An Archaeological Assessment of Cultural Resources in Urban Los Angeles

El Pueblo de Los Angeles, la Placita de Dolores
W.O. 91393

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Prepared for
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Department of Public Works
Bureau of Engineering

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AN ARCHAEOLOGICAL ASSESSMENT OF CULTURAL RESOURCES IN URBAN LOS ANGELES, CALIFORNIA

LA PLACITA de DOLORES -- LAn-887

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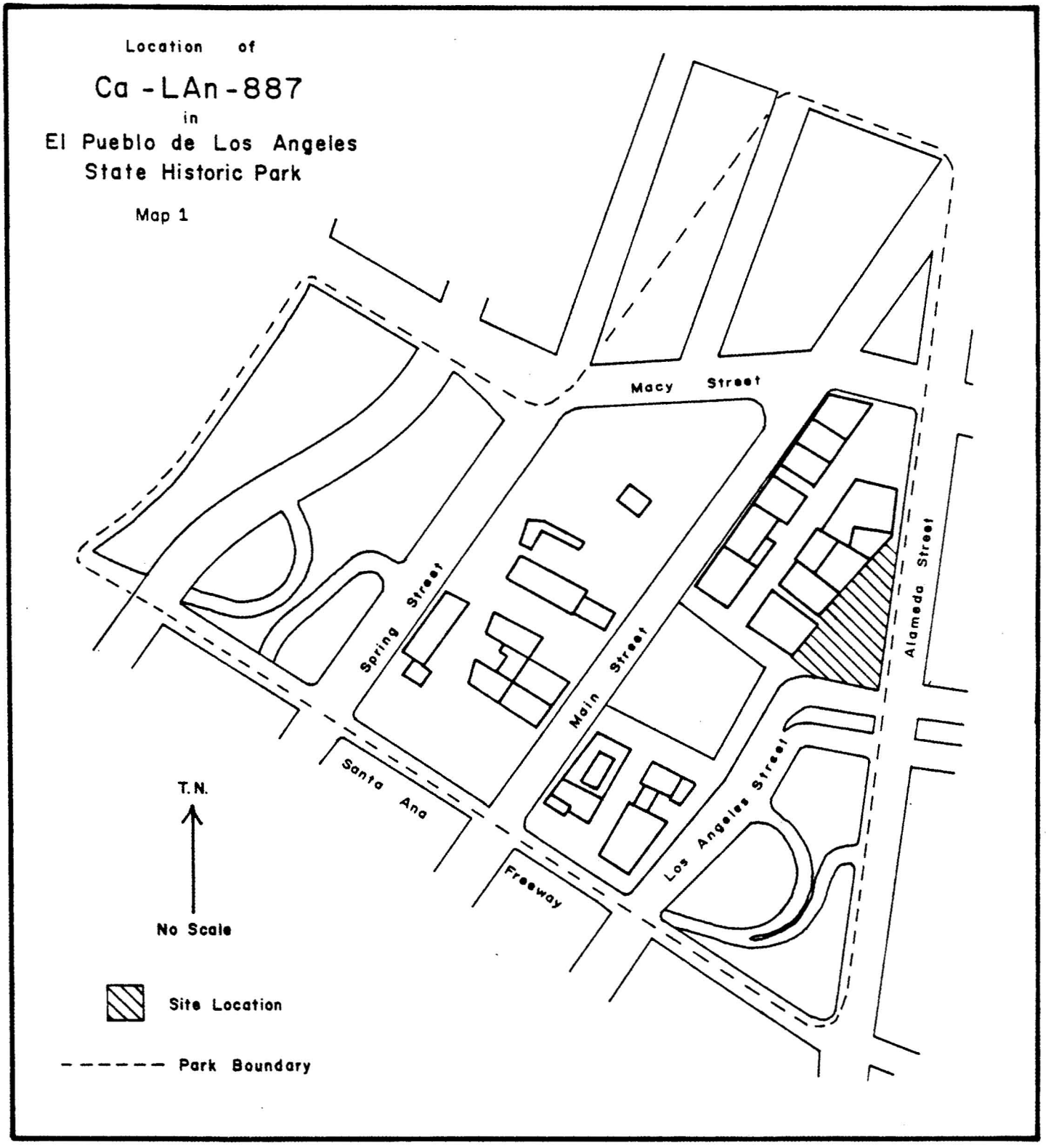
INTRODUCTION

In 1968 a replica of the Bell of Dolores, rung by Father Miguel Hidalgo on September 15, 1810, to herald the Mexican Revolution, was presented to the City of Los Angeles by Diaz Ordaz, at that time president of Mexico. A site within El Pueblo de Los Angeles State Historic Park, the heart of the historic Spanish/Mexican pueblo, was chosen as the suitable location to display the Bell of Dolores and to establish an area for celebrations and displays oriented toward recognition of the Spanish cultural heritage of the City of Los Angeles.

The site is owned by the Department of Public Works of the City of Los Angeles and consists of a triangular piece of land, bounded by Alameda Street on the east, Sunset Boulevard on the south, and the buildings on the east side of Olvera Street on the west (see Plate 1).

Development of plans and designs for La Placita de Dolores Pedestrian Mall began in 1970 by the Department of Public Works in conjunction with consultants for President Diaz Ordaz. Funding for the project was sought and obtained through the Public Works Employment Act of 1977, Title I, Round II, administered by the Economic Development Administration (EDA). As a consequence of the funding being from a Federal source, the undertaking was subject to the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended by Title II of the Land and Water Conservation Fund Act of 1976 and Executive Order 11593 (1971).

The substance of these provisions requires that Federal Agencies must assess the effect of the proposed undertaking upon any district, site, building, structure, or object which is included in, or eligible for inclusion in, the *National Register of Historic Places*. This requirement for identification


Location of
Ca - LAn - 887
in
El Pueblo de Los Angeles
State Historic Park
Map 1
Macy Street
Spring Street
Main Street
Alameda Street
Santa Ana
Freeway
Los Angeles Street
T.N.
No Scale
Site Location
Park Boundary

1

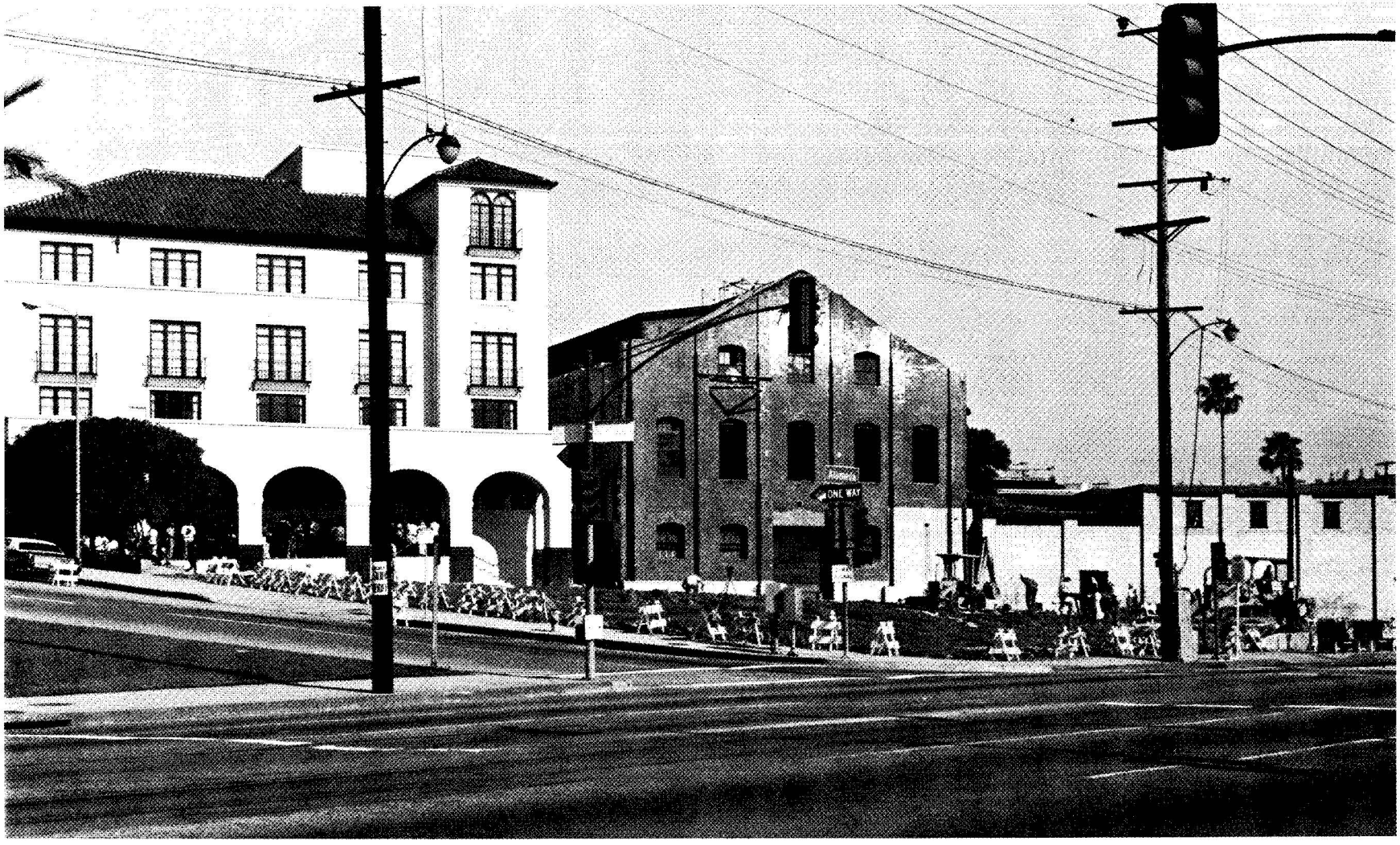


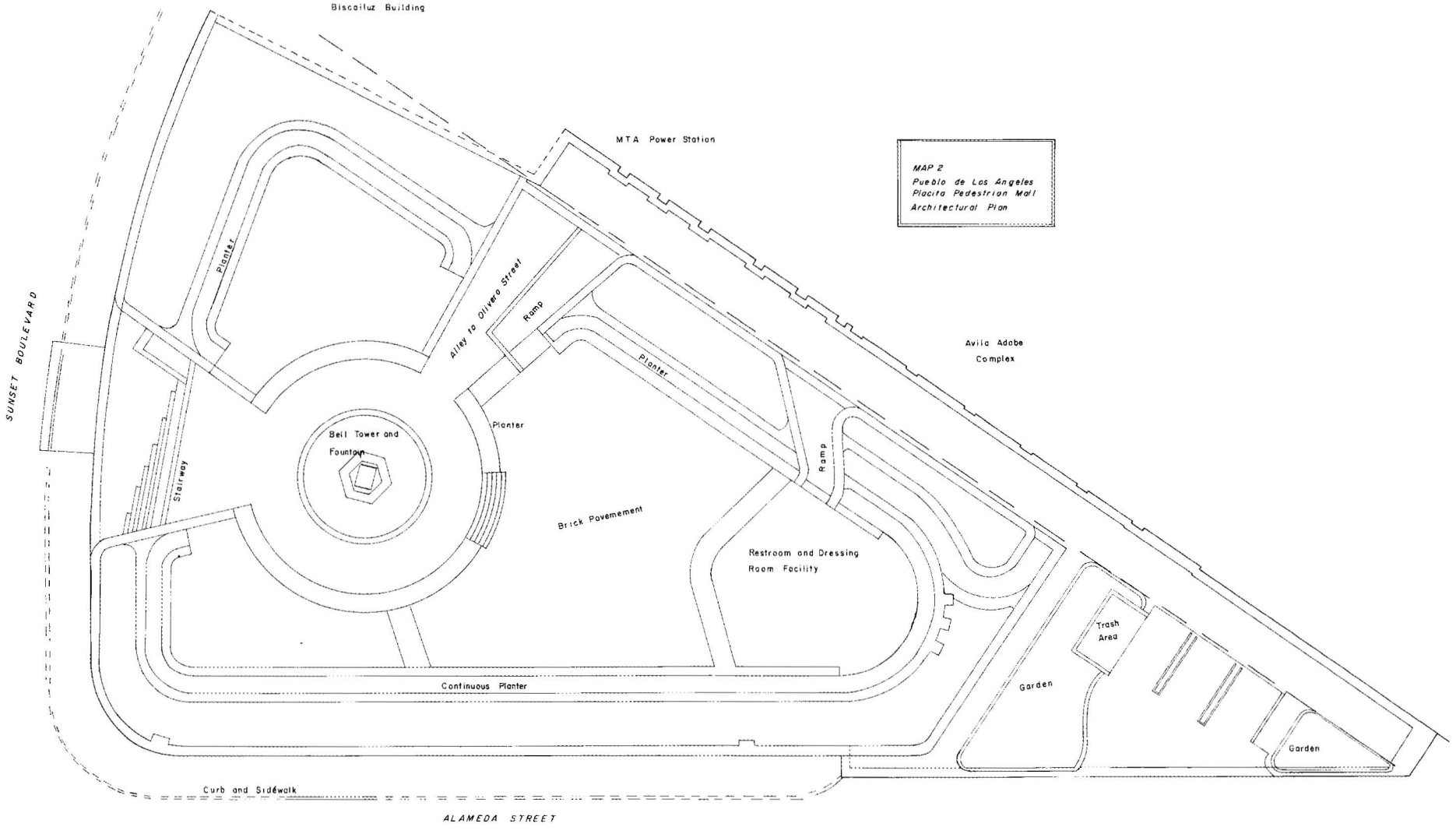
PLATE 1: La Placita Site. Looking to northwest with site area lying between foreground Sunset Blvd. (left) and Alameda Street (right) and background (left to right) Mexican Consulate, MTA Building, and reconstructed rear of Avila Adobe complex.

of resources eligible for inclusion in the National Register resulted in the formulation of Special Condition of the Offer of Grant to the City of Los Angeles. The Special Condition required that, prior to the commencement of construction, the City of Los Angeles would present evidence to EDA that the State Historic Preservation Office (SHPO) had approved a qualified, historic archaeologist to conduct a preliminary assessment to determine what cultural resources were reasonably expected to occur in the project area and to assess the need for a testing program. The assessment was also subject to review and approval by the SHPO and EDA. If a testing program was determined to be necessary, all details of the program would be sent to the SHPO for approval.

On February 15, 1978, the present proposal for an archaeological and historical survey of La Placita site was accepted by the Department of Public Works. The first phase of investigation involved research into the history of the site area. The nature of the human occupations involving ethnic affiliations, economic land use, and historic structures and features was established in order to anticipate and evaluate archaeological remains encountered during the field survey.

The second phase of work, the field investigations, were directed toward determining the range of archaeological material present on the site, identification and artifact sampling of the materials, and evaluation of the resources for significance in terms of National Register criteria.

The following report is a presentation of the historical/archaeological research outlined above, including assessment of project impact and recommendations for mitigation. Original field notes, maps, photographs, and recovered artifacts are available through the Department pf Public Works, City of Los Angeles. Copies of this report are filed at California State Universities and may be obtained by writing La Placita Report, Department of Public Works, City Hall Room 810, 200 Spring Street, Los Angeles, California 90012.


Biscailuz Building
MTA Power Station
MAP 2
Pueblo de Los Angeles
Placita Pedestrian Mall
Architectural Plan
SUNSET BOULEVARD
Planter
Alley to Olivera Street
Ramp
Planter
Avila Adobe
Complex
Planter
Bell Tower and
Fountain
Stairway
Brick Pavemement
Ramp
Restroom and Dressing
Room Facility
Trash
Area
Continuous Planter
Garden
Garden
Curb and Sidewalk
ALAMEDA STREET

ENVIRONMENT AND PREHISTORY *

Environment

Topographically, LAn-887 is situated on the western bluff of the Los Angeles River, overlooking what was at one time a broad floodplain. Apparently the main course of the Los Angeles River shifted many times during the early 1800s. According to Johnson (1962:77):

> With few exceptions old residents recalled that, until the floods of 1824-25 sent it careening off through the lowlands to the south, the Los Angeles River ran below a high bluff between the present Main and Los Angeles Streets, turning westward on its meandering way to the "cienegas," the great marshlands that lay between the Baldwin and Beverly hills.

Evidence for this site being on a bluff is found in the 1888 grading profiles of Los Angeles Street (Figure 18b). Clearly, prior to grading for the street, a considerable drop in elevation was evidenced on La Placita property.

Although at present the region is an intensively occupied, urban site, the area of La Placita Block would have originally consisted of foothill woodland and California prairie vegetation communities (Landberg 1965:46). In 1769 when the Portola Expedition passed near the location of La Placita site, Father Juan Crespi made reference to the thickets of alders and sycamores and the tangles of wild grapevines and masses of wild roses in the vicinity of Los Angeles River (Bolton 1971: 146-149; Johnston 1962:117).

During the Spanish and Mexican period the floodplain was utilized as an agricultural area where crops were grown and vineyards were planted. The first fruit trees and vine slips were procured from Baja California and transported to Los Angeles by ship (Heizer 1968:78-79).

The climate of Los Angeles Basin is Mediterranean, with cool, dry summers and warm, wet winters. The mean annual rainfall is 14.54 inches (Durrenberger 1976:131).

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* by Larry R. Wilcoxon

Prehistory

Although no identifiable, prehistoric cultural remains were found on La Placita site, a general and somewhat brief cultural history of the area's Native American population is appropriate. Examination of the archaeological site records at the University of California at Los Angeles revealed that no prehistoric sites were known to be present in the vicinity of the property under investigation. However, a search of the literature demonstrated that there are a number of archaeological sites within urban Los Angeles that are presently not systematically recorded at the UCLA clearinghouse. This situation clearly reflects the traditional neglect of archaeologists to conduct research in dense, urban settings. As Chartkoff and Chartkoff (1972:59) noted:

> Urban Los Angeles has the interesting distinction of having one of the world's highest concentrations of archaeologists while itself remaining archaeologically almost unknown.

Approximately 200 yards east of the property, numerous Gabrielino artifacts were discovered during the construction of the Union Station Building in 1939. Johnston (1962:122) and Chartkoff and Chartkoff (1972:64) contend that these archaeological remains represent the location of the historic Gabrielino village of *Yangna*. Although this is a distinct possibility, a systematic analysis of these cultural materials is yet to be made.

It is interesting to note the location of these archaeological remains. It appears from our historic research that the present Union Station building rests on the former active floodplain of the Los Angeles River. If this is indeed true, then the location of a village in this area seems to contradict some of our notions about prehistoric settlement.

For example, even as Chartkoff and Chartkoff (1972:59) point out:

> Prehistoric settlement patterns differed to a large extent from present-day patterns as far as site location is concerned, primarily because resource needs have changed. Prehistoric settlement emphasized access to several adjacent

> habitats, access to fresh running water, and *avoidance of periodic floods*. Prehistoric settlements tended to be *concentrated on river bluffs*, along Pleistocene *raised terrace systems*, around springs in the hills, and around canyon mouths (emphasis added).

The history of human habitation in Los Angeles extends back in time for perhaps 25,000 to 30,000 years. The archaeological record for this time period is scant at best and beset with controversy. The earliest inhabitants appear to have been hunters of large Pleistocene megafauna (Willey 1966). As the climate became warmer and sea levels rose with the recession of the ice age, numerous large animals were displaced from their ecological habitats and many became extinct. This situation had a direct effect on the early human predators. An adaptive change in subsistence practices was necessary.

By 8000 B.P. people with a predominantly gathering economy were present all along the southern California coast from Santa Barbara to San Diego counties. Archaeological sites of this period manifest a technology and subsistence pattern oriented toward the collection of wild plants, seeds, and shellfish. Sites associated with this early gathering adaptation have been classified as belonging to the Encinitas Tradition (Warren 1968).

The artifact assemblage characteristic of the Encinitas Tradition includes metates, manos, hammerstones, crude chopping scraping and cutting tools, and occasional doughnut stones, discs, and cogstones. Bone and shell artifacts are rare in these assemblages. Artifact forms first appearing in this cultural tradition persist in archaeological sites until the historic period.

The Campbell Tradition (5000 B.P. to 500 A.D.) represents a major subsistence change by the inhabitants of southern California. During this period the technology and faunal remains from archaeological sites reflect an increase in the importance of fishing and hunting. For the first time, large

knives, side-notched, stemmed, and lanceolate shaped points, drills, sandstone mortars and pestles, hopper-mortars, and a wide variety of bone and shell artifacts make their appearance. Without these new forms, the artifact assemblage of the Campbell Tradition is very similar to that of the Encinitas Tradition.

During the Campbell Tradition, sites reflecting activities characteristic of the Encinitas Tradition occur predominantly in inland areas where the collection of wild foods is optimal. The primary difference noted in these sites is a shift toward the exploitation of a more diverse resource base.

By A.D. 500 the adaptive trends which had their beginnings in the Campbell Tradition reached their apogee. An increase in population density, site diversity, social complexity, and inter-site trade is evident throughout the southern California region. For the first time, permanent villages were located in the fertile lowlands along rivers and streams and sheltered areas along the coast (Hudson 1971). This cultural prosperity is classified as the Shoshonean Tradition and is thought by many to coincide with the coastal intrusion of Takic-speaking (Shoshonean) peoples from the eastern portion of the state (Kroeber 1925; Johnston 1962; Bean and Smith 1978). Which linguistic group occupied the area prior to the recent Shoshonean influx is largely a matter of speculation.

At the time of historic contact the Los Angeles Basin was occupied by Gabrielino Indians. The Gabrielino were hunters and gatherers and fishermen who exploited a wide variety of both marine and terrestrial resources. They lived in permanent villages through most of the year. During the lean season, usually in the winter, the large village populations would disperse into smaller economic units and exploit resources at different locations within the Los Angeles region. Based on ethnohistoric reconstruction (Johnston 1962) and ethnographic accounts

(Heizer 1968) the Gabrielino social organization followed that of a moiety system similar to that of other southern California Takic speakers. However, this system seems not to have functioned in controlling socioeconomic interrelationships. According to Bean and Smith (1978:543-544):

> Villages were politically autonomous, composed of nonlocalized lineages, often segmentary in nature. Each lineage had its own leader .... The dominant lineage's leader was usually the village "chief" (tumia'r) whose authority was legitimatized by the possession of the sacred bundle, the link between the sacred past and the present and material, temporal representation of the Gabrielinos' raison d'etre and the primary embodiment and focus of power. Often several villages were allied under the leadership of a single chief.

The Spanish missionization of southern California led to a disruption of the traditional aboriginal systems, a general decline in population, and eventually, the cultural extinction of these native groups. Unfortunately, most of the Gabrielinos were dead long before systematic ethnographic studies were instituted, thus making knowledge of their lifeways meager in comparison to some of the other California Indian groups.

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HISTORY OF LA PLACITA DE DOLORES PARK SITE, 1769-1978*

INTRODUCTION

The property in question is a triangular shaped lot located on the northwest corner of Alameda and Los Angeles Streets in downtown Los Angeles. It is owned by the City of Los Angeles and is included within the Pueblo de Los Angeles State Historic Park. The City of Los Angeles intends to build a park on this property to be known as the "Placita de Dolores Pedestrian Mall." Therefore, for the sake of convenience, this report will refer to the property as the "Placita Block."

In order to determine how the construction of the Placita Park will affect the cultural or historical resources on the Placita Block, it is important to understand the specific history of that block and the role it played in the general history of the City of Los Angeles. This report seeks to recreate the sequence of historical events which have occurred on or around the Placita Block since the founding of Los Angeles in 1781. It is my intention to interweave the history of this block with the history of the growth of Los Angeles, as well as to focus on the specific events which make the history of this block unique. I have tried to trace the occupation of this block, and to outline any and all ethnic associations or uses of the property. To do this, I had to determine what structures had been built on this block, their function, and give some indication as to their significance.

The Placita Block was part of the original pueblo of Los Angeles, founded in 1781. When the pueblo's main Plaza was moved to its present location in 1818, the Placita Block was located on the northeastern corner. The pueblo's main water ditch, the *Zanja Madre*, ran through the Placita Block and this water ditch was to play a major role in both the history of the block and the history of Los Angeles. Early

*by Paul D. Friedman

use of the block during the Spanish and Mexican period was probably associated with activities having to do with the Zanja Madre, with the Plaza, and with nearby residences. In the 1840s and 1850s Juan Sepulveda, a noted Californio resident of the pueblo, probably lived on the southern end of the Placita Block.

In the early American period the town's first privately owned water company took over the southern end of the Placita Block. The early history of water in Los Angeles can be traced by merely recording the history of the various water companies that occupied this land: from the Los Angeles Water Works Company to the Los Angeles City Water Company, and, finally, to the City of Los Angeles Department of Water and Power. The Placita Block later became part of the heart of Los Angeles' old Chinatown, and the role played by this block in the cultural history of this group cannot be overlooked. Thus, we see a progression in ethnic occupancy on the Placita Block from Spanish/Mexican, to early American, to Chinese.

NOTES ON SOURCES

In researching this report, I was particularly concerned with finding visual material, such as maps and photographs, which would help me recreate the structures that were built on the Placita Block. I have tried to rely as heavily as possible on primary material. A wide variety of sources was exploited: old city maps, photographs, city engineering maps and profiles, newspapers, municipal ordinances, city departmental files, fire insurance maps, court cases, and title insurance records of ownership. Because of the short time available, I was unable to make use of personal papers and manuscripts, demographic records, or oral history.

Much of the huge array of secondary material relating to the history of Los Angeles could only be skimmed. Various published reminiscences about life in early Los Angeles were particularly useful. Horace Bell's *Reminiscences of a Ranger*, first published in 1881, gives a wild and romantic view of Los Angeles as a rough, frontier town in the 1850s. Harris Newmark presents a more business-like vision of Los Angeles in his book, *Sixty Years in Southern California*, published in 1916. Boyle Workman's *The City That Grew* (1936) is often self-serving but had a great deal of information on the history of water in Los Angeles.

Ludwig Louis Salvator was Archduke of Austria when he visited Los Angeles in 1876. His view of Los Angeles in his book, *Los Angeles in the Sunny Seventies*, gives an outsider's opinion about the City of the Angels. Also of use was the 1959 reproduction of Thompson and West's 1880 *History of Los Angeles*. The compiler, John Albert Wilson, liberally clipped from the local papers, giving this book an aura of authenticity.

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ABSTRACT

Spanish and Mexican Period: 1781-1846

El Pueblo de la Reina de Los Angeles was founded in 1781 and the Placita Block was included within the original town boundaries. When the pueblo's main Plaza was moved to its present location in 1818, the Placita Block formed its northeast corner. The pueblo's main water ditch, the *Zanja Madre*, was cut across the block's embankment. Juan Sepulveda, a well-known Californio resident of Los Angeles, owned a large portion of the Placita Block and it is likely that his adobe house was the only structure on the block during the 1840s and 1850s. The northern portion of the site formed the back lots of the residences on Olvera Street.

The Early American Period: 1847-1888

When the United States took over control of California in 1847, the pueblo of Los Angeles showed few immediate effects. The Californio families continued to control the land on the Placita Block throughout the 1850s. A major change occurred, however, when American capital was invested in the area. In 1861 the Sepulveda property was acquired by the city's first private water company, the Los Angeles Water Works Company, which built a structure at the corner of Alameda Street and Marchessault Street in the 1860s. When this venture went out of business in 1868, the land was almost immediately taken over by another privately owned water company, the Los Angeles City Water Company. This company had three buildings on the property until Los Angeles Street was extended through the western section of the Placita Block in 1888. At that time the water company built a large, two-story, brick, office building on the corner of Marchessault and Alameda Streets. In terms of

physical size, both the water company's lot and its office building were to dominate the Placita Block for over fifty years.

Chinatown: *c.* 1870-1939

In the 1870s the ethnic make-up of the neighborhood began to change and the Placita Block was swallowed up by Chinatown. The Chinese were to reside on the east side of the Plaza until 1950. Prostitution flourished in the area during the latter decades of the nineteenth century and bordellos appeared on the Placita Block, extending down Alameda Street from the water company property to the northern end of the block. When a reform-minded, civic government began to enforce anti-vice laws in 1909, the prostitutes disappeared and the single story brick buildings they had occupied were taken over by Chinese merchants. They remained until 1923 when the buildings were probably torn down.

In 1902 the City of Los Angeles formed its own municipal water department and took over the Placita Block property. At first the City Water Department used the building on the corner of Marchessault and Alameda as a main office, then, later, as a meter-repair shop, until it was leased in 1925 to several Chinese businesses. In 1939 the old water company building was demolished to make room for the widening of Sunset Boulevard as an approach to the newly constructed Union Station.

The Modern Period: 1940-1978

With the removal of the water company building, all that remained of the Placita Block was a section of property owned, for the most part, by the Rimpau family. On the north end of this property, facing Los Angeles Street, a

reinforced concrete building was constructed and leased to a restaurant known as the White Log Tavern in the early 1930s. This restaurant was the only structure on the block when the City of Los Angeles acquired the property in 1954. The block was eventually turned into a parking lot.

In 1953 the Plaza area, including the Placitas Block, was designated as a State Historic Park. In 1972 the Pueblo de Los Angeles State Historic Park was admitted to the National Register of Historic Places. The Placita Block was not included within the boundaries of the National Register site.

A PIECE OF THE PUEBLO:
A History of Las Placitas de Dolores Park Site

THE SPANISH AND MEXICAN PERIOD: 1769-1846

The historical sequence of the Placita Block begins with the arrival of the first Europeans in the Los Angeles area in 1769. What is now the State of California was claimed by Spain during the sixteenth century as part of the empire it was establishing in the New World. Although Cabrillo in 1542 and Vizcaino in 1602 had sailed up the California coast, no Spanish expedition had ventured overland into Alta California until 1769. Threats of raids by the Englishmen such as Francis Drake, and fear of Russian incursions from the north motivated the Spanish government in 1768 to order that San Diego and Monterey should be fortified and occupied (Bancroft 1884: v. 1, 113). The Spanish exploration and occupation of Alta California was to be a joint venture between the Church and the Monarch. Beginning in 1769 a series of missions was established by the Franciscan Order. These extended northward from San Diego to San Francisco.

To protect the missions, military *presidios* were set up in San Diego, Santa Barbara, Monterey, and San Francisco. The present site of the City of Los Angeles was first noted by the Portola expedition during its journey northward from San Diego in search of Monterey Bay. On August 1, 1769, they camped by a river which the Franciscan priest, Juan Crespi, named the "Rio Porciuncula" (Temple 1931:70).

When the Spanish governor of California, Felipe de Néve, moved his capital to Monterey in 1777, he traveled

overland to inspect possible sites for new settlements. On June 1, 1779, Néve issued his *Reglamento*, an important section of which dealt with colonization. The regulation called for the occupation of the Santa Barbara region, the redistribution of land within the informal pueblo of San José (founded in 1777), and the establishment of a new pueblo on the Rio Porciuncula (the Los Angeles river) (Bancroft 1884: v. 1, 318). These pueblos would theoretically provide food and goods for the presidios, making the government of Alta California independent from both the missions and the supply ships from *Nueva España*. Settlers for the new pueblo were recruited in Sinaloa and Sonora and induced to make the hard, overland journey to California with promises of free land, livestock, tools, and a subsidy of money. In return, the colonists were expected to sell the surplus products of their land to the presidios (Bancroft 1884: v. 1, 333).

After a short stay at the Mission San Gabriel, forty-four colonists arrived at the location of the new settlement, and on September 4, 1781, *El Pueblo de la Reina de Los Angeles* (the town of the Queen of the Angels) was founded (Treutlein 1973:1). According to Néve's instructions, issued from San Gabriel on August 26, 1781, a plaza was laid out with its corners facing the cardinal points. House lots around the plaza were to be 20 to 40 *varas*. Settlers were to draw lots for the acquisition of available farmland. An irrigation ditch, known as the *Zanja Madre* (Mother Ditch), was cut from the Los Angeles River to the pueblo, corrals for the horses and cattle were built, and simple, mud-roofed huts of palisades were thrown up. By the end of 1784 the first rude shelters were being replaced by more substantial houses of adobe bricks (Bancroft 1884: v.1, 345).

Just five years after the founding of the pueblo Governor Pedro Fages commissioned Alferez Josef Dario Argüello of the Santa Barbara presidio to go to Los Angeles and place

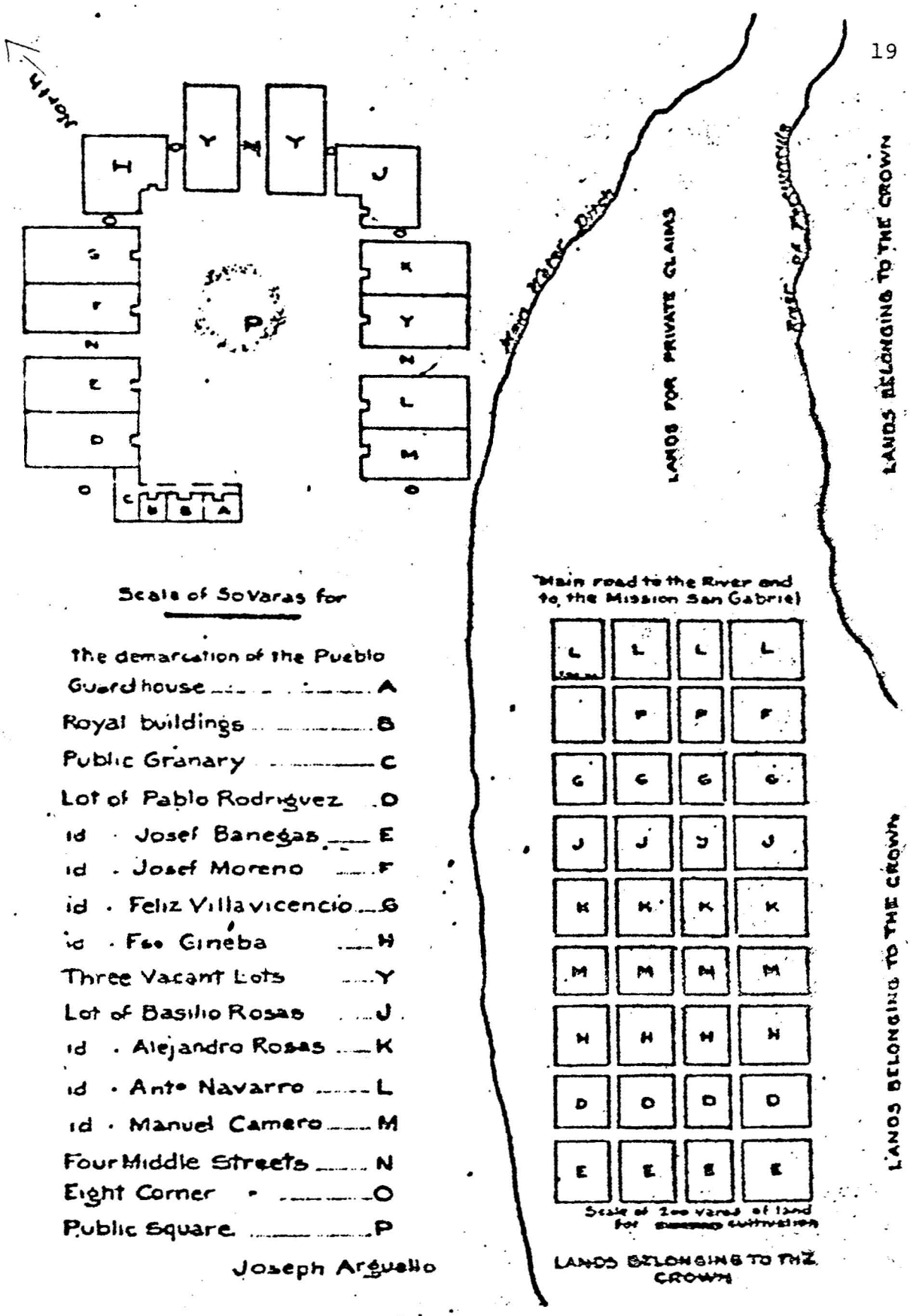
the *pobladores* in formal possession of their land. Thus, on September 4, 1786, the residents of Los Angeles received their official grant of title (Temple 1931:91) (see Map 3).

Today the exact location of the original Plaza of Los Angeles is unknown. It probably was northeast of the present Plaza, on lower ground, closer to the river. According to Bancroft, the first chapel for the Plaza was begun in 1784 (Bancroft 1884: v. 1, 346). In 1814 the cornerstone for a new church was laid, but the flooding of the Los Angeles River in 1815 caused abandonment of this site and the Plaza was moved to higher ground. The present Plaza was very likely laid out in 1818 when work was begun on the Plaza Church (the present church was completed in 1822) (Harlow 1976:14).

Los Angeles soon proved to be a prosperous, agricultural community. By 1840 it was the largest settlement in Alta California and had a population of over 1,200 persons (Fogelson 1967:10). During the politically turbulent Mexican period, after Mexico won its independence from Spain in 1822, the inhabitants of Los Angeles often vied with the government in Mexico City and that in Monterey, its rival to the north, for political control of California. For a short time Los Angeles was even designated as the capital.

Life in the pueblo during the Spanish and Mexican periods revolved around the Plaza and by the end of the Mexican period many prominent Californio families resided nearby. At the southwestern corner of the Plaza, where the Pico House stands today, was the home of José Antonio Carrillo. Next to the Carrillo lot were the properties of Andrés and Pio Pico. Other homes around the Plaza included those of Agustin Olvera, Vicente Lugo, and Ygnacio del Valle (Bowman 1974:47).

Little is known from the historic records available about the specific activities which may have occurred on the Placita Block during the Spanish and Mexican period. The



Certificate of José Fco de Ortega Lieut & Commandante of the Company annexed, Company consisted of 12 men as per his review had Jan. 2nd 1782.

MAP 3: Bancroft, 1884, "Original Plan of the Pueblo."
From Bancroft, *History of California.*

Placita Block was located near the first pueblo site and at the northeastern corner of the final Plaza. It is likely that by 1847 Juan Sepulveda owned the southern end of the Placita Block which faced the Plaza. The bluff upon which the pueblo had been built ran through the middle of the block. A part of the way down this bluff flowed the Zanja Madre, which supplied the pueblo with water for both irrigation and domestic purposes. A small irrigation ditch, known as Zanja No. 3, ran from the main zanja at the northern end of the block and went in a southeasterly direction along what is now Alameda Street. (See Map 4 and Map 7.)

The Zanja Madre (1781-1845)

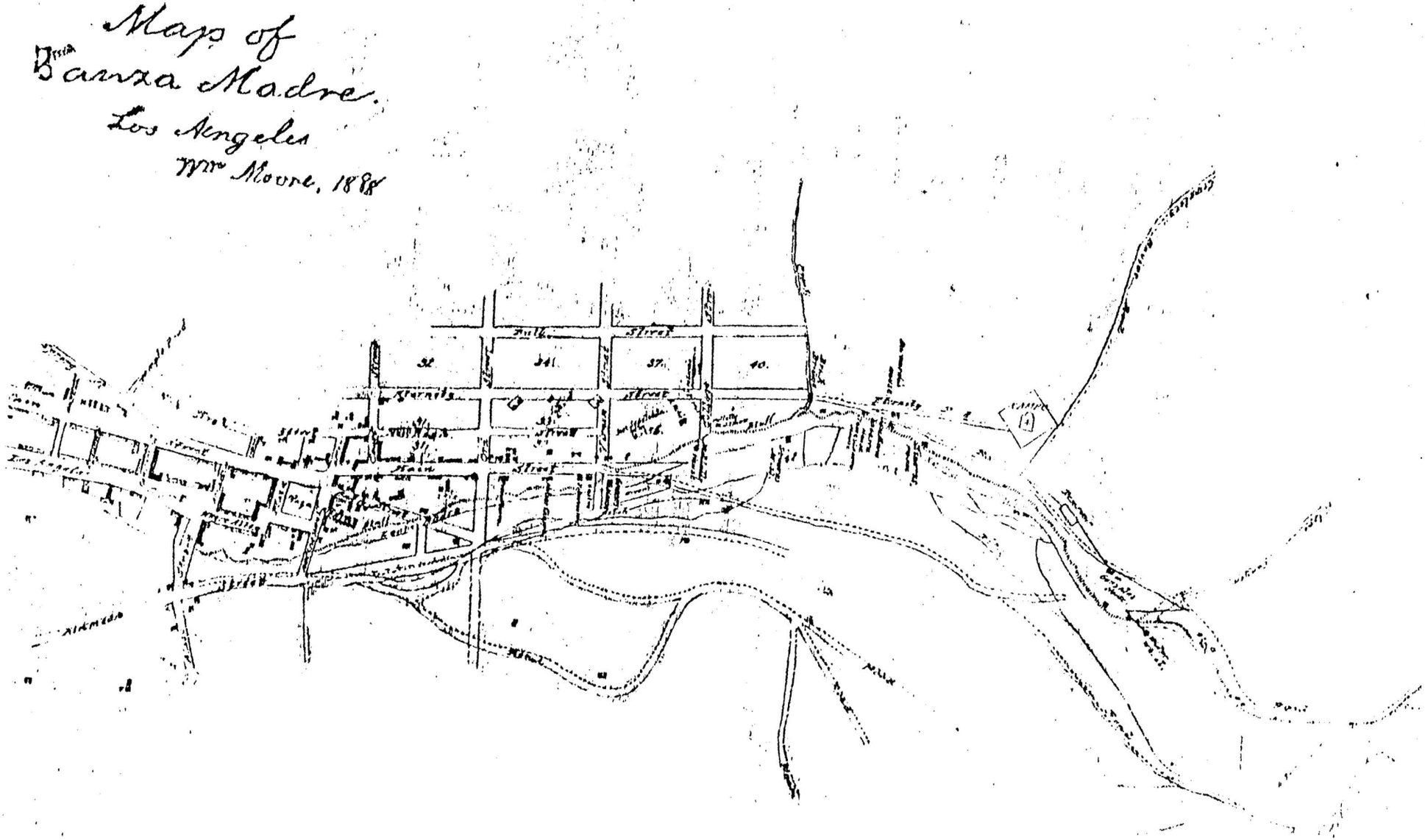
Many of the activities associated with the Zanja Madre probably took place on the Placita Block. During the Spanish and Mexican period the Zanja Madre played a vital role in the life of the pueblo, serving as the town's principal source of water for both irrigation and domestic needs. The fact that the first act of the settlers of Los Angeles was the construction of the irrigation ditch, even before they built their homes or sowed their crops, testifies to the importance of the zanja (Temple 1931:87).

Water was diverted from the Los Angeles river into the zanja by means of a primitive *toma*, or dam, made of a weir of willow poles. During this period the administration of the zanja system was overseen by the *Ayuntamento* (town council) on behalf of the pueblo (Ostrom 1953:30). Often, when the zanja required maintenance, Indians were pressed into service to supply the needed labor (Guinn 1915:391).

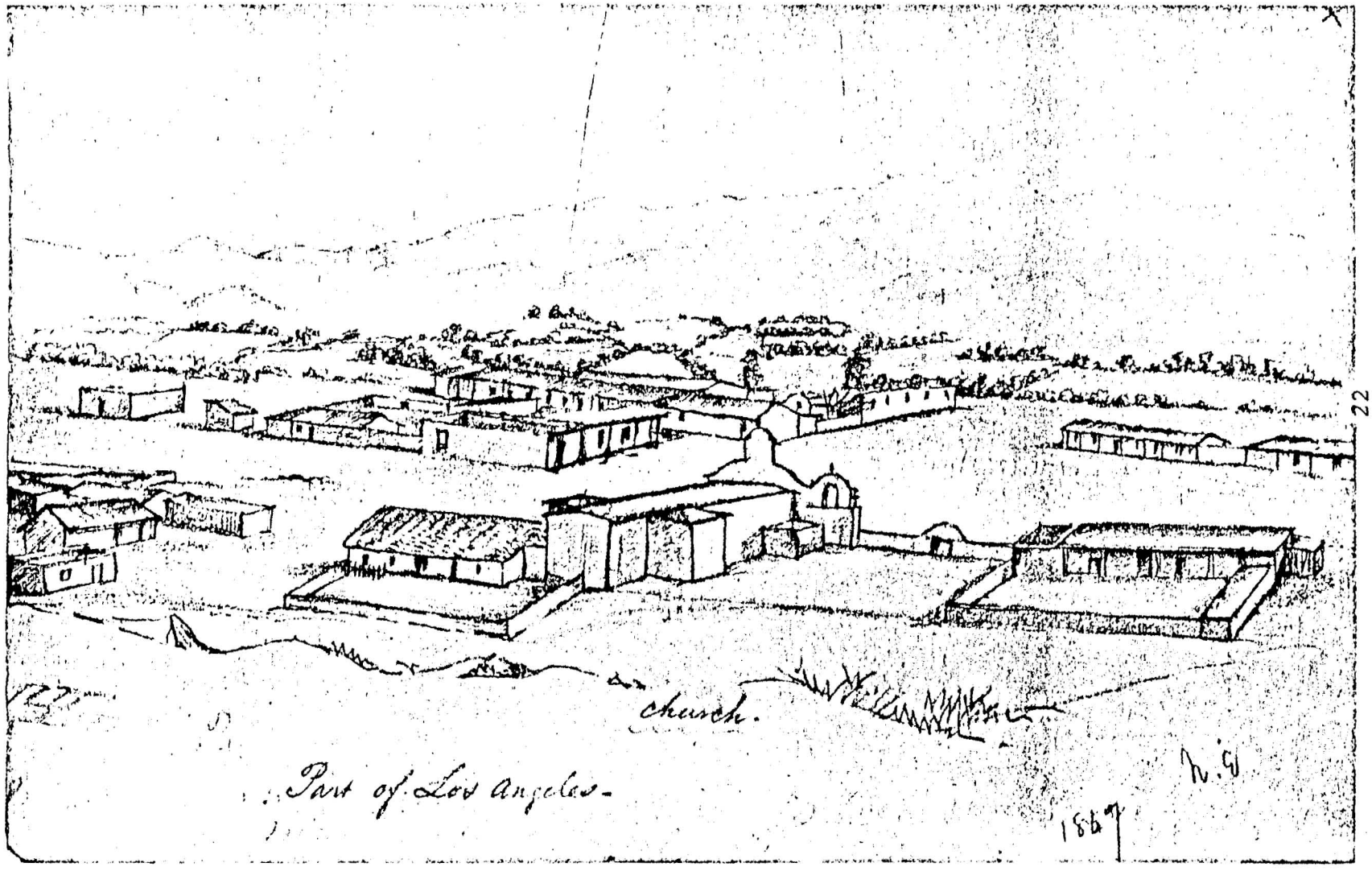
THE EARLY AMERICAN PERIOD: 1847-1888

The Transition Years: 1847-1859

When the United States took over control of California after the Mexican-American War of 1846, the residents



MAP 4: Moore, 1868, "Map of the Zanja Madre." From W. W. Robinson, *Maps of Los Angeles.*



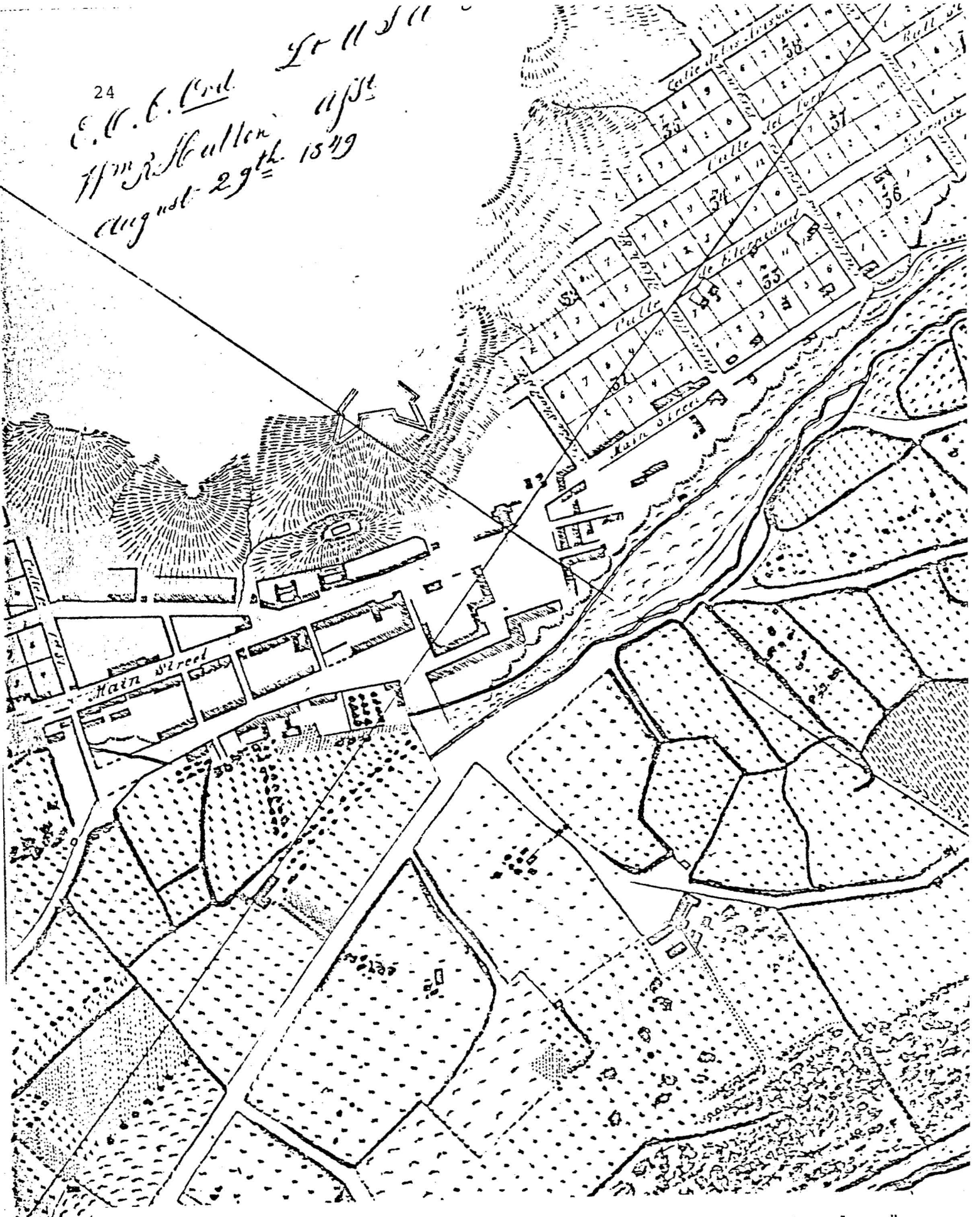
MAP 5: "Los Angeles, 1847" by William Rich Hutton. From William Rich Hutton, *California Drawings*.

of Los Angeles showed few signs of anxiety. To them the American government in Washington seemed as distant as had the government in Mexico City. A transfer of allegiance did not seem to matter to a town so set in its pattern of self-sufficiency. Los Angeles in the 1850s was little changed from the pueblo the Spanish and Mexicans had known. It was a simple settlement of single-story, flat-roofed adobes huddled about a dusty, treeless plaza. The Plaza, as always, was the center of town.

The Americans found the pueblo highly disorganized. The town seemed haphazardly arranged, with buildings jutting into the middle of streets and alleys meandering around the adobes. The Plaza, itself, was little more than an open square, crisscrossed with paths, overgrown with weeds, and used in some places as a dumping ground for refuse (Newmark 1916:98). (See Plate 2.)

Even during the Mexican period the town council had recognized the need to have a survey made of the pueblo. However, it was not until the American occupation that such a survey was made. In June, 1849, the town council requested that the American governor, Bennett Riley, send a surveyor to Los Angeles to map out the pueblo. Lieutenant Edward O. C. Ord was sent to survey the town and lay out the streets, and for these services the town council offered him payment in either cash or unappropriated land (*First Los Angeles City and County Directory* 1963:10). The Ord Survey of 1849 represents the first known map drawn of Los Angeles in the American period and it served as a model for later surveys of the city. (See Map 6).

After 1849 the gold rush greatly changed the tempo of life in Los Angeles. The discovery of gold in the California hills brought thousands of newcomers to the state and created an enormous market for cattle. In southern California the *rancheros* grew rich off the miners' demands for



MAP 6: Ord Survey of 1849, "Plan de la Cuidad de Los Angeles."
Copy as Los Angeles Public Library, Central Branch.

PLATE 2: View of the Plaza in 1861. (Mislabeled as 1857). From El Pueblo de Los Angeles Historic Park collection.

meat and Los Angeles became the bustling center of the beef trade. The pueblo evolved into a frontier boom town and it soon acquired a reputation for crime and violence. A former vigilante recounted how Los Angeles in the early 1850s was the scene of an average of one homicide per day (Bell 1927: 13). "Gambling, drinking, and whoring are the only occupations" wrote one American visitor to the town in 1849 (Nadeau 1960:42). Many of these activities took place in the gambling houses, saloons, and brothels clusterd on Calle de los Negros, known to the Americans as "Nigger Alley" (present-day Los Angeles Street near Arcadia).

With the great influx of foreigners who were drawn to California in search of gold, Los Angeles began to take on a more cosmopolitan aura. The new Yankee settlers, finding the established Californio families firmly entrenched around the Plaza, began to build their homes on the west side of town. Mexicans, primarily from Sonora, also came to California during this period. In Los Angeles they settled on the north side of the Plaza, and this neighborhood of adobes soon became known as "Sonoratown (Newmark 1916:31).

During the 1850s Los Angeles appeared more Mexican than Yankee. In 1853, out of a total population of approximately 3,500 persons, only about 300 were Americans (Pitt 1971:122). The Americans were forced to take a position of minority status in a town still strongly dominated, both socially and politically, by the Californios. Looking at the ethnic composition of Los Angeles, Horace Bell labeled the town "semi-gringo" (Bell 1927:243).

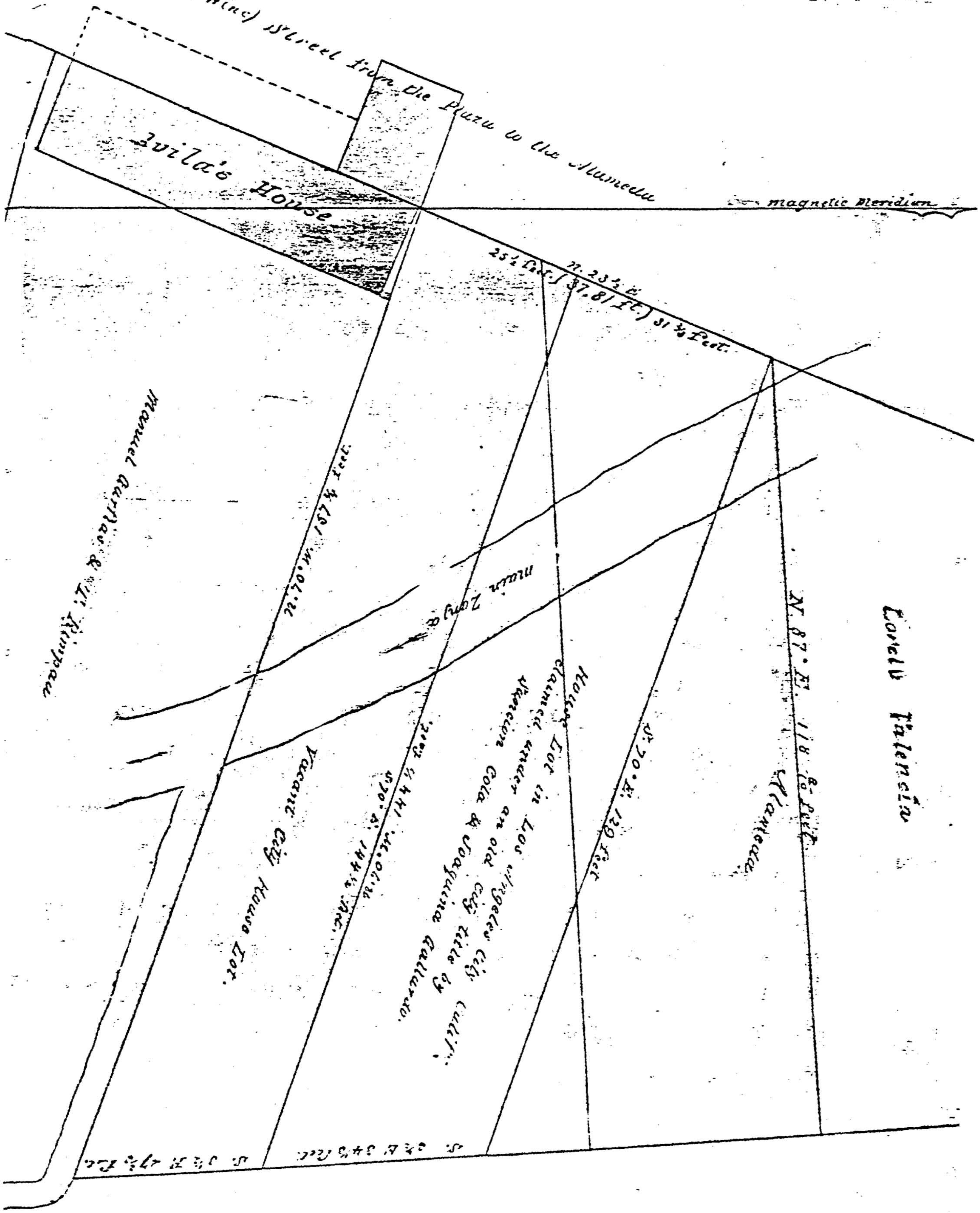
On the Placita Block the old Californios still controlled the land during the 1850s. A map drawn by Deputy County Surveyor George Hansen on September 21, 1855, showed that all the owners of the property between Wine Street (Olvera Street) and Alameda Street had Spanish names. At the northern end of the block was the property of Loreta

Valencia. Next to the Valencia property was the vacant lot owned by Suncion *(sic)* Cota and Joaquina Gallardo. Lying on the south side of the vacant lot was the property of Manuel Garfias and Theodore Rimpau. This lot contained the Avila adobe, probably the oldest adobe house standing in Los Angeles today. It was built about 1818, and it was once the home of Francisco Avila. Theodore Rimpau, a German immigrant to Los Angeles, married one of Avila's daughters (Robinson 1959:88). (Interestingly, the Rimpau family remained in control of a section of this block until 1954 at which time it was acquired by the City of Los Angeles).

Manual Garfias was a well-known California resident of the pueblo, having served as county supervisor and later as county treasurer (Layne 1935:64). In addition to the Plaza property, Garfias owned the 14,000-acre San Pasqual Ranch where the city of Pasadena now stands (Newmark 1916: 178) (see Map 7).

Next to the Rimpau/Garfias property, on the southern end of the Placita Block and facing the Plaza, was the home of Juan and Felipa Sepúlveda. The Sepúlvedas were a wealthy and respected Californio family. Juan Sepúlveda was deeply involved in local politics, serving as *alcalde* (mayor) of Los Angeles in 1845, and again in 1849. In 1854 Sepúlveda was a county supervisor and in 1857-1858 he served as county assessor (Bancroft 1964:324). Along with his brother, José Loreto, Juan Sepúlveda owned the 31,000-acre Rancho Los Palos Verdes (Cleland 1941:16).

One of the first known structures to be built on the Placita Block was the Sepúlveda adobe. This building can be seen situated behind the Olvera house on the northeast edge of the Plaza in the 1847 sketch of Los Angeles drawn by William Rich Hutton (see Map 5). An old adobe house can also be seen on the Sepúlveda property in the Pacific Railway Survey sketch of the Plaza drawn in the



MAP 7: 1855, "Survey of Olvera to Alameda Streets."
From W. W. Robinson, *Maps of Los Angeles*.

early 1850s. The Ord Survey of 1849 shows a building standing on the Sepúlveda property (see Map 6), as do later maps drawn in the 1870s. These maps, such as the Stahlberg Map of 1876, attempted to depict how the Plaza looked in the 1850s.

The maps of the 1870s, such as those drawn by Ruxton, Lecouvreur, and Stahlberg, were based on the Ord Survey of 1849 and other earlier maps of the town, but they are filled with inconsistencies and only roughly correspond to the original survey (*First Los Angeles City and County Directory*, 1963:11). While often inaccurate, these maps are useful in that they denote early title of ownership on some of the properties, give early street names, and show the Plaza prior to its reconstruction in 1871-1872. The Stahlberg Map of 1876 shows Juan Sepúlveda as the owner of the property on the southern end of the Placita Block. The Sepúlveda adobe is drawn behind the Olvera residence, even though this building was very likely gone before 1861. At that time Los Angeles Street did not yet go through the Plaza and Marchessault Street was labeled as an alley (see Map 8).

By 1861 the Sepúlveda adobe apparently no longer existed, as shown in a photograph taken of the Plaza around 1861 (See Plate 1). Available maps, drawings, and photographs of the Plaza area show that the only structure on the Placita Block during the 1850s was on the Sepúlveda property.

The Americanization of the Pueblo (1860-1870)

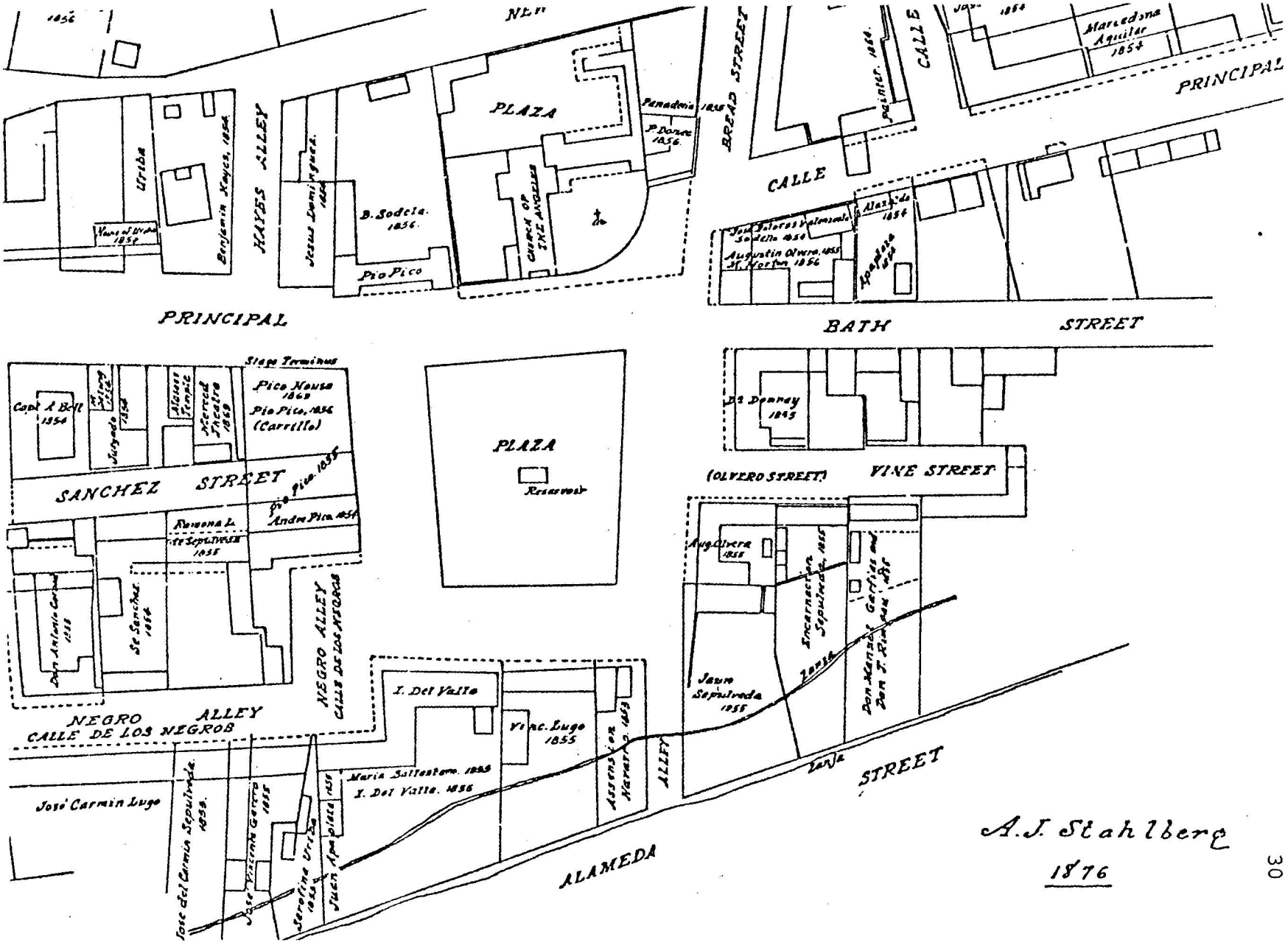
During the 1860s the American presence in Los Angeles became more noticeable. Many Californio families lost title to their land during the inquiries before the Board of Land Commissioners, either because of insufficient proof of ownership, or because of non-payment of taxes, or as a result of exorbitant legal fees run up after years of litigation. For the rancheros, first floods and then a disastrous drought

led to bankruptcy (Cleland 1941). Many of the ranchos were broken up and sold as small farms to the Americans who, by then, were swarming into the state. In Los Angeles the Americans were soon dominating both the business and the politics of the town.

On the Placita Block, as elsewhere in the pueblo, the anglicization of Los Angeles was reflected in the changes of ownership of property from Mexican families to Americans. Yankee capital was slowly displacing the Californios in the Plaza area. Ygnacio del Valle sold his home on the east side of the Plaza in 1861 and moved to his ranch, Camulos (Newmark 1916:98).

Juan Sepúlveda was forced in 1861 to sell his lot on Placita Block to the Los Angeles Water Works Company, which claimed it was "compelled in its progress to take possession of and use as its own property" the Sepúlveda land ("Los Angeles Water Works Company *vs.* Felipa and Juan Sepúlveda, 1861"). Sepúlveda was willing to sell the land to the water company, since, by this time, the lot lay vacant and he had probably moved to his ranch in Palos Verdes; but when an acceptable price could not be reached, the water company took Sepulveda to court. The District Court Judge, Benjamin Hayes, assigned five commissioners to assess the value of the property and it was finally agreed that Juan Sepulveda should be paid $215 for his land "Los Angeles Water Works Company *vs.* Felipa and Juan Sepúlveda, 1861").

The water company probably chose to purchase the Sepúlveda land because the Zanja Madre passed through the property and the location of the lot offered excellent access to the center of town. During the 1860s the company constructed a building on the former Sepúlveda property, situated so that it faced Alameda Street. A water wheel and pump were also built on the lot to convey the water



MAP 8: Stalberg, 1876, "Map of the Los Angeles Plaza." Copy at Los Angeles Public Library, Central Branch.

from the zanja to a brick storage tank the water company had built in the middle of the Plaza (Guinn 1915:391).

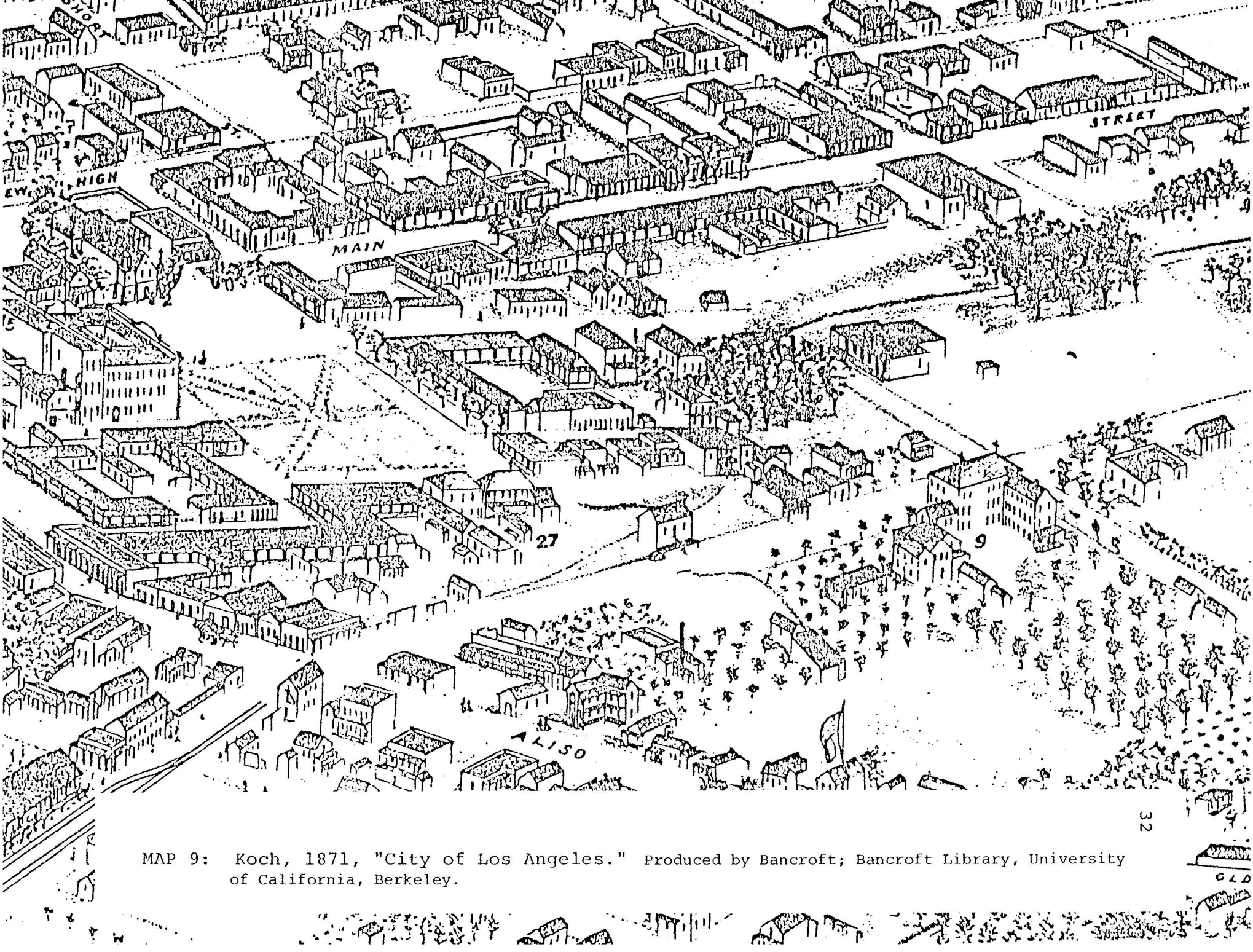
The water company building on the Placita Block can be seen in the 1869 photograph of the Plaza. The water tank also appears in this photograph (see Plate 3). The water company building facing Alameda Street appears in an 1871 drawing of Los Angeles by Koch (see Map 9). The Los Angeles Water Works Company and its successor, the Los Angeles City Water Company, controlled the southern portion of the Placita Block from 1861 until 1902, at which time the City of Los Angeles formed its own water company and purchased the property on the Placita Block.

The Water Works (1850-1868)

During the early American period Los Angeles still relied on the zanja system for its source of water for both domestic and agricultural use. By 1850 the number of zanjas had grown to seven or eight (Newmark 1916:115). In 1854 the town council appointed a *Zanjero*, or water commissioner, to oversee the maintenance and operation of the zanjas, issue permits, and enforce the local ordinances pertaining to the use of water and its distribution system. In 1860 the Zanjero held such an important position that he earned a higher salary than the mayor (Workman 1936:73).

Because the zanjas were merely open ditches, local authorities, concerned with the possibility of contamination, passed regulations prohibiting the washing of clothes in the zanjas and the throwing of garbage into the ditches. Even fishing in the zanjas had to be licensed by the Zanjero (Ostrom 1953:40).

During the Spanish and Mexican period the pueblo's water supply had been a communal affair, operated by the town council. In the early American period, as the town expanded, the municipal authorities were unable to meet the growing demand for domestic water. Private enterprise



MAP 9: Koch, 1871, "City of Los Angeles." Produced by Bancroft; Bancroft Library, University of California, Berkeley.

stepped into the gap and contracted with the city government to supply Los Angeles with water. For almost fifty years thereafter private companies controlled the town's water works. The first example of private entrepreneurship in the delivery of domestic water was the advent of the water carrier. Residents of the town who lived too far from the zanja to obtain water easily for domestic purposes would contract with the water vendor who traveled about Los Angeles daily in his horsedrawn cart delivering buckets of water at a charge of fifty cents a week (Newmark 1916:116).

The first person to attempt to establish a private water distribution system in Los Angeles was Judge William G. Dryden. In 1857 the town council accepted Dryden's offer to supply Los Angeles with water from springs that he owned on the north side of town. He was also allowed to "erect and place upon the main zanja of this city a water-wheel to raise the water by machinery to supply the city with water...." (Wilson 1959:117). In 1858 Dryden formed the Los Angeles Water Works Company which was the company that purchased the Sepúlveda property on the Placita Block in 1861. Dryden's company built a brick water tank in the center of the Plaza and "water was distributed to consumers by a system of wooden pipes" (Newmark 1916:210)(see Plate 2).

In the winter of 1862 floods washed out a portion of Dryden's works and the town council then awarded Jean Louis Sainsevain a contract for the construction of a dam, flumes, and other works (Guinn 1915:392). Jean Louis Sainsevain came to Los Angeles from France and, with his uncle Jean Luis Vignes, owned one of the better-known vineyards and wineries in town (Workman 1936:81).

The water works were eventually leased by the City in February, 1865, to David W. Alexander for a term of four years with an option to renew the lease for an additional six years. Alexander was to pay $1,000 a year for the franchise and, at the expiration of the contract, the water

system would revert back to City ownership (Newmark 1916: 349). After meeting with some unexpected difficulties, Alexander assigned his lease back to Jean Louis Sainsevain in August of 1865. Later that same year Sainsevain made a direct contract with the City. Sainsevain, along with his partner, Damien Marchessault, a former mayor of Los Angeles, then proceeded to lay a system of wooden pipes constructed of bored pine logs joined together by iron bands. This distribution system ran through the business section of town from Macy Street south to First Street (see Map 10). Unfortunately, these wooden pipes were "continually bursting, causing springs of water that made their way to the surface of the streets" (Ibid.:349).

In November, 1867, the City entered into a new contract with Sainsevain and Marchessault. This contract called for the extension of the water works and the replacement of the wooden pipes with iron ones. An elaborate dam of piles and earthen fill was built on the Los Angeles River and a large waterwheel was erected to raise the water to a reservoir (Workman 1936:83). However, floods during the winter of 1867-1868 washed out the dam and rendered the water works inoperative. Despondent over the failure of his scheme and distraught over gambling debts he had accumulated, Damien Marchessault shot himself to death in the Common Council chambers on January 20, 1869 (Newmark 1916: 366). The street which passed by the water company's property on the Placita Block bore his name until 1941.

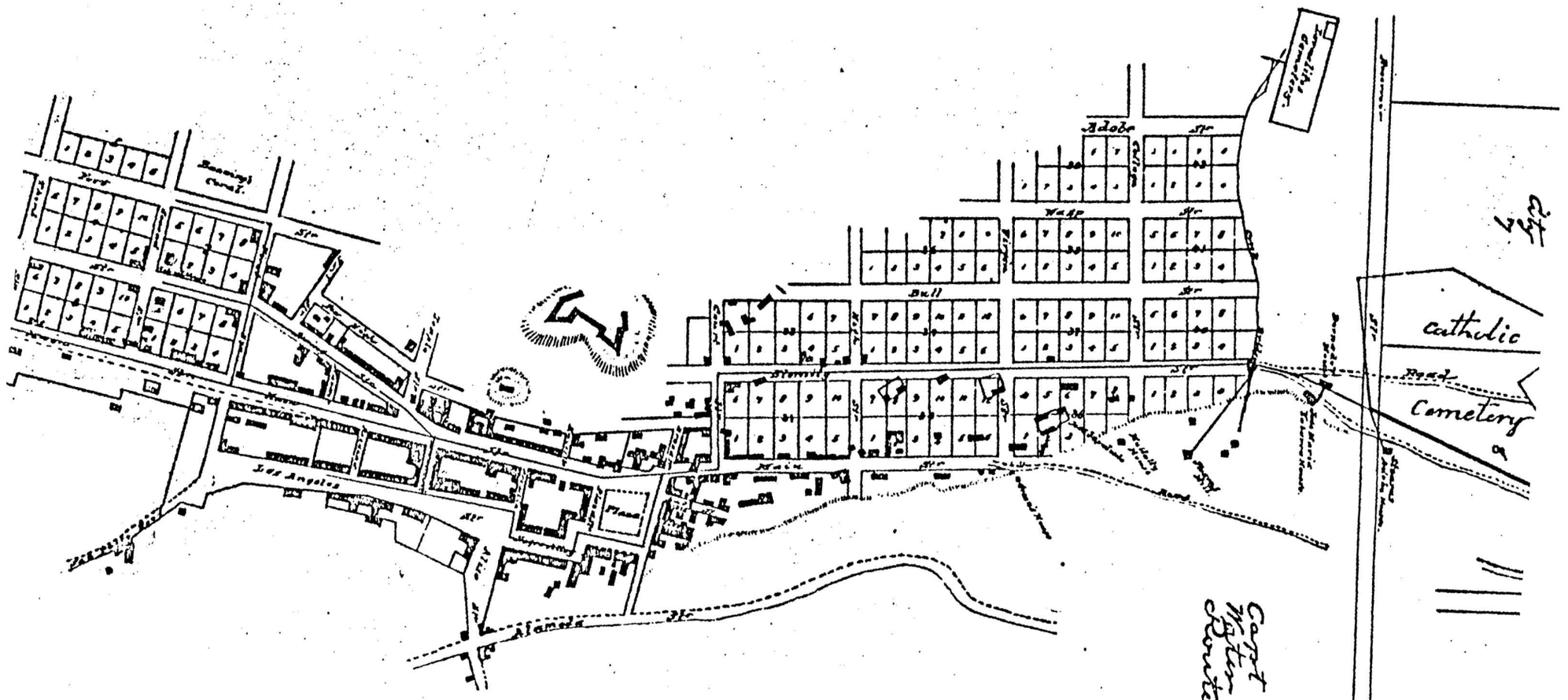
Having become totally frustrated in his attempts to manage the city's water works, Jean Louis Sainsevain transferred his lease in February, 1869, to Dr. John S. Griffin, Prudent Beaudry, and Solomon Lazard. These gentlemen operated the water works until the expiration of the contract. The Griffin group then offered to lease the water system from the City for a period of fifty years upon the payment

of $1,000, the surrender of all claims against the City, the construction of a new reservoir, and the extension and improvement of the works. This offer was rejected when Mayor Christobal Aguilar vetoed it.

Griffin and his associates then made a second proposition to the City to lease the water works for thirty years, pay $1,500 per year rental, remove the brick water tank from the Plaza, expand the system of iron pipes, and make other improvements (Ostrom 1953:42). Several factions bid against the Griffin group, the most substantial offer coming from Juan Bernard and Patrick McFadden who had obtained the rights to the Dryden system. Despite the competition, the City Council refused to hear debate on the issue and on July 20, 1868, the Griffin group was awarded the City's water franchise. Griffin and his partners quickly formed the Los Angeles City Water Company and Bernard and McFadden were compelled to sell their interests in the water works to the new company (Workman 1936:87). In 1870 the Los Angeles City Water Company acquired the former Los Angeles City Water Works Company property on the corner of Alameda Street and Marchessault Street, at the southern end of the Placita Block.

From Town to City (1870-1888)

In the 1870s the Plaza area was still the center of Los Angeles. The main business district was located on Main and Springs Streets (Salvator 1929:125). At this time interest developed in the community aimed at improving the condition of the Plaza. When the Los Angeles City Water Company leased the City's water system in 1868, the owners promised to remove the brick reservoir that Dryden had built in 1857. The problem of the appearance of the Plaza and the existence of the reservoir resulted in much heated debate in the City Council chambers. As Harris Newmark observed: "The City Fathers, who later granted a part of the old square for a prosaic water-tank, created a greater rumpus than had the



MAP 10: Moore, 1864-1868, "Route of the Log Pipes."
Copy at Los Angeles Public Library, Central Branch.

combative soldiers some years before" (Newmark 1916:97). Finally, in 1871, the brick reservoir was dismantled and replaced by an ornamental fountain. The old picket fence was torn down and replaced by a new one, a circular walk was laid, and flowers and trees planted (Guinn 1915:352) (see Plate 4).

By the early 1870s Los Angeles bore the distinct imprint of its newly established, Yankee residents. Prefabricated frame houses of New England origin had been imported into southern California as early as the 1850s (Kirker 1973:40). The first brick building in Los Angeles was built on the west side of Main Street in 1853. In March, 1854, Joseph Mullaly and Samuel Ayers arrived in town and immediately entered into the brick business. Joining with Daniel Porter in 1855 they formed the company of Mullaly, Porter & Ayers, and by 1858 they were producing two million bricks a year (Layne 1935:68). Soon wood and brick structures were replacing adobe all over town. A sign of the changing times was the construction of the Pico House in late 1869 on the former site of José Antonio Carrillo's adobe on the southeastern corner of the Plaza. The Pico House, which was the first three-story building in Los Angeles, had a stone foundation and wall of brick, stuccoed and painted to look like light blue granite. Its owner, Pio Pico, the former Mexican governor of California, had adopted American methods of construction in hopes of building the finest hotel in the city (Robinson 1959:70).

The coming of the railroad to Los Angeles in 1876 did much to open the city eventually to the eastern states. Local promoters began to advertise the city throughout the nation, advertising southern California's mild weather, its beautiful vineyards and orchards, and its available, open land. A "rate war" between two competing, transcontinental railroads helped to precipitate a great migration to California, and by the mid 1880s the great land boom was on. As thousands of new-

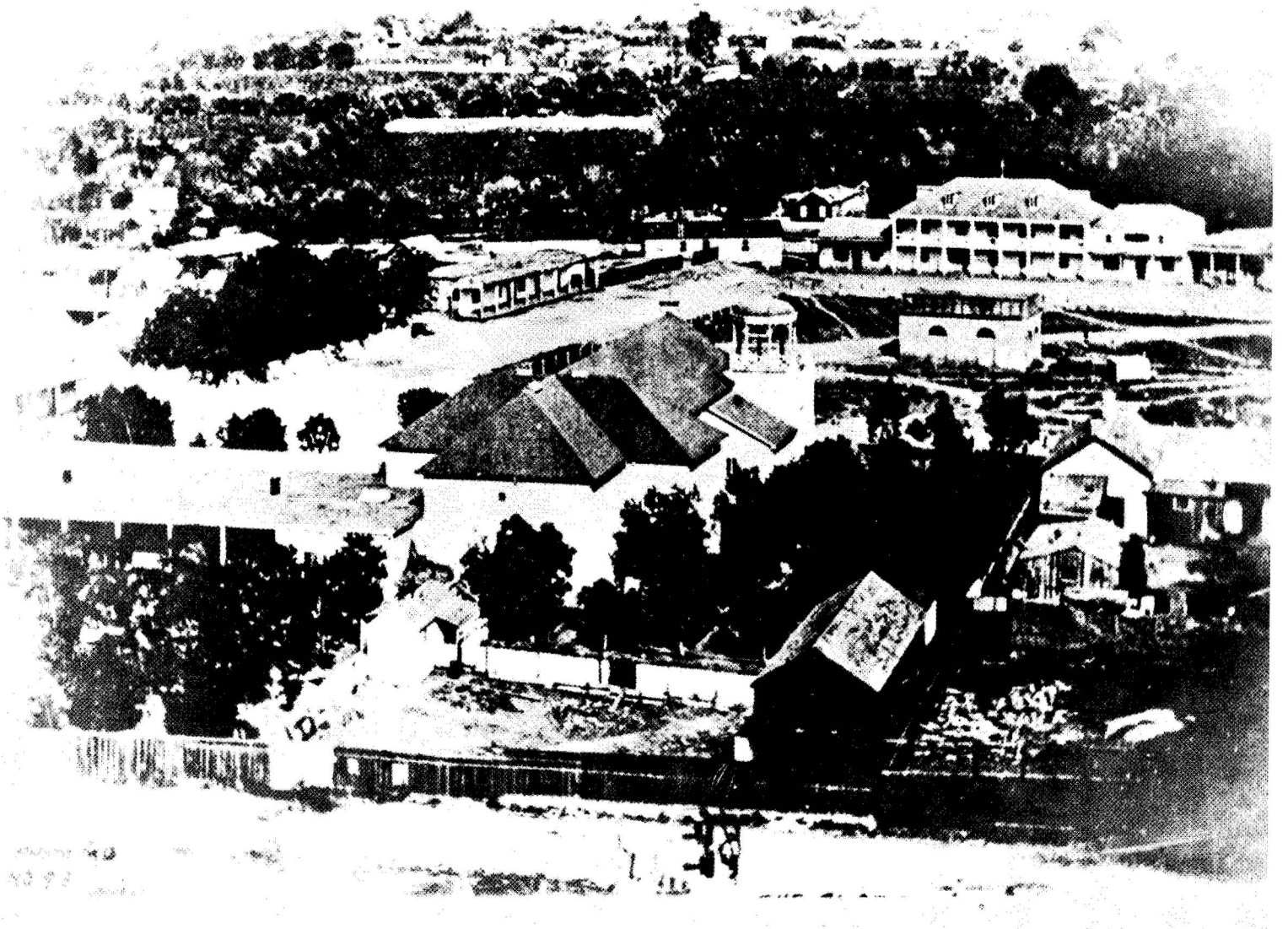


PLATE 3: View of the Plaza in 1869. From City of Los Angeles, Department of Water and Power.

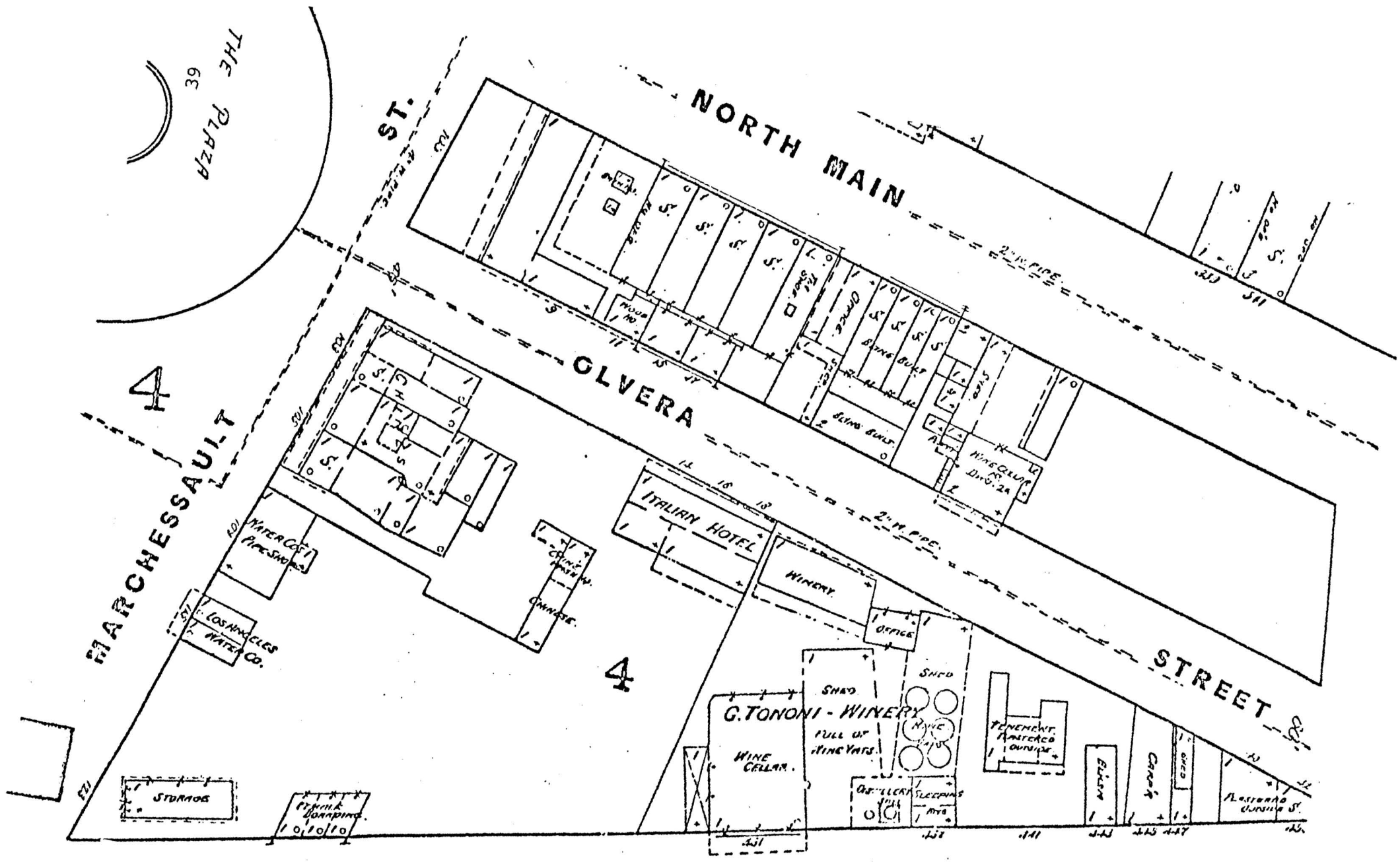
PLATE 4: View of the Plaza in 1890. From City of Los Angeles, Department of Water and Power.

comers poured into the city, real estate prices rose dramatically. Land that sold for $100 an acre in 1886 went for $1,500 an acre a year later (Guinn 1915:263). The real estate boom had declined, however, by the end of 1888, but not before it had transformed Los Angeles. The population had grown from 11,183 persons in 1880 to 50,395 in 1890, and assets had increased from $7 million to $39 million (Fogelson 1967:67).

The Placita Block of the 1870s and 1880s was part of a much larger block of property than it is today, bounded, as it was, on the west by Olvera Street, on the east by Alameda Street, and on the south by Marchessault Street. Los Angeles Street was not cut through the block until 1888 (see Map 11). In the 1860s the water company building on the corner of Marchessault and Alameda Streets was probably the only structure on the block. In the early 1870s the Los Angeles City Water Company erected a barn-like structure on the southwest corner of the property facing the Plaza on the spot where the Sepúlveda adobe had once stood. This structure can be seen in a photograph taken of the Plaza around 1873 (on file at El Pueblo de Los Angeles State Historic Park).

The Sanborn fire insurance map of 1883-1887 shows the building, labeled as the water company's pipe shop, to be at 109 Marchessault Street. The old Los Angeles Water Works Company building on the corner of Alameda and Marchessault Streets was used by the new water company for storage. Later, probably in the 1880s, the water company constructed a third building on its property in the Placita Block, just east of the pipe shop at 115 Marchessault Street, to serve as its main office. The water company property dominated the Placita Block in terms of both size and physical structures for almost seventy years.

Another structure which arose on the Placita Block in the early 1880s was the G. Tonomi Winery, the address of which was 413 Alameda Street. The wine cellar, which stood on the northern end of the block, was constructed of brick and had an earthen floor (Sanborn 1888: map). When Los Angeles Street



MAP 11: Sanborn, 1883-1887, "Insurance Maps of Los Angeles." From City of Los Angeles Department of Public Works.

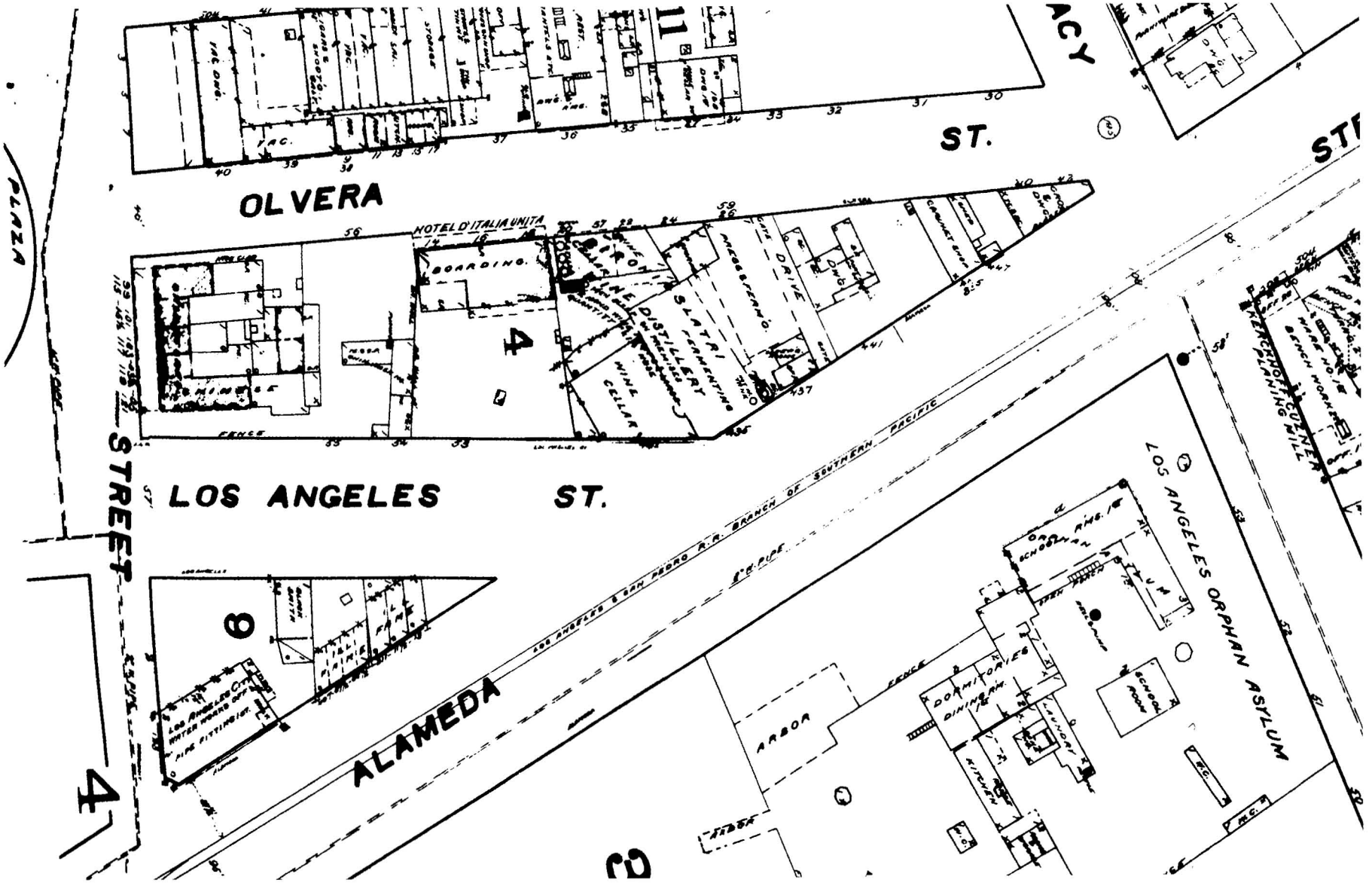
was put through in 1888, part of the building was knocked down and the property lay vacant (Sanborn 1894: map) (see Map 12).

Los Angeles, by the end of the 1850s, had acquired a reputation as one of the leading wine-producing areas in the state. It was designated by some as "the City of Vineyards" (Bell 1927:22). Many of the city's larger vineyards were located just east of the Placita Block, between Alameda Street and the Los Angeles River (see map 13). William Wolfskill, one of the pioneer vintners in the city, had some property on Alameda Street (Cleland 1941:193). Matthew Keller, who had about 100,000 vines planted by the 1870s, owned seventy-five acres of land on Alameda Street (Salvator 1929:139). Jean Luis Vignes and his nephew, Jean Louis Sainsevain, had their winery and vineyards nearby on Aliso Road. Benjamin D. Wilson, who had the largest vineyard in Los Angeles, owned property directly across Alameda Street from the Placita Block, where Union Station now stands (Ruxton 1873: map). In 1879 thirty distilleries were estimated to be located in Los Angeles County and two million gallons of wine were produced that year (Wilson 1959:66). The era of viticulture in Los Angeles came to an end with the real estate boom of the 1880s. As Mayor William H. Workman explained in 1887:

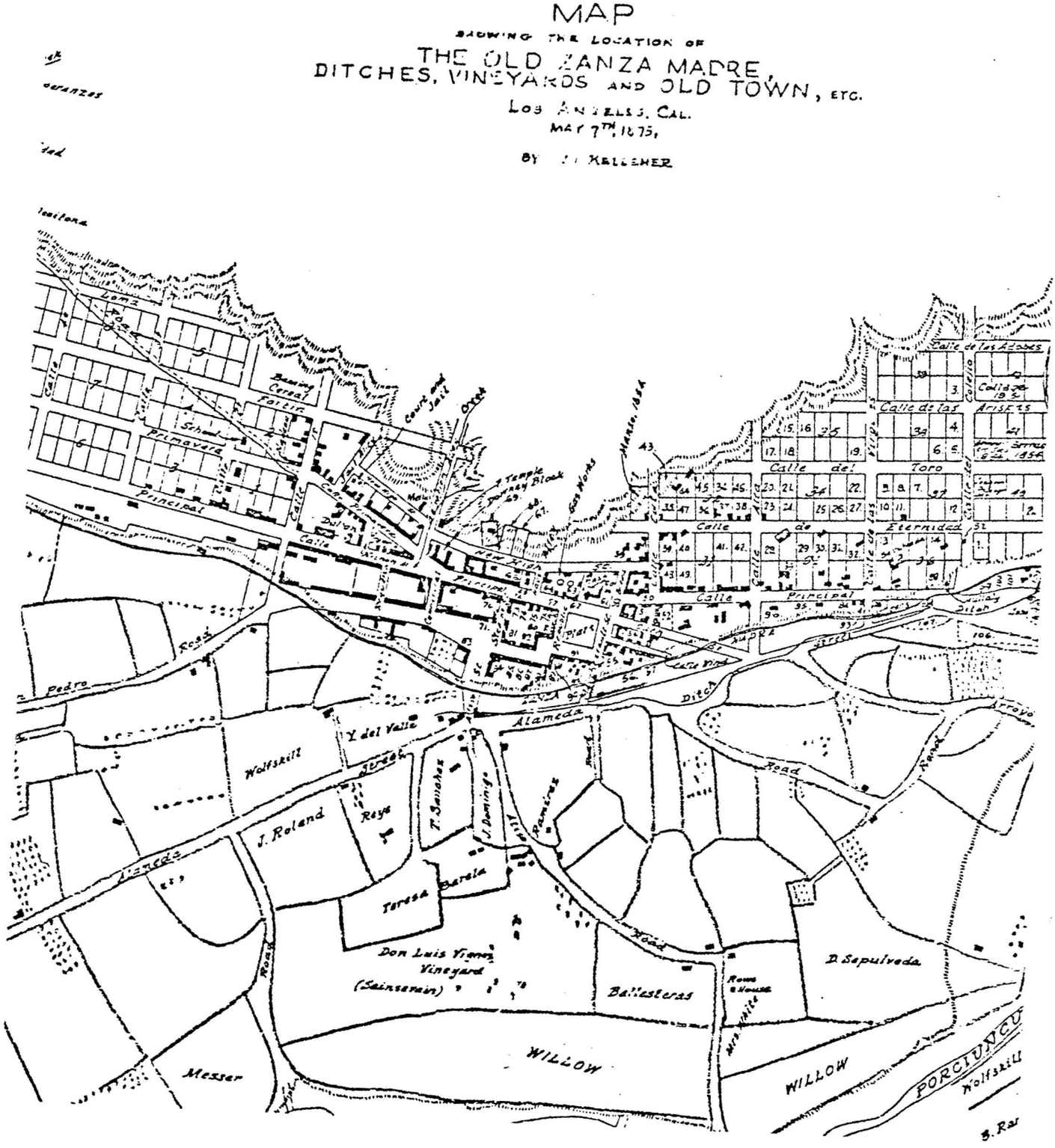
> The necessity of irrigation within the city limits does not now exist to any great extent as most of the vineyards and orchards have been subdivided and made into residence sites for our rapidly growing population. (Ostrom 1953:40).

The Zenith and Decline of the Zanja System (1877-1913)

The zanja system in Los Angeles reached its height at the end of the 1870s and the beginning of the 1880s. Before 1877 the zanjas primarily irrigated the low lands bordering the river, covering an area of about 4,500 acres (Hall 1888: 565). The Zanja Madre was still an open, earthen ditch, much as it had been in the Mexican period, diverting water from the Los Angeles River and carrying it along the bluff. In 1877,



MAP 12: Dakin, 1883-1887. "Fire Insurance and Real Estate Atlas."
From City of Los Angeles Department of Public Works.

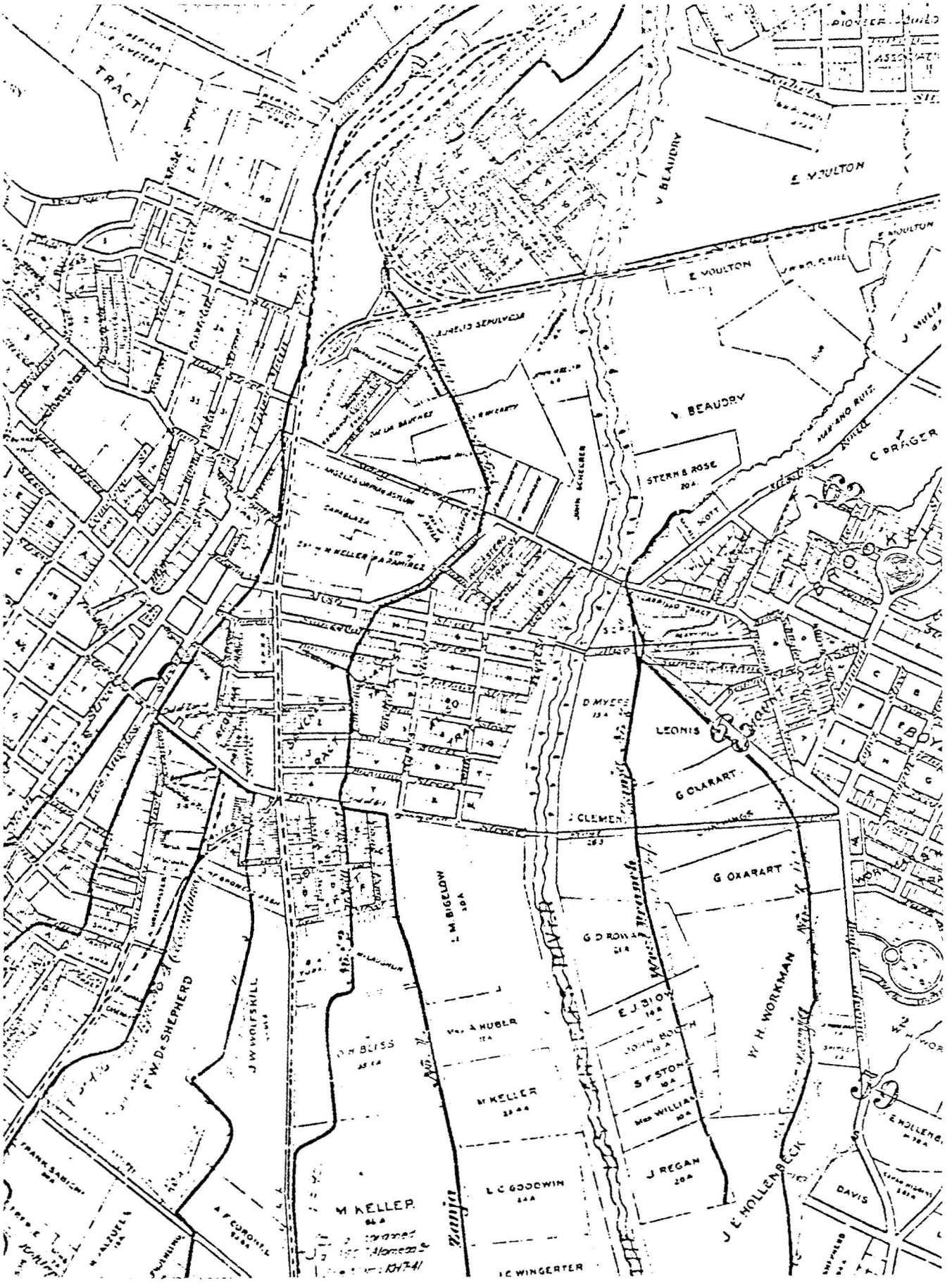


MAP 13: Kelleher, 1875, "Map of Old Los Angeles."
Copy at Los Angeles Public Library, Central Branch.

in response to citizens' demands for a better water system, the City Council voted to improve the zanjas. After bonds of $115,000 value were authorized, a board of engineers was consulted to formulate plans to remodel the works. A wooden pile dam was built across the river and a 3,200-foot tunnel was cut in the soft rock of the bluff above the river, parallel to the Southern Pacific Railroad tracks, to supply the Zanja Madres with a new source of water from the Elysian hills. The Zanja Madre, itself, was to be lined with concrete for the 8,000 feet which would extend down to Aliso Street (Workman 1936:91). In late 1882 the City Council announced that it would accept proposals from contractors for the construction of a brick conduit for the Zanja Madre (*Profile of the Zanja Madre*, 1880: map).

When the floods of January, 1884, damaged the water works, the City Council appointed another board of engineers to devise a plan for the reconstruction of the zanja system. This board's report recommended that the tunnel at the head of the Zanja Madre be repaired and that the waters of the Zanja Madre be carried in a closed brick conduit from the mouth of the tunnel to First Street, and from First Street to the river as an outlet for storm waters (Hall 1888:567). In June, 1885, the City Council allocated $125,000 for the improvement of the zanjas and the subsequent bond issue was passed. The improvements of 1877 and 1885 marked the zenith of the development of the zanja system. A high service works was built to serve the hill lands and a total of 10,000 acres was irrigated by the water district. By 1888 a total of 4,900 feet of the Zanja Madres, from the Capital Mills to the end of First Street, was carried in a closed brick conduit, 3½ feet in diameter (Ibid.: 544) (see Map 14.)

The land boom of the 1880s initiated the end of the zanja system. As farmland was taken out of irrigation to be subdivided for housing, the need for the zanjas declined. At the height of the system there had been as many as ten ditches,



MAP 14: 1884, "Map of the Irrigation System of Los Angeles."
Copy at City of Los Angeles Bureau of Engineering.

but slowly they began to disappear. In 1888, under the pressure of urban development, the first of the zanjas, No. 5, was abandoned (Ostrom 1953:40). One authority claims that the last of the zanjas was closed in 1904 (Ibid.), but city engineering maps show the Zanja Madre was still in use in 1907 (*Zanja Madre*, 1907: map). Certainly the zanjas would have no longer been needed as a source of water once the Owens Valley Aqueduct was completed in 1913. On the Placita Block the abandoned Zanja Madre was destroyed when Los Angeles Street was paved around 1912 and 1915 (*Profile of Los Angeles Street 1912:* map: *Profile of Los Angeles Street 1915:* map).

CHINATOWN: 1870-1939

After 1870 the neighborhood surrounding the Placita Block underwent a significant change in ethnic make-up as the area on the east side of the Plaza was occupied by an increasing Chinese population. During the gold rush many Chinese, principally from Canton province, came to California to work in the mining operations. The census of 1850, however, shows only two Chinese living in Los Angeles (*Census of the City and County of Los Angeles 1850*). In 1863 the transcontinental railroad began to use Chinese labor and several thousand Chinese came to California. When the railroad was completed, the Chinese sought other forms of employment, and in 1869 many came to Los Angeles to work on a wagon road being built near Newhall. By 1870 the Chinese living in Los Angeles numbered 172. Most had settled near the Plaza, around Negro Alley (Mason 1967:15).

The Chinese were not well received by the Anglo residents of Los Angeles. In October, 1871, a race riot, known as the "Chinese Massacre," erupted over the shooting of a white man by a Chinese. An angry mob gathered around Negro Alley and many frightened Chinese took refuge in the old Coronel adobe at the southern end of the block. Innocent Chinese were dragged into the street and murdered by the mob. By the time the disorder had subsided, nineteen Chinese had been killed and the Coronel adobe was pocked by bullet holes (Newmark 1916:432).

In spite of racial tensions, the Chinese population in Los Angeles continued to grow. By 1890 about 2,000 Chinese resided in Los Angeles, over half of whom lived around the Plaza area (Mason 1967:16). The Placita Block was in the heart of the city's old Chinatown. Its major thoroughfares were Alameda, Los Angeles, Apablasa, and Marchessault Streets. During Chinese New Year and other festivals a colorful parade, led by a dragon, could be seen winding its way up Marchessault Street, past the water company building and to the Plaza (Bowman 1974:340).

Chinatown became the center of the city's "red light" district when the Los Angeles City Council made prostitution legal in a large area between Third Street and High Street (now Ord Street) and west of Alameda in 1886 (Robinson 1966:55). Fire insurance maps of the time show buildings labeled "Ill Fame" lining Sanchez and Alameda Streets (Dakin 1888-1893: map) (see Map 12). These single-story, brick buildings, known as "cribs," were occupied by women of various nationalities (Mason 1967:16).

On the Placita Block the first bordellos appeared in the mid 1880s. A small group of buildings labeled "Female Boarding" stood just north of the water company property and faced Alameda Street in 1887 (see Map 11). By 1893 the bawdyhouses extended down the Placita Block from 813 to 823 Alameda Street (see Map 12). Prostitution probably prospered on the Placita Block until the early 1900s. In 1909 civic reformers elected a progressive administration under the leadership of Mayor George Alexander, and the doors of tolerated vice on the Placita Block were soon closed (Robinson 1959:88).

Los Angeles Street Goes Through (1888)

American antagonism toward the Chinese did not disappear after the Chinese Massacre of 1871. If anything, it grew worse. Anglo newspapers stirred up racial hatred by printing various slurs about the Chinese lifestyle. Arsonists set fires in the

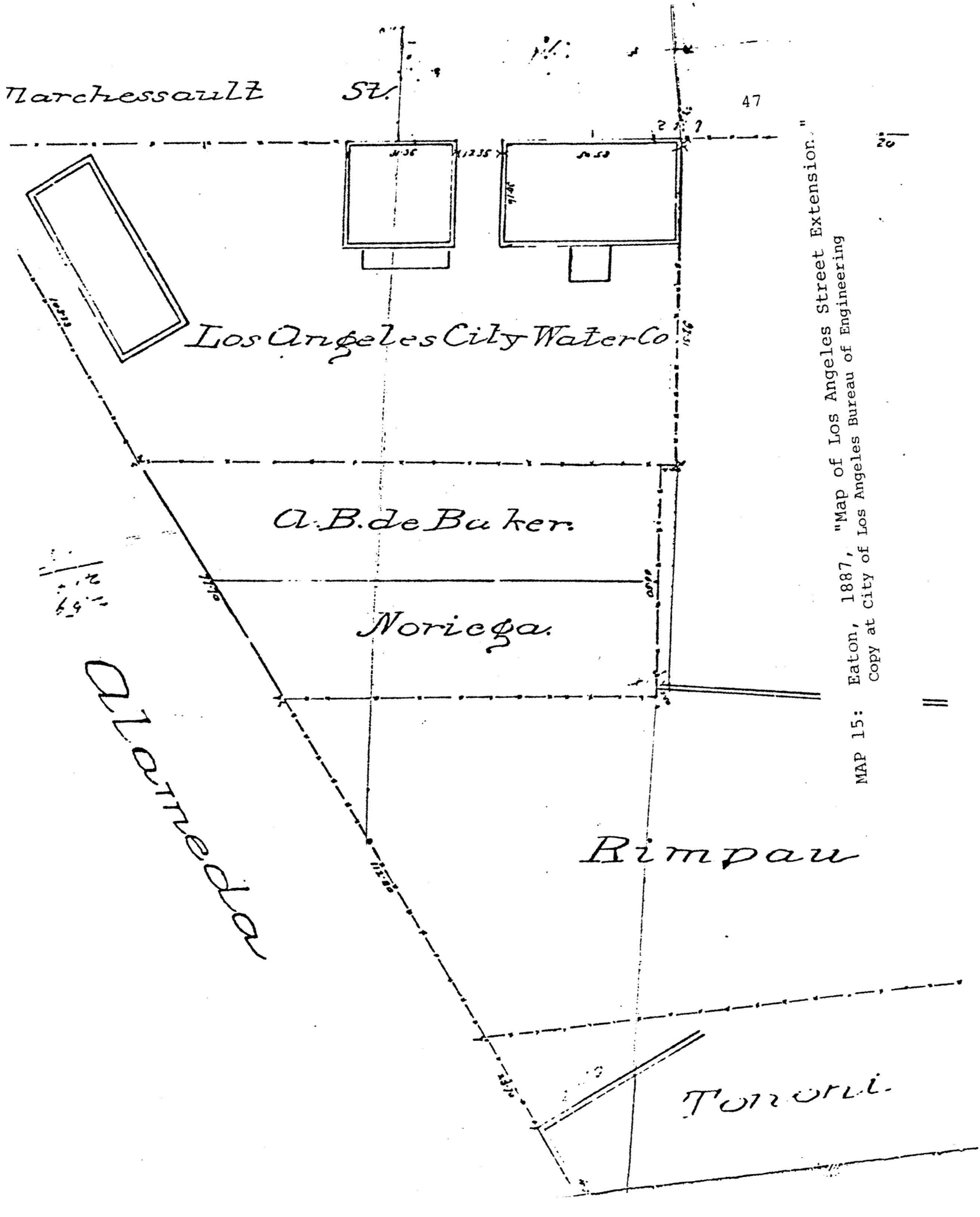
Chinese quarter in 1887 and the insurance companies refused to cover the property in Chinatown. A plan was formulated by the City Council for the removal of Chinatown by means of the extension of Los Angeles Street through Negro Alley and Marchessault Street all the way to Alameda Street. This would cut a path directly through the Placita Block (see Map 15). It was hoped that the removal of homes and the added traffic brought into the area by the completed thoroughfare would encourage the Chinese to move elsewhere. As the *Los Angeles Times* reported in 1887:

> The removal of Chinatown from its present quarters on Nigger Alley and the east side of the Plaza to a section more remote and less obtrusive is a piece of good fortune which has literally been forced upon Los Angeles .... Now Los Angeles Street, which has been so long held in suspense, can be put through to a junction with Alameda Street, and an unsightly and noisome quarter of town can be revolutionized. The change can not come too quickly. (*Los Angeles Times*, August 10, 1887.)

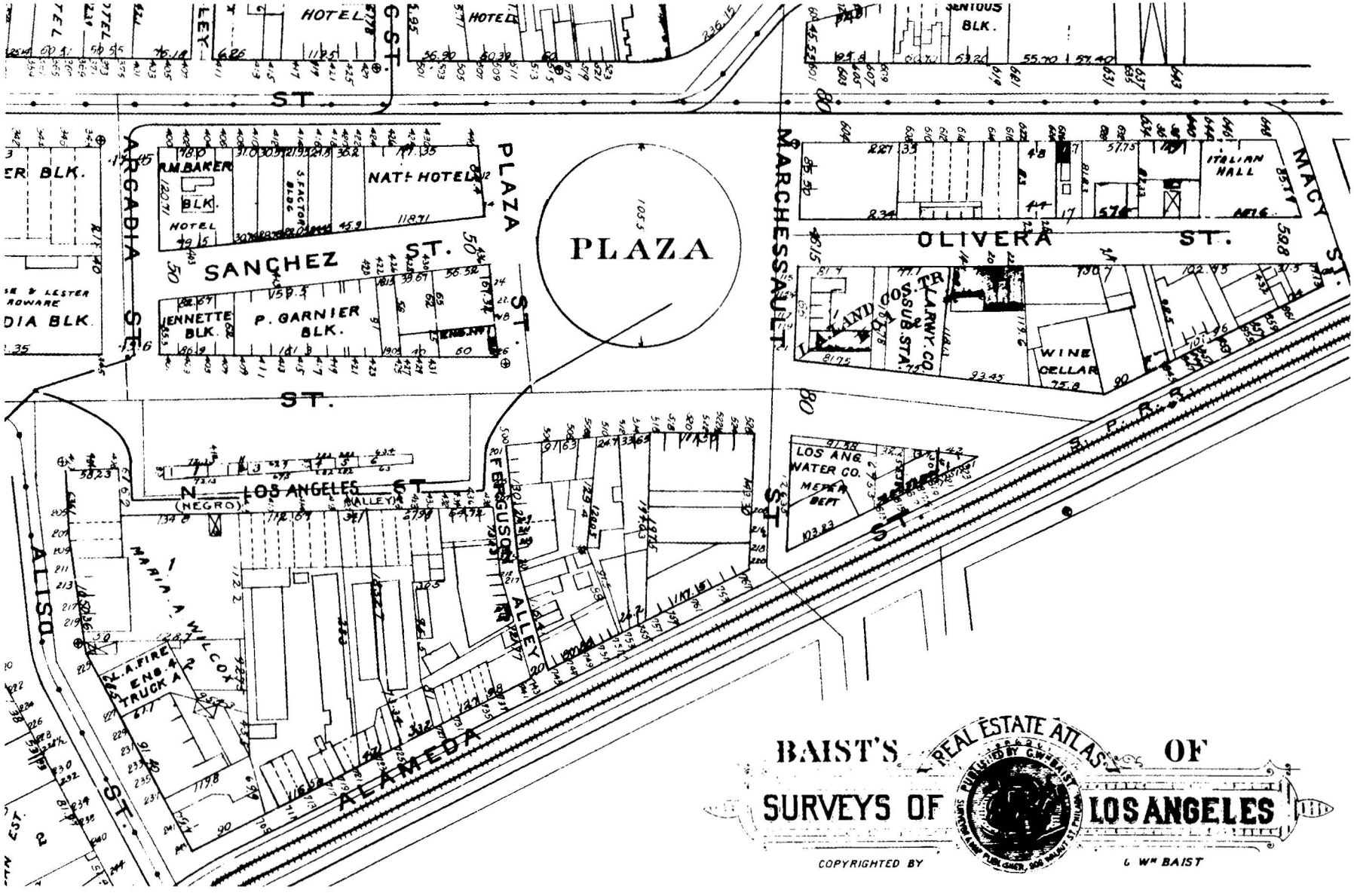
In 1886 and 1887 the City Council had tried unsuccessfully to obtain a right-of-way through the property between Marchessault and Alameda Streets. Finally, in 1888, the Council passed an ordinance to extend Los Angeles Street through Chinatown, in spite of the objections of the property owners (*City of Los Angeles* vs. *L. M. Bigelow, et al.*, 1887). Joseph Kuhrts, the Superintendent of Streets for the City of Los Angeles, described what happened:

> At that time the buildings extended clear across Los Angeles Street to Negro Alley, so the Council instructed me to remove them. I hired about a hundred men, and on a certain morning had them on the ground by four o'clock with battering rams and other instruments, and by ten o'clock in the morning, I had razed nearly every building between Arcadia Street and the Plaza, when an injunction was filed upon me by Col. Wiley Wells. But the mischief was done, and Los Angeles Street was opened as it is today (Kuhrts 1906:67).

In spite of this attempt to force the removal of Chinatown from around the east side of the Plaza, the Chinese remained fairly well entrenched there until about 1950. The cutting through of Los Angeles Street helped to change the physical appearance of the area, but not its ethnic composition. The



MAP 15: Eaton, 1887, "Map of Los Angeles Street Extension."
Copy at City of Los Angeles Bureau of Engineering



MAP 16: Baist, 1921, "Real Estate Atlas and Surveys of Los Angeles."
From City of Los Angeles Department of Public Works.

Negro Alley block was torn down and many of the wooden shacks which line Los Angeles and Alameda Streets were replaced by brick structures (Mason 1967:16). In 1890 Philippe Garnier built a brick office building known as the Garnier Block, and this structure was quickly occupied by Chinese merchants and businessmen (Bowman 1974:338).

When the City began its anti-vice campaign in 1909, the one-story brick buildings on the Placita Block, which had formerly housed bordellos, were occupied by Chinese merchants (see Map 16). These buildings were probably torn down around 1923 (Sanborn 1923: map). A photograph of the water company building in 1931 shows that it is occupied by Chinese businesses, but no other building can be seen north of it (see Plate 6).

Chinatown on the east side of Alameda Street finally gave way to make room for Union Station, which was built across from the Placita Block between 1935 and 1938. At that time a new Chinatown was built along North Broadway and Hill Street, and many of the Chinese slowly moved there. The portion of Chinatown on the west side of Alameda Street lingered on through the 1940s.

Eventually the Hollywood Freeway was built through a section where Ferguson Alley and once housed Chinese living between Los Angeles Street and Alameda Street. Around 1950 the Lugo House, the former residence of the Hop Sing Tong, was demolished and a park now covers that part of old Chinatown (Mason 1967:20).

The Water Company Building (1888-1939)

When Los Angeles Street was cut through the Placita Block in 1888, the three buildings which stood on the property were torn down and the Los Angeles City Water Company built a new, two-story, office building on the northwest corner of Marchessault and Alameda Streets (Sanborn 1888: map) Plate 5.) This building was to be the single dominant struc-

PLATE 5: View of Los Angeles Water Department Building on the corner of Marchessault and Alameda Streets, *c.* 1902. From City of Los Angeles, Department of Water and Power.

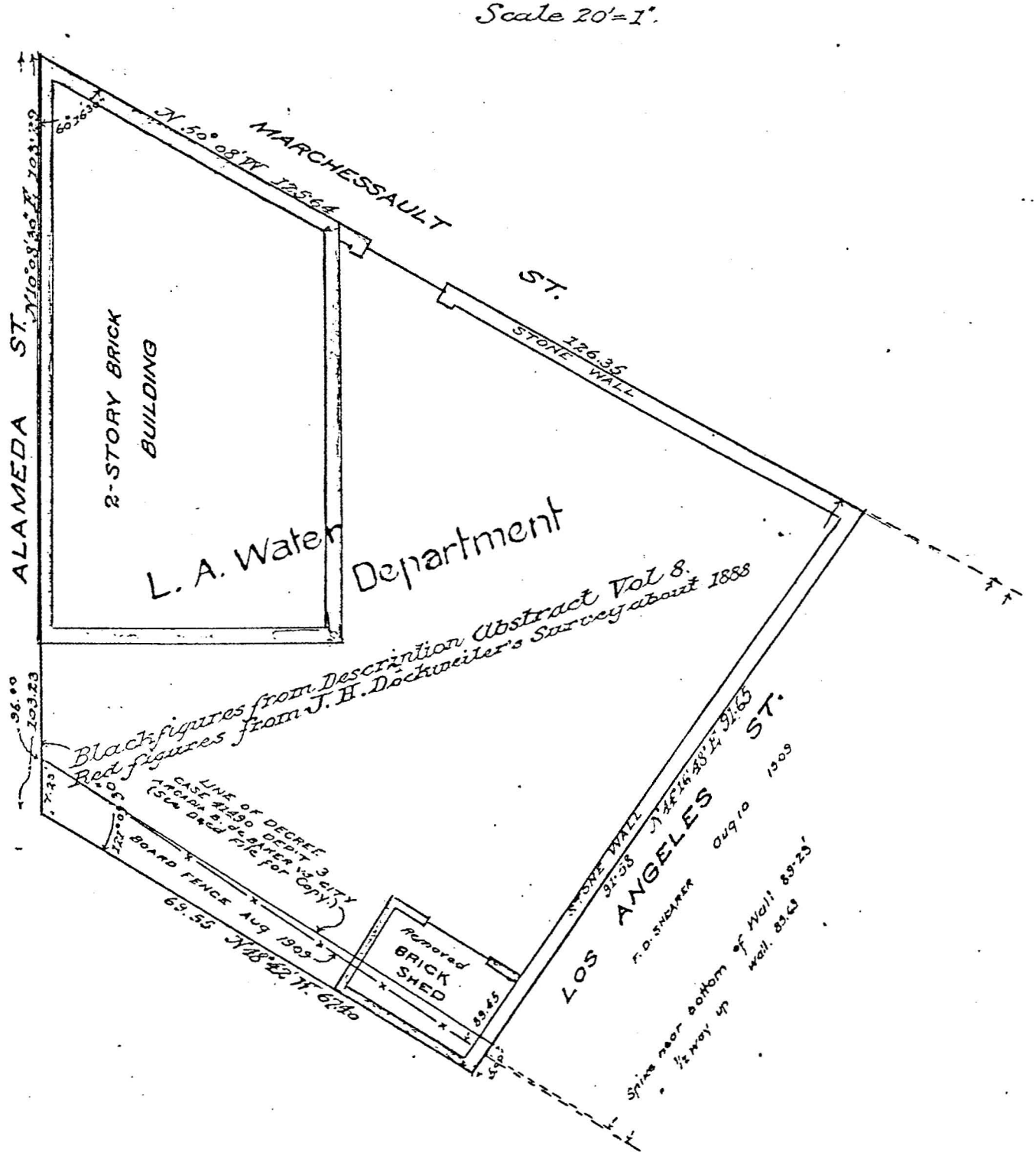
ture on the Placita Block until it was razed in 1939. For a time after 1923 it was the only building on the block.

When the water company built its office building in 1888, it also constructed a brick shed behind a stone wall which it had earlier erected facing Los Angeles Street. During the 1890s this brick shed was probably rented out as a blacksmith's shop (see map 12). Later, from 1906 to 1909, the water company rented part of its property to the "First New Testament Church" for $75 a month (Department of Water and Power: "Property Book #1").

The brick shed became the focus of controversy in 1907 when Arcadia Bandini de Baker, the owner of the property adjacent to the water company lot, claimed that the shed had been built on her land (see Map 17). De Baker took the water company to court (by this time the Los Angeles City Water Company had been acquired by the City of Los Angeles) and won the case. In August, 1909, the brick shed was torn down and replaced by a wooden fence which separated the water company from the de Baker property (*Arcadia B. de Baker* vs. *City of Los Angeles* 1907).

In 1901 the people of Los Angeles voted on a large water bond issue. It was decided that the City of Los Angeles should spend $2 million to acquire the Los Angeles City Water Company and create a municipally owned and operated water department. A Board of Water Commissioners was created to manage the enterprise and on February 13, 1902, the board assumed control over the water company. William Mulholland, the old water company's superintendent, and all its personnel were transferred into the City's civil service.

The City of Los Angeles acquired the former Los Angeles City Water Company property on the southern end of the Placita Block on February 3, 1903. At first the two-story building on the corner of Marchessault and Alameda Streets served as the main office for the newly formed city water department. Then, in 1909, it was converted into the department's meter and service division. The building was thoroughly reconditioned and painted.



MAP 17: "N.W. Cor. Alameda and Marchessault Sts. Parcel 16," 1909. From City of Los Angeles Department of Water and Power, Land Division, "Property Book #1."

PLATE 6: View of former Water Department building on corner of Marchessault and Alameda Streets, December, 1931. From City of Los Angeles, Department of Water and Power.

PLATE 7: View of destruction of former water company building, April, 1939. From City of Los Angeles, Department of Water and Power.

The upper floor was partitioned off into rooms to serve as sleeping quarters for the night crew. In 1910 three single men and a married couple occupied the building. The ground floor was devoted to an office, a meter repair and testing shop, and a pipe-fitting repair room (Department of Water and Power 1910: *Ninth Annual Report*).

In 1924 the building at the corner of Marchessault and Alameda Streets was still being used as a meter repair station by the water department (Department of Water and Power 1924: "Land Division No. 17-3243"). The next year, however, the meter testing and repair shop was moved to the new water department building on the corner of Ducommon and Alameda Streets (Department of Water and Power 1926: *Twenty-Fifth Annual Report*). Soon thereafter the old water department office was leased to several Chinese businesses. A photograph taken in December, 1931, shows the top floor of the building to be occupied by "F. See On Co. Imports." The bottom floor housed the "Hong Kong Low Chop Suey and Noodles Restaurant" (see Plate 6).

In March, 1939, the City of Los Angeles Department of Water and Power transferred ownership of its property on the Placita Block to the City of Los Angeles Department of Public Works. The Chinese continued to occupy the building until April, 1939, when it was torn down to make room for the widening of Marchessault Street as an approach to the newly constructed Union Station. In May, 1941, the name Marchessault Street, where it ran between Los Angeles Street and Alameda Street, was officially changed by the Los Angeles City Council to Sunset Boulevard. With the widening of Sunset Boulevard, the former water company property was almost totally removed from the south side of the Placita Block, Ironically, the block where Damien Marchessault built one of the city's first water companies disappeared at the same time as the street which bore his name (Los Angeles City Ordinance No. 84896) (see Plate 7).

THE MODERN PERIOD: 1940-1978

In the early decades of the twentieth century, as Los Angeles grew into a major metropolis, the center of town shifted away from the Plaza area. The central business district moved south and west, from Spring and Third in 1885 to Sixth and Hill by 1920 (Fogelson 1967:148). The advent of the electric railroad around the turn of the century (the so-called "Red Cars" of Henry Huntington's Pacific Electric Railway Company) allowed developers to lay out subdivisions away from the central city. Los Angeles not only expanded in population, which by 1930 was over a million persons, but expanded in geographic area as well. In 1909 the City of Los Angeles acquired a harbor and annexed Wilmington and San Pedro. Hollywood was annexed in 1910 and much of the San Fernando Valley in 1925. Los Angeles grew from 108 square miles in 1913 to 415 square miles by the end of 1925. Later the red cars were replaced by freeways as the tie which held together the many, far-spread suburbs. The result of all this growth was the creation of what historian Robert Fogelson calls the "fragmented metropolis" (Fogelson 1967).

Plaza Revival (1920-1978)

As Los Angeles grew, the Plaza area played a much less significant role in the life of the city. By 1920 it was considered a run-down part of town. The *Los Angeles Times* in 1925 referred to the "shabby" appearance of the Plaza in an article which read, in part,

> Today the walks and benches of the Plaza are thronged by cosmopolitan loiterers, with Mexican 'cholow' predominating. The circuitous cement walk about the park is fringed with decrepit express wagons and trucks (*Los Angeles Times*, October 4, 1925).

The initial effort to restore the Plaza area was undertaken by Mrs. Christine Sterling in 1926-1927 (Sterling 1933:10). Mrs. Sterling helped to organize the Plaza de Los Angeles corporation, the announced purpose of which was "to preserve the Plaza as a monument to the founding of Los Angeles" (Robinson 1959:90).

In 1930 Olvera Street was opened as a Mexican market place under the direction of the Plaza de Los Angeles corporation. In 1953 the Plaza area was designated a State Historical Monument, with the City, County and State all contributing toward the acquisition of the park. Eleven square blocks were included within the park, one of which was the Placita Block. Under the auspices of the State, a private, non-profit organization known as El Pueblo de Los Angeles, Inc. (the successor to Plaza de Los Angeles) operated the park until 1965.

In 1965 a joint powers agreement between the City, the County, and the State created the El Pueblo de Los Angeles State Historic Monument Commission to administer the park. The actual management of the park was leased to the El Pueblo de Los Angeles corporation. In 1974 a new joint powers agreement was entered into by the City, County, and State. The Pueblo Commission was dissolved and the operation of the park was taken out of the hands of the Pueblo corporation. The City of Los Angeles then took over management of the park on behalf of the State (El Pueblo de Los Angeles State Hisoric Park 1974: "Joint Powers Agreement").

The Placita Block (1939-1978)

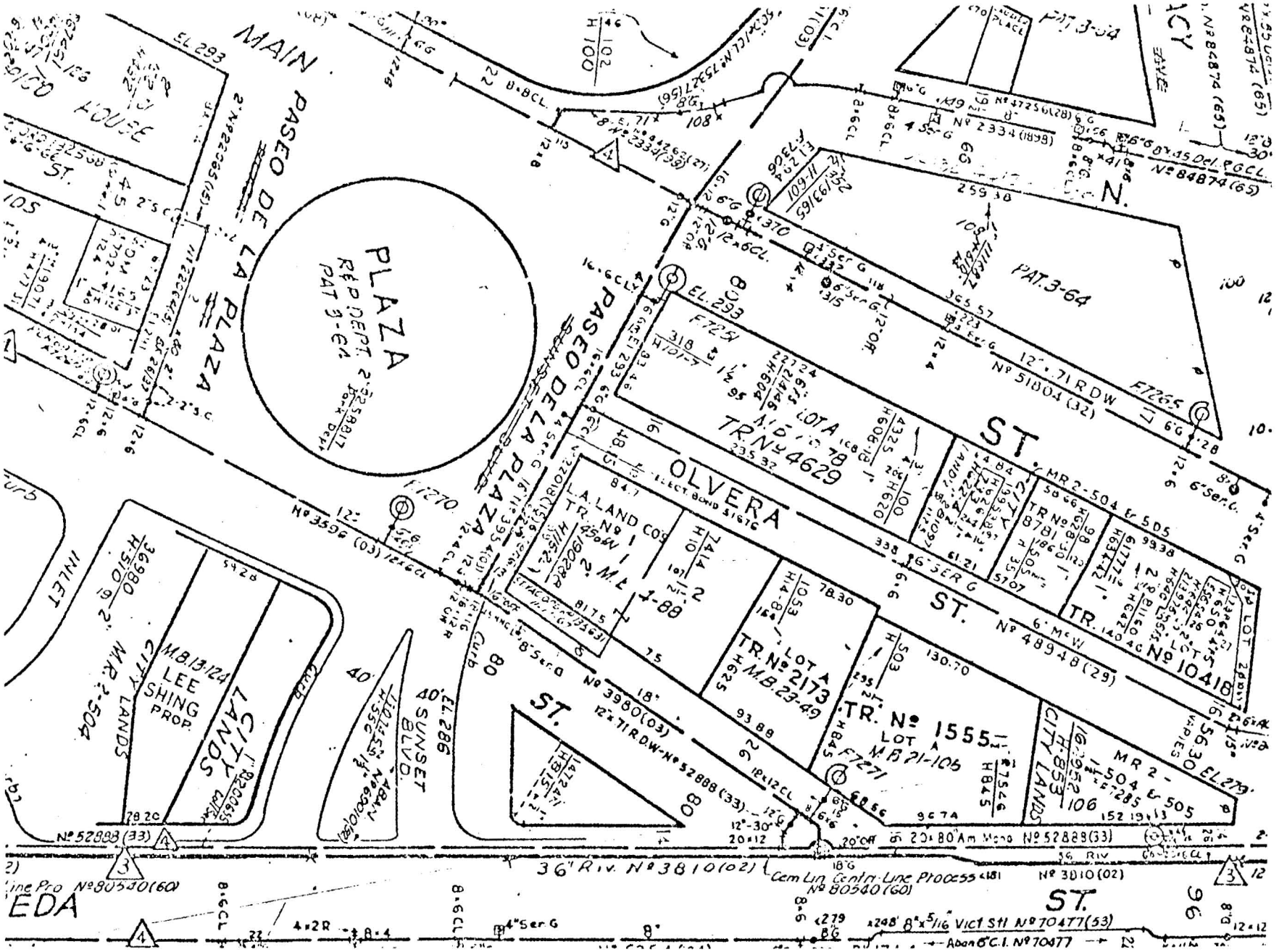
When the water company buildings were removed to make way for Sunset Boulevard, the Placita Block was greatly reduced in size. All that remained was a small, triangular section owned, for the most part, by the Rimpau family. In the early 1930s, on the north end of this property where bordellos had once flourished, a reinforced concrete building was constructed facing Los Angeles Street (Sanborn 1923-1948: map). In 1934 the Rimpau family leased this property to the White Log Tavern, Inc., to be used as a restaurant. After 1939 this restaurant stood as the only structure on the Placita Block until the City of Los Angeles purchased the property.

In 1952 the City of Los Angeles passed an ordinance to acquire by means of condemnation proceedings the rest of the property on the Placita Block which, at that time, was still owned by the Rimpau family. The City intended to build a replica of the Lugo House which had been recently torn down from its original location on the east side of the Plaza, across the street from the Placita Block. In 1954 the City acquired the Placita property as planned, but a replica of the Lugo House was never built there (Los Angeles City Ordinance No. 99497).

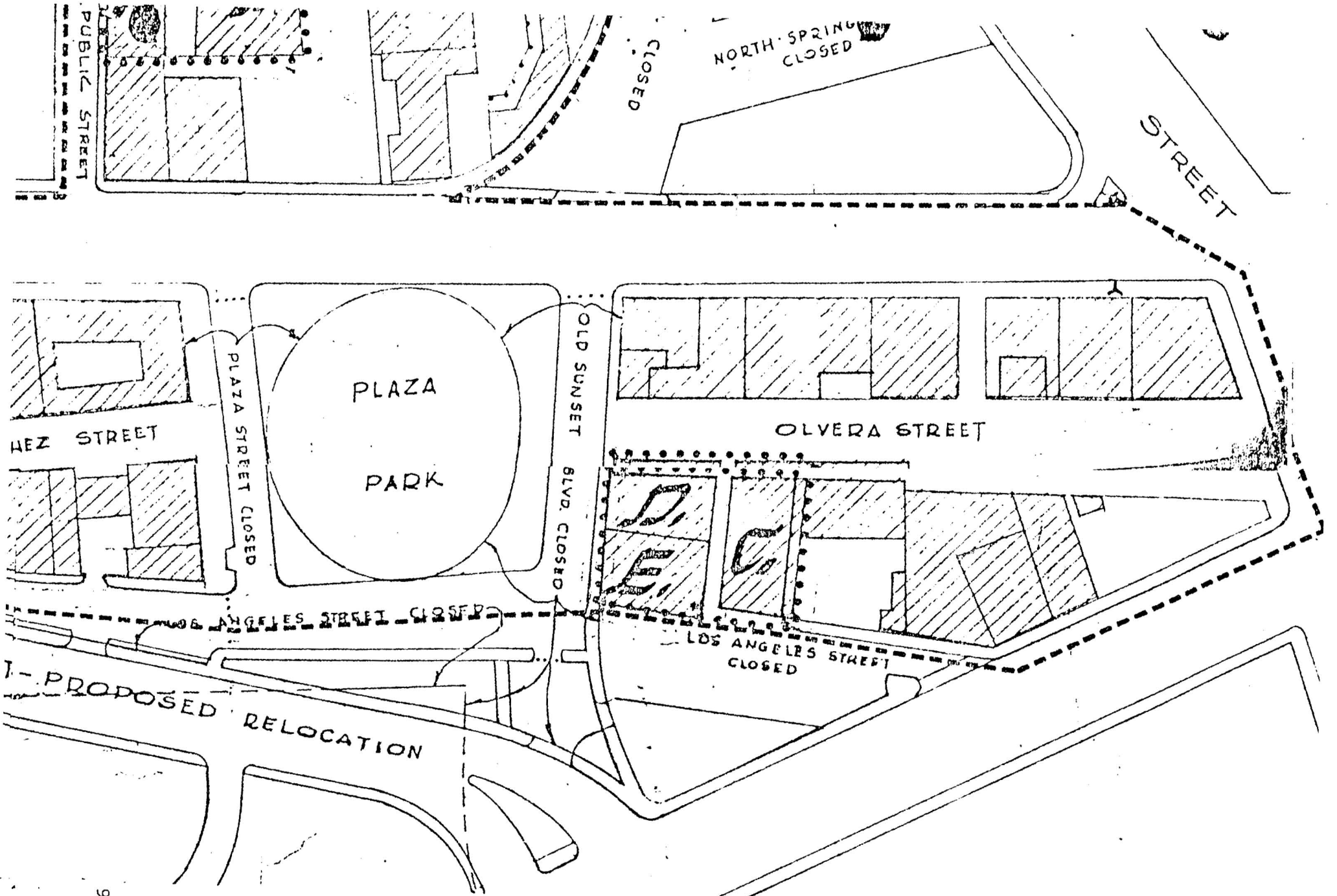
The Placita Block was included within the Pueblo de Los Angeles State Historic Park. On May 10, 1973, the name of Sunset Boulevard and Plaza Street, between north Main Street and Los Angeles Street, was officially changed by the Los Angeles City Council to "Paseo de la Plaza" (Los Angeles City Ordinance No. 144,708). Then, in September, 1975, this street was closed to through traffic and turned into a pedestrian mall (Los Angeles City Ordinance No. 147,700).

As for the Placita Block, an aerial photograph taken in 1959 showed that the restaurant was still on the northern end of the block. Eventually the restaurant was destroyed and the property turned into a parking lot by the City of Los Angeles. At that time Los Angeles Street was cut off and traffic rerouted on Sunset Boulevard to Alameda Street, as it is today (see Map 18).

In 1972 the Pueblo de Los Angeles State Historic Park was nominated for and accepted into the National Register of Historic Places. However, when the boundary for the National Register site was drawn, the Placita Block was excluded (see Map 19). The historical and archaeological information uncovered and related in this report indicates that this block has the potential to meet the criteria for the National Register, and it should be considered for nomination.



MAP 18: 1978, City of Los Angeles Department of Water and Power Map. From Water Engineering and Design Division.



MAP 19: 1972, "Map of the Site to be Nominated for the National Register of Historic Places. From California State Department of Parks and Recreation.

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METHODOLOGY*

The primary objectives of this study were:

(1) the location and identification of all cultural remains present within the boundaries of the property under investigation and specifically in the areas to be impacted by proposed construction activities;

(2) the placement of these cultural components within a cultural and temporal framework; and

(3) the evaluation of these remains in terms of their potential for contributing to interpretation of the past of the City of Los Angeles. Consideration was given to the investigation of both historic and prehistoric cultural remains.

In order to gain a realistic insight into the nature of the cultural variability to be expected within the boundaries of the property, a thorough, historic and prehistoric search of litature was conducted. Information pertaining to the area's prehistory was obtained from the files of the Archaeological Survey at the University of California, Los Angeles, and from previously published material.

Historic documents and maps were gathered by Mr. Paul Friedman and are presented elsewhere in this report. Most information came from a series of early maps showing the location of specific structures on the property. In order to rectify these early maps to a common scale, they were optically enlarged and traced onto a single base map (Map 20).

Given the location and nature of these structures, certain types of information would be expected to be manifest in the archaeological record. For example, we might expect to find evidence bearing on the nature of activities performed at

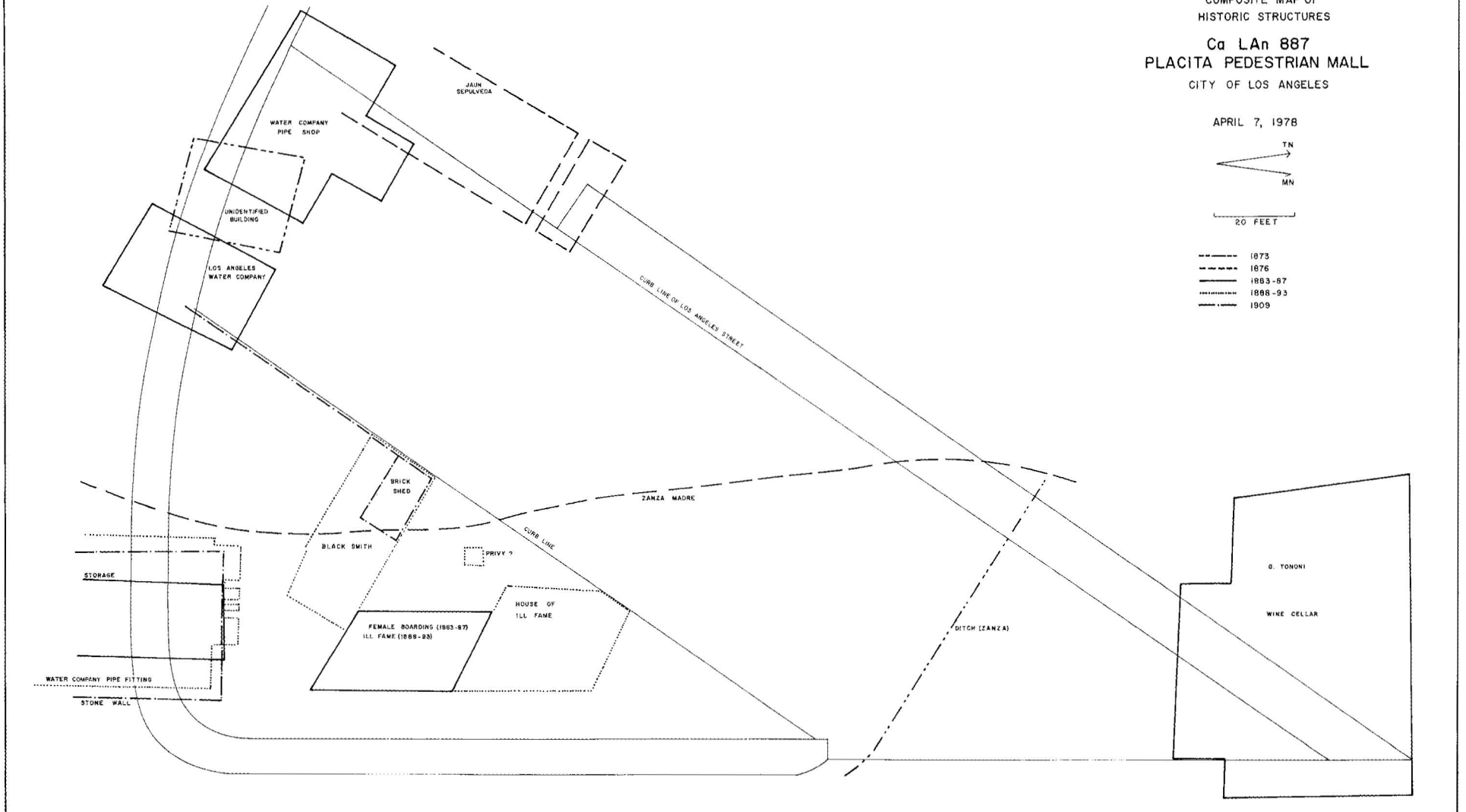
*by Larry R. Wilcoxon

MAP 20
COMPOSITE MAP OF
HISTORIC STRUCTURES

Ca LAn 887
PLACITA PEDESTRIAN MALL

CITY OF LOS ANGELES

APRIL 7, 1978



or adjacent to the identified structures. Some of these activities may have occupational or ethnic specificity, thus allowing us to assign certain artifact classes to specific cultural or vocational groups. Another kind of evidence which we might be expected to find in the archaeological record is architectural in nature. Different temporal periods went through different phases of construction and style. Architecture and architectural remains are also often directly attributable to specific ethnic groups or businesses.

A final category of information expected to be manifest archaeologically would be items related to subsistence practices. In particular, food containers, eating and cooking utensils, and faunal remains found in the context of trash pits or privy areas serve as direct evidence for human dietary habits. Again, ethnic and social distinctions can be reflected in this class of cultural remains.

With this limited set of possibilities in mind, we selected data collection procedures which would allow the collection of information relevant to these and other unspecified problems.

FIELD TECHNIQUES*

At the beginning of our investigation, the property under consideration was a parking lot facility serving El Pueblo de Los Angeles State Historic Park. The first phase of our field work consisted of monitoring the removal of the asphalt from the parking lot surface and the removal of the former street surface of Los Angeles Street (Test Area 23). Specific care was taken to inspect all bulldozing activites. When cultural features and artifacts were exposed, the machinery operators were diverted from the area and portable barriers were placed over the archaeologically sensitive areas. Each locus where a cultural feature was exposed was assigned a "Test Area" designation. As the surface of Los Angeles Street was being removed, information pertaining to materials and methods of construction and location was carefully recorded and plotted on a sketch map (Figure 18a).

The second phase of field work involved delineation of cultural features uncovered during removal of the parking lot and street surfaces. This was accomplished by removal of overburden from the features with trowels, shovels, and whisk brooms. None of the overburden deposit was screened since volumetric control was deemed impossible in this context and horizontal mixing by heavy machinery made surface levels unreliable for data retrieval.

Artifacts found in association with the overburden of these features were collected when encountered, but they are not presented in the analysis that follows. When artifacts were discovered in undisturbed deposits associated with features, these deposits were screened through 1/8-inch mesh screen and the artifacts retained were collected and placed in labeled bags. Artifacts from the overburden of features which were located under the former Los Angeles Street surface

*by Larry R. Wilcoxon

were assigned a temporal association predating construction of the street (*c.* 1914). Special attention was given to mapping all features and recording their absolute elevations.

The third phase of field work was the employment of a mechanical backhoe with a scraper blade to excavate a series of trenches within the boundaries of the property. A total of thirteen 36-inch wide trenches were excavated on the property. These trenches were use to clarify the stratigraphic relationships between features, discover subsurface cultural deposits on the site, expose the nature of the overall site geomorphology, and locate the presence of any prehistoric cultural remains. Profiles of at least one sidewall of each trench were drawn and soil samples were taken from each defined stratigraphic level. Certain strata were observed to be present at several different loci on the site.

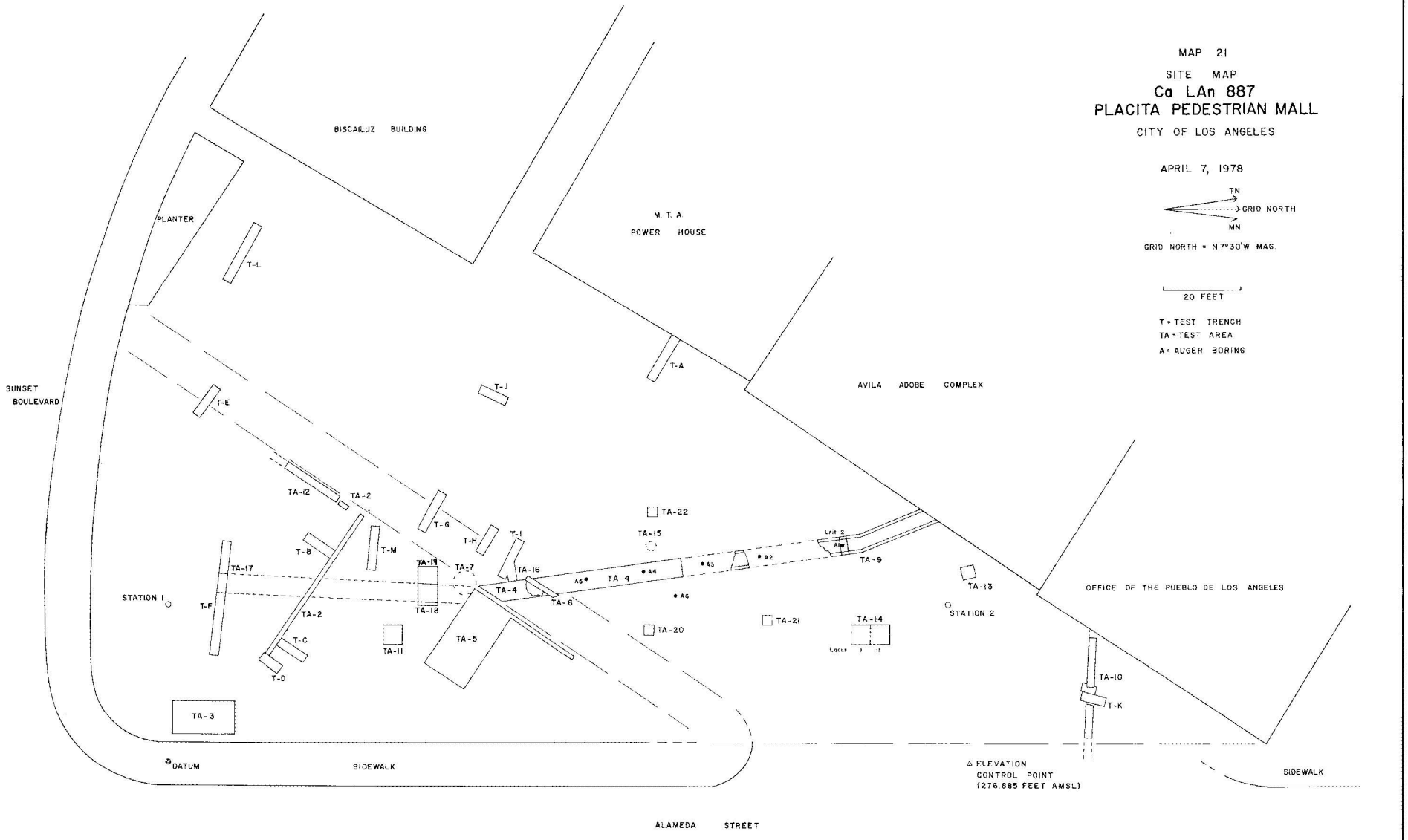
No attempt was made to screen the trench back-dirt. Artifacts collected from this context were used only to indicate the presence of specific cultural components in this area of the site. When a feature was encountered in a trench, additional hand excavation was employed to obtain artifacts and record specific artifact-feature-stratagraphic relationships. In some contexts certain strata were screened through 1/8-inch mesh screen.

The final phase of field work consisted of controlled excavation of grid units. Given the exploratory nature of the project, it was deemed more efficient to obtain controlled samples from selected areas only. All grid units were excavated either by arbitrary, six-inch levels or by natural stratigraphic levels down to culturally sterile deposit.

All deposit from each grid was passed through an 1/8-inch mesh screen. Artifacts, bone, and charcoal retained by the screen were collected and placed in labeled bags. These were taken back to the laboratory for analysis.

For each grid unit observations about the nature of the deposit were made. The depths of all strata transitions were recorded with a line level attached to the northeast corner of the grid unit. All features encountered were carefully mapped and photographed. Special attention was given to the relationships among artifacts within a feature and the relationships between the feature and its stratigraphic context. Only from such controlled contexts could temporal and cultural assignments be made with confidence. (For overviews of excavation, see Plate 8 and Map 21.)

PLATE 8: La Placita Site Under Excavation. Alameda Street at bottom; North at right of photo. By John Shadle, City of Los Angeles, Department of Building and Safety.


MAP 21
SITE MAP
Ca LAn 887
PLACITA PEDESTRIAN MALL
CITY OF LOS ANGELES
APRIL 7, 1978
TN
GRID NORTH
MN
GRID NORTH = N 7°30'W MAG.
20 FEET
T = TEST TRENCH
TA = TEST AREA
A = AUGER BORING
BISCAILUZ BUILDING
M. T. A. POWER HOUSE
PLANTER
SUNSET BOULEVARD
AVILA ADOBE COMPLEX
OFFICE OF THE PUEBLO DE LOS ANGELES
STATION 1
STATION 2
DATUM
SIDEWALK
SIDEWALK
ALAMEDA STREET
△ ELEVATION CONTROL POINT (276.885 FEET AMSL)
T-A
T-B
T-C
T-D
T-E
T-F
T-G
T-H
T-I
T-J
T-K
T-L
T-M
TA-2
TA-3
TA-4
TA-5
TA-6
TA-7
TA-9
TA-10
TA-11
TA-12
TA-13
TA-14
TA-15
TA-16
TA-17
TA-18
TA-19
TA-20
TA-21
TA-22
A1
A2
A3
A4
A5
A6
Unit 2
Locus I
Locus II

TEST AREA DESCRIPTIONS*

A generalized discussion of the features encountered in each Test Area and the relationship of these features to their stratigraphic context is contained in this section. A discussion of "Historical Context" then relates the remains with known, historical activities (see Map 21).

Test Areas 1 and 5

Removal of the asphalt from these test areas revealed the presence of six foundation walls and a portion of a concrete floor. All are remnants of a rectangular structure, 36 feet by 21 feet 6 inches (Figure 1).

Two different types of construction techniques used in the building of the foundation suggests that two phases of construction are represented. A careful examination of the six foundation walls lends support to this hypothesis. Walls 2, 3, and 4 were all constructed from 8-inch wide, cinder blocks, mortar, and rebar and are contiguous. Conversely, Walls 1, 6 and 5 share a common construction material (concrete), are 12 inches wide and are also contiguous. Walls 1 (25'6" long) and 2 (10'6: long) constitute almost the complete length of the structure and run parallel to the eastern edge of the former Los Angeles Street.

The southern foundation wall (Wall 3) is 21 feet 6 inches long and intersects Walls 2 and 4 at right angles. The southeastern foundation wall (Wall 4) extends in an easterly direction from Wall 3 for 10 feet 6 inches. At this point the remainder of the wall has been destroyed.

Within Walls 2, 3, and 4 of the structure a painted, concrete slab floor was uncovered. The easternmost edge of the slab had been previously destroyed. The surface of the slab was 3½ inches below the surface of the foundation walls.

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*by Julia G. Costello and Larry R. Wilcoxon

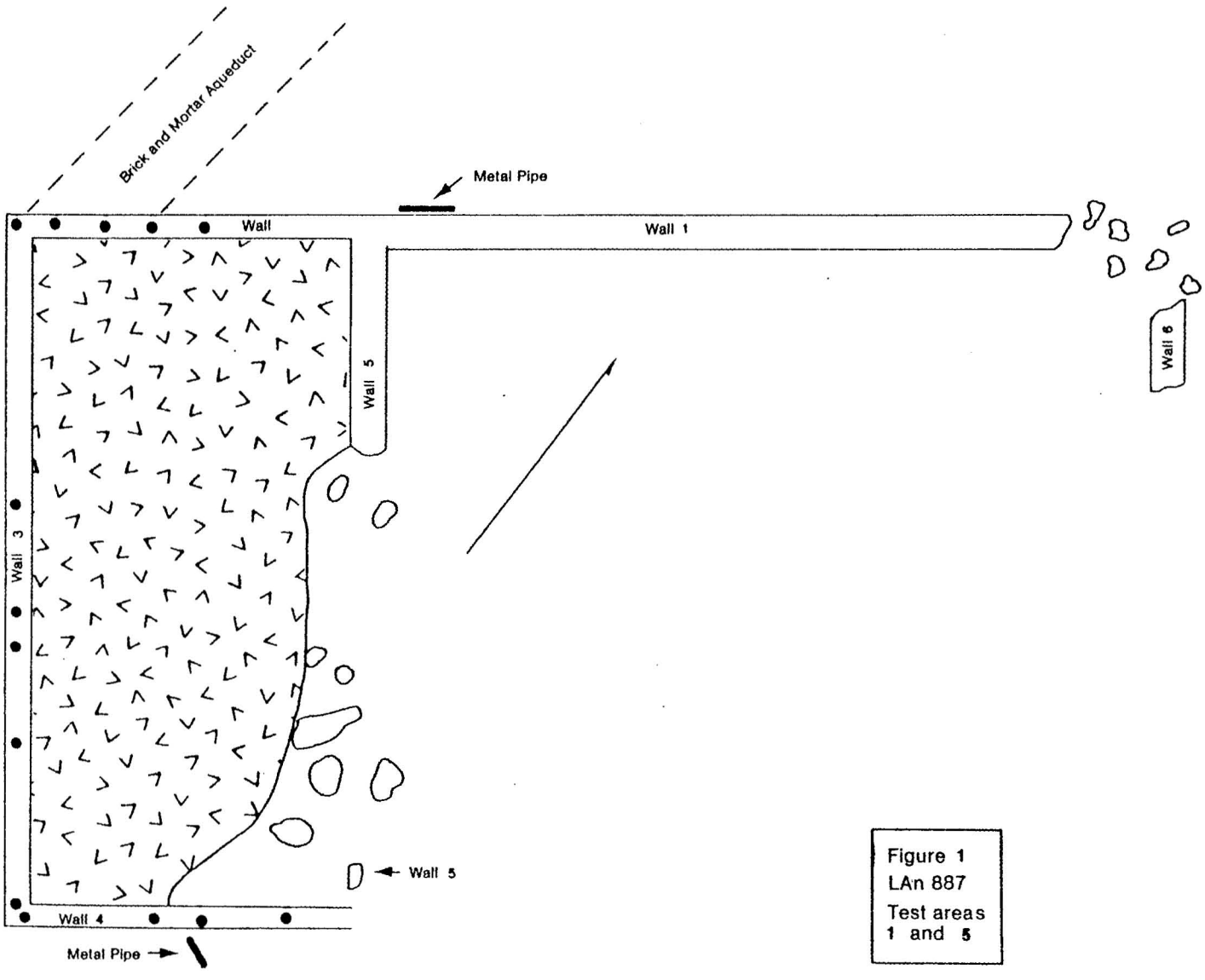


Figure 1
LAn 887
Test areas
1 and 5

The northeastern foundation wall (Wall 6) is almost completely destroyed. Only one two-foot segment appears to be intact. This foundation appears to have intersected Wall 1 at right angles to form the northeastern corner of the structure. Of the concrete east-west foundation of Wall 5, the eastern half has been almost completely destroyed, although a small, intact portion near the terminous of Wall 4 attests to its probable continuity.

Because of the utilization of Wall 5 to complete the southern room, we conclude that the southern portion of the structure was built during a later construction phase than that of the northern portion.

No interior or exterior subsurface excavation was conducted while clearing this feature.

Historical Context

These are undoubtedly the remains of the White Log Tavern built *c.* 1934 and abandoned in the early 1960s. The modern construction materials of the structure and its orientation toward the former Los Angeles Street conform to the historic attributes of this sole, mid-twentieth century structure on La Placita site. "Sidewalk informants" who remembered the Tavern also confirmed this location.

Test Area 2

On the ground surface two portions of a concrete foundation, varying in width from 15 inches to 18 inches, were exposed (Figure 2). The largest foundation is oriented in an approximate east-west directon and measures 44 feet 6 inches in length. The western terminus of this foundation lies close to the eastern edge of the former Los Angeles Street. This foundation became progressively thicker (from 16 to 36 inches) toward its eastern terminus.

The smaller, second foundation (30 inches long) is oriented in an approximate north-south direction and lies per-

pendicular to and south of the western terminus of the larger foundation. A gap of 44 inches separates the foundations. This gap may represent the location of a former gateway or door, or it may simply represent a demolished section of the smaller foundation.

Work conducted on this feature was limited to the delineation of its surface extent and to the excavation of three backhoe trenches (B, C, and D) to determine the depth of the foundations and their possible stratigraphic relationships. No floors were found in association with the foundations.

Historical Context

These are the northern footings for the Los Angeles Water Company property wall (compare Maps 20 and 21). This northern wall was constructed post 1909 (see Map 17) and possibly when the property was leased to commercial enterprises in the 1920s.

The small footing south of the western end is difficult to explain in terms of a gateway, however. Photo 6, showing the demolition of the Water Company building in 1939 does not show any opening at the corner. The apparently continuous sandstone footings of the north-south wall (Test Area 12) also seem to preclude a concrete section here. This problem has remained unresolved.

Test Area 3

In this test area a rectangular, painted concrete slab was encountered on the ground surface. This feature was cleared of overburden and found to be 16 feet long and 8 feet 4 inches wide. Work conducted was limited to the delineation of its surface extent and mapping. No subsurface excavation was conducted. The presence of paint on the surface of the modern concrete slab attests to the recent nature of this feature.

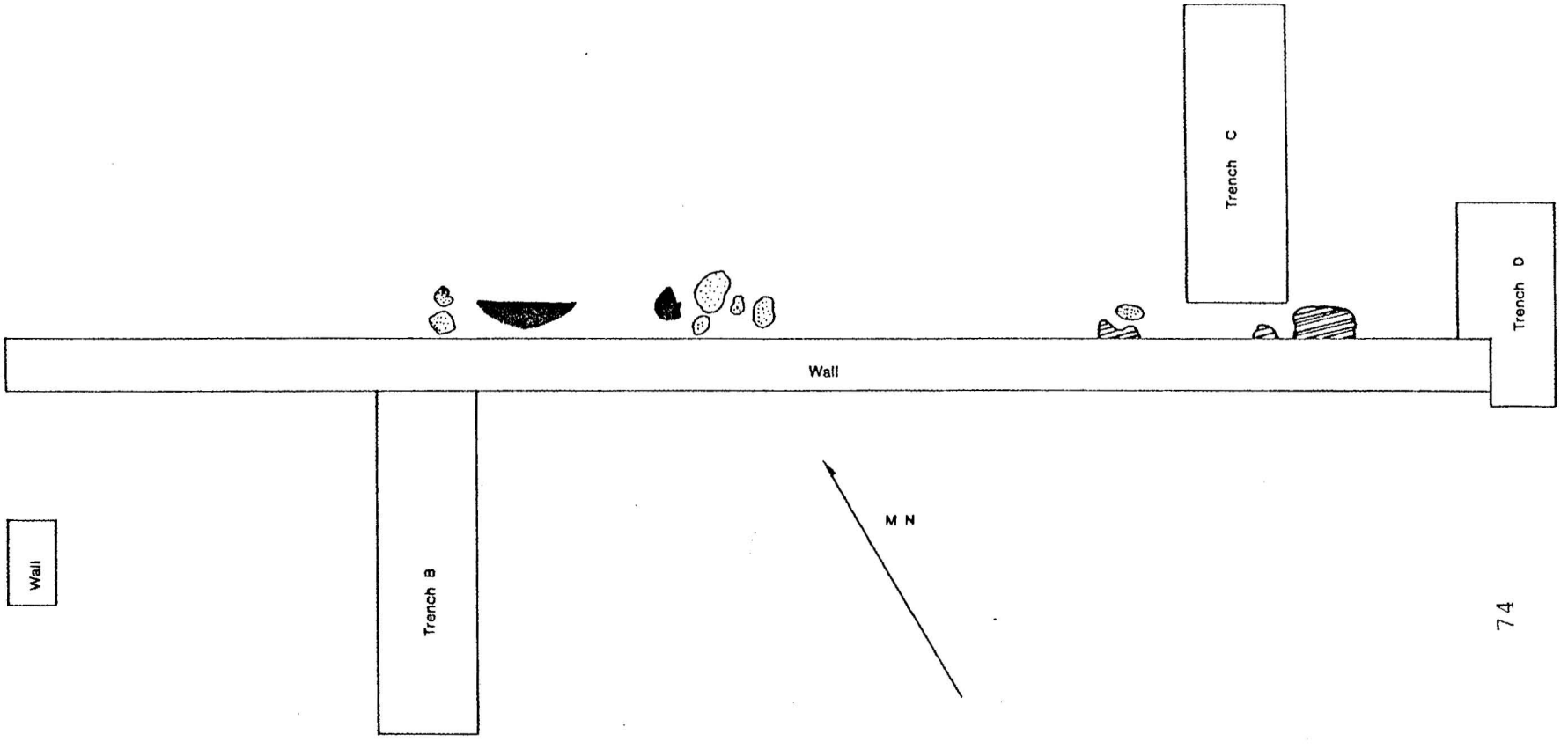


Figure 2
LAn 887
Test area 2

Historical Context

Although no historical information could be found on this structure, "sidewalk informants" indentified it as the Log Cabin Malt Shop, one of a chain of malt shops in the Los Angeles area in the 1940s and 1950s. This identifcation, however, may be a confusion with the White Log Tavern (see Test Areas 1 and 5 above). At this time we are still uncertain as to the true nature of this feature.

Test Areas 4, 9, 16, 17, and 18

Test Area 4 encompasses a 54-foot, 3-inch section of a brick and mortar cylinder having an external diameter of 56 inches and an internal diameter of 38 inches (Figure 3). The bricks used in the construction of this feature have been set with the long axis of their cross-section pointing radially inward toward the center of the cylinder. They have been mortared in place with lime mortar to produce an overlapping, double wall, approximately nine inches thick around the circumference of the cylinder (Figure 3).

At several *loci* within Test Area 4 the aqueduct has been intersected and partially destroyed by subsequent features. At the southern end of the Test Area, Wall 1 of the 1930s White Log Tavern (Test Areas 1 and 5 above) intersects and has destroyed the upper portion of the aqueduct.

In the northern portion of Test Area 4 the aqueduct has been collapsed by the *c.* 1914 construction of Los Angeles Street and its associated curb and sidewalk areas. In this area only the bottom portion of the aqueduct is intact. A segment of the eastern curb of the former Los Angeles Street is still *in situ* at its intersection with the aqueduct (Test Area 6; see Plate 10). Between the southern edge of this curb segment and a point 60 inches to the south, the uppermost section of the aqueduct wall was collapsed inward during asphalt removal activities. A hollow cavity is exposed at this point.

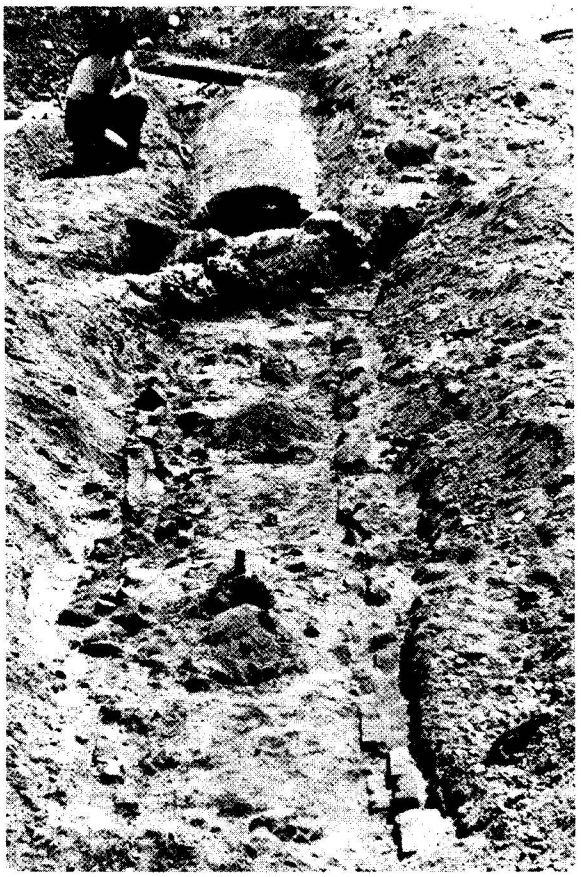
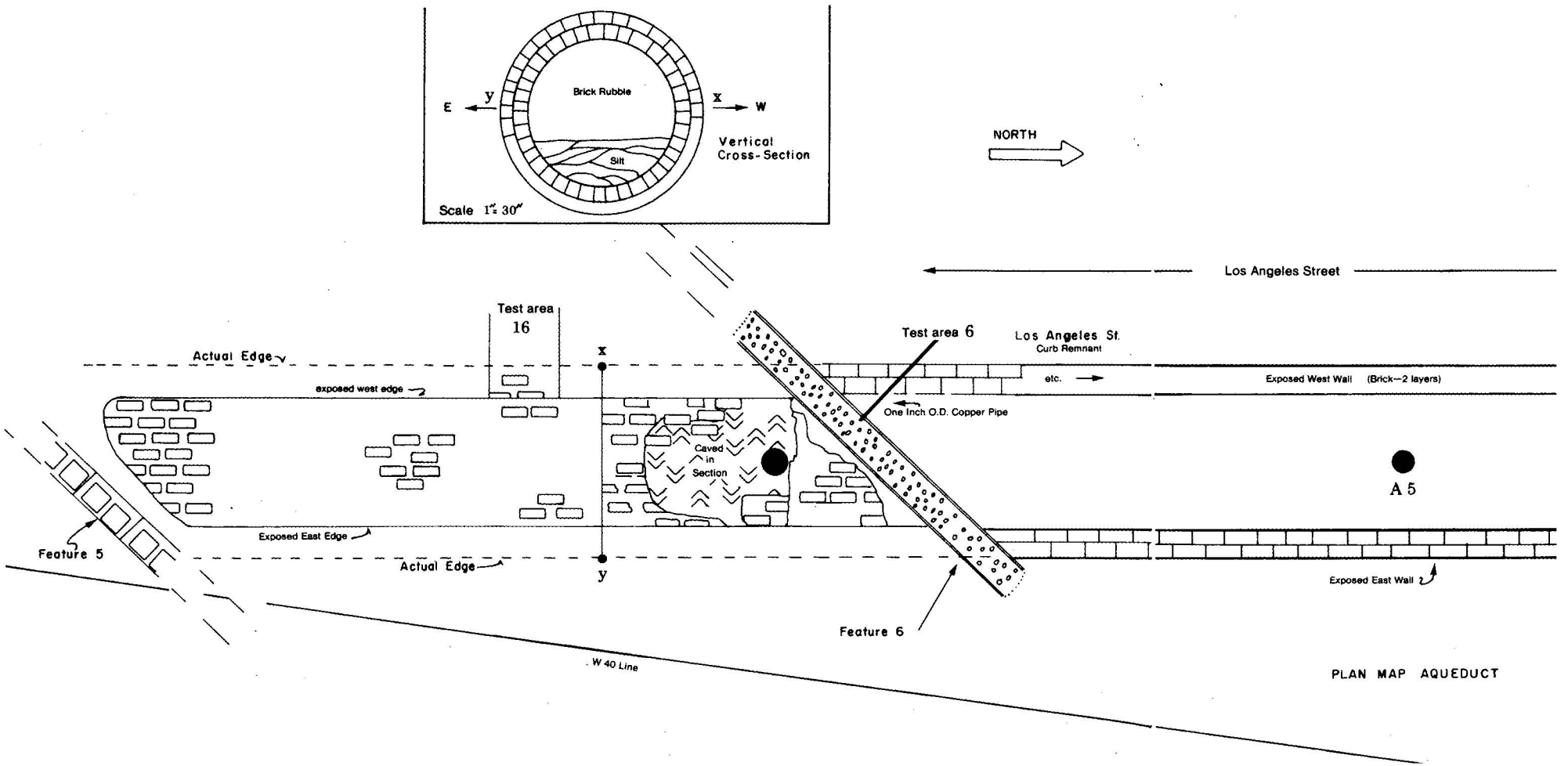


PLATE 9: (above) Interior of complete aqueduct, showing section of silt deposit removed. (Test Area 4.)

PLATE 10: (left) View to southwest of aqueduct; complete section (Test Area 4) top center; foreground exposure of portion with top half removed during *c.* 1914 L.A. Street extension.

PLATE 11: (below) Exposure of Spanish/ Mexican period deposit in Test Area 14.


E
y
x
W
Brick Rubble
Silt
Vertical
Cross-Section
Scale 1"= 30"
NORTH
Los Angeles Street
Test area
16
Test area 6
Los Angeles St.
Curb Remnant
Actual Edge
exposed west edge
etc.
Exposed West Wall (Brick—2 layers)
One Inch O.D. Copper Pipe
Caved
in
Section
A 5
Feature 5
Exposed East Edge
Actual Edge
Exposed East Wall
Feature 6
W 40 Line
PLAN MAP AQUEDUCT

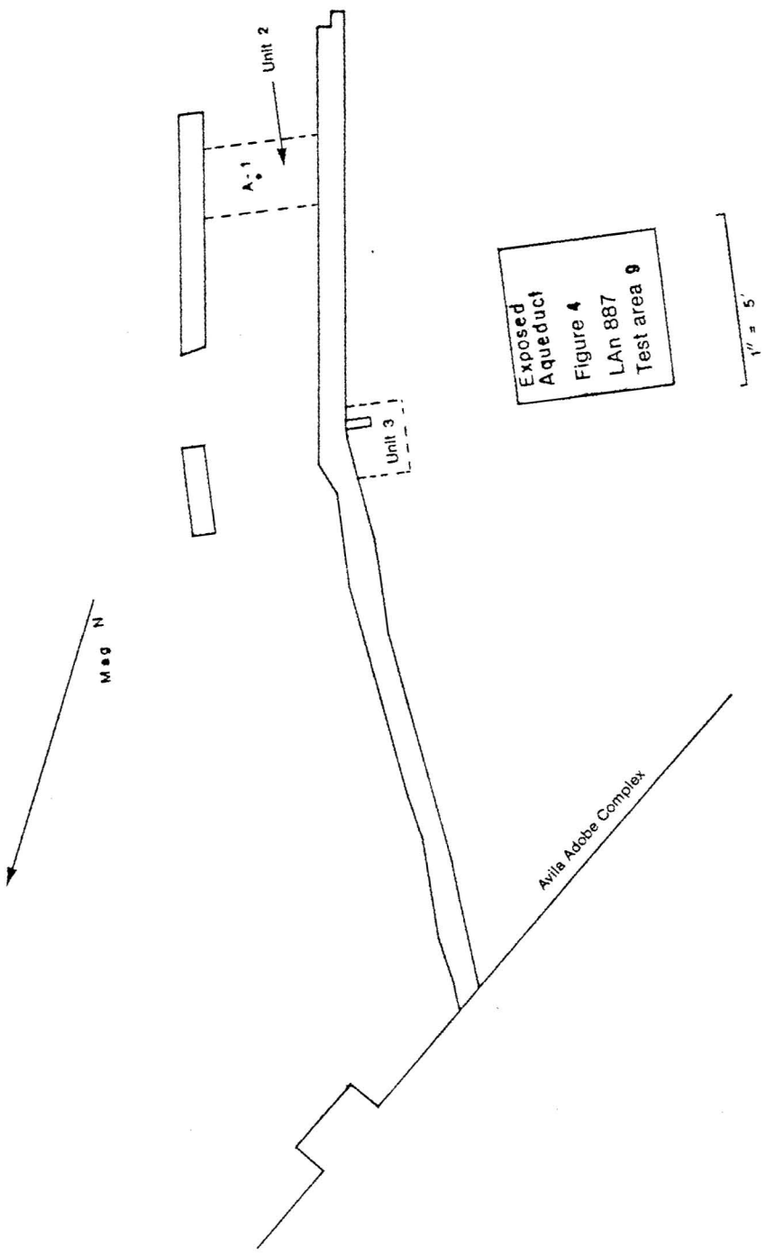
The collapsed brick debris (overburden) was cleared from the aqueduct interior and a 24-inch wide excavation unit (Unit 1) was established to sample the sediment deposit at the bottom of the aqueduct (Plate 9). Excavation revealed a nine-inch thick deposit of layered sand and silt (Level 1). The artifacts collected from this deposit (and a similar one in Test Area 9 below) should be contemporaneous with the latest period of aqueduct use.

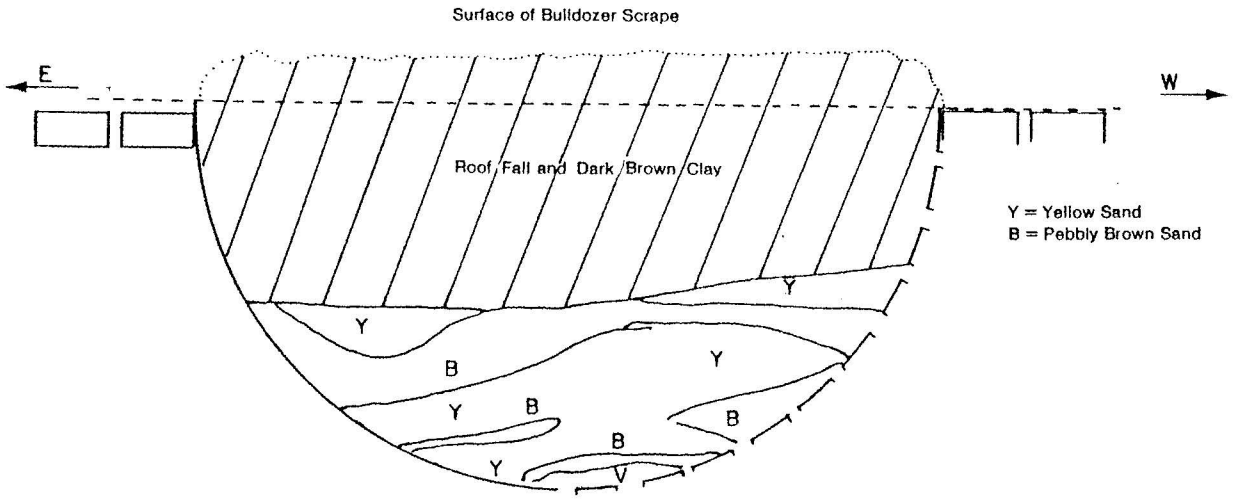
To the north of Test Area 4 the aqueduct continues, in a collapsed form, under the roadway and sidewalk areas of the former Los Angeles Street (see Test Area 9 below) and reemerges as an intact cylinder in the basement of the Avila Adobe complex. To the south the intact cylinder is exposed in Test Areas 16 and 17 (below).

Test Area 9. South from the eastern wall of the Avila Adobe complex, approximately 30 feet of the crushed aqueduct was exposed. This area was designated as Test Area 9 (Figure 4).

In order to obtain a controlled sample of the debris and artifacts from within this segment of the aqueduct, the overburden was removed down to an undisturbed level flush with the top of the intact aqueduct sidewalls (Unit 2). Two distinct stratigraphic levels were recognized during the excavation of this unit (Figure 5). Level 1 consisted primarily of the brick and mortar rubble associated with the collapsed top of the aqueduct cylinder. This level was 15 inches thick. Level 2 consisted of the sandy sediment deposit in the bottom of the aqueduct. Like Unit 1, Level 1 in Test Area 4, this deposit was layered and found to contain artifacts contemporaneous with the last period of aqueduct use.

At a point approximately 22 feet south of the eastern Avila Adobe complex wall the course of the aqueduct makes a westward jog and aligns with the segment of the aqueduct exposed in Test Area 4. At this turning point a small, 26-inch by 20-inch unit (Unit 3) was excavated outside the western aqueduct


Unit 2
A-1
Unit 3
Exposed Aqueduct
Figure 4
LAn 887
Test area 9
1" = 5'
Mag N
Avila Adobe Complex



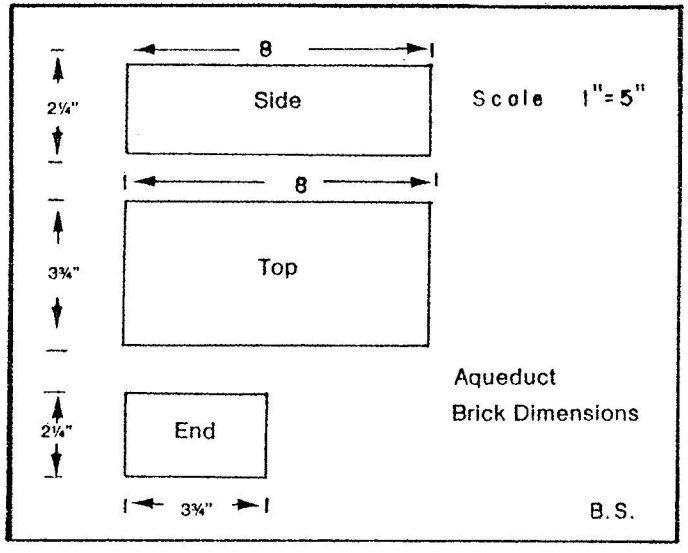


Figure 5
LAn 887
Southern Profile

Unit 2

Scale 1"=10"

sidewall to examine the structural nature of the feature at this point. The excavation revealed at least two bricks mortared into the outside wall of the aqueduct to serve as structural support for the directional change of the aqueduct.

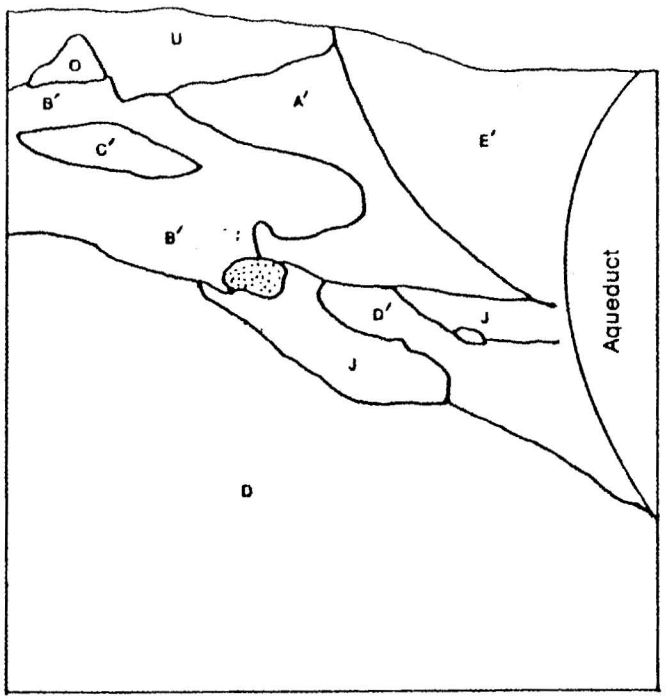
To obtain elevation readings for the bottom of the interior of the aqueduct between Test Areas 4 and 9, five auger borings, spaced at 15-foot intervals, were excavated to the bottom of the sediment deposit. A stadia rod was lowered into the six-inch diameter auger borings and elevations were recorded with a transit. These elevations are presented in Table 1.

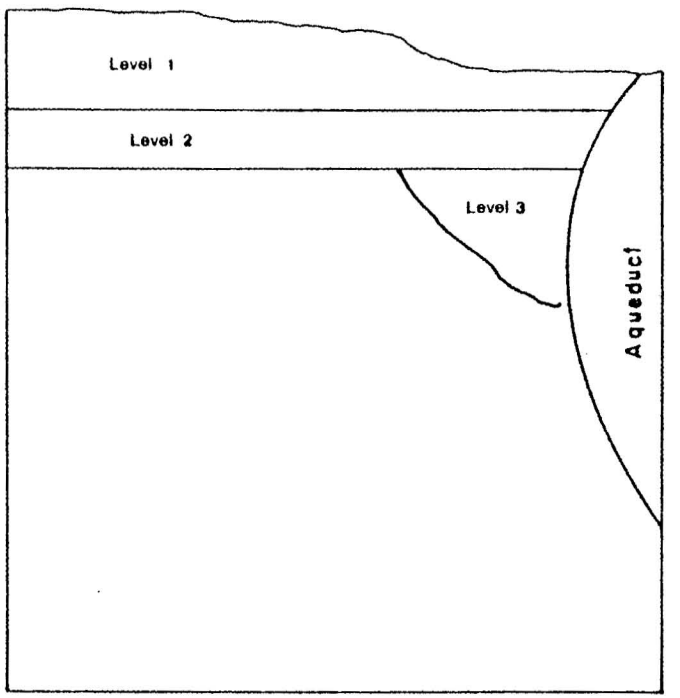
Table 1: ELEVATIONS OF THE INTERIOR BOTTOM OF THE AQUEDUCT

Location of Reading	Relative Elevation	Absolute Elevation
A-1	-.54'	276.35' asl.
A-2	-.52'	276.37' asl.
A-3	-.54'	276.35' asl.
A-4	-.51'	276.38' asl.
A-5	-.59'	276.30' asl.
Open cavity at Test Area 4	-.63'	276.26' asl.

Additional exposures of the aqueduct were made in Test Areas 16, 17, and 18. In each of these areas the aqueduct was found to be intact. In Test Areas 16 and 17 the trench in which the aqueduct was constructed was clearly discernible in the profiles of the excavated units.

Test Area 16 refers to the small trench excavated from the eastern end of Trench I, perpendicular to the western wall of the aqueduct (Figure 6). Three levels were excavated in this trench. Level 1 contained a mixture of overburden deposit (Stratum U), subsurface cultural deposits (Strata O, B', and A'), and fill deposit from the construction trench (Stratum E').





Sandstone Cobbles

Figure 6
LAn 887

Profile of Northern Sidewall and Excavation Units

Test Area 16

Scale

1"=2 0"

Level 2 contained a mixture of cultural deposits (Strata A', B', and C') predating the construction of the aqueduct and deposit associated with the construction trench fill (Stratum E').

Level 3 consisted only of deposit from the construction trench (Stratum E').

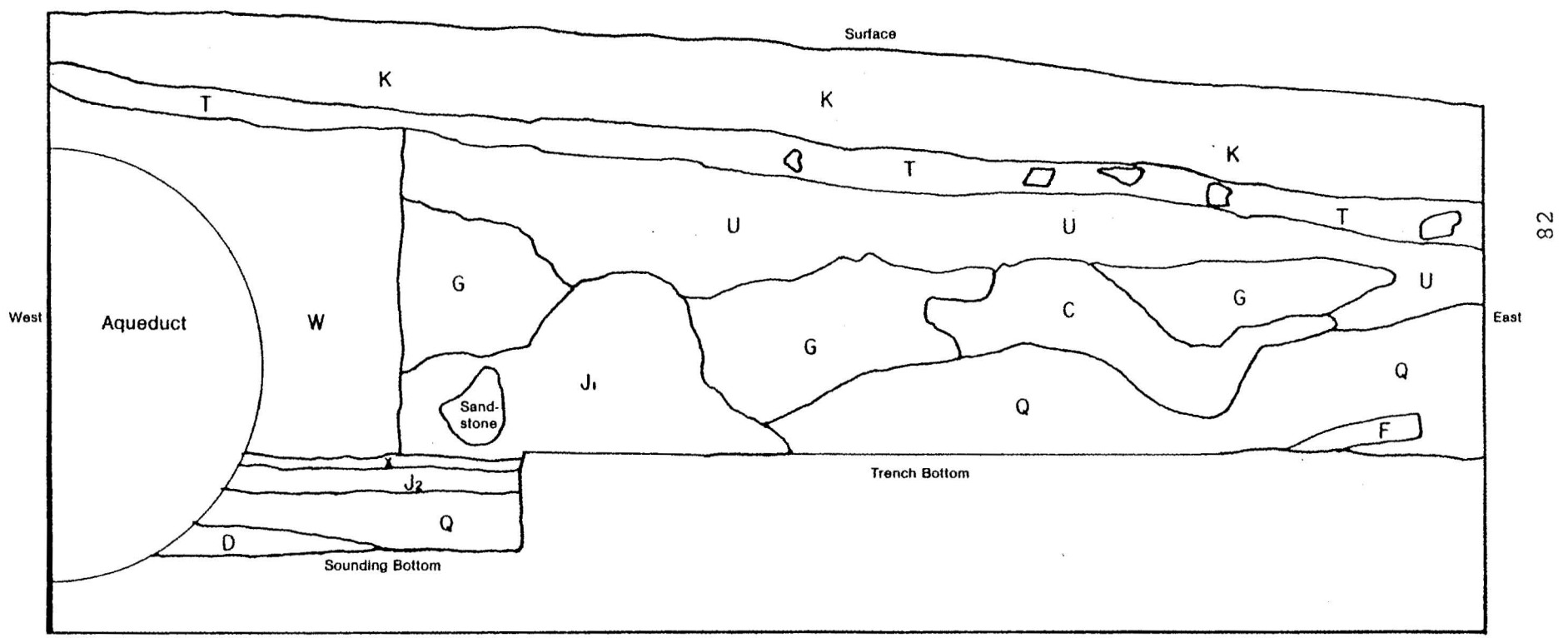
Test Area 17 is located at the southern end of the property in the western end of Trench F. This area contains an intact portion of the aqueduct and adjacent cultural deposits to the east. After the exposure of the aqueduct in Trench F, an excavation unit (Unit 1) was established 37 inches below the ground surface. This unit was 32 inches by 36 inches and was located at the eastern edge of the aqueduct.

In order to maintain both vertical and horizontal control over the excavated material, the excavation unit was subdivided into four spatially distinct loci and excavated by four levels (Figures 7 and 8). The primary distinction that was made during excavation was between those loci and levels encompassing cultural deposits that were earlier than the aqueduct construction trench and those loci and level which were from the construction trench, fill deposit.

Locus 1, Level 1 is located east of the vertical line representing the eastern wall of the construction trench. This subunit consisted of a distinct stratum of dark brown (10 YR 3/3) sandy clay (Stratum J_1). This lense was 18 inches thick and represented a cultural level that was deposited prior to construction of the aqueduct.

Locus 2, Level 1 and Locus 4, Level 1 are located between the aqueduct and Locus 1, Level 1. These subunits were excavated in the pale brown (10 YR 6/3), sand and gravel (Stratum W) fill deposit associated with the aqueduct construction trench.

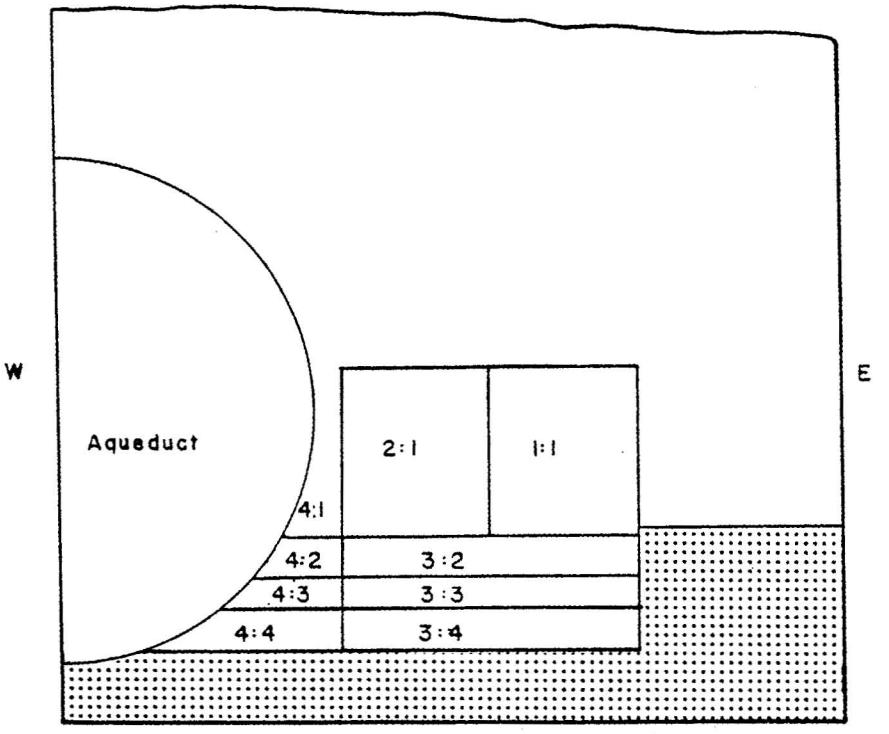
At the bottom of Level 1, in Loci 1, 2, and 4, a very pale brown (10 YR 7/4), coarse sand lense (Stratum X) was encountered and noted to extend across the entire unit at this



82

Figure 7
LAn 887
Stratigraphic Profile of Trench F
North Sidewall

Scale
1"= 20"



Trench Bottom

Figure 8 Unit 1
LAn 887
Profile of Trench F
Showing Excavation

Scale 1"=20"

level. Above this level (approximately 12 inches above the bottom of the aqueduct) the construction trench reached its maximum depth.

Locus 3, Level 2 and Locus 4, Level 2 were located below Stratum J_1 and encompassed the next five inches of deposit, including the relatively thin lense of Stratum X and another lense of Stratum J_2. These cultural deposits clearly predate the construction of the aqueduct and those deposits associated with Level 1 of Loci 1, 2, and 4.

At 59 inches below the ground surface Stratum J_2 ends and is replaced by a lense of light, brownish gray (2.5 Y 6/2) sand ranging in thickness from four to eight inches (Stratum Q). Loci 4 and 3, Level 3 were associated with this lense.

At 63 inches below ground surface, on the western side of the unit, a distinctive layer of pale brown (10 YR 6/3) sand, gravel, and cobbles (Stratum D) was encountered. At this point Loci 4 and 3, Level 4 were established. Locus 4, Level 4 consisted of both Strata D and Q. The excavation of Unit 1 was terminated at 66 inches below the ground surface because of the constraints of time.

After a careful examination of the stratigraphy within Trench F, several interpretations can be made. First, Strata G, J_1, X, J_2, Q, and D definitely predate the construction of the aqueduct. Stratum U very likely represents the surface of the ground at the time of aqueduct construction.

Second, Strata T and K definitely appear to cap the aqueduct and, thus, postdate its construction.

The aqueduct construction trench appears to have been cut with vertical sidewalls through Strata U, G, and J_1 from an elevation horizontal with the top of the aqueduct. At this point the trench was 16 inches wider than the actual, outside diameter of the cylinder.

Aqueduct Construction

Excavations in Test Areas 16, 17, and 18 suggest that the construction trench was probably symetric with respect to the vertical axis of the aqueduct. From the attributes of the construction trench, two stages of construction can be hypothesized. In the first stage, a trench approximately seven feet wide was excavated to a depth slightly below the horizontal axis of the aqueduct. From this point the center of the trench was then hollowed to the exact dimensions of the bottom, outside surface of the cylinder. To accomplish a precision fit, sand may have been used as filler inside the trench. This semi-circular trough was then used as a mold in which the base of the aqueduct was constructed. The outer layer of bricks was mortared in place, after which a second, inner layer of bricks was added. This construction method is evidenced archaeologically by the presence of unsmoothed, linear tracks of mortar between bricks extending over two inches beyond the outside, bottom surface of the aqueduct.

Once the bricks of the base of the cylinder had been laid, the construction of the upper portion of the aqueduct could begin. Each brick was individually mortared in place and the outside and inside surfaces were scraped clean of excess mortar. There is a possibility that some sort of convex-shaped, portable mold was used while building this upper portion of the aqueduct.

After the brick and mortar aqueduct was constructed, the construction trench was backfilled and the facility became operational.

Historical Context

This aqueduct clearly is the Zanja Madre which appears on many early maps (Map 4 and Map 14). Its geographical location coincides with all known references to this system. The aqueduct system was originally constructed during the early

Spanish period of the Pueblo and was in use until the beginning of the twentieth century. This architectural version of the channel conduit can be dated from the 1880s to the first decade of the twentieth century.

A map of dated 1879 shows a profile of the aqueduct system from above College Street to First Street (Goldsworthy 1879). This zanja is composed of sections labeled "concrete ditch" (northern end,) "brick conduit" (near College and north Springs Streets), and "covered wooden flume" (between Olvera and Marchessault Streets, which is in La Placita site area). Apparently the aqueduct was also operated as a source of hydraulic power, as vertical drops in elevation are recorded at Bakers Mill (12.70') and at the "gate near the pipe works" (1.36') on the south end of the site area. The volume of water is recorded as 18.44 $ft.^3$ per second.

After 1877 the City of Los Angeles began to convert the Zanja Madre to a more substantial conduit. An 1880 map (Profile of Zanja Madre) indicated that a brick conduit had been completed from the "wheel of W.W. Co." at the south end of the site area, to Requena Street. The same map contains newspaper clippings containing an 1882 call for bids on construction of a brick conduit or "cement stone piping" from Requena Street to First Street.

The next indication of aqueduct improvements was found in an 1885 bond issue allocating funds for renovations. Hall, in his study of the irrigation systems of Los Angeles (Hall 1888) noted that by 1888 the Zanja Madre from Capital Mills to First Street was a brick conduit. An 1889 surveyors map of the aqueduct confirms this observation (Zanja Madre Survey 1889: 17-21). The construction of the section of the aqueduct which runs through La Placita site is, therefore, dated after 1882 and prior to 1888. As it seems likely that the 1885 bond issue would have resulted in a new phase of renovation, the Zanja Madre construction date is referred to as *c.* 1886.

The terminal date for the use of this section of the Zanja Madre has not been precisely established. It may have been in use in 1907, as indicated by a 1907 engineering map (Robinson 1907). Flooding had been caused by an obstruction in the zanja near the Commercial Street intersection. Three openings in the zanja showed silt accumulations of 7", 16", and 22". Evidently this was a cronic problem in the operation of the system. The silt levels in Test Area 4 and Test Area 9 also reflect this problem in La Placita site area.

The brick paving of Los Angeles street *c.* 1914 destroyed a portion of the upper half of the brick conduit on La Placita site and provides a terminal date for the Zanja Madre in this area. Although the aqueduct could have been abandoned anywhere between 1907-*c.* 1914, the *c.*1914 date is used as the last date of operation.

Test Area 6

Test Area 6 was initially designated as a separate area when a small section of the eastern, concrete curb of Los Angeles Street was discovered during asphalt removal. At a later time further clearing activities brought to our attention the presence of the brick and mortar aqueduct. This latter feature was given a separate designation as Test Area 4.

The concrete curb along the eastern edge of Los Angeles Street was found to be mostly destroyed. Aside from the section found in Text Area 6, smaller remnants were found in the sidewalls of Trenches H and I. From this alignment we are able to reconstruct the former street edge with considerable accuracy. The largest intact portion of the curb is that at Test Area 6. This feature was 8 feet 9 inches long and 7½ inches wide.

Historical Context

For historical context, see discussion of Los Angeles Street under Test Area 23.

Test Area 10

Test Area 10 contained a foundation footing made of sandstone boulders and cobbles cemented in a mortar binder which was encountered at ground level (Figure 9). This feature is 24 feet long and 26 inches wide and is oriented in an east-west direction. At the western end of the foundation, two courses of bricks were found to be still articulated with the top surface of the footing.

A backhoe trench (Trench K) was cut through the foundation, perpendicular to its long axis, to provide information on the depth of the feature and its stratigraphic relationship with the surrounding cultural deposits (Figure 10). The foundation was found to reach a maximum depth of 20 inches. No foundation construction trench could be discerned.

Historical Context

This foundation appears to be the remains of a corner of the G. Tononi Winery "wine cellar." The winery structure represented by the remains in Test Area 10 was probably in operation from *c.* 1870 to 1888. The winery first appears on maps drawn about 1870. The 1871 sketch of Los Angeles (Map 9) shows the series of buildings fronting Alameda Street. The Sanborn map (1883-1887) labeled these as a "wine cellar," two "sheds -- full of wine vats," a distillery, sleeping room, and office and "winery" fronting Olvera Street (Map. 11). The Sanborn Map of 1888 indicated that this building was constructed of brick and had an earthen floor. Map 15 shows that the southeast corner of the winery was destroyed by the extension of Los Angeles Street in 1888. It is the remains of this destroyed corner that appear in Test Area 10. The 1888-1893 Dakin Map shows the truncated wine cellar and indicates that much of the lower complex is "Vacant" (Map 12).

Test Area 11

Test Area 11, just under the overburden, at 19 inches below the ground surface, contained a midden deposit. A decision

Alameda St.
26"
N
Trench K
Sandstone Boulders and Cobbles Set in Mortar
Red Brick
Figure 9
LAn 887
Test Area 10
Scale 1" = 48"

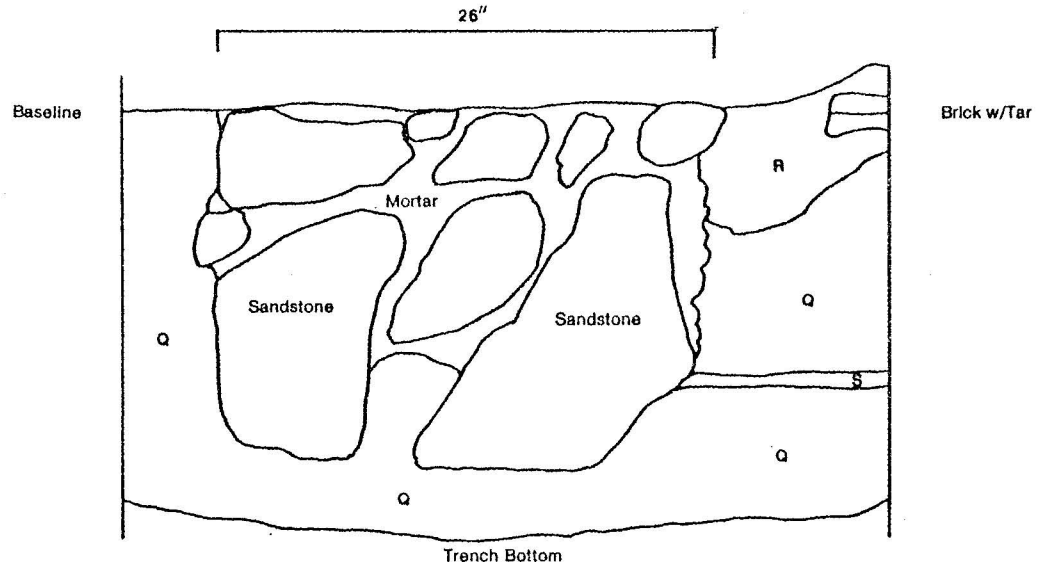


Figure 10
LA'n 887
Trench K West Wall

Scale 1" = 10"

was made to sample these remains and a five-foot by five-foot grid unit was established.

The first three levels excavated consisted of overburden and brick and concrete rubble; no attempt was made to screen this deposit. Artifacts were collected as they were encountered. All excavation in this unit was by natural stratigraphic levels (Figure 11).

Level 1 consisted of a damp, brown (10 YR 5/3), sand deposit (Stratum G) which extended from the ground surface to a maximum depth of eleven inches. This deposit was disturbed overburden which contained fragments of brick, asphalt, milled wood, and miscellaneous cobbles.

Level 2 consisted of a pale brown (10 YR 6/5), sand deposit (Stratum Y) which contained both concrete and brick rubble. Deteriorated brick gave this deposit a dark red color. The northwestern corner of the grid contained a particularly high density of concrete rubble. This lense reached a maximum thickness of six inches and was found to extend 17 inches below the ground surface.

Level 3 consisted of a distinctive, pinkish gray (5 YR 6/2), sandy loam (Stratum H). This deposit was clearly different from the overlying stratum in color and texture and it contained a lesser quantity of brick and concrete rubble. This deposit reached a maximum thickness of two inches and ended at a depth of 19 inches.

Levels 2 and 3, though distinct, share similarities. They both contain large quantities of brick and concrete debris which very likely represent the remains of a collapsed brick structure. No distinctive features could be discerned within either level.

Level 4, at 19 inches below the ground surface, contained a dark, grayish brown (10 YR 4/2), sand deposit (Stratum G). A midden of bone, porcelain, and glass fragments was located in the southwestern corner of the grid. At 20 inches a thick (one inch), dark brown, clay lense was encountered in the southern quarter of the grid. Immediately below this, at 23 inches, a series of

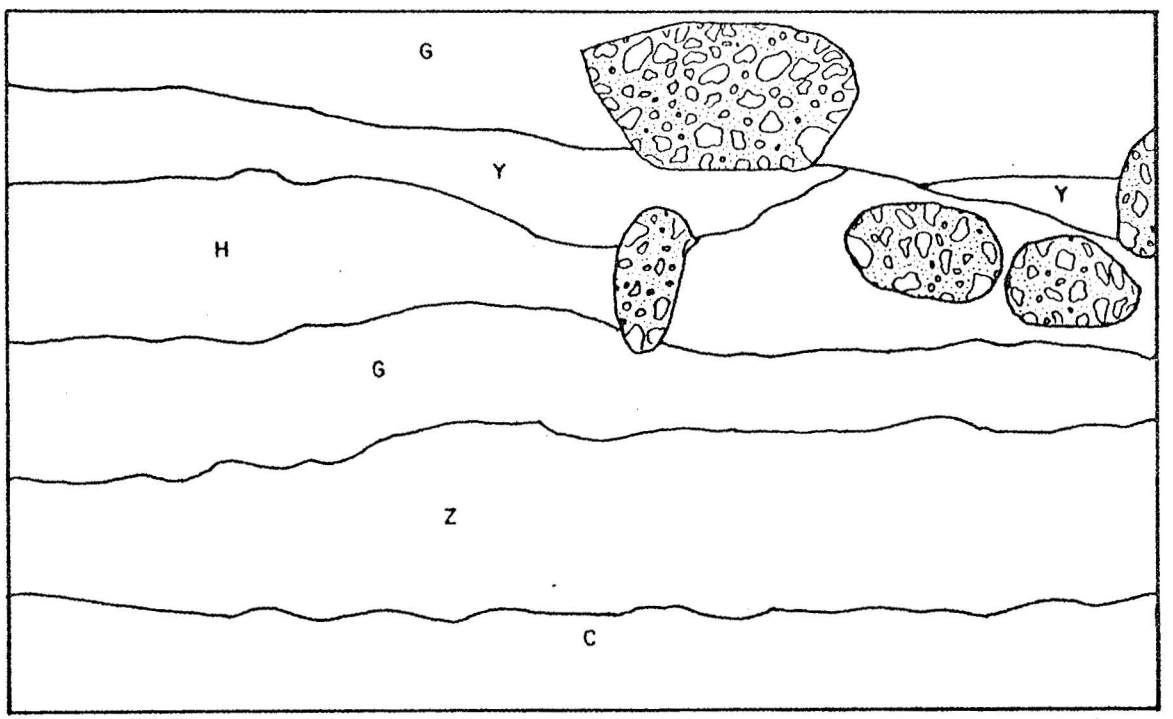


Figure 11
LAn 887
Test area 11
Western Profile

Concrete Rubble

Scale 1"= 10"

unarticulated, redwood shingles were uncovered. These appear to have been concentrated in the southwestern corner of the grid within the midden (Figure 12). The stratum containing the uppermost midden deposit, the thin clay lense, and the shingle feature were all assigned to Level 4.

Level 5 consisted of a pale brown (10 YR 6/3), sand deposit (Stratum Z) which contained all of the materials from below the redwood shingle feature to a depth of 29 inches. The midden deposit in the southwestern corner of the grid became more sparse as excavation was continued.

At 27 inches below the ground surface a rectangular-shaped pad of compact brown earth, 12 inches by 36 inches, was encountered five inches east of the western wall of the grid (Figure 13). This feature was approximately two inches thick. Its southern end appeared to have been cut by the intrusive midden area at the southwestern corner of the grid. The northern end of the feature extended into the northwestern corner of the grid, where its overall extent became obscured by a concentrated pile of concrete debris.

Level 6 was designated to begin at a point equal to the depth of the bottom of this feature (29 inches). Level 6 consisted of a light brownish gray (2.5 Y 6/2), sand deposit (Stratum C) and contained all of the deposit below the compact mud feature. At 33 inches the top of a hollow, postmold cavity was discovered. This posthole was located below, but adjacent to, the eastern edge of the compact mud feature. Within the posthole were splinters of redwood, presumably from a post that had once occupied this cavity.

Excavation of this level terminated at 36 inches below the ground surface when culturally sterile deposits were encountered.

The presence of a rectangular, compact, mud pad with an adjacent posthole provides support for interpreting this feature as a remnant of an adobe wall. The overall extent and nature of this feature, however, were undetermined.

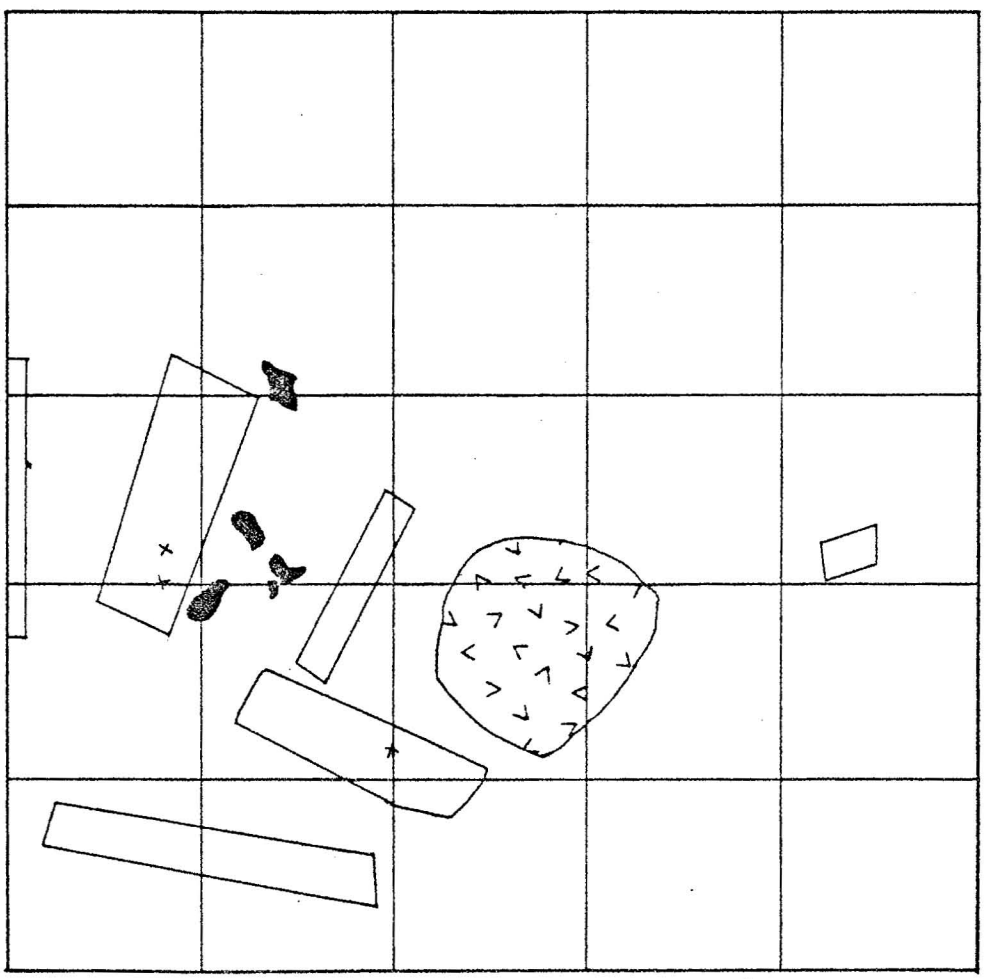


Figure 12
LAn 887
Test area 11
Shingle
Feature

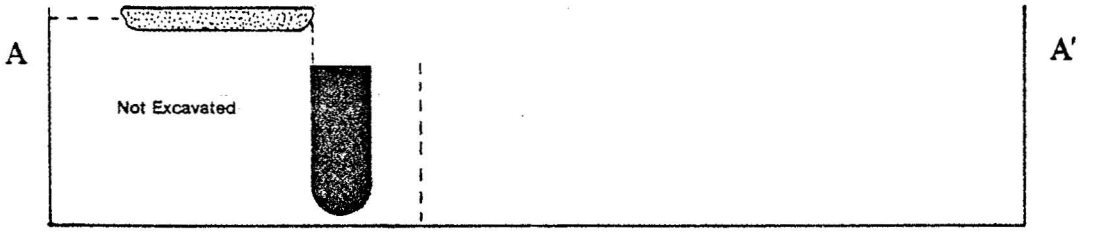
Wood

Glass

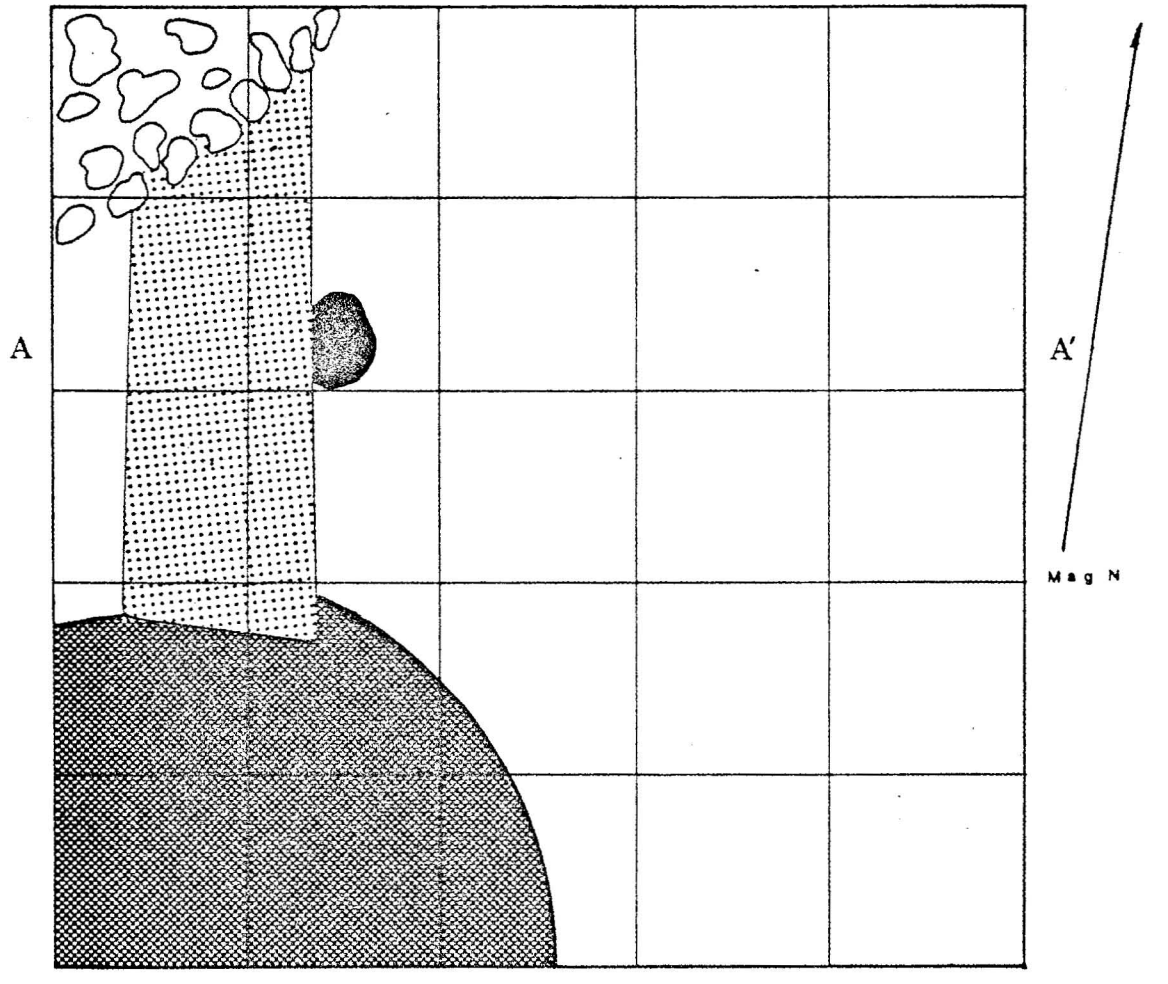
Concrete Slab

Nail

Scale 1"= 1'



Tramped Mud Wall Feature



Post Hole

Tramped Mud Wall

Concrete Rubble

Midden

Figure 13
LAn 887
Test area 11
Scale 1"=1'

Historical Context

The brick and rubble fill of Levels 2 and 3 very likely represent the destruction of the *c.* 1887-*c.* 1923 brothel complex. Before the turn of the century La Placita Block was in the heart of the city's "red light" district, and one-story, brick edifices, known as "cribs" of prostitution, lined Alameda Street. On La Placita site these structures first appear on the Sanborn Map of 1883-1887 labeled as "Female Boarding" (see Map 11). The 1888-1893 Dakin Map shows the complex enlarged to cover the northern end of the block and designated as houses of "Ill Fame" (see map 12). These buildings probably operated as bordellos until antivice laws were enforced *c.* 1909. Afterwards they were occupied by Chinese businesses and merchants. These brick buildings were torn down *c.* 1923 (see Friedman report).

Levels 4 and 5 were interpreted as representing midden deposits related to the occupation of the brothel structures. These were sealed under the subsequent building destruction of Levels 2 and 3. This association is based on the hypothesis that, during the time period related to the midden artifacts, the occupants of neighboring properties did not also utilize these areas for rubbish disposal. An 1889 map (Brick Aqueduct 1889) shows a fence enclosing the northern, western, and southern borders of the Water Works Co. lot. A "board fence" is indicated along the southern border of the brothel property prior to 1808 (Map 17). This fence was later replaced by a concrete wall (Test Area 2) which remained until the Water Works Co. demolition in 1939. Because of the different activities taking place on the brothel and Water Works Co. properties, it is assumed that some type of dividing structure existed along this border from *c.* 1890 to 1939.

The adobe "wall" of Level 5 and the posthole of Level 6 may represent the remains of a small Spanish/Mexican or early American period building. A similar arrangement of an adobe wall and interior posthole was found at the Santa Barbara Presidio excavations (Costello 1976:15-16). The lack of stone foundations

for the "wall" could indicate either a structure dating to the American period when adobe construction techniques deteriorated, or an earlier, relatively unimportant outbuilding. This latter interpretation finds some support in that a building is not indicated for this area on any of the early surveys.

Test Area 12

Test Area 12 contained a sandstone foundation near the surface of the ground. The feature is 28 inches in width and is constructed from sandstone cobbles in a very friable, gray mortar. A total of 17 feet of this foundation was cleared and was found to extend in an approximately north-south direction along the eastern border of the former Los Angeles Street. Work on this feature was limited to the delineation and removal of surface overburden. No subsurface excavations were conducted.

Historical Context

This foundation belongs to the west wall of the Los Angeles Water Department Building. It is not certain when the wall was initially constructed, although it was probably after Los Angeles Street was extended. The wall is first shown in an 1890 photograph of the Plaza (Plate 4) and is identified as a "stone wall" on a 1909 map (Map 17). It is clearly shown in Plate 7 during the 1939 demolition.

This wall was joined on its northern corner by the concrete wall foundations of Test Area 2.

Test Area 13

Test Area 13 is located in the roadway of the former Los Angeles Street, adjacent to the eastern wall of the Avila Adobe complex. In this area a relatively square, brick and mortar, foundation footing was discovered (Figure 14). The remains of this disturbed feature measure 48 inches by 38 inches and consist of at least four courses of bricks. On the northern end of the brick surface were two pieces of thin metal, 18 inches long and 1/2 inch wide. Their context and function remain uncertain. The southern end of the feature was covered by a large concentration of crushed brick rubble.

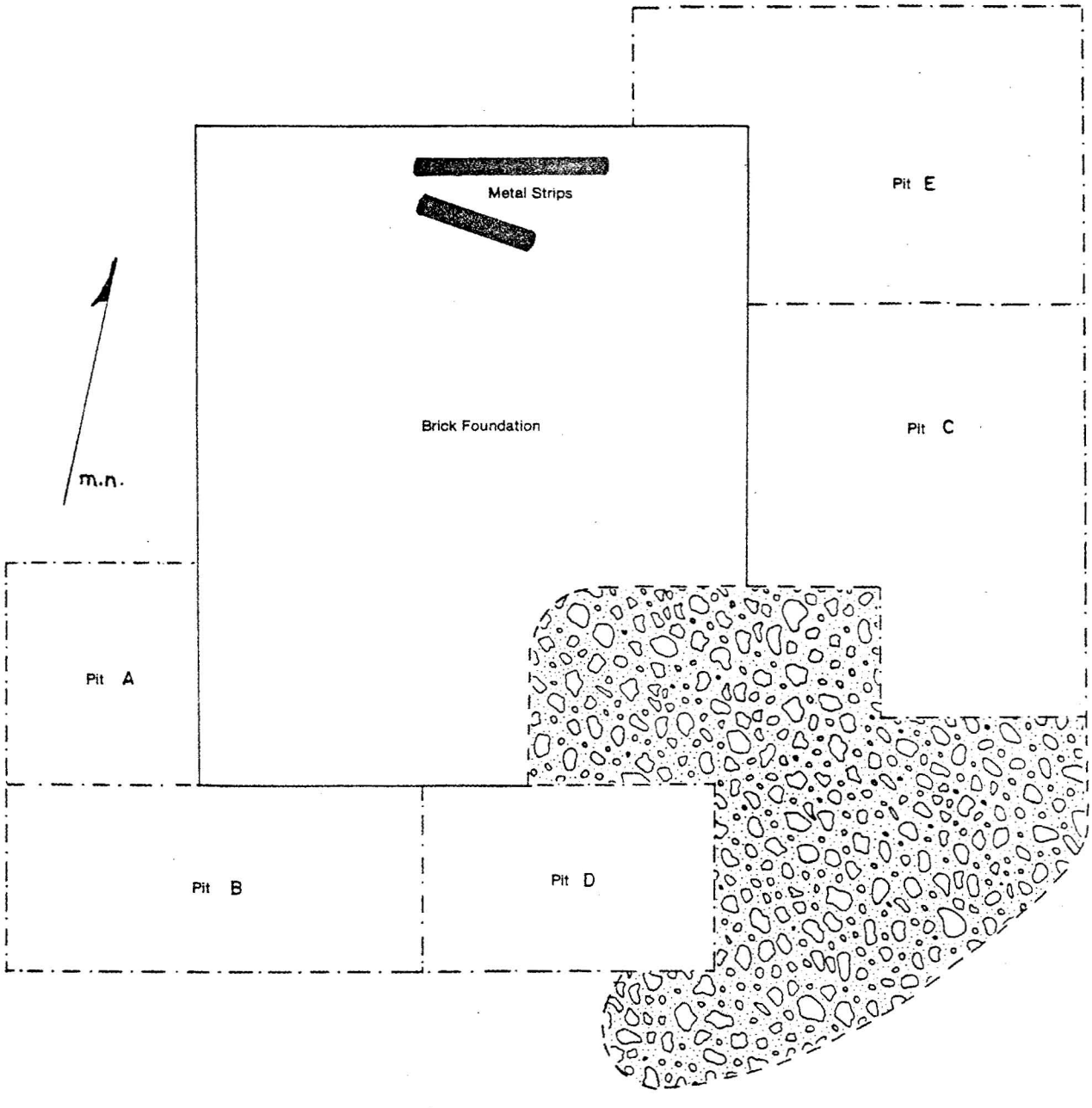


Figure 14
LAn 887
Test area 13

Crushed Rubble

Test Pit Boundary

Scale 1"= 1'

To determine the extent and nature of this feature, five, small, exploratory trenches (Pits A, B, C, D, and E) were excavated immediately adjacent to the foundation. The brick foundation was found to extend to a depth of 14 inches. The bottom course of bricks rested on a damp, brown, sand deposit and no stone footings were found below this feature.

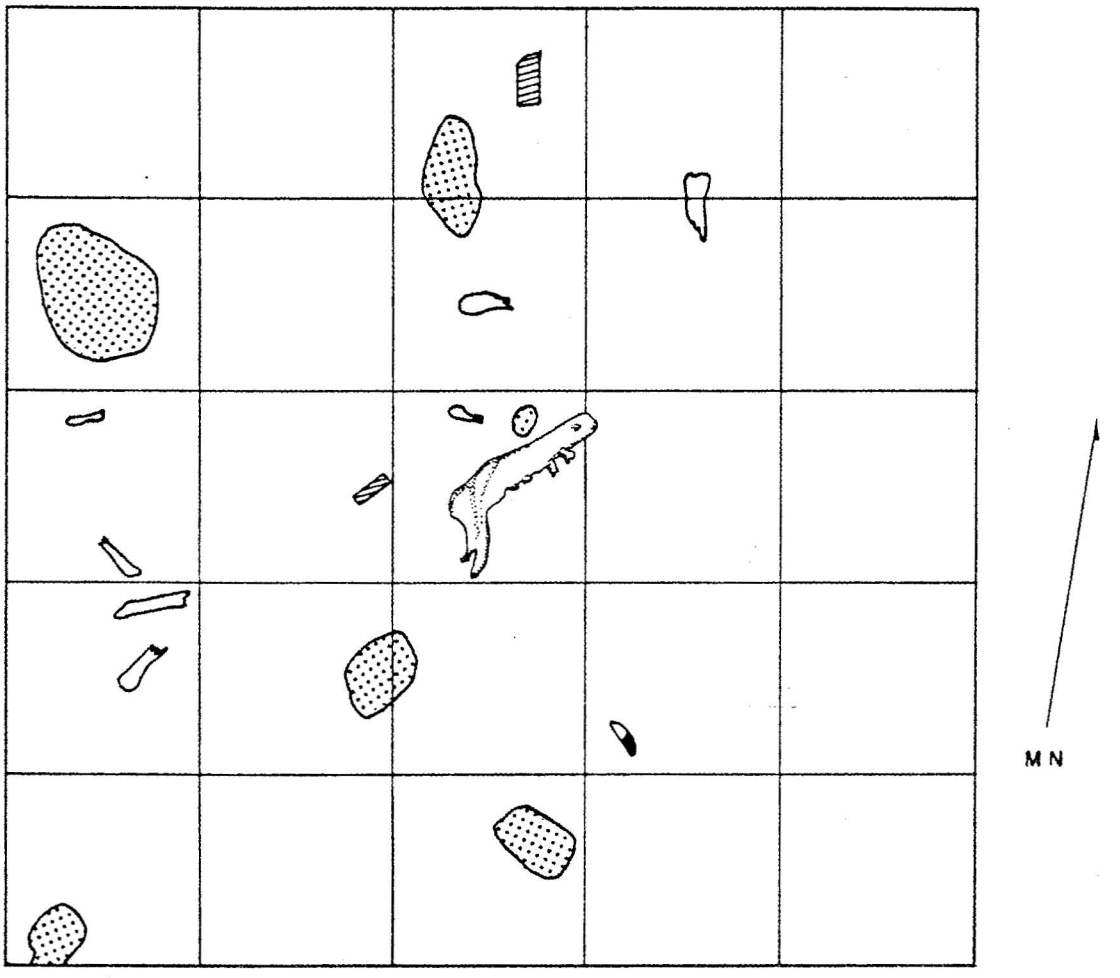
In Pit E, at four inches below the top of the brick foundation, a compact layer of earth, 1½ inches thick, was discovered. This feature was overlain by a thin veneer of charcoal and extended away from the footing in a northeastern direction. A piece of ceramic was recovered from the surface of the earthern layer (#90, Plate 12d). Time did not permit the exposure of this feature; but, considering its attributes and context, it may represent the remnants of a tamped mud floor. Any definitive statements concerning this feature must await future investigation.

Historical Context

The "American" size of the bricks used in construction would date the building to a post Spanish/Mexican period, while the feature's position under Los Angeles Street would provide a terminal date of 1888. The only complex of buildings in this area from 1846-1888 which appears on early maps is the G. Tononi Winery (Test Area 10). Although a "shed" appears on the south side of the "wine cellar" on Map 11, the location of the Test Area 13 footings do not encourage an association between the two (compare Maps 20 and 21). However, the omission of this apparetly substantial structure from all early surveys also seems unlikely. The identification of this feature is presently unknown.

Test Area 14

Test Area 14 at the northern end of the property yielded several sherds of mission ware pottery and some large fragments of mammal bone when the bulldozer made a surface scrape. To investigate the nature of this deposit, a single, five-foot by five-foot square, grid unit (Locus 1) was excavated (Figure 15).



Rock
Bone
Ceramics
Brick

Figure 15
LAn 887
Test area 14
Locus 1
Level 1

Scale 1" = 1'

The upper level of this grid (Level 1) was taken down approximately four inches to a distinctive layer of mammal bone, glass fragments, and ceramic sherds. These materials appeared to be uniformly scattered across the grid unit. All of these items were found within a matrix of olive (5 Y 4/3), sandy loam.

In order to determine the size of this component, an additional five-foot by five-foot grid unit (Unit 2) was excavated to the north of, and contiguous with Locus 1 (Figure 16). As in Locus 1, the upper four inches of deposit were excavated down to the distinctive, midden layer. The same types of cultural materials were found to be present in this unit and their distribution was continuous throughout the grid.

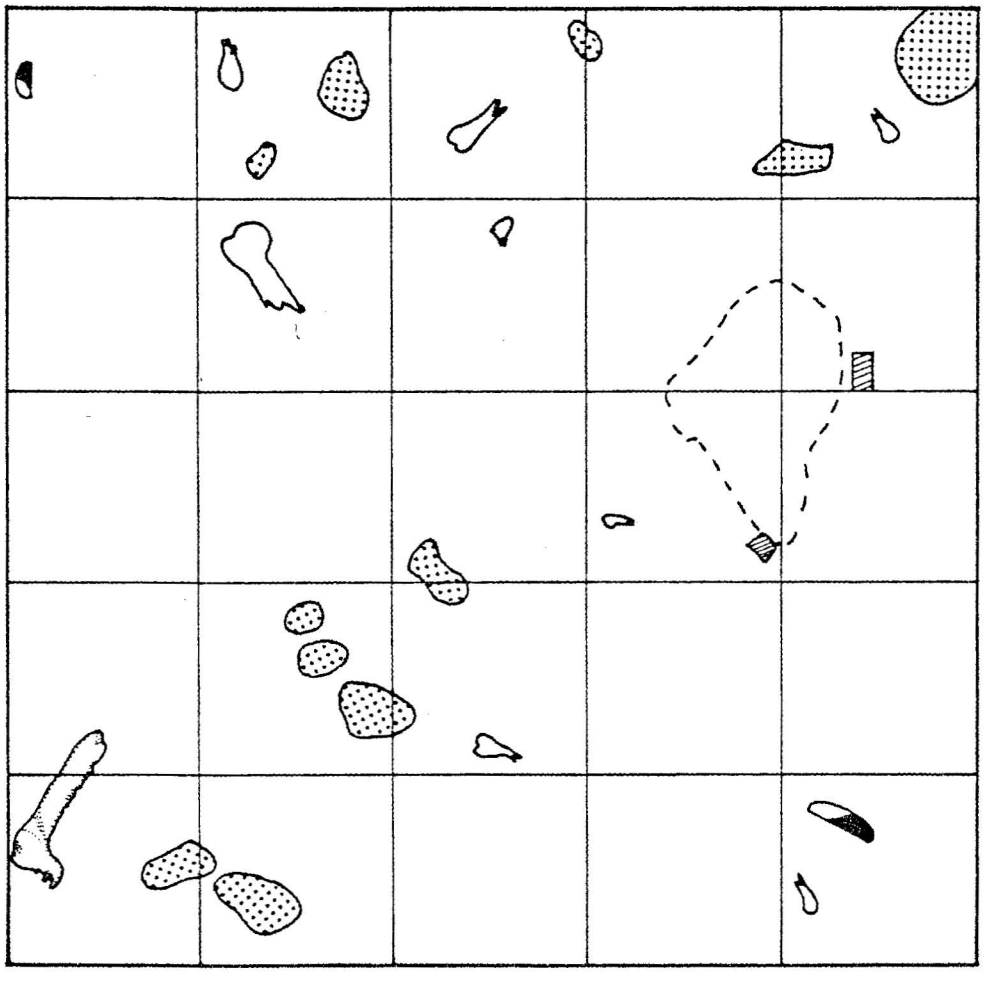
In order to determine the depth of the component, the northeastern quarter of Locus 2 was excavated to culturally sterile deposit. All materials recovered were assigned to Locus 2, Level 2. Numerous fragments of large mammal bone, sherds of mission ware pottery, and some bottle glass were uncovered. All of these materials were in a matrix of olive, sandy loam.

As time considerations restricted the amount of excavation which could be conducted at this unit, a smaller unit was taken down to the sterile layer of small, closely packed cobbles. The deepest level from which cultural material was recovered was twelve inches.

Historical Context

Based on the artifacts recovered from this test area, these deposits were dated to the Spanish/Mexican period of occupation. El Pueblo de la Reina de Los Angeles was founded in 1781 and the main Plaza was moved to its present location in 1818. Fremont's victory in January, 1847, provides the terminal date for Mexican political control of the pueblo.

Possibly the remains in Test Area 14 can be associated with the original pueblo site. The terrace bluff ran through the Placita Block and the first Plaza may have been located on



MN

Rock
Bone
Ceramics
Brick
Ash

Figure 16
LAn 887
Test area 14
Locus 2
Level 1

Scale 1" = 1'

the flood plain nearby (see Friedman report). Although the distance from the first Plaza to the bluff is not known, one source indicated that several houses of the original pueblo were removed when the present Plaza was laid out (Guinn 1915: 348); thus, the two Plazas were relatively close.

During the Spanish/Mexican period Test Area 10 was located in the rear of the Avila/Rimpau property (Map 7) on the flood plain beneath the Zanja Madre (Figure 18a). The artifacts are very likely refuse from the occupation of the Avila Adobe and, possibly, other nearby structures. The presence of the ash lense in Locus 2, Level 1 (Figure 16) would indicate that Test Area 10 includes primary deposits which have not been eroded nor removed by subsequent historic impacts.

Test Area 15

Test Area 15 was initially discovered when bulldozing activities uncovered an area of ceramic, glass, and bone fragments west of the aqueduct and near the center of Los Angeles Street. Careful investigation revealed a small, localized, trash feature. A collection was made of the artifacts and the area was surveyed and mapped.

Historical Context

Test Area 15, located under Los Angeles Street, would date prior to the *c.* 1914 paving.

Test Area 19

Test Area 19 was thought to contain a possible privy area as indicated on Map 12; therefore, a five-foot by five-foot square grid unit was established. As the general stratigraphy of the immediate area had been established in Test Area 11, the decision was made not to screen the deposit from the upper two levels.

Level 1 (0-7 inches) consisted of a dark, yellowish brown (10 YR 4/4), friable loam which contained assorted brick fragments and large pieces of concrete. A brown, sandy, midden deposit was encountered in the southwestern corner of the grid at approximately six inches below the surface of the ground. This midden contained pieces of bottle glass, ceramics, and wood and was very

similar in color and content to the midden encountered in Test Area 11, Level 1.

Level 2 (7 to 15 inches) consisted of a reddish brown sand (5 YR 4/3) with fragments of brick and concrete. This level was very similar in content and color to Level 3 in Test Area 11.

Level 3 (15 to 30 inches) consisted of a moist, brown (10 YR 5/3), sandy, midden deposit which contained the remains of a shovel, burnt wood, glass, and ceramics. At 18 inches, in the eastern half of the grid, a yellow, sandy gravel was encountered. This deposit was left in *situ* and the midden in the western half of the grid was removed.

The midden deposit encountered in Level 3 was very similar in content and color to the midden discovered in Level 4 in Test Area 11 and in the lower strata of the eastern end of Trench M (Figure 17). It appears that these three test units have exposed an extremely rich midden area within this portion of the site.

Historical Context

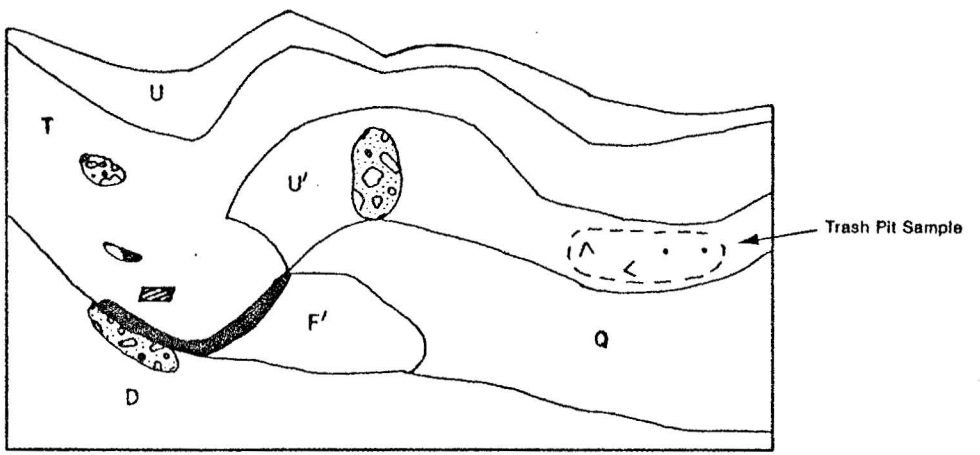
Test Area 19 contains deposits similar to those in Test Area 11. Levels 1 and 2 in Test Area 19, like Levels 1, 2, and 3 in Test Area 11, contain the remains of the brothel structure once located in this area. Level 3 in this test area corresponds to Levels 4 and 5 of Test Area 11 and represents cultural deposits made during the occupation of the brothel (see foregoing discussion under Test Area 11).

Test Area 20

Test Area 20 is located in the former roadway of Los Angeles Street.

Level 1 consisted of a damp, brown (10 YR 5/3), sand deposit which extended from the ground surface to a depth of five inches. This layer was disturbed overburden dating from a period prior to the construction of Los Angeles Street.

Levels 2 and 3 consisted of small pockets of sand, ranging in color from light gray to dark brown. No apparent order of these strata was discernible. Associated with these levels



Sandstone Cobbles
Ceramics
Brick
Wooden Trough
Metal
Glass

Figure 17
LAn 887
Trench M
North Profile

Scale 1"= 20"

were numerous fragments of animal bone and a piece of mission ware pottery (Level 3). The bottom of Level 3 was 18 inches below the ground surface.

Level 4 (18 to 24 inches) revealed a decrease in the frequency of bone. At 22 inches a continuous layer of decomposed granite cobbles in a matrix of olive yellow (5 Y 6/6) sand was encountered. It extended to a depth of 24 inches. Below the cobble layer a dark brown, clay lense was discovered. It extended to the bottom of Level 5 (30 inches).

At 30 inches (the upper elevation of Level 6) an olive (5 Y 4/3), sandy loam, which contained numerous mammal bones and mission ware pottery sherds, was encountered. This lense was found to extend to at least 36 inches below the ground surface.

Because of time limitations, a hand auger was employed to excavate through the remaining cultural deposit down to a distinctive layer of sterile, pale olive (5 Y 6/3), clay. The top of the sterile clay was encountered at 48 inches below the ground surface.

Historical Context

Test Area 20 is located under old Los Angeles Street. Level 1 consists of mixed material deposited prior to the *c.* 1914 paving date. Based on the artifacts recovered, Levels 2-7 correspond to the Spanish/Mexican occupation period of the site.

The proximity of Test Area 20 to Test Area 14 suggests that the two middens are a result of the same depositional process (see discussion under Test Area 14).

Test Area 21

Test Area 21 is located at the northern portion of the property, between Test Areas 20 and 14. Like these other test areas, Test Area 21 lies in the former roadway of Los Angeles Street.

Level 1 consisted of a friable, dark, grayish brown (10 YR 4/2) sand which contained small granitic cobbles, pieces

of bone, and chunks of cement rubble. This level extends from the ground surface to six inches and is classified as overburden.

Levels 2 and 3 (6 to 18 inches) were characterized by well-sorted, fine-grained, olive (5 Y 4/3) sand. Occasional granitic cobbles and bone fragments were found throughout these levels.

Levels 4, 5, and 6 (18 to 36 inches) exhibit a distinctive difference from the levels discussed above. These soils included pockets of green and orange clay, brown (10 YR 4/3) sand, and pale olive (5 Y 6/3) clay. Near the bottom of Level 4 a large quantity of bone was uncovered. The high frequency of bone continued throughout the remaining cultural levels. At approximately 30 inches a fine-grained, olive sand (5 Y 4/3) graded into a sandy clay of the same color. In Level 6 a fragment of mission ware pottery was recovered.

Although the bone layer in this unit appears to be thicker than in either Test Areas 14 or 20, this series of levels is undoubtedly related to the same basic midden component which underlies this area of the site.

At 36 inches below the ground surface a single auger boring through the remaining cultural deposit was excavated to the top of the distinctive, sterile, pale olive clay which underlies all of the cultural deposits in this area. This was found at a depth of 39 inches. Time limitations did not permit a more extensive excavation in this area.

Historical Context

Test Area 21 is similar to Test Areas 20 and 14 above. Level 1 corresponds to the mixed, pre 1914 period, while Levels 2 through 7 are related to the Spanish/Mexican period of site occupation (see discussion under Test Area 14 above).

Test Area 22

Test Area 22 is located in the north central portion of the property, near the center line of the former Los Angeles Street roadway. Excavation of this grid proceeded to a depth of

six inches, at which point a very compact, sterile, pale olive (5 Y 6/3) clay deposit was encountered. To test for deeper cultural deposits, the auger was employed to excavate a single boring 20 inches below the ground surface. No cultural material was recovered from this probe and the excavation of the unit was terminated.

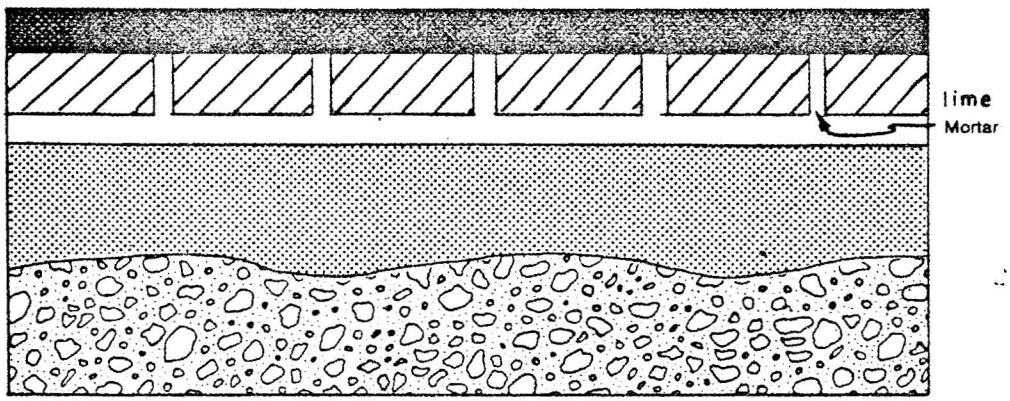
Historical Context

Like Test Areas 20 and 21, Level 1 corresponds to the pre *c.* 1914 date for the Los Angeles Street paving. Located on the western (uphill) side of the Zanja Madre, the sterile subsoil of the former terrace was encountered six inches under the surface. This reflects the path of the aqueduct on the lower edge of the bluff and the grading of the former embankment during construction of and renovations of Los Angeles Street (see Figure 18a).

Test Area 23

Test Area 23 contained a brick pavement which covered most of the western part of the site (see Map 21). This was discovered during the clearing away of the asphalt. The brick road was constructed in several layers (Figure 18a) over the sterile, yellow sand and gravel level which constituted Stratum D on the site. The road base consisted of a six-inch thick, concrete slab. Over this was a layer of yellow sand into which the road bricks were set, leveled, and mortared. The vitrified paving bricks were unmarked and measured 8.75" x 3.5" x 3.25". Over the bricks was a layer of poured asphalt (see Figure 18b).

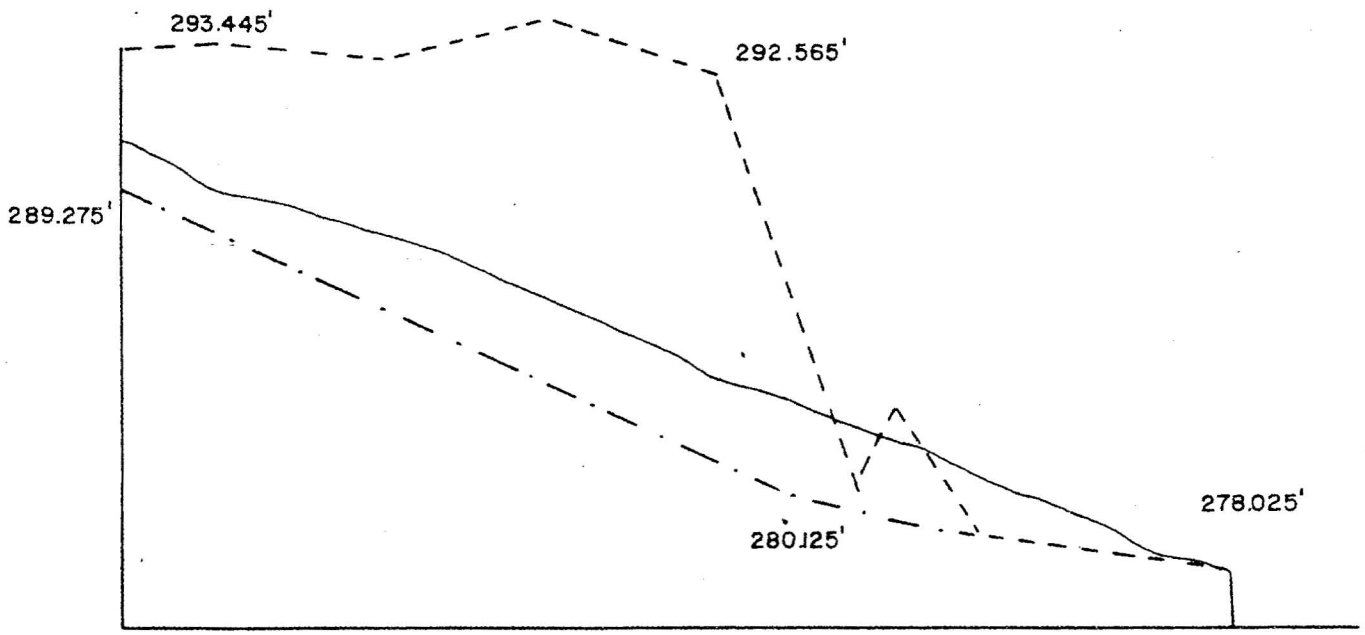
As heavy equipment was being used to clear the site, two considerations were important in the removal of this roadbed. Sequentially, the first was the removal of the bricks for reuse in Heritage Square. This "recycling" of historic materials was arranged by Jean Poole of El Pueblo de Los Angeles State Historic Park with the cooperation of the Department of Public Works and the Heritage Square Commission. In order to obtain "clean" truckloads, the asphalt was scraped off some areas with the bulldozer blade, after which the bricks were "ripped" up from their sand bed and piled separately.



Concrete Slab
Asphalt
Sand
Sand and Gravel
Brick

Figure 18 A
Idealized profile of Los Angeles Street brick and asphalt pavement

1" = 1'



Natural ground surface prior to grading of Los Angeles Street c. 1888

Ground surface prior to pavement of Los Angeles Street c. 1912

Proposed grade for brick pavement of Los Angeles Street c. 1915

Figure 18 B
LAn 887
Profile: West Side of Los Angeles Street from Marchessalt St. to Alameda St.

40'

The second consideration involved insuring minimal disturbance of the cultural deposits which might be located under the concrete slab. This was done by leaving the slab in place until all other superimposed levels had been removed from the old Los Angeles Street area. The slab was then broken and removed as cleanly as possible. When archaeological features were noted during this removal, they were marked and avoided by the heavy equipment.

Historical Context

Los Angeles Street was cut through La Placita site in 1888 in an attempt to remove a portion of the Chinese-dominated area of the City of Los Angeles (see Freidman report above). At this time some grading must have taken place as the old bluff was leveled for road traffic (see Figure 18b). Grade changes were authorized in 1891 but apparently were not consummated until after 1909 (profile of Los Angeles Street 1904). This map shows a 12-inch wide, wood curb on each side of the street. A 1912 grading ordinance calls for slightly lower street elevations, the replacement of the wooden sidewalk with concrete ones, and the addition of granite gutters. These changes seem never to have been implemented, however, as a 1915 map of Los Angeles Street shows the brick-paved street with higher elevations than the 1912 map and without the granite gutters. The date for paving is, therefore, determined to be *c.* 1914.

Test Area A-6

A-6 consists of a six-inch diameter, auger boring excavated between Test Areas 20 and 15 to a maximum depth of 24 inches below the ground surface.

Historical Context

Since this sample was collected from the roadway area of the former Los Angeles Street, all artifacts recovered can be expected to predate the period of street paving, *c.* 1914.

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SUMMARY OF FINDINGS BY PERIODS*

The primary goal of archaeology is to interpret the material remains left by man in terms of the cultural processes by which they were deposited. Man manufactures objects and modifies his environment in accordance with various social and economic activities. The more adept archaeologists become at careful excavation and at interpreting the artifacts and artifact patterns represented in distinct deposits, the more accurately we can reconstruct the activities of past cultures.

In order to relate the materials and features discovered on La Placita site to human activities in the area, the excavated levels were first assigned Strata desginations (Table 2). These Strata represent discrete episodes of deposition in each Test Area. The Strata were then interpreted in terms of known, historic events at the site and were assigned to a temporal period and, when known, to a specific activity or structure (Table 3). By this method, artifact assemblages deposited during the same time periods and, in some cases, by the same activity, can be seen as a unit.

Although most Strata can be historically identified, there are limits on the extent to which they can be interpreted. The primary constraint is the small sample size collected. As the goals of this archaeological investigation were to identify the range and extent of human cultural remains extant on the site and to evaluate their importance, excavation was limited to a minimal amount necessary for feature identification. A second restriction on interpretation involves the representativity of the excavated sample. In most cases the percentage of the material deposits included in each Stratum sample is unknown. In addition, the homogeneity of the deposits and,

* by Julia G. Costello

TABLE 2: STRATA DESIGNATIONS

Test Area	Stratum	Level, Locus, or Pit	
4	I	overburden	under Los Angeles Street
	II	level 1	aqueduct silt
9	I	overburden	under Los Angeles Street
	II	level 1	aqueduct destruction
	III	level 2	aqueduct silt
10	I	level 1	under Los Angeles Street
11	I	level 1	surface mixed
	II	levels 1A, 2, 2A, 3	brick rubble associated with building destruction
	III	level 4	shingle feature and midden
	IV	level 5	under clay, adboe top, midden
	V	level 6	adobe association
13	I	overburden	under Los Angeles Street
	II	pits A, B, C, D, E	associated with building footings
14	I	all levels	midden deposit
16	I	level 1	surface mixed
	II	level 2	aqueduct trench and material cut by trench
	III	level 3	aqueduct trench
15	I	level 1	under Los Angeles Street
17	I	locus 2:1 locus 4:1	aqueduct construction trench
	II	locus 1:1	dep its cut by aqueduct
	III	locus 3:2 locus 4:2	underlying aqueduct trench
	IV	locus 3:3 locus 4:3 locus 3:4	pre Stratum III
	V	locus 4:4	pre Stratum IV
19	III	level 3:1 level 3:2	midden
20	I	level 1	under Los Angeles Street
	II	levels 2-7	midden
21	I	level 1	under Los Angeles Street
	II	levels 2-6	midden
22	I	level 1	under Los Angeles Street
A6	I	level 1	under Los Angeles Street; pre *c.* 1914

TABLE 3: PERIOD DESIGNATIONS OF STRATA

Test Area	Stratum	
Spanish/Mexican Period 1781-1846		
14	I	
20	II	
21	II	secondary refuse
17	V	
	IV	lowest deposits in Test Area 17
Early American Period 1847-1888		
11	V	associated with adobe wall
17	III	underlying aqueduct trench
	II	pre 1866: lowest deposit of several that were cut by and, therefore, pre-date aqueduct construction
16	II	pre and *c.* 1886; aqueduct construction trench and deposits cut by it
16	III	
17	I	*c.* 1886: construction trench for aqueduct
13	II	pre 1888: associated with buildings destroyed in 1888
Middle American Period 1889-1914		
4	II	*c.* 1907: silt deposits in bottom of aqueduct
9	III	related to last period of use
4	I	
9	I	
10	I	
13	I	pre *c.* 1914: these deposits were sealed under
15	I	the brick paving of Los Angeles Street
20	I	
21	I	
22	I	
A6	I	
9	II	*c.* 1914: destruction of aqueduct
Brothel *c.* 1883-1923		
11	IV	
	III	
19	III	pre 1923: sealed by building destruction
11	II	*c.* 1923: destruction of brothel building
Recent American *c.* 1915-*c.* 1953		
16	I	mixed surface material

therefore, the representativity of the small samples is correspondingly undetermined. (Exceptions to these restrictions might be found in the enclosed and adjacent Strata associated with the aqueduct).

Because of these limitations, the presentation and comparison of artifact patterns for different time periods was not attempted. The occurrence of artifacts by material types for different periods is presented in Table 4.

The excavated collections, however, *are* samples of material remains deposited by the historic occupants on La Placita Block. The collections are generally dated to specific time ranges and, therefore, can be useful in noting specific artifact occurrences. A complete list of recovered artifacts by Test Area and Level is found in Appendix I. A brief discussion of these collections by Period follows. In some cases, artifact patterns and cultural interpretations are suggested as well as possibilities for further research.

Spanish/Mexican Period

Strata were assigned to this period primarily based on the artifacts recovered from the deposits. The ceramic repertoire of the Spanish/Mexican period has been generally established from previous excavations where discrete Spanish/Mexican Period features have been defined: several features at La Purisima Mission (Deetz 1963); Feature 23 at Mission San Buenaventura (Greenwood May, 1976:238-241; McIntyre 1976:257-284); and excavations at the Indian dormitories at Mission San Antonio de Padua (Smith n.d.). The occurrence of majolica and mission ware pottery (Tizon Brown) are especially diagnostic of this period as their utilization is thought to be generally typical of this early period.

Majolica sherds recovered from La Placita site were too fragmentary to permit a secure type classification. The mission ware pottery was all hand-modeled and contained micacious inclusions, reflective of what was probably a local, clay source. The lack of controlled firing is evident in the

TABLE 4
DISTRIBUTION OF MATERIALS BY PHASE

OBJECT		SPANISH MEXICAN	%	EARLY AMERICAN	%	MIDDLE AMERICAN	%	BROTHEL	%	RECENT AMERICAN	%	TOTAL	%
METAL	QTY	21	4	158	33	30	8	930	41	1	3	1140	30
	WT	149.9	6	1753.8	54	4700.0	66	5013.6	48	3.1	0	11620.4	48
GLASS	QTY	17	3	147	31	206	55	1075	48	21	58	1466	39
	WT	51.0	2	685.4	21	1319.7	18	3387.2	33	390.0	65	5833.3	24
CERAMIC	QTY	42	7	76	16	43	12	111	5	14	39	286	8
	WT	186.9	7	603.7	18	424.8	6	1614.1	16	209.1	35	3038.6	13
SHELL	QTY	8	1	4	1	8	2	4	0	0	0	24	1
	WT	2.0	0	56.1	2	133.7	2	2.1	0	0	0	193.9	1
BONE	QTY	516	85	93	19	88	23	137	6	0	0	834	22
	WT	2161.3	85	175.9	5	584.1	8	312.9	3	0	0	3234.2	14
TOTAL MATERIAL	QTY	604	100	478	100	375	100	2257	100	36	100	3750	100
	WT	2551.1	100	3274.9	100	7162.3	100	10329.9	100	602.2	100	23920.4	100

occurrence of various degrees of unburnt, carbonacious material in the sherd cores. A small, mission ware, jar rim contains a pattern of incising (Figure 19) that is typical of pre-contact, decorative designs found on soapstone bowls (Lee 1978). This may indicate a Native American maker who was either a resident of, or supplier of, ceramics to the Pueblo. The potential is considerable for studies of mission ware ceramics to contribute to our understanding of Native American and Spanish acculturation and to the development of early technologies in Spanish California.

During the 1974 season at San Buenaventura, 280 mission ware sherds were recovered (Gardner 1975). Of these, three (p. 143, or 7?, p. 145) sherds were distinguished as having mica temper and also as having thinner body walls (*c.* 1.0 cm) than the bulk of the collection. The sherds from La Placita site range from 0.4 - 0.8 cm. in thickness and all contain mica temper. It is possible that the occurrence of these micacious sherds at Mission San Buenaventura are the result of exchange systems with the Los Angeles area during the mission period. This is, of course, conjecture at this point, but regular accumulations of this type of well stratified data may provide insights on early Spanish and Native American economic systems.

Chinese Export Porcelain and British pearl, cream, and white wares (Flow Blue, Shell Edged) are typical of Spanish/Mexican period ceramic collections and are represented in the collections from La Placita site (see Appendix). These ceramics indicate systems of long-distance trade which are largely undocumented for these early periods. Roof and floor tiles, indicative of adobe architecture, also occur. The glass bottle and metal fragments indicate the importation of these industrial products.

Besides indicating subsistance, an especially rich area for research is seen in the analysis of butchering marks on faunal remains (see Appendix II). The presence and absence of

saw-cut butchering marks seems to indicate a change, not only in technology, but also in food preparation techniques related to Spanish/Mexican and American eating habits (Table 7). "Flaying" of meat off the bone to obtain the stew or roasting meat used in Spanish/Mexican cuisine produces a different osteological product than slicing individual portions of meat as practiced by Americans. Other excavated faunal collections of this period seem to substantiate this hypothesis of diagnostic butchering techniques (McIntyre 1976:273-274; Costello 1977:6-7).

Early American Period and the "Transition Years," 1847-1888

Although a political division has been made between the Spanish/Mexican period and the Early American period, it is hypothesized here that, until the Mexican majorities were displaced and transportation improved, no substantial change in the activities and material culture of Spanish California took place.

The major Americanization of the Los Angeles area in the 1870s is summarized in Friedman's historical section "From Town to City (1870-1888)." Railroads reached Los Angeles in 1876 and replaced the slow and expensive, New England ship trade, which had supplied most of California's material needs since *c.* 1830. The land boom of the 1880s stimulated American immigration to the area and assured the cultural transformation of southern California from Spanish/Mexican to American.

In dealing with La Placita site, 1888 was used as a terminal date for the Early American period for primarily archaeological reasons. The aqueduct construction (*c.* 1886) and the extension of Los Angeles Street (1888) provided firm historical dates for major activity changes in relation to which many deposits could be relatively dated (see Table 3). Although this was a convenient date for associating a large number of deposits and reflects activity changes on La Placita site, it fails to distinguish the more useful "Transition" period of 1847-*c.* 1870.

Deposits which could be specifically dated to this "Transition" period are found in Strata II and III of Test Area 17 (see Appendix I: Catalog of Artifacts).

Additional archaeological evidence for a continuity in Spanish/Mexican material culture through the "Transition" years can be found in the "Cienega"/Sepulveda house (Chace 1969). Occupied from *c.* 1836 (1820?) to 1868, the excavated, ceramic collections show few departures from Spanish/Mexican inventories. The use of mission ware pottery (Cerritos Brown) has also been documented for the post 1844 occupation of La Casa de Rancho Los Cerritos (Evans 1969) and, although the European ceramics from this site have not been presented in detail, they appear also to indicate a general continuity in ceramic types. The absence of majolica in both of these mid-nineteenth century sites is notable and may prove to be diagnositc in distinguishing Spanish/Mexican from Transition period deposits.

Also indicative of cultural orientations are house construction materials and techniques. These appear to be particularly sensitive, cultural indicators: Native American tules and willow, Hispanic adobe and tiles, and American brick and board.

The Early American Period of 1847-1888 on La Placita site covers transformation of the Mexican pueblo to an American urban center. The distribution of artifacts by material (Table 4) clearly shows that this cultural change has been recorded in the archaeological record. The increased percent occurrence of glass and metal reflect the importation of manufactured items and the beginnings of local industrialization. These increases are accompanied by a decrease in the percent occurrence of bone. Butchering methods evidenced on these remains reveal the saw-cut, individual portions diagnostic of American processing (see Appendix II: Faunal Remains). This relative decrease in faunal remains may also be a product of the urbanization of Los Angeles. As the population density increased, food-processing discard

would probably not be deposited near residences but would be removed for disposal at secondary sites. Establishing patterns of refuse disposal for distinct time and ethnic periods will contribute considerably toward interpreting the archaeological record.

Middle American Period, 1889-1914

The Middle American Period deposits reflect life in turn-of-the-century Los Angeles. As in the Early American Period above, the date ranges reflect specific changes taking place on La Placita Block and are not necessarily applicable to cultural trends of Los Angeles as a whole. The *c.* 1914 paving of Los Angeles Street and the relatively contemporaneous abandonment of the Zanja Madre produced a series of datable deposits which could be assigned to a specific time period.

Excavated materials included in this sample came from a series of unrelated deposits. As a result, making generalizations about the specific cultural processes or individuals represented by these remains is difficult. The secure, terminal dates for the collections, however, may provide a reference for the occurrence of specific artifact types in the Los Angeles area and, thereby, assist in dating deposits encountered in other areas.

Brothel, 1883-1923

Midden deposits of Test Areas 11 and 19 can be associated with the occupation of the brothel which operated legally on La Placita Block from the 1880s to *c.* 1909 and, very likely, illegally until *c.* 1923. Initially we had assumed a Chinese ethnicity for the inhabitants of the buildings because of their location in Los Angeles' Chinatown. Although the Chinese ceramics which were recovered were typically diagnostic of Overseas Chinese occupations for this period (see Appendix I: Chinese Ceramics), the fact that Chinese were solely responsible for

these deposits is not a certainty. Alameda Street was the "red light" district for all of Los Angeles at this time, and women from all cultural backgrounds probably would have resided here. For these reasons the primary function of the buildings as a brothel was used to designate the deposits rather than cultural constituents which are questionable.

Unfortunately, time and sampling constraints did not allow for a more in-depth analysis of these remains. Reconstruction of this widespread, but little documented aspect of human cultural history would be invaluable in understanding the role of prostitution in relation to society as a whole. The potential for cultural reconstruction from relatively recent deposits such as these is seen in Adam's ethnoarchaeological reconstruction of a rural community in Washington State (Adams 1977). Although the present, small sample size from La Placita site precludes such analysis at this point, the valuable, cultural information inherent in recent, material remains should not be overlooked by archaeologists and cultural historians.

Recent American Period, *c.* 1915-1953

Deposits assigned to this time period were confined to the surface material in Test Area 16. Because of the small sample size (see Table 4), little can be said about the cultural activities related to these artifacts. Recent analysis of modern garbage in Tucson (Rathje 1974), however, has established the potential contribution of modern material remains for understanding our present society.

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SIGNIFICANCE*

Archaeological remains on La Placita site represent the historic periods of occupation of the area. These deposits reflect the activities of Los Angeles' occupants from the Spanish colonial period through the present and, as such, are an unified collection. The material remains have potential to yield specific information pertaining to the diet, technologies, acculturation, trade, land, use, and ethnicity of the former residents. In addition, the comparison of successive temporal periods reflects the changing nature of this birthplace of urban Los Angeles.

The close stratagraphic association of artifact complexes with historically dated activities can yield invaluable data for the reconstruction of historical artifact repetoires diagnostic of cultural and temporal periods in California.

Although the archaeological deposits are valuable as an integrated whole, there are at least two specific archaeological features which are of sufficient significance to be considered eligible for listing in the National Register of Historic Places (Title 36, Ch. VIII, Part 800.10). These will be discussed in terms of National Register criteria.

Midden Deposits of the Spanish/Mexican Period

The deposits "are associated with events that have made a significant contribution to the broad patterns of our history" (Criteria 1). The introduction of European culture to the west coast of North America commenced with the Spanish colonial occupation of Alta California. The Hispanic and later Mexican periods encompass the cultural transition from Native American to European American populations. The early European colonizers left their visible and lasting cultural imprint on succeeding occupants of this area.

*by Julia G. Costello

These deposits "have yielded," and are "likely to yield information important ... in history" (Criteria 4). Undisturbed material remains of the Spanish/Mexican period in California are one of the rarest of our archaeological resources. Although Spanish structures have received a great deal of architectural attention, the material remains of their occupants are often sacrificed for expedient reconstruction or subsequent development.

While the Mission complex is particularly suited for studying the adaptation of Native Americans to the introduced European culture, the civil settlements of colonizers from Nueva España supply information on the nature of these transplanted systems. San Jose and Los Angeles were the only secular pueblos originally charted by Spain in the colonization of Alta California.

Populated primarily by mestizos and Indians from Nueva España, the "European culture" introduced to Alta California was certainly quite different from that of Spain or even of Mexico City. Problems of transportation to the Alta California coast also greatly restricted communication with established trade and governmental centers to the south. These considerations, coupled with interaction and intermarriage with local Native Americans, would have produced a cultural adaptation unique to Alta California.

The importance of archaeological remains in reconstructing this cultural *mezcla* is substantial. From this brief investigation and prior archaeological work on Spanish Colonial sites several contributions can clearly be recognized:

1. Artifacts recovered represent a blending of Native American and European traits.
2. The supplementing of Majolica, Galera and Chinese ceramics with the cruder Mission Wares reflects the difficulty of supplying the settlements and implies a self-sufficiency of operation.

3. Occurrence of European ceramics indicate the activities of American trade vessels along the California coast.
4. Faunal remains indicate a heavy reliance on introduced cattle and little use of wild game. An analysis of differing butchering methods may result in establishing diagnostic characteristics of the early Spanish/Mexican settlements.
5. The statehood of California did not immediately alter the living patterns of the Spanish/Mexican populations in the Los Angeles area. It was not until the 1870s, with the influx of large Anglo populations and material items that the nature of the pueblo began to change substantially.
6. More broadly, patterns of cultural adaptation established in this historically known setting can be of potential benefit to broader studies of human acculturation in colonizing situations.

The Zanja Madre

This feature is "associated with events that have made a significant contribution to the broad patterns of our history" (Criteria 1). The history and development of the Los Angeles area has always been intimately connected with water. In the semi-arid climate of Southern California, permanent water sources, irrigation of agricultural lands, and water supply to urban centers have always been of prime importance.

Aqueduct systems were one of the first improvements made by the Spanish settlers. The original pueblo site on the Los Angeles River floodplain would have been easily watered by an upstream division of the main river channel. Once the site was moved to the terrace in 1815, however, a more elaborate dam farther upstream would logically have been required to carry the water along the bluff face. Additional channels were added

to the Zanja Madre as Los Angeles expanded and demands increased. Drinking, cooking, washing, and irrigation water was supplied by the Zanja and "waste" water prohibited from being dumped in the channel. As the town's needs grew beyond the capacity of the zanjas (*c.* 1850s), new sources of water were tapped. In addition, the zanjas also served as storm drains after the 1870s.

Architectural changes were made in the zanja itself: the typically tiled channel of the Spanish was replaced by wooden conduits (*c.* 1860) and then by brick conduits (*c.* 1880) before the system was abandoned in the early twentieth century. The *c.* 1884 version is represented on La Placita site and, as such, embodies the distinctive characteristics of a significant period and method of construction (Criteria 3).

The significance of the Zanja Madre, therefore, is based on its functional importance to the Pueblo of Los Angeles, on its specific architectural characteristics of a stage in the development of the water system, and in its symbolic representation of the importance of water development in the greater Los Angeles area. Part of the value of the remains are, therefore, derived from its physical position along the route of the first aqueduct in the City of Los Angeles. By looking at this water channel we can trace the evolution of water systems in Los Angeles from Spanish occupation to the twentieth century.

IMPACT OF THE PROPOSED PROJECT ON RESOURCES*

Our investigations have revealed the presence of two highly significant archaeological features or components on La Placita site (see "Evaluation of Significance" above). The initial parts of this section are devoted to the spatial definition of these components and an evaluation of the impact of the proposed park facilities.

Midden Deposits of the Spanish/Mexican Period

One of the most important archaeological discoveries was that of a Spanish/Mexican period midden deposit located at both the northeastern and southeastern portions of the property. Evidence for the presence of this component at La Placita site came from Test Areas 14, 17, 20, and 21 (Map 21). In Test Area 14 the archaeological remains associated with this component were found at the present ground surface, which is 276.795 feet above sea level. In Test Areas 20 and 21 the highest archaeological remains from this component were discovered at approximately six inches below the ground surface, at 277.675 and 276.840 feet above sea level, respectively. The close proximity of these three test areas argues strongly for the horizontal continuity of the component throughout the northeastern portion of the site.

In Test Area 17 at the southeastern end of the property, archaeological remains attributable to this temporal period are found at 63 inches below the ground surface, at 276.625 feet above sea level. The lack of evidence for the presence of this component from surrounding test areas implies that the horizontal extent of the midden in this area of the site may be limited. This area does not appear to be threatened by the proposed construction.

A comparison of the Architectural Plan and Elevation maps with the site excavation map reveals that the Spanish/Mexican

*by Larry R. Wilcoxon

Period component will be impacted by at least one proposed structural feature. This feature is the subsurface restroom and dressing room facility located at the northern end of the proposed park. Based on the elevations provided by the City of Los Angeles, the construction of this facility would require vertical excavation of between six and seven feet of earth to a maximum depth of 273.25 feet above sea level. Clearly this would directly impact a major portion of the Spanish/Mexican Period component northeast of the Zanja Madre aqueduct.

The Zanja Madre

The second significant archaeological discovery was that of the Zanja Madre aqueduct. This feature extends almost the entire length of the property and has been exposed in Test Areas 4, 9, 16, 17, and 18. The uppermost elevations for the intact sections of this feature are given in Table 5.

Examination of the Architectural Plan and Elevations maps reveals that the Zanja Madre will be impacted by at least two proposed structural features. The first feature to impact the aqueduct is the subsurface restroom and dressing room facility located at the northern end of the proposed park. If constructed, this facility would destroy approximately fifty feet of the aqueduct between Test Areas 9 and 4. Computation of the average elevation for the top of the aqueduct in this region (278.225 feet) demonstrates that the maximum depth elevation for the restroom and dressing room facility in this area (273.25 feet) would penetrate the upper part of the aqueduct by at least 4.975 feet.

The second structural feature to impact the aqueduct would be the bench planter near the south entry steps. If constructed, it is estimated that this feature would destroy approximately eight feet of the Zanja Madre south of Test Area 17. The maximum depth for this feature is given as 278.13 feet. This would exceed the upper portion of the aqueduct by approximately 1.995 feet.

TABLE 5: UPPER ELEVATIONS FOR THE ZANJA MADRE AQUEDUCT

Test Area	Location	Elevation (above sea level)
T.A. 9	western aqueduct wall adjacent to A-1	278.005 feet
	western aqueduct wall adjacent to A-2	278.165 feet
	western aqueduct wall adjacent to A-3	277.865 feet
T.A. 4	western aqueduct wall adjacent to A-4	278.645 feet
	western aqueduct wall adjacent to A-5	278.435 feet
	top of aqueduct south of collapsed area	280.175 feet
T.A. 18	top of aqueduct	280.235 feet
T.A. 17	top of aqueduct	280.125 feet

RECOMMENDATIONS *

In view of the substantial destructive impact which La Placita Park development will have on the significant cultural remains of this site area, the following recommendations are made. These recommendations are presented in a decreasing order of desirability.

1. The focus of the present park development could be altered to avoid destruction and to include on-site interpretation of significant archaeological resoures. The Zanja Madre is especially suited to an *in situ* presentation.
2. The present park project could be modified to avoid destruction of significant cultural resources. This would include the abandonment of the sunken dressing room proposal and the use of fill in other areas.
3. The significant cultural resources to be impacted negatively could be archaeologically excavated prior to construction in order to salvage their scientific potential. Because of the rarity and the high information potential of the Spanish/Mexican midden, a 100% sample is recommended for this feature.

In addition to the physical destruction of cultural resources, an area of impact which is often not directly addressed is that of interpretation of and public access to the resources determined eligible for listing in the National Register of Historic Places. The initial declaration of the National Historic Preservation Act states that "the historical and cultural foundations of the Nation should be preserved as a *living part* of our community life and development in order to give a sense of orientation to the American people" (emphasis added). Again, Executive Order 11593 (Section 1. Policy) states that Federal Agencies shall initiate measure so that significant, federally-owned sites "are preserved, restored, and maintained for the inspiration and benefit of the people."

* by Julia G. Costello

The question, therefore, is whether simple "non-destruction" of the remains constitutes a "No Adverse Effect." That these remains are located within an area which has been specifically set off by the people of Los Angeles and of the State of California to preserve and interpret the pre *c.* 1900 history of the Pueblo is of particular relevance to this argument. I believe that the responsibility of the City to display and interpret these significant, Zanja Madre remains to the taxpayers (who are financing both the historical/archaeological research as well as the proposed park developmemt) is a serious consideration.

I, therefore, recommend that all possible consideration be given to the development and interpretation of the remains of the significant, cultural resources found on the site in accordance with the purposes of the National, State, and City historic agencies involved.

Impact on Other Remains

Other important archaeological remains which will be impacted by the proposed construction include:

1. Deposits thought to date to the brothel operation (Test Area 11, Strata II, III, and IV; Test Area 19, Stratum III), and
2. Deposits and remains associated with the Early American Period of occupation (Test Area 10, Test Area 13, Test Area 16, and Test Area 17).

Those areas assigned to the "brothel operation" period are only functionally identified as such since the exclusively Chinese origins of the deposits may be questionable.

The early American building foundations in Test Area 13 and Test Area 10 are highly important as representative remains of this period. Subsequent disturbances, however, especially those caused by Los Angeles Street construction, have reduced the archaeological features to the extent that they were not felt eligible for National Register listing. Deposits of the pre and *c.* 1886 periods are associated with Test Areas 16 and 17

where the Zanja Madre construction has provided information for relative dating. Although not of "high significance" on their own, their association with the important Zanja Madre may inadvertantly result in their preservation. The interpretive potential in these clearly stratified deposits for the Hispanic-Anglo transition in California is substantial.

Impact on other features such as the foundations of the Water Works property wall (Test Areas 2 and 12), the foundations of the White Log Tavern (Test Areas 1 and 5), and the 1930s malt shop (Test Area 3) were not determined to have an adverse effect.

From our investigations at La Placita site the determination was made that the area in which construction activities would have minimal impact on cultural resources is located within the bounds of the former Los Angeles Street, south of the Zanja Madre aqueduct. All cultural resources discovered through the course of this investigation fell outside of this area.

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APPENDIX I

CATALOG OF ARTIFACTS

CERAMICS*

The ceramics recovered during the Las Placitas (LAn 887) excavations are presented on the following pages. Terms used in descriptions of body type and decorative techniques are briefly defined and dates for the manufacture or importation of specific wares are included where known. Munsell colors are given on selected earthenware bodies only.

As the extent of the historic occupation on the site is fairly well established, the mere presence of ceramic types on the site is not as significant as their archaeological context. In view of this, the ceramics have been presented by excavated Feature and Level so that collections from the same context can be seen as a unit.

Illustrated ceramics are limited to those recovered in clear archaeological context and to those whose design elements are relatively complete or distinctive.

A brief definition of terms as they are use in ceramic descriptions follows. My thanks to Paulette Barclay for her comments on the initial draft of this analysis.

BODY TYPES

Earthenware. This term is used below to describe low fire clays; porous, non-vitrified bodies. Clay types include all natural clays or mixtures of natural clays which may fire red, buff, grey or yellowish, according to impurities (Roger 1971:99). Earthenwares generally fire completely at c. 900° C and often have a lead glaze to reduce the high porosity of the body for general use. Earthenware types which are included in this ceramic inventory are Mission Ware, Majolica, and Galera Ware.

Creamware and Pearlware. These finer bodied clays represent a technological step toward the production of semi-vitreous and vitreous wares in the Straffordshire district of

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England. The bodies are composed of generally white clays with flint and are glazed with flint glass (Clow 1958:351). Creamware was first introduced into the United States in the early 1760s (Noël Hume 1972:353, 357). The later improvement on creamware, known as pearlware, was made in 1779 and was shipped to the United States in large quantities from 1785-1830 (Noël Hume 1969:394, 396). Decorative styles executed on creamware and pearlware include shell-edge, blue prints, dipped or annular designs, gaudy dutch, and sponge decoration.

White Wares. This term refers to the large group of industrially produced ceramics which emerged during the early nineteenth century in England. Although they have a finer and more durable body than earthenwares, they are still porous and, therefore, require a glaze for common use. Many different varieties of this white, non-vitreous ware have been grouped under this category. Early White Wares are found with shell-edge, dipped or annular, gaudy dutch and sponge decorations, although later they were more generally popular for printed designs.

Improved White Wares. These belong to the same family as White Wares but evidence a higher degree of vitrification in the body. The dating and decorative techniques for these appears to be the same as for White Wares above (Paulette Barclay, personal comm). American-made, heavy-grade wares came into production around 1870-1900 (Boger 1971:163).

Stoneware. This has a high-fire, vitrified body, distinguished from Improved White Wares by a non-white body color and the presence of fluxes.

Porcelain. European porcelains were not developed until the late eighteenth century. The bodies are vitrified and non-porous and are generally white and translucent in appearance. Although there was some early decoration in underglaze blue, after 1790 the majority of decoration was with overglaze enamels.

CERAMIC TYPE DESIGNATIONS

Printed Ware. Transfer printing developed early in the eighteenth century with overglaze red, black and purple as colors and later (1756), in underglaze blue (Clow 1958: 343). The printed design was carved on a copper plate and transferred to paper and then to the ceramic. Underglaze brown was introduced *c.* 1810 (Leisenbein 1971) and other underglaze monochrome colors in the late 1820s. Polychrome prints were produced *c.* 1846 (Jameson 1958:662).

Flow Blue. This type first appeared around the mid 1700s. The blurring of the print was a technological problem of early transfer printing. Clarity and sharp edges were preferred. Beginning in 1820 and through at least 1915 a "flown" or blurred design was intentionally produced, reaching great popularity in the 1840s and 1850s. "Improved Earthenware" was the favorite vehicle for these later "flown" prints. (Collard 1967:118; Leisenbein 1971:13).

Dipped Wares. This term refers to several types of eighteenth and nineteenth century ceramics including "Mocha," "Marbled," and "Banded" or "Annular" wares. Only Banded wares appear in this collection. The ceramic was dipped in a color slip after a bisque fire; color was then removed in stripes and other colors added to produce the polychrome, banded effect. Banded designs on pearlware date to the first quarter of the nineteenth century (Noël Hume 1969:395).

Gaudy Dutch. A colorfully hand-decorated, Staffordshire pottery made especially for the American trade from 1810 to 1830; primarily executed on plates and tea wares (Boger 1971:126). It should be noted that the hand-painted designs of Gaudy Dutch resemble those which are occasionally used on Sponge Ware and some error may be involved in identifying small fragments.

Shell Edge Ware. A deep plate with the rim edge, either scalloped or straight, decorated with interior molded grooves. These grooves are either individually hand painted or colored with a solid band. Manufactured on cream as well as the more popular pearlware from 1779-1825 (Hume 1969:393).

Sponged Ware. Initially, hand-painted designs of colors applied within black outlines were presented on a background of sponge "spattering" (1820-1860). This time consuming process was modernized for mass production with the reptition of Stick Spatter motifs around the vessel (1850-1900) (Roebacker 1971:245).

Majolica. A tin-opacified, lead-glazed earthenware. Manufactured exclusively in Nueva España in the New World, it is associated with Spanish occupations where it occurs in Alta California.

Galera Ware. A simple glazing method for earthenwares where lead sulphide (galena) was blown on the dry clay body before firing. In California the occurrence of Galera Ware has been associated with the Spanish and later Early Mexican trade, ending with the Americanization of California and the mass importation of more durable white wares. Although the manufacturing process is simple, it has not yet been established that lead sulphide glazing took place in California, itself.

Mission Ware. Although there was some knowledge of ceramic technologies in prehistoric southern California, pottery manufacturing was generally spread by the colonizing Spanish and by their agents. Local clays are used and primitive firing is often reflected in the lack of complete oxidation of the bodies. The Mission Ware sherds in the present collection are generally of local, micacious clays and are all hand modeled. Date range: ? - *c.* 1846.

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CERAMIC VESSELS

TEST AREA 4

Cat. #	Items	Wt. in Grams	
Overburden			
805	1	13.0	body sherd; earthenware; interior lead glaze, exterior partial lead glaze; exterior burning; body color 2.5YR 5/6. Galera Ware
806	2	12.5	body sherd; earthenware; undecorated; thickness, 0.6 cm., Mission Ware
794	1	11.3	saucer rim; white ware; interior overglaze blue print (Plate 13i)
795	1	4.5	cup rim; white ware; exterior overglaze black "dot" print with overglaze polychrome handpaint (Plate 13f)
796	1	6.2	cup rim; white ware; exterior underglaze green stick splatter motif. Sponge Ware - Stick Spatter 1850-1900 (Plate 13b)
797	1	5.8	plate/bowl rim; white ware; interior overglaze handpainted green and purple. Gaudy Dutch 1810-1830 (Plate 13c)
798	1	7.0	cup body sherd; white ware; exterior underglaze blue floral design, puddling of blue pigment (Plate 13e)
799	1	4.3	bowl body sherd; white ware; exterior blue and green underglaze handpainting. Gaudy Dutch 1810-1830
802	1	10.0	handle fragment; white ware; red "sponge" underglaze decoration. Sponge Ware 1820-1860 (Plate 13a)
803	1	4.3	cup/bowl body sherd; white ware; exterior handpainted underglaze blue and overglaze green, brown; Gaudy Dutch 1810-1830 (Plate 13d)
804	1	20.2	plate rim; white ware; interior underglaze light blue print with overglaze handpainted, dark blue outlines (Plate 13g)
801	1	2.0	body sherd; white ware; exterior underglaze red
789	1	16.8	deep plate rim; white ware; interior molded decoration
792	2	21.0	ring base; 1 saucer, 1 plate; white ware; undecorated

TEST AREA 4 (cont.)

Cat. #	Items	Wt. in Grams	
Overburden (cont.)			
800	1	17.9	body sherd; stone ware; exterior under-glaze blue "sponge" decoration, Bristol glaze lead glaze. Delftware (Plate 13h)
790	1	15.6	body sherd with handle attachment, bowl; improved white ware; undecorated.
791	1	7.1	pitcher rim; improved white ware; undecorated.
788	3	18.00	body sherd; improved white ware; undecorated.
793	1	27.4	rectangular lid fragment; porcelain; undecorated.
Level 1			
949	1	0.5	body sherd; white ware, interior blue underglaze print, 1756-*c.* 1850. Flow Blue.
950	3	0.9	body sherd; white ware; undecorated.
TEST AREA 9			
Level 1			
1115	2	8.1	body sherd; white ware; undecorated.
1116	1	0.7	cup body sherd; white ware; blue underglaze print. 1750-1915. Flow Blue.
1118	1	2.4	plate rim; white ware; red exterior transfer print, mark under rim, post-1820 (Plate 16i,j)
1119	1	3.9	cup rim, flared; white ware; undecorated.
1117	1	1.1	bottle body sherd; beige body, stoneware; exterior brown slip. Ale bottle.
Level 2			
942	1	2.0	cup body sherd; white ware; brown int. print (Plate 16h)
945	1	0.7	body sherd; brown body; white ware; exterior brown and blue glaze, interior cream glaze.
946	7	4.7	body sherds; 5 white ware, 1 porcelain, 1 pearl/ cream; undecorated.
944	1	36.8	cover rim; improved white ware; exterior purple print (Plate 17b)
941	1	24.3	deep plate rim; improved white ware; interior molded decoration.
943	1	3.8	cup rim sherd; porcelain; fluted exterior.

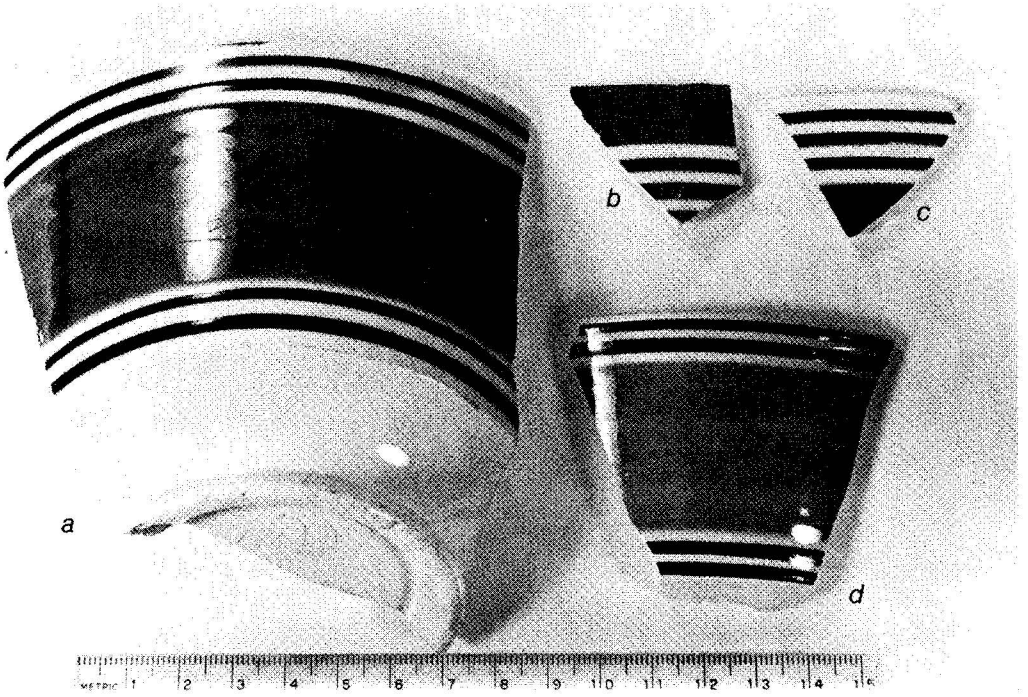


PLATE 12: Annular Ware - Banded. *a.* - Test Area 17, locus 3, level 2, #37; *b.* - TA 16, level 2, #112; *c.* - TA 16, level 1, #110; *d.* - TA 13, Pit E, #90.

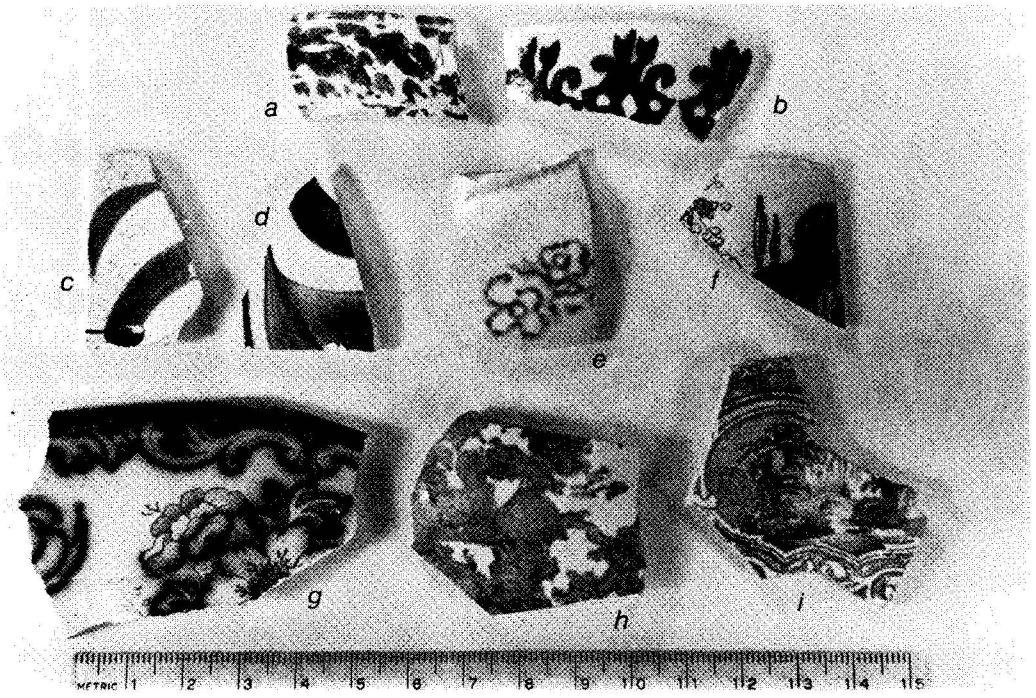


PLATE 13: All sherds from Test Area 4 overburden, pre *c.* 1914. *a.* - #802; *b.* - #796; *c.* - #797; *d.* - #803; *e.* - #798; *f.* - #795; *g.* - #804; *h.* - #800; *i.* - #794.

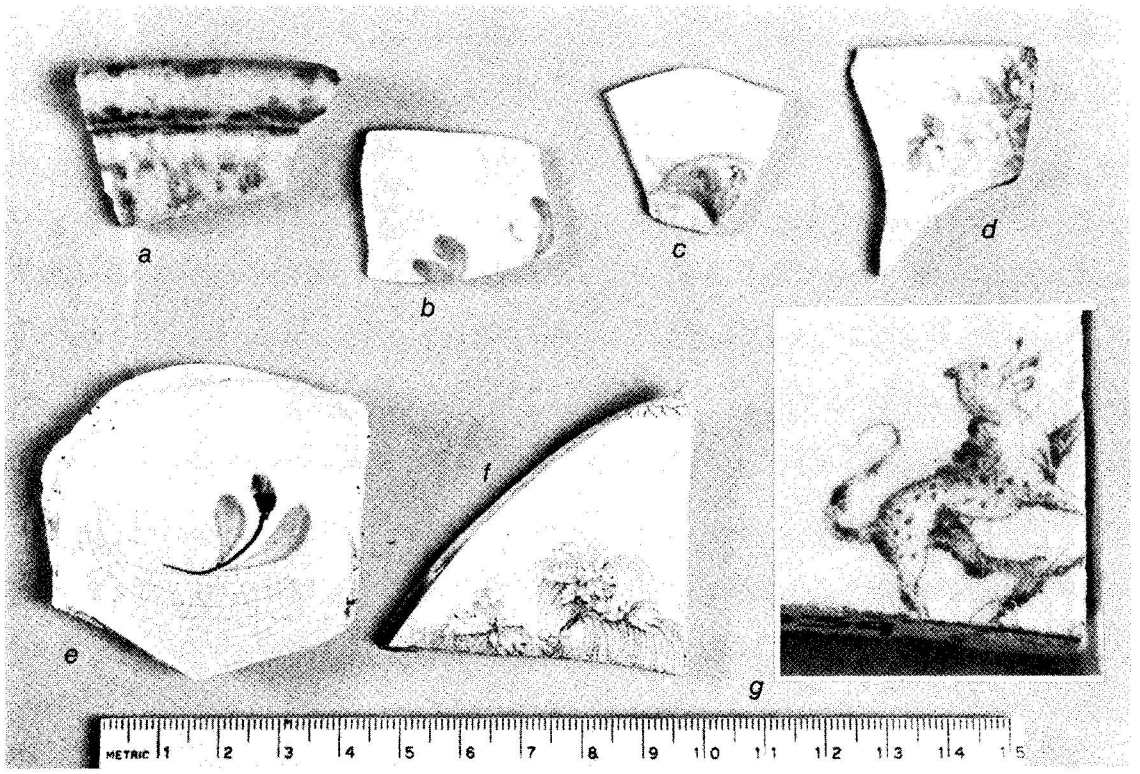


PLATE 14: *a.* - Test Area 11, level 4, #127; *b.* - TA 13, overburden, #77; *c.* - TA 11, level 4, #136; *d.* - TA 11, level 5, #966; *e.* - TA 16, level 2, #113; *f.* - TA 17, locus 3, level 2, #39; *g.* - partial mark on reverse of "f.

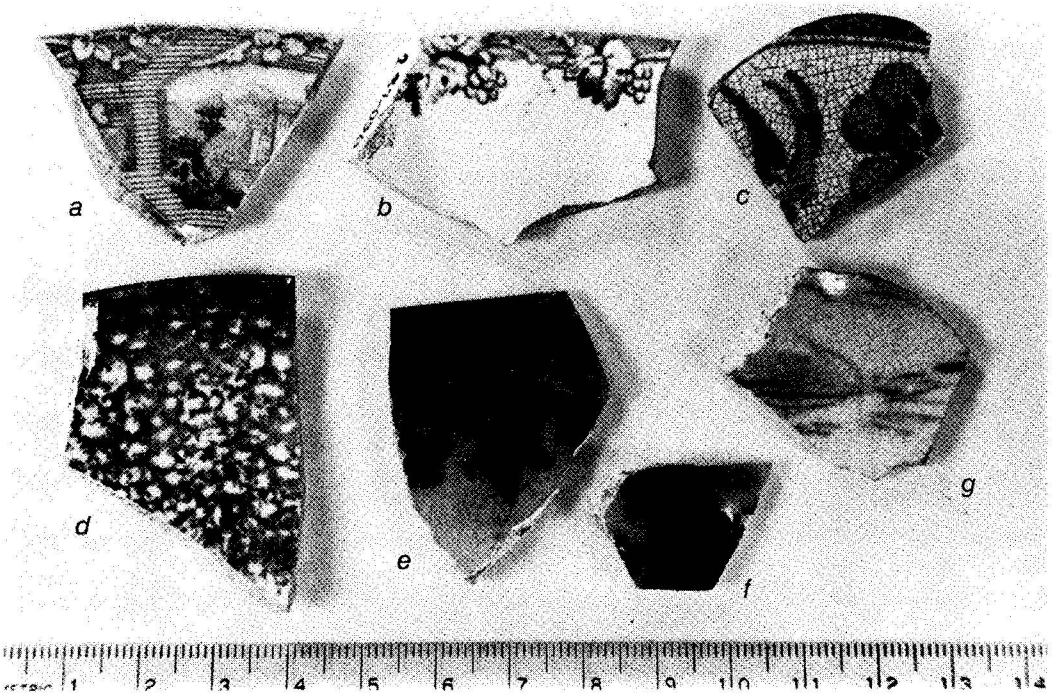


PLATE 15: *a.* - Test Area 17, locus 3, level 2, #40; *b.* - TA 17, locus 3, level 2, #38; *c.* - TA 11, level 5, #958; *d.* - TA 17, locus 1, level 1, #47; *e.* - TA 17, locus 1, level 1, #51; *f.* - TA 11, level 6, #928; *g.* - TA 17, locus 3, level 2, #43.

TEST AREA 10

Cat. #	Items	Wt. in Grams	
Level 1			
947	1	7.2	deep plate rim; improved white ware; undecorated
TEST AREA 11			
Level 1			
935	2	1.7	body sherd; white ware; undecorated
936	1	2.1	ring base; white ware; undecorated
934	1	11.0	body sherd bottle; stoneware; Ale Bottle
Level 4			
123	1	1.4	body sherd; white ware; blurred grey print
124	1	2.5	saucer rim; white ware; interior molded relief; interior overglaze blue "dot" transfer; post-depositional burning
125	1	16.1	jar body sherd; beige body, whiteware; molded exterior, brown interior and exterior slip
126	1	2.0	cup rim, flared; white ware; undecorated
127	1	6.2	cup rim; improved white ware; exterior overglaze polychrome print in green, pink, brown, post-1846 (Plate 14a)
128	1	1.0	cup/saucer rim; dark grey body; white ware; undecorated
129	1	1.3	molded body sherd; white ware; exterior green slip; interior unglazed
132	4	19.6	saucer fragments; white ware; scalloped rim, interior molded design
134	3	12.3	jar (?) body sherds, white ware; green exterior glaze
136	1	3.9	cup body sherd; white ware; green exterior hand paint. Gaudy Dutch, 1810-1830 (Plate 14c)
812	1	3.6	ring base; white ware; undecorated
121	8	561.8	wash basin; improved white ware; undecorated (Figure 20)
130	2	21.4	cup rim; improved white ware; undecorated
131	2	11.0	ring bases; improved white ware; undecorated
133	1	2.8	cup body sherd; beige body, improved stoneware; undecorated

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4 (cont.)			
135	19	89.8	body sherds; 7 improved white ware, 12 white ware; undecorated
809	1	0.5	cup rim sherd; porcelain; overglaze red enamel; post despositional burning
810	1	0.3	cup rim sherd; porcelain; undecorated
Level 5			
951	1	20.2	jar rim and handle attachment; beige body, white ware; brown interior and exterior slip
952	1	6.1	jar body sherd; white ware; green exterior glaze
955	1	16.2	bowl/cup ring base; white ware; exterior hand-paint, blue "puddling" on interior base. Gaudy Dutch, 1810-1830
957	1	0.8	saucer rim; white ware; interior and exterior blue glaze tint, interior blue underglaze print. Flow Blue; *c.* 1756-*c.* 1850 (Plate 16c)
958	1	5.2	ring base; white ware; blue interior print (Plate 15c)
959	1	1.4	body sherd; white ware; exterior brown print
960	1	1.2	body sherd, white ware, interior gold overglaze design
965	1	4.9	cup rim; white ware; undecorated
966	1	3.4	body sherd; white ware; interior overglaze polychrome print in orange, red, green, yellow (Plate 14d)
968	2	10.7	saucer rims; white ware; interior molded decoration
969	5	12.0	plate/saucer rims, white ware; undecorated
970	2	12.0	cup body sherd; improved whiteware; fluted exterior
971	10	78.0	ring bases; 7 improved whiteware, 3 whiteware; undecorated
811	1	2.0	body sherd; porcelain; undecorated
953	1	2.3	deep plate rim; improved white ware; undecorated
954	1	6.0	saucer rim; improved white ware; interior rim molding and fluting, yellow interior tint
967	18	39.1	body sherd, 10 improved white ware, 8 white ware; undecorated
961, 962, 963	3	14.4	two body sherds, one rim; stoneware; bottles

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 5 (cont.)			
964	1	5.6	handle; improved white ware; undecorated
956	1	3.3	cup body sherd; improved white ware; interior and exterior blue print (Plate 16a)
Level 6			
920	1	10.4	body sherd; earthenware; light exterior burnish. Thickness 0.7 cm. Postdepositional burning. Mission Ware
921	1	3.1	body sherd; earthenware; undecorated; thickness 0.5 cm.; black core; body color 2.5YR 5/6 under surface. Mission Ware
922	1	2.7	body sherd; earthenware; thickness 0.65 cm.; body color 2.5YR 4/4. Mission Ware
923	2	6.7	body sherd; earthenware; postdepositional burning. Mission Ware
924	1	1.2	body sherd; white ware; brown overglaze interior print (Plate 16f)
925	2	1.2	body sherd, 1 rim sherd; white ware; blue interior underglaze print (Plate
926	2	1.8	saucer/cup rim; white ware; undecorated
927	2	6.6	ring base; white ware; undecorated
928	1	2.0	ring base; white ware; blue interior underglaze print. Flow Blue. 1756-*c.* 1850 (Plate 15f)
930	6	5.9	body sherd; 5 white ware, 1 improved white ware; undecorated
929	1	5.9	cup body sherd; improved white ware; undecorated, blue glaze tint

TEST AREA 13

Overburden

74	1	3.5	ring base; white ware; undecorated
76	1	8.8	body sherd; white ware; undecorated
77	1	15.1	bowl rim; improved white ware; exterior and interior green mottled design (Plate 14b)
73	1	44.7	cup rim and body; improved white ware; exterior vertical fluting

TEST AREA 13 (cont.)

Cat. #	Items	Wt. in Grams	
Overburden (cont.)			
75	1	12.8	ring base; improved white ware; undecorated; base diam. 14 cm.
Pit A			
80	1	1.8	cup ring base; pearlware; undecorated
81	1	0.7	body sherd; white ware; blue interior decoration
Pit B			
89	1	7.2	body sherd; earthenware; hand modeled, undecorated; color under surface 5YR 4/5; black core, 5YR 3/2. Mission Ware
82	1	0.5	body sherd; pearl/creamware; interior underglaze blue decoration. Sponged ware 1820-1860.
83	1	0.8	Saucer rim; pearl/creamware; interior underglaze blue print
84	1	1.0	cup rim; white ware; interior underglaze black band, exterior overglaze red and green hand paint. Gaudy Dutch. 1810-1830
85	2	4.9	rim; white ware; undecorated
86	1	5.3	ring base; improved white ware; undecorated
87	1	5.6	cup rim; improved white ware; undecorated
88	2	2.6	body sherd; 1 improved white ware; 1 white ware; undecorated
Pit E			
90	1	23.9	bowl rim with carnation; white ware; black exterior bands with central blue band. Dipped Ware - Banded. 1800-1825 (Plate 12d)
91	3	13.1	1 plate rim, 2 body sherds; white ware; undecorated
TEST AREA 14			
Overburden			
68-72	6	39.0	body sherds; earthenware; hand modeled, black core, 1 with exterior burnish. Color under surface 2.5YR 4/5. Thickness 0.8-1.2 cm. Mission Ware

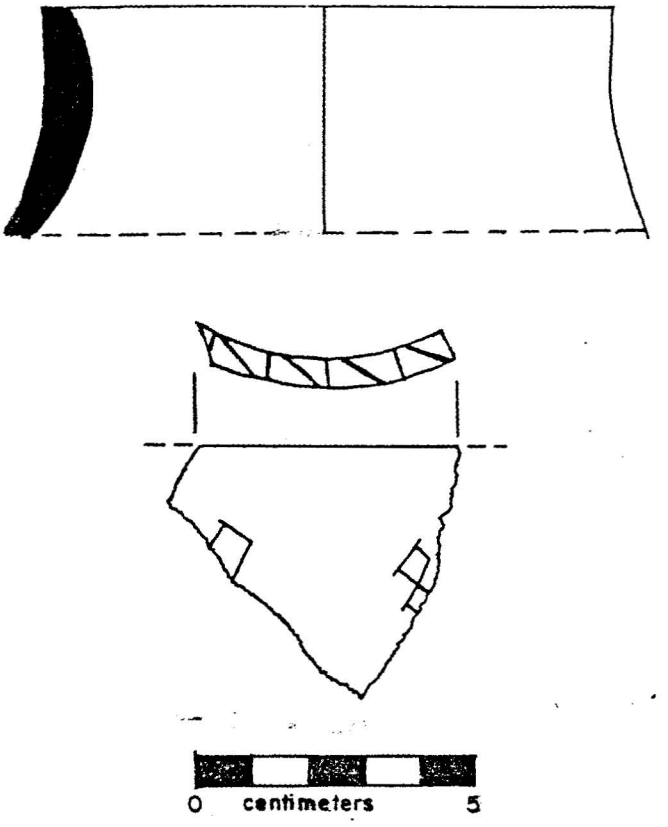


FIGURE 19: Mission Ware jar rim; T.A. 14, Level 1, Locus 2; #100

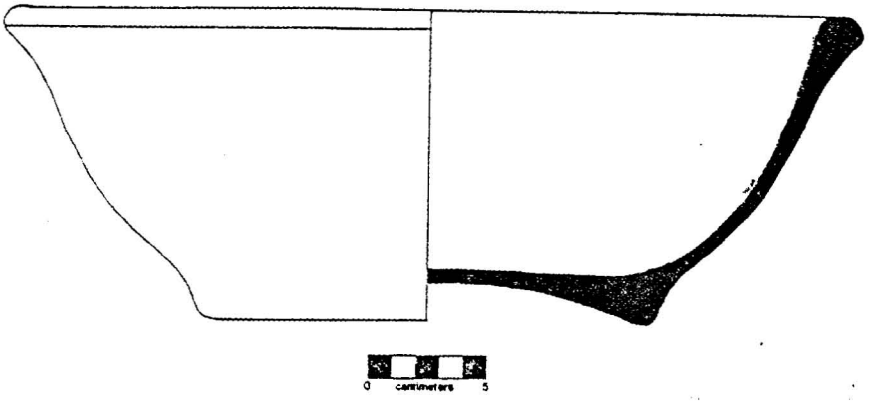


FIGURE 20: Bowl; T.A. 11, Level 4: #121

TEST AREA 14 (cont.)

Cat. #	Items	Wt. in Grams	
Level 1, Locus 2			
100	1	23.3	jar neck; micacious earthenware; exterior diamond incising, rim incising. Mouth diam. 8.0 cm. Mission Ware (Figure 19)
101	1	1.6	body sherd; earthenware; exterior burnish, exterior charring, interior under surface color 2.5YR 4/8. Mission Ware
98	3	35.0	deep plate; white ware; interior molded design, smooth rim, underglaze interior green paint band over exterior rim. Shell Edged Ware. 1779-1825 (Plate 17c)
99	1	0.6	cup/saucer rim; white ware; interior underglaze purple print (Plate 16e)
Level 2, Locus 2			
95	1	1.2	body sherd; earthenware; green/black decoration; body color 7.5YR 7.5/4. Majolica
93	1	6.0	body sherd; earthenware; undecorated; exterior burning, thickness 0.5 cm. Mission Ware
94	3	4.8	deep plate rim; pearl/creamware; yellow interior and exterior slip
96	1	2.5	plate body sherd; cream/pearl ware; undecorated
97	1	0.3	body sherd; white ware; blue interior and exterior underglaze print. Flow Blue. 1756-1850
92	1	0.9	cup/saucer base; white ware; purple overglaze interior print (Plate 16g)
TEST AREA 15			
Overburden			
919	1	3.2	body sherd; earthenware; undecorated. Thickness 0.6 cm.; color under surface 2.5YR 3.5/6. Mission Ware
148	2	29.2	deep plate; white ware; undecorated; sagger marks under rim, illustrated (Plate 17a)
149	2	3.3	body sherd; white ware; undecorated
150	1	2.5	body sherd; white ware; blue exterior underglaze decoration. Sponged Ware. 1820-1860 (Plate 16b)

TEST AREA 15 (cont.)

Cat. #	Items	Wt. in Grams	
Overburden (cont.)			
915	1	1.4	body sherd; white ware; blue underglaze exterior paint with overglaze black band. Dipped Ware - Banded. 1800-1825
916	1	0.9	cup rim; white ware; red overglaze interior and exterior rim band, blue underglaze exterior decoration. Gaudy Dutch. 1810-1830
917	1	7.1	saucer rim; white ware; undecorated; rim diam. 15.24 cm.
918	2	10.3	cup rims; improved white ware; undecorated; 8.9 cm.
147	2	35.6	cup base, low ring; improved white ware; exterior fluting; base diameter 5.3 cm.
21	1	1.0	toy cup rim; porcelain; fluted body with exterior handle attachment; rim diameter 3.5 cm.
TEST AREA 16 - Trench I			
Level 1			
110	1	5.3	bowl rim; white ware; exterior underglaze brown rim bands (3), blue underglaze exterior paint. Bowl diam. 13.3 cm. Dipped Ware - Banded. 1800-1825 (Plate 12c)
102	5	33.9	cup body sherds; white ware; undecorated
103	1	5.4	cup/bowl rim; white ware; undecorated
104	1	1.6	body sherds; white ware; exterior underglaze blue print
105	1	2.9	cup bowl body sherds; white ware; partial exterior blue glaze
106	1	20.4	plate rim; improved white ware; undecorated
107	1	33.6	handle; white ware; exterior blue underglaze print
108	2	26.0	plate, low ring bases; white ware; undecorated
109	1	35.0	bottle body sherd; stone ware; beige; Ale Bottle
Level 2			
111	1	8.9	bowl ring base; white ware; exterior and interior light blue underglaze slip
112	1	5.0	bowl/cup body sherd; white ware; exterior underglaze blue paint with bands. Dipped Ware - Banded. 1800-1825 (Plate 12b)

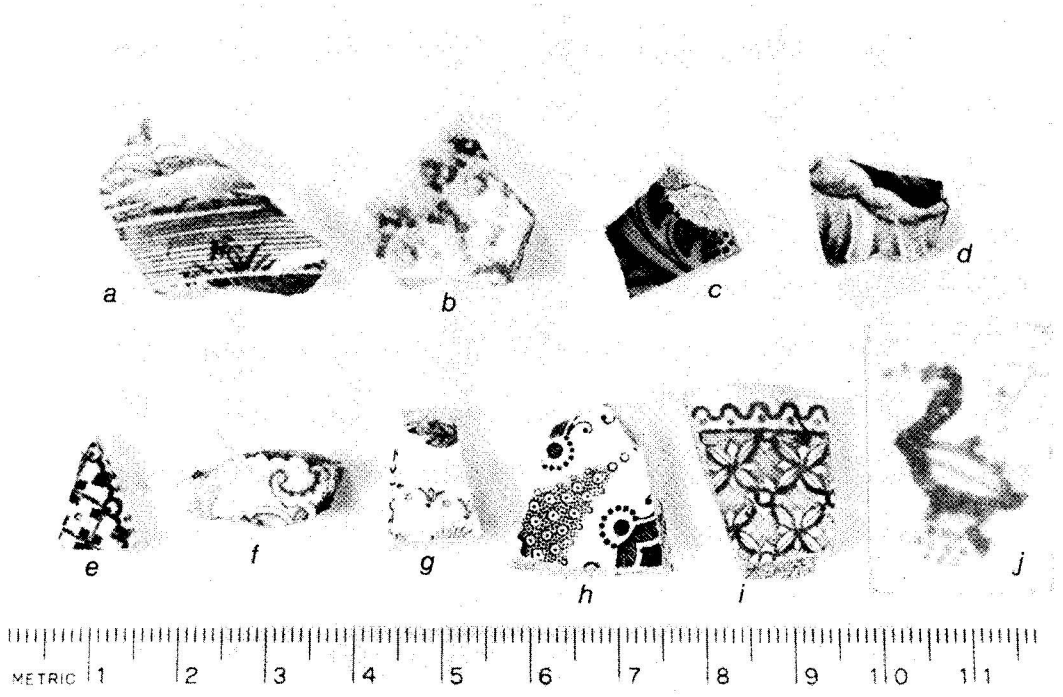


PLATE 16: *a.*- Test Area 11, level 5, #956; *b.* - TA 15, #150; *c.* - TA 11, level 5, #957; *d.* - TA 11, level 6, #925; *e.* - TA 14, level 1, locus 2, #99; *f.* - TA 11, level 6, #924; *g.* - TA 14, level 2, locus 2, #92; *h.* - TA 9, level 2, #942; *i.* - TA 9, level 1, #1118; *j.* - mark(?) on reverse of "*i.*"

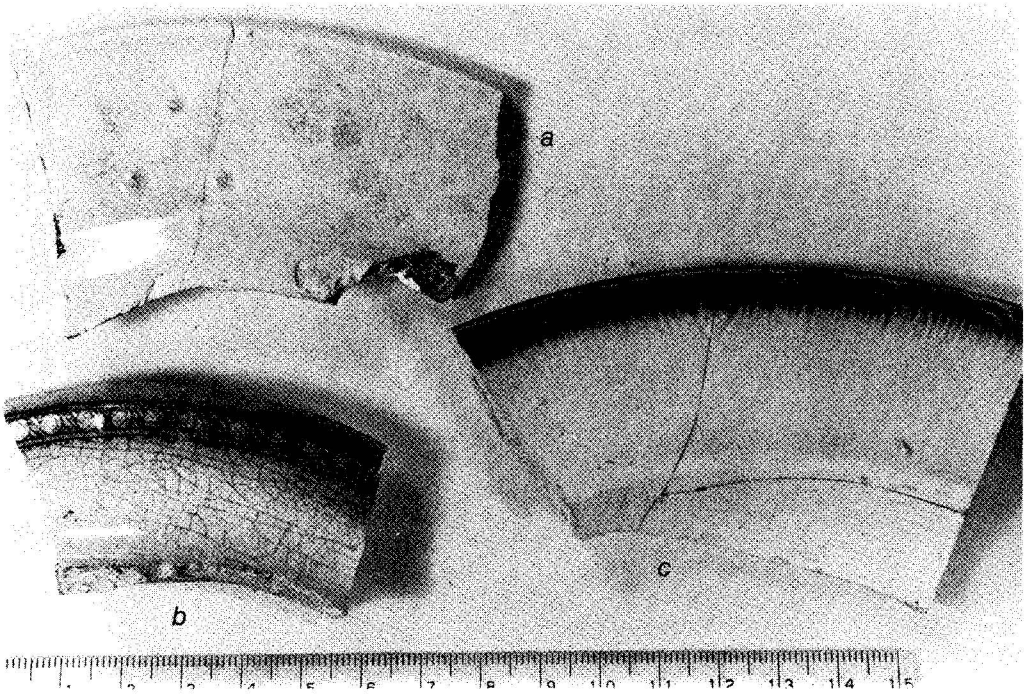


PLATE 17: *a.* - Test Area 15, #148 showing sagger marks; *b.* - TA 9, level 2, #944; *c.* - TA 14, level 1, locus 2, #98.

TEST AREA 16 - Trench I (cont.)

Cat. #	Items	Wt. in Grams	
Level 2 (cont.)			
113	1	21.2	bowl/cup base; white ware; interior overglaze hand paint in blue, green, and black. Gaudy Dutch. 1810-1830 (Plate 14e)
114	3	7.3	cup body sherds; white ware; underglaze blue on exterior.
115	1	2.4	cup rim; white ware; undecorated.
116	4	19.1	plate body sherds; white ware; undecorated.
117	1	1.4	body sherds; white ware; undecorated.
118	1	0.9	cup/saucer rim; white ware; undecorated.
119	1	31.6	1 cup rim; white ware; undecorated.
120	1	118.8	chamber pot lid (?); improved white ware; undecorated.

TEST AREA 17

No provenience and Overburden

931	1	10.9	bowl rim; beige body; white ware; interior light brown underglaze slip over rim, blue underglaze exterior band.
141	1	88.8	jar; low ring base; improved white ware; exterior blue overglaze print.
142	1	4.9	bowl body sherd; white ware; exterior underglaze blue slip with blue bands. Dipped Ware - Banded. 1800-1825.
143	1	1.6	cup rim; white ware; exterior hand painted blue rim band and body design.

Locus 1, Level 1

57	1	20.0	body sherd; earthenware; undecorated; hand modeled; only exterior oxidized. Color under surface 2.5YR 4/8; body color 2.5YR 3/0. Mission Ware.
58	1	14.2	body sherd; earthenware; exterior burnish; thickness 0.55 cm. Mission Ware.
59	1	11.7	bowl rim; earthenware; hand modeled; body color 2.5YR 3.5/5. Mission Ware.
60	1	3.2	body sherd; earthenware; only exterior oxidized; thickness 0.6 cm.; color under exterior surface 5YR 6/1.5; color under interior surface 5YR 3.5/1. Mission Ware.

TEST AREA 17 (cont.)

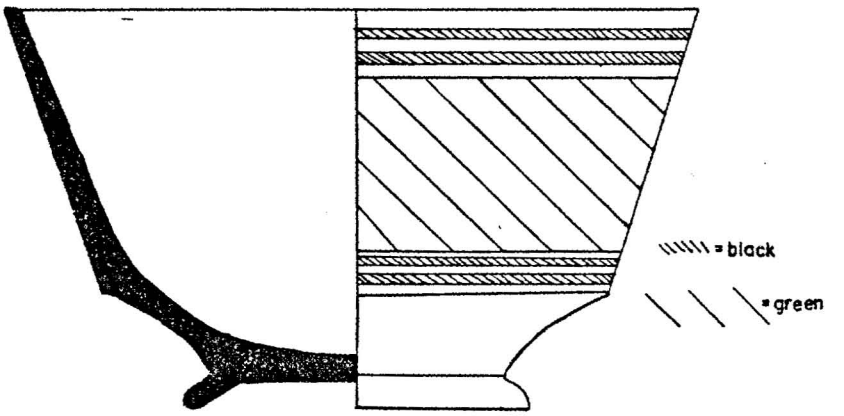
Cat. #	Items	Wt. in Grams	
Locus 1, Level 1 (cont.)			
50	1	14.3	jar body sherd; white ware; undecorated
51	1	6.2	bowl or deep plate rim; white ware; blue underglaze interior print. Flow Blue. 1750-1850 (Plate 15e)
52	1	35.2	deep plate rim; white ware; interior molded decoration; diam. 22.8 cm.
53	1	1.9	jar neck; white ware; undecorated
54	1	1.5	body sherd; white ware, beige body, interior and exterior underglaze green/beige paint, exterior underglaze green bands
55	1	2.5	body sherd; white ware; undecorated
47	1	7.7	bowl rim; white ware; interior underglaze blue decoration; diam. 12.7 cm. Sponged Ware. 1820-1860 (Plate 15d)
48	1	4.4	saucer rim; improved white ware; undecorated
49	1	19.4	plate rim; improved white ware; interior molding; rim diam. 22.8 cm.
56	2	7.1	plate rims; improved white ware; undecorated
Locus 3, Level 2			
37	1	106.2	bowl ring base; white ware; exterior underglaze green/gray band with overglaze black border bands (Figure 21, Plate 12a) Annular Ware - Banded
38	1	7.9	saucer rim; white ware; interior underglaze blue print, interior fluting (Plate 15b)
39	1	13.2	deep plate with low wing base; white ware; interior overglaze green print, partial base mark (Plate 14f,g)
40	1	6.1	cup rim; white ware; purple overglaze interior print (Plate 15a)
41	1	3.1	saucer rim; white ware; undecorated
42	1	1.7	body sherd; white ware; undecorated
43	1	5.2	plate body sherd; white ware; interior and exterior underglaze blue/black decoration (Plate 15g)
44	1	0.2	rim; white ware; blue underglaze interior hand painted "feathering," no molding. Shell Edged Ware. 1779-1825

TEST AREA 17 (cont.)

Cat. #	Items	Wt. in Grams	
Locus 4, Level 2			
45	1	25.6	body sherd; earthenware; hand modeled; thickness 0.8 cm.; body color 5YR 4/3. Mission Ware
46	1	0.9	body sherd; beige body; stoneware; undecorated; bottle (?)
Locus 3, Level 3			
61	1	7.2	ring base; white ware; undecorated
Locus 3, Level 4			
62, 63	2	9.7	body sherds, earthenware; hand modeled; exterior charred on one. Thickness 0.5 cm.; body color 2.5YR 4/5. Mission Ware
64	1	6.3	bowl rim sherd; earthenware; hand modeled; color under surface 5YR 5/4
65	1	1.4	body sherd; earthenware; light blue underglaze decoration. Majolica
Locus 4, Level 4			
66	6	23.4	body sherd; earthenware; hand modeled; 2 exterior charred, 2 only exterior surface oxidized; thickness 0.4-0.6 cm. Mission Ware
67	1	0.8	body sherd; white ware; interior and exterior underglaze blue print. Flow Blue. 1756-1850

TEST AREA 19

Level 3, Locus 2			
137	1	3.9	body sherd; white ware; undecorated
139	1	3.5	saucer/plate rim; white ware; interior light blue slip over exterior rim, slight exterior fluting
140	1	2.1	plate body sherd; white ware; undecorated
1113	1	318.9	jar; white ware; undecorated, blue puddling at base (Figure 22)
1114	2	8.8	body sherd; dark brown body, improved white ware; undecorated
138	1	5.7	plate rim; improved white ware; undecorated



FIGURES 21: Annular Ware - Banded
T.A. 17, Locus 3, Level 2, #37

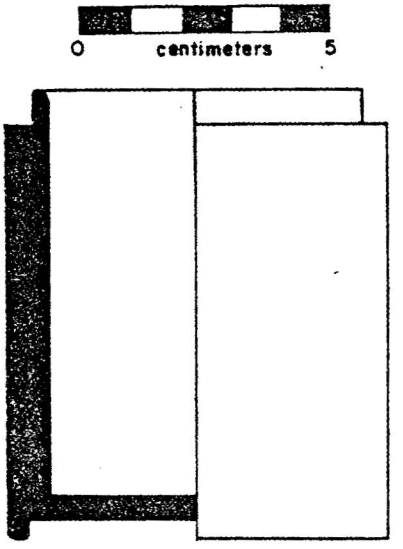


FIGURE 22: Jar; T.A. 19, Level 3, Locus 2; #1113

TEST AREA 20

Cat. #	Items	Wt. in Grams	
Level 1			
731	1	1.9	body sherd; pearl/cream ware; interior green, underglaze hand painted leaf. Gaudy Dutch 1810-1830.
732	4	4.8	cup/bowl/plate rim sherds; white ware; undecorated
730	8	11.2	body sherds; white ware; undecorated
Level 2			
739	3	2.1	body sherds; pearl/cream ware; undecorated; yellow glaze tint.
Level 3			
742	1	3.2	body sherd; earthenware; undecorated; thickness 0.8 cm.; color under surface 10YR 4/5. Mission Ware
Level 4			
744	1	3.0	low ring base; pearlware; undecorated
Level 6			
752	2	6.5	body sherd; earthenware; body color 2.5YR 4/6. Mission Ware
Level 7			
766	1	3.7	body sherd; earthenware; body color 2.5YR 4/6. Mission Ware

TEST AREA 21

Level 2			
771	1	0.9	low ring base; white ware; undecorated
Level 6			
775	1	3.5	body sherd; earthenware; exterior charring; thickness 0.5 cm.; interior color under surface 5YR 4/4. Mission Ware

CHINESE CERAMICS FROM THE LAn-887 SITE,
La Placita de Dolores*

A small collection of ceramics sherds of Chinese manufacture was recovered from the investigations at site LAn-887, La Placita de Dolores, in the central, historic district of the City of Los Angeles. At the request of the project director, Julia G. Costello, the collection of 43 tiny sherds was reviewed and identified.

Although the collection is extremely small, it is of special importance because it appears to represent and archaeologically document three distinct, historic, cultural patterns of the local Los Angeles area. The collection includes: (1) Chinese export porcelain acquired through maritime traders and utilized by the Hispanic pioneer settlers in California in the first half of the nineteenth century, (2) provincial southern Chinese ceramics supplied to and utilized by Overseas Chinese working in California during the last quarter of the nineteenth century, and (3) Oriental decorated porcelains, possibly Chinese, in wide vogue and purchased as decor for many Anglo households early in the twentieth century.

Chinese Export Porcelain

The early group of Chinese ceramics comes from Test Area 14 and consists of three small sherds of Chinese export porcelain painted in underglaze blue designs. They are of very modest quality with poorly executed paintings and numerous pits in the glazed finish. The sherd from Level 1 is from a large bowl, probably decorated with the Nanking border pattern. A flat plate and a tall vessel are represented by sherds from "Overburden." These pieces probably were made before 1850 and were used locally in Hispanic households.

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*by Paul G. Chace

These sherds are similar to the Chinese export porcelain dish fragments recovered from beneath portions of the Avila Adobe on Olvera Street during archaeological investigations conducted there in early 1972 under the direction of Franklin Fenenga of California State University, Long Beach. Although this 1972 collection has not yet been published in detail, La Placita sherds seem similar in general design and quality.

This Chinese export porcelain is attributed to manufacture in Ching-te Chen. It was exported to Europe and North America in the world-wide maritime trade of the seventeenth and eighteenth centuries. By the nineteenth century, the general quality of this ware had deteriorated. The manufacture, exportation, and trade of this ware ended with the wars and civil rebellions in southern China in the 1840s and 1850s, about the same time English and American manufacturers began producing quality white ceramics.

Overseas Chinese Ceramics

A series of provincial Chinese ceramics were recovered in Test Area 11. These are wares supplied to and utilized in early California almost exclusively by the Overseas Chinese, many of whom came to the west coast of California as laborers in the period from 1850 to 1896. Detailed descriptions of the ceramics of these Overseas Chinese, based on the superb archaeological collections recovered at Ventura, are published elsewhere (Chace 1976).

The most characteristic specimen recovered is a broken rice bowl of glazed stoneware, painted with the simple "Three Circles & Dragonfly" pattern. Fragments of this rice bowl were found in Levels 5 and 6. This stoneware is known only as rice bowls of this pattern, but this example is approximately 14 cm. in diameter and smaller than most. (A sherd from Trench F looks like this same ware, and it may be a new, unknown form.) A celadon green glazed porcelain piece is represented by a fragment of a small dish (as a sauce dish) about 8 cm. in diameter

and 2.5 cm. high at the upcurved rim. This celadon green glazed ware was a common ware of the Overseas Chinese and is often encountered as tea and wine cups or rice bowls, but other forms, as this dish, are extremely rare.

Other porcelains found were a fragment of a straight-walled, Chinese-style white porcelain tea pot decorated with underglaze blue painting, and pieces of probably two similarly decorated porcelain jars (typically containing ginger). A thin, tiny sherd, finely painted with red enamel, may be from a fancy tea cup. The other porcelain item recovered was part of a very thick, white bowl (definitely whiter than the "Four Seasons" painted ware often found in such collections).

The Chinese brown glazed stoneware, manufactured in a variety of forms and principally used in packaging and marketing Chinese foodstuffs (Chace 1976), is well represented in the sherds collected from Test Area 11. The most complete specimen is part of a large, shouldered jar, about 15 cm. in diameter at the shoulder, a form typically containing vegetables. Other sherds probably represent two or more other such food jars or the somewhat similarly shaped, sauce bottles, such as is sometimes used to market soy sauce. A fragment of the unglazed lid (shaped like an inverted milk-pan) of a hugh, barrel-shaped jar was found. Such large jars are over 40 cm. tall and probably held wholesale quantities. Specialty containers are represented by sherds of one small and a medium-size, straight-sided jar, plus lid fragments from two such jars. A recent, large example of this style jar, packed with maltose sugar, was purchased in a market.

These Chinese brown glazed stoneware containers have been produced for centuries and can still sometimes be found in markets importing Chinese foods. This ware is undoubtedly manufactured in southern China, probably near Canton, although its production has yet to be historically researched. It is a ubiquitous part of the archaeological debris in Overseas Chinese settlements in the west. It is commonly found in the form of wine bot-

tles, although none seems to be represented in La Placita collection for some reason.

Overall this particular series of wares appears to be typical of Overseas Chinese settlements of the period from about 1880 to about 1895. Certainly the rice bowl patterns of the earlier eras and the tablewares of the later periods are not represented. The collection is generally like that recovered from the Chinese quarters occupied about 1884-85 at Harmony Borax Works in Death Valley (Teague and Shenk 1977), although many more special pieces of white porcelain are present as might be expected in an urban center like Los Angeles. A seemingly high frequency of special porcelain pieces and stoneware food containers in this La Placita collection, compared to daily eating and drinking vessels which are often broken, were found. This fact may reflect the very small and unrepresentative sample of the local archaeology.

Significantly, these ceramics recovered in La Placita de Delores archaeological investigation provide material evidence of the presence and distinctive life-style of the Overseas Chinese within the community of early Los Angeles

Oriental Decorated Porcelains

Two small fragments of good, white porcelain pieces with bold overglaze enamel paintings were found in the silt fill of the Zanja Madre, in Test Areas 4 and 9. One piece probably was a tea cup and the other, a plate. Of Oriental style, possibly Chinese, these very likely represent the Chinese vogue popular among Californians early in the twentieth century. Such Oriental porcelain items were imported and purchased to add to the decor of many Anglo households.

Chinese export porcelain is found exclusively in the earlier, Hispanic context and not with the archaeological remains of the Overseas Chinese at this site. On the other hand, the fancy porcelains widely purchased at the beginning of the century also might well be part of the decor of local Chinese-American households.

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1976 Overseas Chinese Ceramics. In "The Changing Faces of Main Street, Ventura Mission Plaza Archaeological Project," pp. 509-530. City of San Buenaventura.

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1977 Excavations at Harmony Borax Works, Historical Archeology at Death Valley National Monument. *Western Archeological Center, Publications in Anthropology*, No. 6, Tucson.

CERAMICS

TEST AREA 4

Cat. #	Items	Wt. in Grams	
Level 1			
019	1	0.8	porcelain, probably Chinese. Form: tea cup (?); about 3.5 cm. in diameter; wide, red band on rim with gold slashes

TEST AREA 9

Level 2			
076	1	2.2	porcelain, probably Chinese. Form: center of flat plate; decorated overglaze with bold, light green enamel

TEST AREA 11

Level 4			
001	2	35.0	Chinese porcelain, blue underglaze. Form: tea pot
002	3	29.5	Chinese Brown Stoneware. Form: large, shouldered jar; 15 cm. in diameter at shoulder; 8 cm. in diameter at rim
004	1	7.7	Chinese Celadon Green Porcelain. Form: small sauce dish; 4.0 cm. in diameter; 2.5 cm. high
005	1	3.3	Chinese Porcelain (?), white, clear glaze with slight blue tint
006	1	3.4	Chinese Brown Stoneware; base of shouldered jar or bottle
007	1	2.2	Chinese Brown Stoneware; lid of huge, barrel-shapped jar
008	1	1.7	Chinese Brown Stoneware; rim of small, straight-sided jar; about 3.5 cm. in diameter (identical to 015)
009	2	3.6	Chinese Brown Stoneware; base of shouldered jar or bottle (not same specimen as 006)
010	1	2.2	Chinese Brown Stoneware; lid of medium-sized, straight-sided jar (similar in size to 009)
011	1	2.6	Chinese Brown Stoneware; body sherd, shoulder jar or bottle
012	1	3.3	Chinese Brown Stoneware; bottom of shouldered jar or bottle
013	1	0.7	Chinese Brown Stoneware; body sherd, shouldered jar or bottle

TEST AREA 11 (continued)

Cat. #	Items	Wt. in Grams	
Level 4 (continued)			
014	1	1.8	Chinese Brown Stoneware; neck of shouldered jar
015	1	0.7	Chinese Brown Stoneware; rim of straight-sided jar (identidal to 008)
016	1	1.3	Chinese Brown Stoneware; base of shouldered jar or bottle
017	1	1.2	Chinese Brown Stoneware; base of straight-sided jar
018	1	1.4	Chinese Brown Stoneware; bose of shouldered jar or bottle
Level 5			
026	4	3.2	Chinese Stoneware, rice bowl, "Three Circles and Drafgonfly" (sherd of Level 6, 078, fits.)
027	1	3.8	Chinese Porcelain; rim of jar, unglazed interior, blue underglaze decoration (ginger?)
028	1	7.8	Chinese Porcelain: jar (giner?), base sherd, glazed interior, blue decoration underglaze
029	1	4.8	Chinese Brown Stoneware; shouldered jar or bottle , body sherd
030	1	0.3	Chinese Stoneware; rice bowl, rim; "Three Circles and Dragonfly" pattern (no fit to 026, but probably a part)
031	1	0.4	Chinese Brown Stoneware; shouldered jar or bottle
032	1	1.9	Chinese Brown Stoneware; shouldered jar or bottle
033	1	2.2	Chinese Brown Stoneware; shouldered jar or bottle
034	1	0.3	Chinese Brown Stoneware; lid of straight-sided jar
035	1	0.5	Chinese Brown Stoneware; shouldered jar or bottle
036	1	3.4	Chinese porcelain jar (ginger?), blue decorated underglaze, interior partially glazed (may be like 027)
Level 6			
078	1	2.4	Chinese Stoneware; rice bowl, "Three Circles and Dragonfly" pattern (fits on 026 of Level 4)
079	1	0.3	Chinese Porcelain; very thin, very white, with fine red line enamel painting. Form: uncertain, may be fancy tea cup?

TEST AREA 14

Overburden

022	1	1.3	Chinese porcelain, export(?), low grade(?). Form: plate
023	1	3.7	Chinese porcelain, export(?). Form: (?)

Level 1

024	1	4.7	Chinese porcelain, export ware, low grade. Form: large bowl. Decor: Nanking(?), border with spears. Date: poorly painted, probably early nineteenth century (?)

METAL*

In a number of units excavated a large proportion of metal retrieved was determined to be nail fragments. Because of the advanced stage of corrosion on most of them, positive identification of type for use and dating was impossible. Of those nails complete in length but too deteriorated to type, three gross categories have been formulated.

Group A, up to 4 cm. in length, could include two through five pennyweights,# used for shingling and slating, wood lath work, barrel nails, basket, chair, shoe and lining work.

Group B, from 4 to 8 cm. long and covering six to nine pennyweights, could be classified into fencing, casing, brads, finishing.

Group C specimens from 8 to 14 cm. in length; nine to sixty pennyweights. Uses in these sizes are for boarding, finishing, flooring, framings, rafters, studding and roofing, with some specimens qualifying in dimension to be considered railroad or trolley spike size (Fontana, Greenleaf: 1962).

REFERENCE

Fontana, Bernard L., J. Camaron Greenleaf, *et al*

1962 Johnny Ward's Ranch: a study in historic archaeology. The Kiva 28(1-2); 1-115.

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* Prepared by Wendy Hill-McHale and Patricia Erbe.

Pennyweights: a retailer's term, originally referred to pennyweight = the number of pounds per 1,000 nails.

METAL

TEST AREA 4

Cat. #	Items	Wt. in Grams	
Overburden			
785	3	38.3	iron nail fragments
784	2	212.5	iron fragments
Level 1			
892	4+	16.2	crown bottlecaps with cork liners; caps 3.0 cm. diam; 0.16 cm. thick; cork liners 0.2 cm. thick
895	2	3.9	metal slag fragments

TEST AREA 9

Overburden			
981	1	73.2	unidentified object (iron); U-shaped, flat object with protruding "handle"; 9.0 cm. long; 4.5 cm. wide; 0.5 cm. thick. Handle has hole on end, 0.4 cm. in diam. Appears complete, no welded joints; one cast (Plate 20a)
982, 956	2	128.2	metal straps
980	1	300.2	metal hinge, 13.5 cm. long; 4.5 cm. wide; 0.5 cm average thickness. Possible bolt/locking system accessory. (Plate 20b)
978	1	4.8	iron nail, class B. (Plate 19d)
979	1	15.8	iron fragment
Level 2			
984	4	17.0	metal fragments

TEST AREA 10

Level 1			
878	1	29.9	square nail, 11.7 cm. long, 1.07-.95 cm. diam. Head 1.4 cm. diameter (Plate 19f)
879	1	8.7	iron nail, class B
1122	1	16.5	iron nail, class C

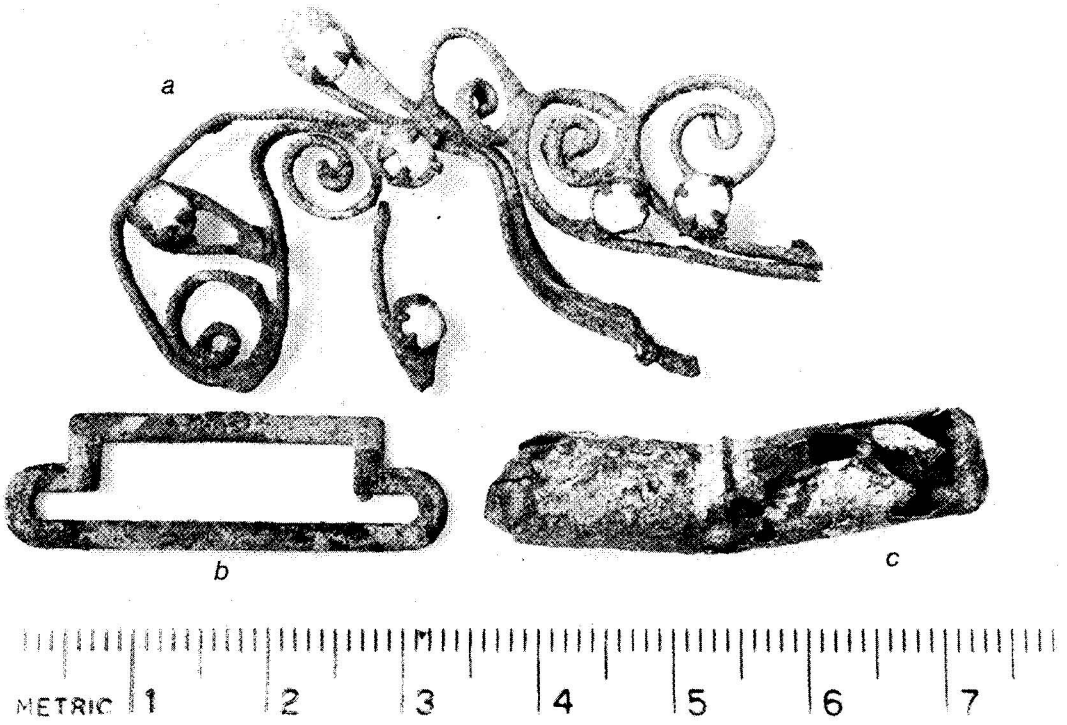


PLATE 18: all from Test Area 11, level 4. *a.* - #672; *b.* - #680; *c.* - #685.

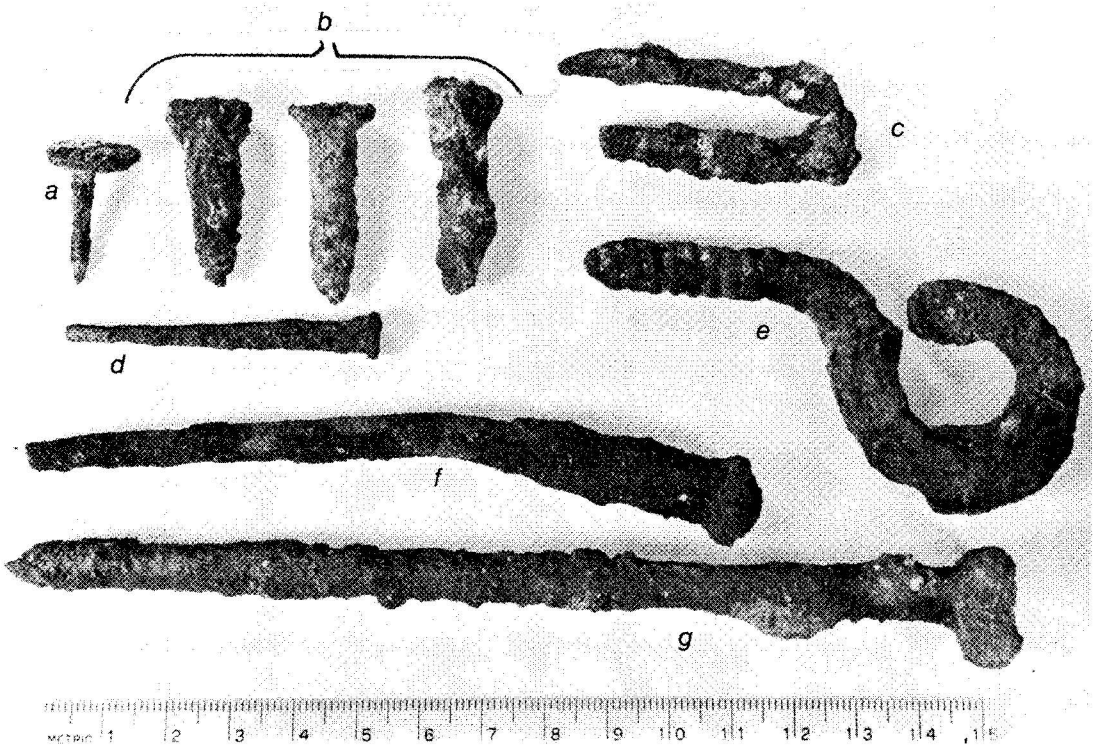


PLATE 19: *a.* - Test Area 11, level 4, #678; *b.* - TA 11, level 4, #687; *c.* - TA 11, level 4, #686; *d.* - TA 9, overburden, #978; *e.* - TA 11, level 4, #676; *f.* - TA 10, level 1, #878; *g.* - TA 11, level 6, #759.

TEST AREA 11

Cat. #	Items	Wt. in Grams	
Level 1			
656	1	15.5	complete tin spoon; 15 cm. long; 3.5 cm. wide at bowl; 0.14 cm. thick. No decoration or manufacturer's stamp (Plate 21b)
Level 1A			
661	1	50.9	iron bolt, incomplete; 4.4 cm. long, 2.5 cm. diam.
658	7	22.9	iron nails
660	1	1.1	iron fragment
Level 2A			
664	3	6.3	iron nail fragments
663	1	9.8	iron fragment
665	2	5.7	iron framents, flat
Level 3			
669	2	183.7	iron carriage bolts with washers; 10.5 cm. long; 1.0 cm. diam. Washers 3.8 cm. diam. (Plate 20c)
670	3	56.9	iron strap fragments, 3.0 cm. wide
667, 668	7	44.0	iron fragments
666	1	4.5	knob or screw top, round; 3.3 cm. diam; 0.2 cm. thick. Stem remnant, 1.0 cm. in diam. Heavy corrosion hindered determination of possible screw threads. (Figure 29)
Level 4			
675	1	97.5	galvanized iron handle; 10.3 cm. long; 1.1 cm. diam. Bucket or container lid handle. Blue mottled finish. Three of four possible nails used to secure ends still visible (Plate 21c)
676	1	44.4	threaded hook, iron; 8.0 cm. long; 0.6 cm. diam. Eyelet for rope hoists, securing straps (Plate 19e)
687	4	24.6	iron wood screws; 2-3.5 cm. long; flat heads (Plate 19b)
688	1	20.9	iron railroad spike, incomplete length; 1.3 cm. wide. For trolley or railroad (Figure 23)
691	1	43.2	iron spike
679	1	49.5	iron hinge, incomplete. Fragment is 7.0 cm. long; 3.15 cm. wide; 0.3 cm. thick. (Figure 25)

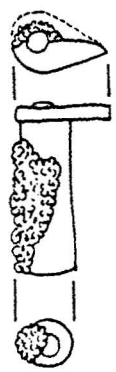


FIGURE 23: Trolley Spike; T.A. 11, Level 4, #688

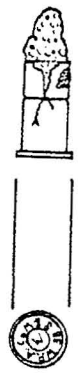


FIGURE 24: Bullet; T.A. 11, Level 5, #716

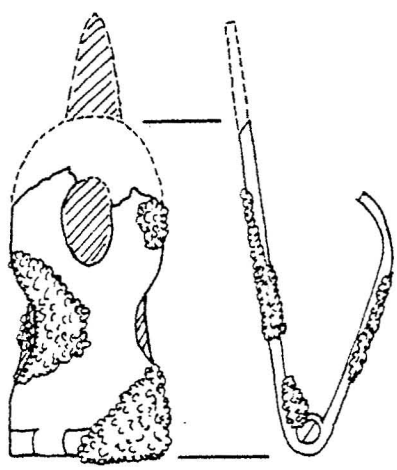


FIGURE 25: Hinge; T.A. 11, Level 4; #679

FIGURE 26: Bullet; T.A. 11, Level 4; #674

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4 (cont.)			
686	1	9.2	iron staple; 5.0 cm. long; 0.5 cm. diam. Heavy duty staple as for wire fencing, etc. (Plate 19c)
678	1	2.4	iron roofing tack; 1.7 cm. diam. of head (Plate 19a)
693	47	87.5	iron nails, class A
694	42	237.2	iron nails, class B
695	110	282.3	iron nails, class C
689, 690	2	117.9	iron bars
697	154	423.0	iron fragments
682	11	7.3	metal wire fragments; widths 0.1 to 0.2 cm.
696	90	218.0	metal fragments
677	1	16.7	copper electrical wire fragment with cloth covering; 25.3 cm. long; .05 cm. thick
683	4	103.2	brass wire fragments
684	1	0.4	brass grommet
673	1	13.4	brass purse clasp; change purse size; 6.8 cm. from sides (ends); 1.2 cm. wide; .04 cm. thick (Figure 30)
672	1	4.0	brass brooch with paste diamonds. 5.2 cm. incomplete length; 3.0 cm. at widest point. Twisted wire ornament, no clasp visible, possibly part of much larger specimen. Minute lines etched evenly across width of wire which loops to encompass four-prong settings for paste stones (5) (Plate 18a)
674	1	0.7	brass bullet, .22 calibre, unfired; 0.8 cm. in diam. No inscription or stamp visible on bottom of shell (Figure 26)
680	1	1.4	brass suspender buckle; 3.3 cm. long, 1.1 cm. wide; 0.2 cm. thick (Plate 18b)
685	1	1.8	brass pencil section; 3.5 cm. long; 0.7 cm. diam. Incomplete pencil (wood fragment still attached) (Plate 18c)
681	2	10.3	crown bottlecap fragments
974	2	6.9	metal slag fragments
692	1	14.1	unidentified metal object. Flat metal fragment; 0.25 cm. thick; 1 cm. high; round "cup" in center with small hole on the top, 0.23 cm. in diam. (Figure 28)

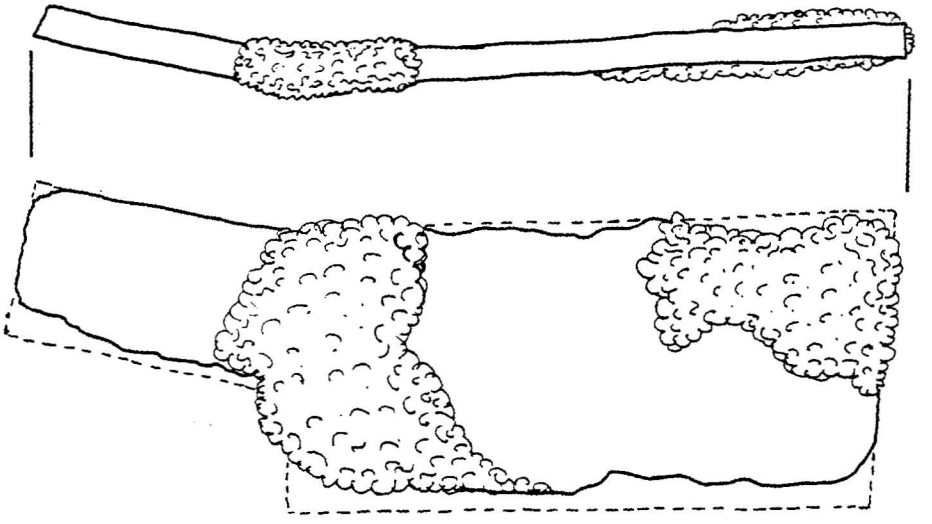


FIGURE 27: Cleaver; T.A. 13, Pit E; #876

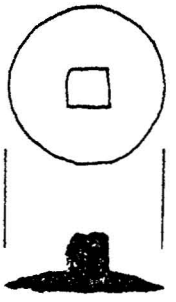


FIGURE 28: Unidentified;
T.A. 11,
Level 4, #692

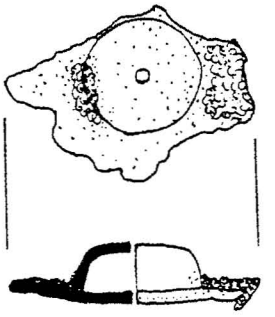


FIGURE 29: Unidentified;
T.A. 11,
Level 3, #666

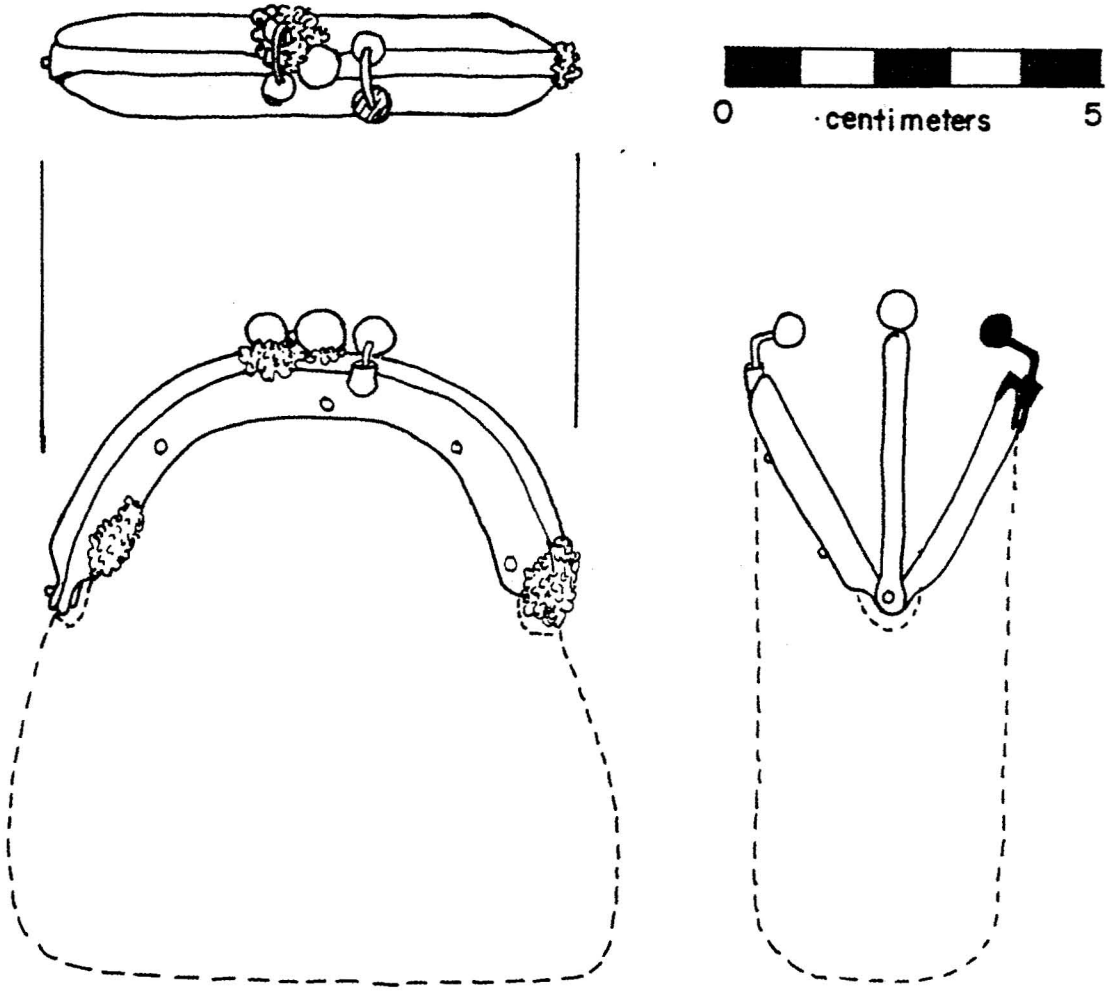


FIGURE 30: Purse Clasp; T.A. 11, Level 4; #673

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 5			
713	2	6.9	iron strap fragments
714	2	17.9	iron eyes
715	1	8.0	iron screw
704	45	98.9	iron nails, class A
703	62	356.2	iron nails, class B
702	11	180.0	iron nails, class C
705	236	567.1	iron nail fragments
706	1	3.3	iron roofing tack
707	1	7.5	iron staple
710	3	12.6	iron wire fragments
708	43	194.9	iron fragments
716	1	10.1	brass bullet, .38 calibre; 3.0 cm. long; 1.1 cm. diam.; inscription (Figure 24)
711	2	7.5	metal pieces of watchworks
709	3	21.8	crown bottlecaps
712	1	11.6	metal fragment, unidentified. See #692, Feature 11, Level 4.
Level 6			
759	1	58.9	iron spike; 16.0 cm. long, 0.8 cm. diam.; 1.9 cm. head diam. (Plate 19g)
760	5	109.0	iron spikes
761	6	54.9	iron nails, class B
762	12	58.9	iron nail fragments
764	2	6.1	crown bottlecap and bottlecap fragment
763	8	71.5	metal fragments
1121	1	318.3	metal fragment
1120	1	8.7	metal slag fragment
TEST AREA 13			
Overburden			
875	2	3795.0	iron bars; both 44.5 cm. long; 4.5 cm. wide; 1.5 cm. thick
Pit C			
911	6	73.7	metal slag fragments

TEST AREA 13 (cont.)

Cat. #	Items	Wt. in Grams	
Pit E			
876	1	346.0	iron meat cleaver, maximum length 18.0 cm.; width 5.5 cm.; thickness 0.55 cm. No handle attached (Figure 27)
877	1	5.7	iron fragment
TEST AREA 14			
Level 1, Locus 2			
993	1	7.4	iron nail, class B
992	1	10.2	iron nail, class C
991	5	37.2	metal slag fragments
Level 2, Locus 2			
995	7	75.9	metal slag fragments
TEST AREA 15			
Overburden			
909	1	3.7	iron fragment
TEST AREA 16, Trench I			
Level 1			
896	1	3.1	iron nail, class B
Level 2			
897	2	3.6	iron nail fragments
901	1	23.2	iron object. Wedge-shaped, rounded plate, slightly concave; 0.3 cm. thick. One side, rows of raised, nail-type protrusions (35 visible), appear to be broken. 0.25 to 0.35 cm. in diameter. Possible heel or toe plate of shoe (Plate 21a)
Level 3			
904	1	13.6	bowl of metal spoon, probably copper or brass (blue-green tarnish). Part of handle is attached. Maximum dimensions: length 6.9 cm.; width 3.2 cm.; thickness 0.32 cm.
907	3	38.0	iron nail fragments
906	35	152.9	iron fragments

PLATE 20: *a.* - Test Area 9, overburden, #981; *b.* - TA 9, overburden, #980; *c.* - TA 11, level 3, #669; *d.* - TA 19, level 3, locus 2, #1000.

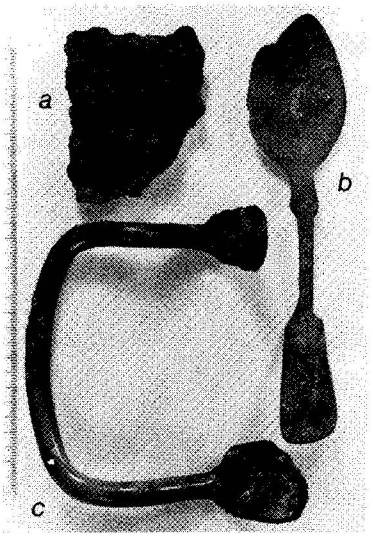


PLATE 21: *a.* - Test Area 16, level 2, #901; *b.* - TA 11, level 1, #656; TA 11, level 4, #675.

PLATE 22: Test Area 19, level 3, locus 2, #1004.

TEST AREA 17

Cat. #	Items	Wt. in Grams	
Locus 1, Level 1			
865	2	333.3	iron pipe fragments
863, 866	9	24.3	iron fragments
860	3	4.0	iron fragments with cement mortar on them
864	9	1.0	metal fragments, probably copper or brass
Locus 2, Level 1			
869	1	21.3	iron nail fragment
870	3	2.3	iron fragments
Locus 4, Level 1			
871	7	24.6	metal fragments

TEST AREA 19

Level 3, Locus 1			
998	1	3.1	metal fragment
Level 3, Locus 2			
1004	1	1079.4	iron shovel blade, incomplete; 18.0 cm. long; 18.5 cm. wide. Handle casing fragment; 10.0 cm. long; 4.5 cm. wide; 4.0 cm. in diam. (Plate 22)
1000	1	70.2	iron eyelet, incomplete; 6.4 cm. long; 4.4 cm. wide; 1.0 cm. thick. Closed loop, cross piece at base broken at ends. Loop 1.7 cm. in diam. (Plate 20d)
1003	1	68.5	iron nail, class C
999	1	14.5	metal fragment

TEST AREA 20

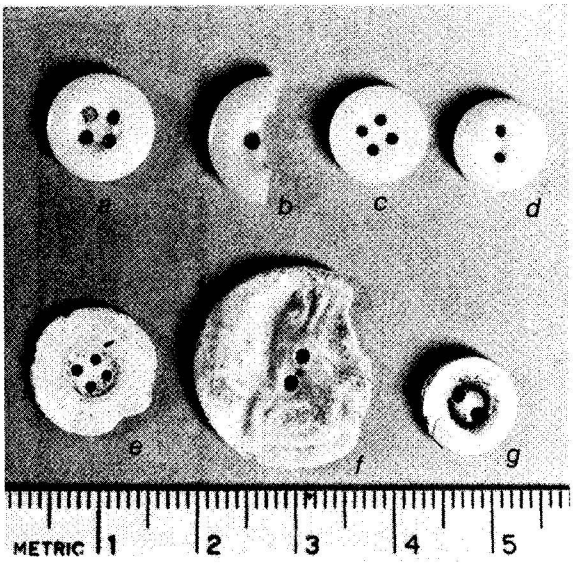
Level 1			
726	5	32.7	iron fragments
Level 2			
733	3	12.0	iron fragments
Level 3			
741	4	7.2	iron fragments

TEST AREA 21

Cat. #	Items	Wt. in Grams	
Level 1			
767	1	1.4	iron nail fragment

TEST AREA 22

Level 1			
779	2	5.9	iron fragments



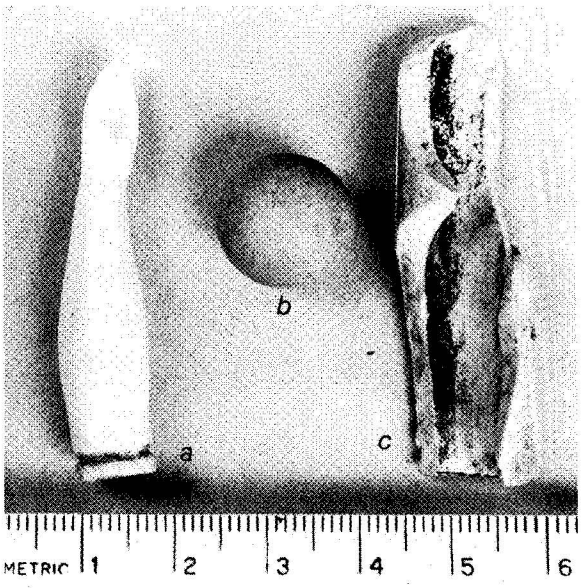


PLATE 23: *a.* - Test Area 9, level 2, #910; *b.* - TA 11, level 5, #719; *c.* - TA 16, level 2, #899; *d.* - TA 16, level 3, #902; *e.* - TA 17, locus 1, level 1, #859; *f.* - TA 20, level 1, #723; *g.* - TA 11, level 5, #718.

PLATE 24: *a.* - Test Area 16, level 2, #898; *b.* - TA 11, level 6, #753; *c.* - TA 9, level 2, #911.

PLATE 25: Test Area 11, level 4, #701, bottom and top views.

MISCELLANEOUS *

In addition to the artifacts in the categories of ceramic vessels, glass, and metal, a number of other items were found. Some of these are ceramic material (*e.g.*, tile, buttons, doll fragments), but not ceramic vessels. Other miscellaneous items include those of leather, and fragments of wood, charcoal, shell, and other materials. The total number of specimens in any one of these categories is too small to warrant separate treatment, so they are grouped in this section.

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1968 The Collector's Encyclopedia of Dolls. New York: Crown Publishers, Inc.

Fontana, Bernard L., J. Cameron Greenleaf, *et al.*
1962 Johnny Ward's ranch: a study in historic archaeology. The Kiva, 28 (1-2): 1-115.

* By Patricia Erbe

MISCELLANEOUS

TEST AREA 4

Cat. #	Items	Wt. in Grams	
Overburden			
782	1	4.0	*Ostrea* spp shell fragment
783	1	108.3	*Tivela* spp shell fragment
786	2	2.9	brick tile fragments
787	32	5.4	leather shoe heel fragments and wire nails from heal
Level 1			
893	1	1.9	Ladyslipper shell
948	1	3.8	electrical conduit, porcelain

TEST AREA 9

Overburden			
977, 975	2	16.2	*Haliotis* spp fragments
Level 1			
983	1	2.0	*Haliotis* spp shell fragment
Level 2			
911	1	7.2	white clay smoking pipe stem fragment; 4.9 cm. long; 0.03 cm. thick; half fragment lengthwise (Plate 24c)
913	1	79.8	tile sewer pipe fragment
985	1	2.6	Bakelite nameplate "Los Angeles/U.S.A." (Figure 31)
910	1	0.7	button, plastic (Plate 23a)
912	1	0.7	plastic fragment

TEST AREA 11

Level 1	1	1.9	*Haliotis* spp shell fragment
655	1	1.9	*Haliotis* spp shell fragment
653, 654	2	225.9	cement slab fragments

TEST AREA 11 (cont.)

Level 1A			
662	2	5.0	leather strap fragements; one 5.5 cm. long; other 2.0 cm. long. Both 2.5 cm. wide; 0.5 cm. thick. Edges across width are finished.
659	1	0.1	charcoal.
Level 3			
671	1		pressed brick, inscribed "MULF/VITRI/BRICK" Partial length 12.5 cm.; width 9.7 cm.; thickness 8.0 cm. (Figure 36)
Level 4			
657	1	0.5	doll face fragment, bisque porcelain
701	4	7.2	black glass buttons, chipped; 1.6 cm. in diam.; incomplete thickness, as each is broken across top; exhibiting 0.05 diam. wire shanks broken off at bases; 0.13 cm. thick brass plates on bases (circular). Centers are conical depressions. Wire from shank protrudes from base of depression as if to once secure additional parts of button (Plate 25)
1111	30	39.8	rubber ball fragments
700	1	121.1	redwood plank, in association with shingles; 44.5 cm. long; 4.5 cm. wide, 2.0 cm. thick
698	7	2380.0	cement slab fragments
699	3	224.4	asphalt slab fragments
973	1	0.6	charcoal
Level 5			
717	2	1.3	*Chione* spp fragments
720	2	0.8	unidentified shell fragments
718	1	0.2	button, shell (Haliotis) (Plate 23g) Found complete but fragmented before analysis. 1.0 cm. in diameter; two drilled holes
719	1	0.2	button, porcelain (Plate 23b) Incomplete; 1.3 cm. in diameter; displays one of four thread holes
722	3	4.4	doll face fragments, bisque porcelain; dated between 1860-1920
721	1	5.6	tile fragment, porcelain
813	3	2.9	black glass button fragments

FIGURE 31: Bakelite plate; T.A. 9, Level 2; #985

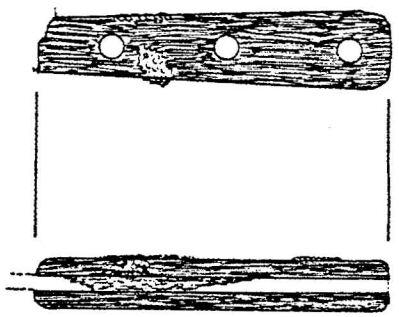

FIGURE 32: Knife handle; T.A. 17, Locus 3, Level 2; #872

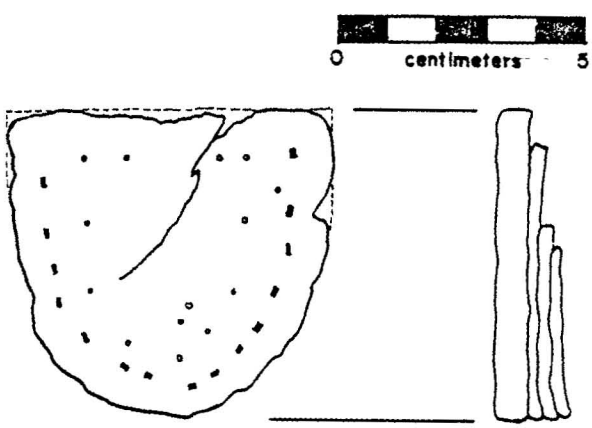

FIGURE 33: Shoe heel; T.A. 17, Locus 1, Level 1, #859

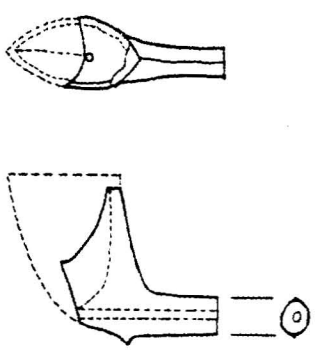

FIGURE 34: Pipe bowl; T.A. 16, Level 1; #908

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 6			
754	1	0.4	*Mytilus* spp shell fragment
755	1	1.4	*Ostrea* spp shell fragment
756	1	0.1	unidentified shell fragment
753	1	3.4	clay marble (Plate 24b)
757	25	8.1	wood fragments
758	1	0.2	fiber fragment; 1.4 x 1.2 cm; 0.1 cm. thick. Stained blue-green, possibly attributable to covering metal containing copper. Fragment not woven but could be described as a covering or wrapping.
765	1	9.1	asphalt fragment
TEST AREA 13			
Overburden			
874	1	5.5	brick fragment
TEST AREA 14			
Level 1, Locus 2			
994	1	44.6	roof tile fragment.
Level 2, Locus 2			
996	1	66.8	asphalt-covered stone
997	1 vial	7.0	charcoal
TEST AREA 16			
Level 1			
908	1	6.4	bowl of while clay smoking pipe; bowl 2.8 cm. tall; diameter incomplete; 0.4 cm. thick at rim. Stem 1.5 cm. long; 0.8 cm. diameter (Figure 34)
Level 2			
912	1	53.8	clam shell fragment.
898	1	5.5	doll arm, white-glazed porcelain; from a well-made, porcelain doll; originally attached to a cloth body; 1840-1880, probably in the earlier half of this span (Coleman, *et al.*, 1968; Jessie Brown, personal comments). Right arm, 4.6 cm. long; average diam. 1.1 cm. (Plate 24a)

TEST AREA 16 (cont.)

Cat. #	Items	Wt. in Grams	
Level 2 (cont.)			
899	1	0.4	button, porcelain; 1.0 cm. diam.; 0.3 cm. thick; four-hole shirt button (Plate 23c)
900	1	18.2	charred wood fragment
Level 3			
903	1	0.5	*Ostrea* spp shell fragment
905	1	29.4	brick fragment
902	1	0.3	button, porcelain; 0.95 cm. diameter, 0.35 cm. thick; 2 holes (Plate 23d)

TEST AREA 17

Locus 1, Level 1			
859	1	0.2	button, shell (Plate 23e)
868	1	230.0	shoe sole, leather. Sole fairly complete, held to uppers with brass soling nails, 40 of which remain. *Construction:* outer sole 1/4 inch thick, badly worn at front half of shoe; half-sole 3/16 inch thick extending from toe to instep area; shoe upper 1/8 inch thick, slipper type enveloping the whole foot and thus forming another sole; insole also 1/8 inch. Soling nails extended through to insole, spaced about 3/8 inch apart.* (Figure 35)
859	3	28.2	shoe heels, leather (Figure 33)
858	4	1.3	shoe heel fragments, leather

*_Dating:_ Anderson (1968) and Fontana, _et al._ (1968-103-107) provide summaries of changes in shoemaking techniques through time. This report is based on their chronologies. Soling nails were too fragile to remove for examination, so it could not be determined if they were machine-driven wire nails. Metal fasteners date as post-1800 and probably post-1829. Nailing machines were not developed until 1862, but it is not known exactly when brass nails were dropped from use. Heeling machines came into use in or around 1875. Prior to that date nails were hand driven. Square nails were hand driven. Those in the heel of this shoe were square, with a row of round, smaller nails inside. Those in the sole were round. If the sole shoe was not re-heeled (it does not appear to have been) it was made before 1875. The use of metal to join soles to uppers places it later than 1800 and likely later than 1829. If the soling nails were machine driven, it was made after 1862.

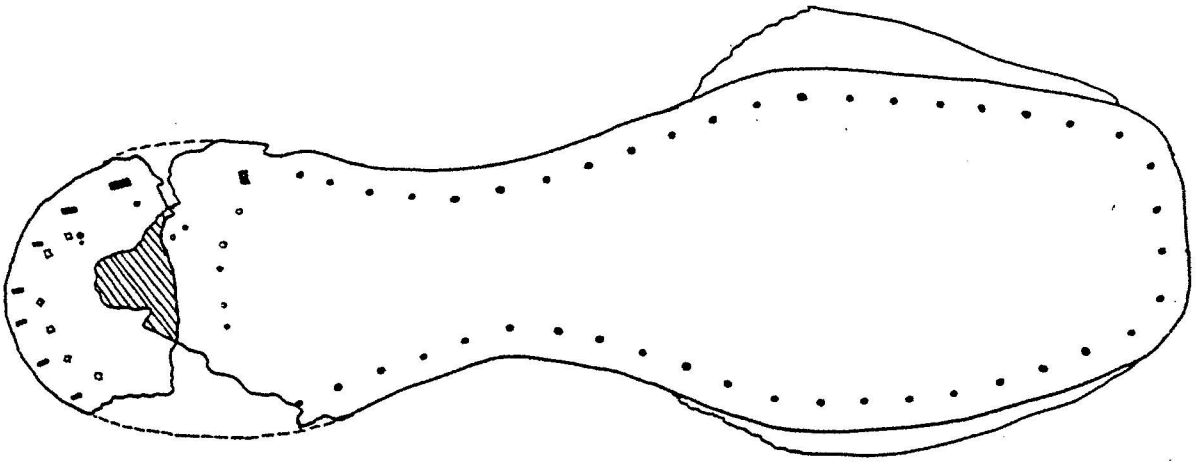

FIGURE 35: Shoe; T.A. 17, Locus 1, Level 1; #868

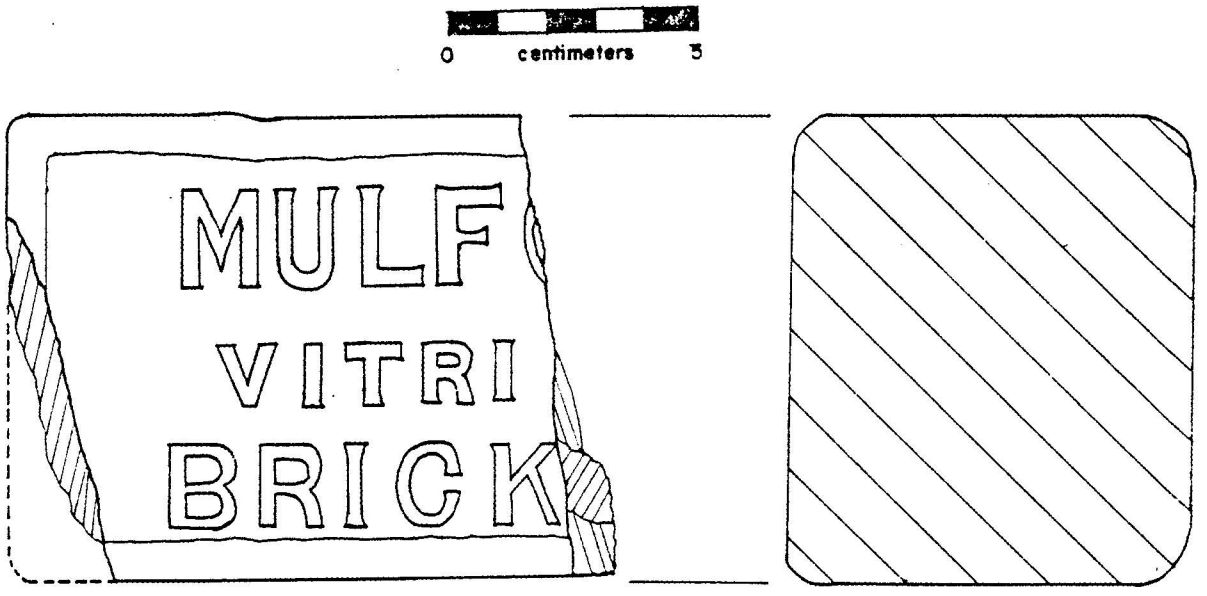

FIGURE 36: Brick, T.A. 11, Level 3; #671

TEST AREA 17 (cont.)

Cat. #	Items	Wt. in Grams	
Locus 1, Level 1 (cont.)			
855	25	44.0	wood fragments
856	1	2.2	charred wood fragment
854	1	8.0	slate fragment
862	1	0.9	brick fragment
867	7	8.4	cement mortar fragments
861	1	2.2	wood fragment stained with metal
Locus 3, Level 2			
872	1	6.7	wooden knife handle (Figure 32)
Locus 4, Level 4			
873	1	1.5	tile fragment
TEST AREA 19			
Level 3, Locus 2			
1001	1	151.3	tile brick
1002	1	36.3	asphalt fragment
1005	7	1300.0	wood fragments
TEST AREA 20			
Level 1			
727	1	0.7	*Mytilus* spp shell fragment
728	1	0.6	*Pecten* spp shell fragment
725	2	43.0	rooftile fragments
724	10	125.5	tile brick fragments
723	1	1.8	button, shell, broken (Plate 23f)
Level 2			
735	6	1.1	*Mytilus* spp shell fragments
736	1	0.4	*Nuttallina californica* shell fragment
734	1	10.0	roof tile fragment
Level 3			
740	3	15.7	tile brick fragments

TEST AREA 20 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4			
743	1	87.2	brick fragment
Level 5			
746	1	0.5	*Pecten* spp fragment
747	1	13.5	roof tile fragment
745	1	0.2	charcoal
Level 6			
749	1	19.6	roof tile fragment
750	1	0.3	chert flake
TEST AREA 21			
Level 1			
768	1	0.7	wood fragment
Level 2			
770	2	1.2	tile fragments
769	1	17.6	rooftile fragments
Level 4			
772	2	29.1	rooftile fragments
Level 5			
774	2	11.4	rooftile fragments
773	1	11.5	wood fragment
TEST AREA 22			
Level 1			
776	8	21.7	brick fragments
778	1	3.3	rooftile fragment
777	1	1.7	tile fragment
781	2	3.5	cement mortar fragments
780	1	0.1	charcoal

GLASS*

Of the over one thousand glass artifacts collected at Las Placitas site, one hundred fifteen were diagnostic to some degree, yielding information on manufacturing technique, date of manufacture, and/or original contents or usage. Of this number, only six were complete or nearly complete.

As a result of the fragmentary nature of this collection, the data derived from it were somewhat limited. Since only one datable embossing was present, date ranges for the bottle fragments were derived from the mold seams, glass color, finish types, and other manufacturing methods exhibited by them. During the nineteenth century the glass industry underwent a series of developments in manufacturing technique which provides a framework that makes it possible to date bottles to within a limited range of years. The following chronology, compiled from a number of references, was used extensively to determine manufacturing date ranges for these fragments.

c. 1810	Three-piece, hinged bottle mold introduced (Lorrain 1968: Newman 1970)
c. 1810-1870	Glass pontil commonly used (Munsey 1970; Newman 1970)
prior to 1840	Sheared lip was most common finish (Kendrick 1968; Newman 1970)
c. 1840	Two-piece, hinged mold introduced (Lorrain 1968)
c. 1840	Laid-on rim introduced as lip finish (Kendrick 1968; Newman 1970)
c. 1840-1870	Bare iron pontil producing reddish black scar used (Munsey 1970)
c. 1856	Lipping tool introduced (Lorraine 1968; Newman 1970)
1857	Snap case introduced to replace pontil rod (Lorrain 1968)
1861	First lead glass medicine bottles (Lorrain 1968; Switzer 1974)
c. 1862	First lettered panel bottles (Switzer 1974)

*prepared by Kathleen Davis

c. 1870-1910	Greatest popularity of three-piece mold (Toulouse 1969)
1870s-1920	Spun-in-the-mold bottles (Newman 1970; Switzer 1974)
1873	Codd's ball stopper for soda water patented in the United States (Lief 1965)
1879	Hutchinson stopper patented (Lief 1965)
1881-1882	First semi-automatic bottle machine patents (Lorrain 1968; Toulouse 1967)
after 1880	Clear glass is commonly produced (Kendrick 1968; Newman 1970)
1882	Lightning stopper patented (Lief 1965)
before 1885	Common use of "black" glass for inexpensive liquor bottles (Newman 1970)
1892	Crown cap patented (Lorrain 1968)
c. 1900	Inside screw closures commonly used (especially on whiskeys) (Kendrick 1968)
1903	Owens automatic bottle machine patented (Lorrain 1968)
to 1920	Blowback and grinding procedure still most common in manufacture of external screw finishes (Kendrick 1968)

Criteria for determining manufacturing methods were found in articles on the dating of bottles and the development of the glass industry by Newman (1970), Lorrain (1968), and Toulouse (1968).

Determination of function depended on elements of body shape and style, and was facilitated by reproductions of nineteenth century glass manufacturers' catalogs. Occasionally embossed markings aided in the identification of contents. Alcoholic beverages predominated among the contents of identifiable fragments in this collection, which totaled thirty-four individual pieces and included fifteen wine bottle fragments, five for spirits, two for beers, and twelve whose specific contents were unknown.

Medicines and toiletries comprised the second largest group of contents, numbering ten individual pieces. One possible soda or mineral water bottle fragment, one fragmented culinary bottle, and two bitters bottle fragments completed the collection. The four stoppers recovered are of the type designed

to have a sleeve of cork fitted over the body to insure the seal and are too large to have been used in perfume bottles. They may come from culinary bottles (sauces) or from large medicinals.

The glass fragments which could not be readily identified were cataloged by color, quantity, and weight. Materials listed as clear glass fragments include both bottle glass and tableware (tumblers, etc.) Windowpane glass is recorded separately. Other colors (olive, aqua, amber) are bottle fragments and are listed as such. The classification of olive glass may include some "black" glass fragments.

The following glossary is designed to clarify the terminology used in the inventory and analysis.

Annealing. Gradual cooling of hot glass in an oven.

Black Glass. Glass which is actually deep olive green in color, but which appears black and opaque in reflected light.

Cup Bottom Mold. A full height mold with a cup indentation in the bottom plate.

Finish. The development of the lip of a bottle; the lip, itself.

Handblown. Blown by hand with the use of a mold; as opposed freeblown -- blown by hand without a mold.

Laid-on Ring. Common finish for wine bottles in which a string of glass is laid around the neck of the bottle just below the lip, enabling the cork to be wired securely. This finish is often called a wine or champagne finish in nineteenth century glassmakers' catalogs.

Laid-on Ring Finish. Giving the appearance of a laid-on ring, but formed with a lipping tool or in a mold.

Lipping Tool. Used to make a uniform finish. A metal insert controls the internal neck dimension, which two metal flanges rotate on the outside of the neck and determine the exterior lip pattern.

Machine Made. Formed by an automatic bottle-making machine.

Pontil. A long, metal rod used to hold the bottle during the finishing process.

Pontil Scar or Mark. Mark left by pontil on the completed vessel.

Post Bottom Mold. Full height mold with a post on the bottom plate.

Push-up. The bottom of a bottle pushed up into the interior during construction, designed to provide an even resting surface, strengthen the bottle, aid in sedimentation, and give the illusion of greater volume. Common on wine bottles.

Spun-in-the-mold. Process by which a bottle is spun in a full height mold to erase mold seams, producing horizontal striations.

Three Piece Mold. A full height mold with a dip-mold body and a two-piece, hinged, shoulder section.

Two Piece Mold. A full height mold, producing two vertical seams from base to neck, with either a post or cup bottom.

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GLASS

TEST AREA 4

Cat. #	Items	Wt. in Grams	
Overburden			
153	1	160.0	black glass bottle base fragment, embossed A B & C^{O} on base. The bottle was hand blown. Probable contents: beer. Date range: *c.* 1857-1913 (from composite dating key. No information available on embossing.) (Figure 40)
154	1	78.1	olive green finish fragment, hand blown and finished with a laid-on ring. Contents: wine. Date range: prior to *c.* 1865 (Composite dating key). (Plate 27d)
155	1	103.7	olive green finish fragment, hand blown and finished with a lipping tool in the laid-on ring style. Contents: wine. Date range: *c.* 1856-1913 (composite dating key). (Plate 27f)
156	1	18.3	clear finish fragment, hand blown and finished with a lipping tool in a prescription style tip (Purnam 1965:20). Contents: medicine. Date range: *c.* 1880-1913 (composite dating key). (Plate 26i)
157	1	13.6	black glass bottle base fragment, hand blown. Probable contents: spirits. Date range: prior to *c.* 1885 (composite dating key).
158	1	25.6	aqua bottle body and base fragment, hand blown. Possible contents: soda or mineral water. Date range: prior to *c.* 1913 (composite dating key).
159	1	11.2	olive green base fragment, exhibiting a basal push-up. Hand blown. Contents: wine. Date range: prior to *c.* 1913 (composite dating key).
160	2	3.9	clear glass fragments
161	4	29.4	light olive green bottle glass fragments
162	2	15.8	dark olive green bottle glass fragments
Level 1			
165	15	6.9	clear glass fragments
164	7	2.3	light olive green bottle glass fragments
163	4	15.0	Amber bottle glass fragments
166	2	1.5	Windowpane glass fragments

TEST AREA 7

Cat. #	Items	Wt. in Grams	
Overburden			
169	1	3.0	amber bottle glass fragment

TEST AREA 9

Level 1

175	1	0.4	milk glass fragment; possibly part of a lamp shade
173	4	5.7	clear glass fragments
170	8	23.7	light olive bottle glass fragments
171	3	10.9	dark olive bottle glass fragments
172	3	5.6	amber bottle glass fragments
174	2	5.0	windowpane glass fragments

Level 2

176	16	9.9	clear glass fragments
177	5	4.4	light olive bottle glass fragments
180	2	4.5	dark olive bottle glass fragments
179	5	1.6	amber bottle glass fragments
178	2	2.3	aqua bottle glass fragments
182	5	1.4	milk glass fragments
181	14	7.4	windowpane glass fragments

TEST AREA 10

Level 1

183	1	53.9	olive green bottle base fragment, exhibiting basal push-up. Hand blown. Contents: wine. Date range: *c.* 1857-1913. (composite dating key).
184	1	46.0	Aqua bottle body and base fragment, usage unknown. Probably hand blown.

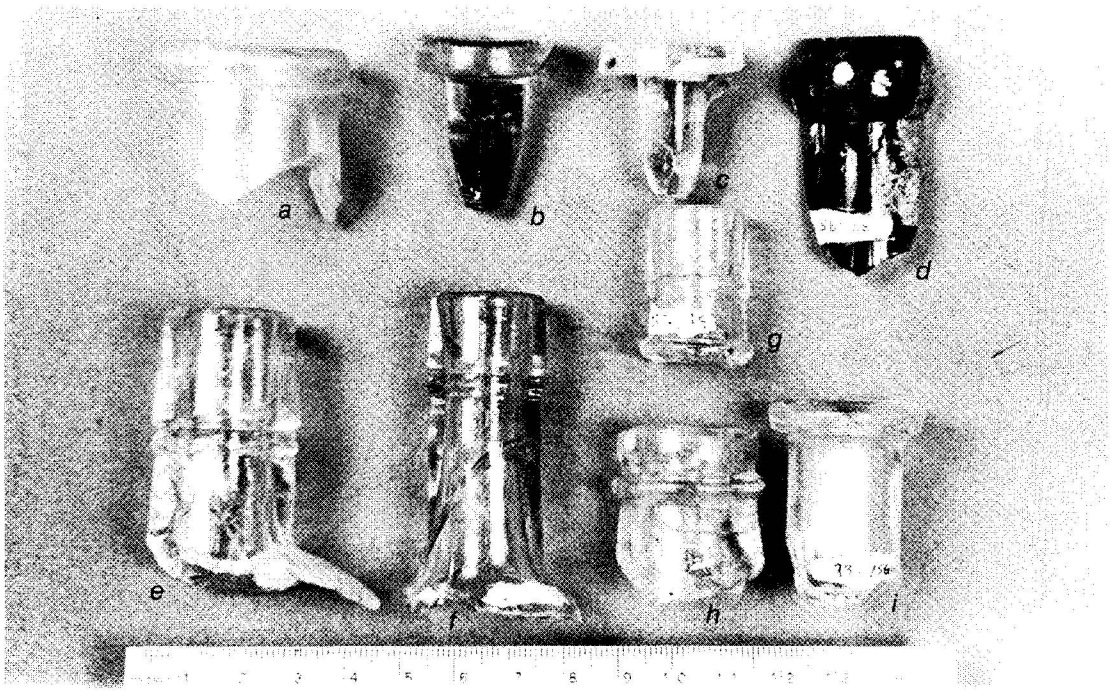


PLATE 26: *a.* - Test Area 16, level 3, #374; *b.* - TA 11, level 4, #187; *c.* - TA 11, level 4, # 198; *d.* - TA 11, level 4, #195; *e.* - TA 11, level 4, #209; *f.* - TA 11, level 5, #228; *g.* - TA 11, level 4, #189; *h.* - TA 11, level 4, #216; *i.* - TA 4, overburden, #156.

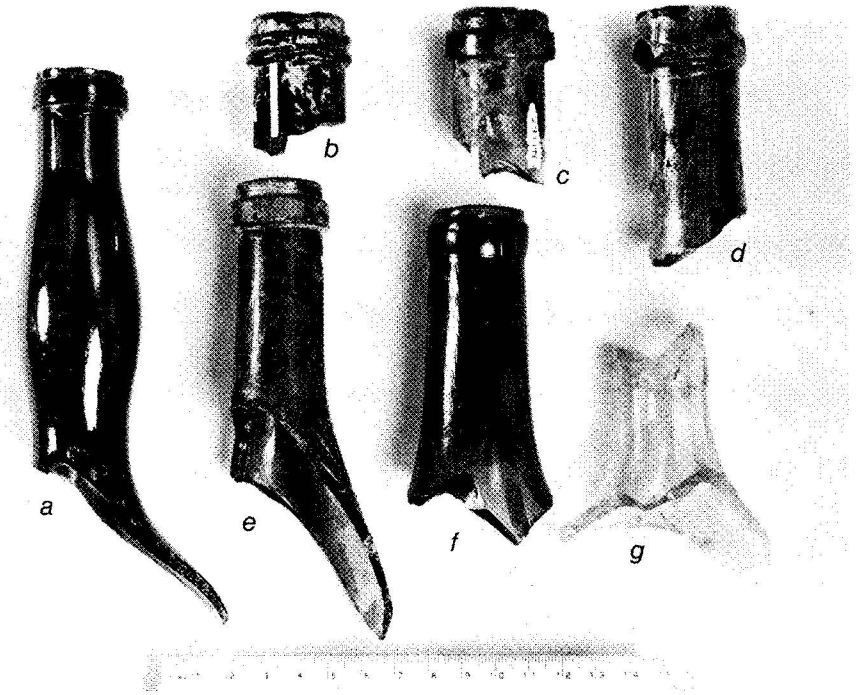


PLATE 27: *a.* - Trench C, #271; *b.* - Test Area 11, level 4, #193; *c.* - TA 11, level 4, #194; *d.* - TA 4, overburden, #154; *e.* - TA 16, level 2, #277; *f.* - TA 4, overburden, #155; *g.* - TA 11, level 4, #188.

TEST AREA 11

Cat. #	Items	Wt. in Grams	
Level 1			
185	1	47.9	amber bottle base fragment, method of manufacture uncertain. Probable contents: alcoholic beverage.
186	1	10.3	olive green bottle base fragment, embossed HH. Probably hand blown. No information available on embossing.
282	1	7.8	clear glass fragments
284	2	20.6	windowpane glass fragments
283	2	32.5	olive bottle glass fragments
Level 1A			
289	10	7.6	clear glass fragments
287	5	10.0	olive bottle glass fragments
285	8	12.1	amber bottle glass fragments
286	4	6.2	aqua bottle glass fragments
288	1	2.4	black bottle glass fragment
Level 3			
291	1	2.3	clear glass fragment
290	1	6.6	olive bottle glass fragment
292	1	1.0	windowpane glass fragment
Level 4			
187	1	17.7	aqua stopper (Plate 26b)
188	1	60.0	aqua neck and finish fragment, hand blown and finished with a lipping tool. Possible contents: alcoholic beverage(?). Date range: *c.* 1856-1913 (composite dating key) (Plate 27g)
189	1	12.9	clear finish fragment, hand blown and finished with a lipping tool. Probable contents: medicine. Date range: *c.* 1880-1913 (composite dating key) (Plate 26g)
190	1	1.8	aqua bottle body fragment, embossed ...IS...
191	1	3.9	light blue bottle body fragment, embossed ... LWA .../...ss...
192	1	4.9	aqua finish fragment, hand blown and formed with lipping tool. Date range: *c.* 1856-1913 (composite dating key)
193	1	34.2	olive green finish fragment, hand blown and formed with a lipping tool. Probable contents: alcoholic beverage. Date range: *c.* 1856-1913 (composite dating key) (Plate 27b)

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4 (cont.)			
194	1	44.0	olive green finish fragment, hand blown and formed with a lipping tool in the laid-on ring style. Contents: wine. Date range: *c.* 1856-1913 (composite dating key) (Plate 27c)
195	1	13.5	olive green finish fragment, hand blown and formed with a lipping tool. Probable contents: alcoholic beverage. Date range: *c.* 1856-1913 (composite dating key) (Plate 26d)
196	1	31.8	black glass bottle base fragment, exhibiting spun-in-the-mold striations. Hand blown. Contents: alcoholic beverage. Date range: *c.* 1870-1920 (composite dating key)
197	1	2.8	olive green finish fragment, hand blown and formed with a lipping tool in the laid-on ring style. Contents: wine. Date range: *c.* 1856-1913 (composite dating key)
198	1	4.9	aqua stopper (Plate 26c)
199	1	2.3	clear, pressed glass, rim and body fragment, probably from decorative vessel.
200	1	4.5	clear bottle body fragment, embossed ...MIAN...
201	1	2.7	clear bottle body fragment, embossed ...NT".../ ...R...
202	1	1.7	clear glass fragment, embossed design present.
203	1	5.1	clear fragment of pressed, decorative glass.
204	1	1.9	amber bottle body fragment, embossed ...s...
205	1	0.7	amber bottle body fragment, embossed letters undecipherable
206	1	3.1	olive green finish fragment, formed with a lipping tool, Probable contents: alcoholic beverage. Date range: *c.* 1857-1913 (composite dating key)
207	4	30.1	four olive green body fragments from a square case bottle, three embossed. Embossing reads: ...R...; ...NA...; C℺. Possible contents: alcoholic beverage
208	1	3.8	amber body fragment, embossed ...A..., from square case bottle.
209	1	47.8	clear finish fragment, hand blown and formed with a lipping tool, Possible contents: alcoholic beverage. Date range: *c.* 1880-1913 (composite dating key) (Plate 26e)

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4 (cont.)			
211	1	10.7	two olive green, embossed body fragments, embossed ... SLER...; and RISL....
212	1	15.2	amber bottle body fragment, embossed C.../S.F.CA .../ with monogram. Probable contents: alcoholic beverage.
213	1	17.2	olive green bottle base, exhibiting a basal push-up. Manufacturing method uncertain. Contents: wine.
215	1	38.5	olive green bottle base and body fragment, exhibiting spun-in-the-mold striations. Probable contents, alcoholic beverage. Date Range: *c.* 1817-1920 (composite dating key).
216	1	18.9	clear finish fragment, hand blown and formed with a lipping tool. Date range: *c.* 1880-1913 (composite dating key) (Plate 26h)
300	1	4.4	clear, machine-made finish fragment. Date range: post1903 (dating key).
217	1	12.7	clear finish fragment, hand blown and formed with a lipping tool. Date range: *c.* 1880-1913 (composite dating key).
218	1	6.1	clear bottle body fragment, side panel. Usage: medicine. Date range: *c.* 1880-1913 (composite dating key).
220	1	6.6	clear, pressed glass fragment from decorative vessel.
221	1	4.5	aqua finish fragment, hand blown and formed with a lipping tool. Date range: *c.* 1856-1913.
222	1	4.4	clear finish fragment, hand blown and formed with a lipping tool. Date range: *c.* 1880-1913.
223	1	3.1	clear stopper fragment, handle absent.
224	1	1.4	clear finish fragment, very small aperture. The bottle was handblown and finished with a lipping tool. Contents: medicine or toiletry (perfume?).
210, 296	245	613.5	clear glass fragments
294	208	643.8	olive bottle glass fragments
295	104	330.1	amber bottle glass fragments
293	154	833.4	aqua bottle glass fragments
299	4	2.9	cobalt glass fragments

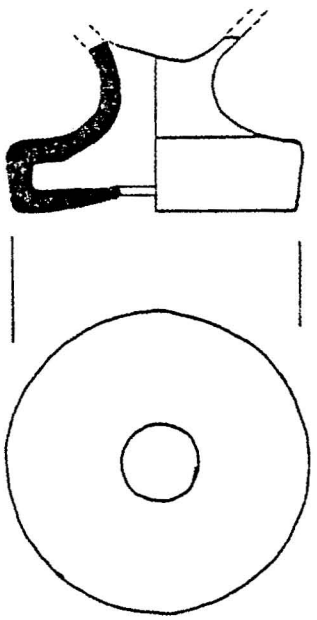


FIGURE 37: Unidentified; T.A. 20, Level 1 #268

FIGURE 38: Generalized drawing; fragments from T.A. 11, Levels 4, 5; #s 225, 226

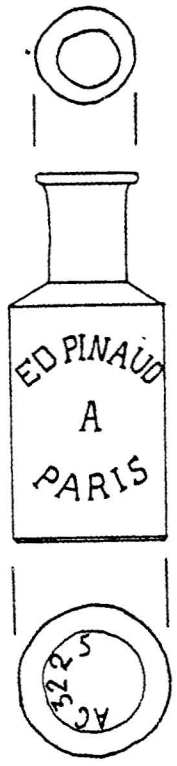


FIGURE 39: Perfume bottle; T.A. 11, Level 5; #240

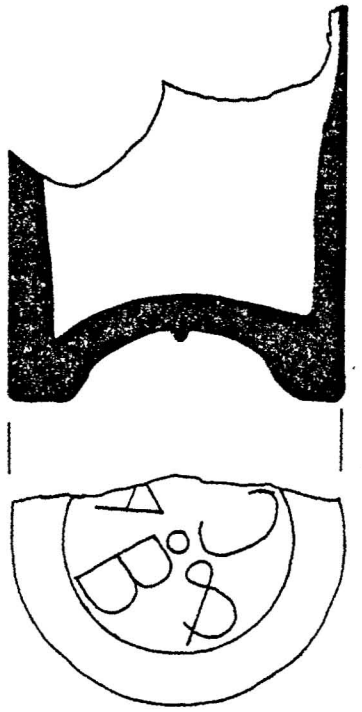


FIGURE 40: Bottle base; T.A. 4, overburden; #153

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4 (cont.)			
298	3	0.6	milk glass fragments, probably from a lamp
297	20	47.9	windowpane glass fragments
306	1	4.4	clear, bottleneck fragment
214	1	3.0	clear, neck fragment
219	1	94.6	decorative glass fragment, aqua
Levels 4 and 5			
225	10	166.4	fourteen aqua body fragments, representing approximately four individula bottles. Thirteen are embossed with various letters from the inscription, GORDON'S/DRY GIN / LONDON/ENGLAND. Variation in the form of letters from the same words indicates that more than one mold was used for the four or more bottles. Date range: *c.* 1890-1906 (Wilson 1968:74) (Figure 38)
226	4	35.4	
Level 5			
228	1	35.7	clear finish fragment, handblown and formed with a lipping tool. Date range: *c.* 1880-1913 (composite dating key) (Plate 26f)
229	1	14.3	olive green body fragment, embossed ...BO.../ ...TER.... Possible contents: bitters(?). Handblown. Date range: *c.* 1857-1913 (composite dating key).
230	1	12.8	bottle base fragment, clear glass with an interior flashing of pink glass. Possible use: toiletry (?). Manufacturing method undeterminable.
231	1	10.3	clear bottle body fragment, embossed ...R/...& Main Sts./AND/...T. Probable contents: medicine. Date range: *c.* 1880-1913 (composite dating key).
232	1	23.7	olive green bottle base fragment, exhibiting a basal push-up and spun-in-the-mold striations. Contents: wine. Date range: *c.* 1870-1920 (composite dating key).
233	1	19.6	olive green bottle base fragment, exhibiting spun-in-the-mold striations. Contents: alcoholic beverage. Date range: *c.* 1870-1920 composite dating key)
234	1	7.9	clear stopper handle

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 5 (cont.)			
235	1	6.7	body fragment of clear, pressed glass, decorative vessel
236	1	7.3	amber bottle base and body fragment, method of manufacture uncertain. Probable usage: medicine.
237	1	10.8	milk glass jar base fragment, embossed ...MD/ ...CAL CO. Probable usage: toiletry or medicinal.
238	1	2.9	clear bottle base fragment, embossed PAT. JAN.../ WT.... Date range: post 1880 (composite dating key)
239	1	0.9	eyeglass lense fragment from dark glasses
240	4	53.9	clear (milky patina developed) bottle, handblown in a two-piece, cup bottom mold and finished with a lipping tool (the glass has run during annealing). The bottle is embossed ED PINAUD/A/PARIS obverse; AC 322 S on base. Basal diameter, 3.01 cm. (1 3/16"); height, 7.53 cm. (2 15/16"); aperture, 1 cm. (3/8"). Contents: toiletry (perfume). Date range: *c.* 1850-1900 (composite dating key). (Figure 39)
241	1	15.1	olive green bottle base fragment, basal push-up present. Probable contents: wine.
243	1	5.0	clear, screw-cap, machine finish fragment. Date range: post 1903 (composite dating key).
244	1	4.2	clear, machine finish fragment. Date range: post 1903.
227	1	13.9	amber base fragment
301	121	250.9	clear glass fragments
303	25	64.5	olive bottle glass fragments
307	6	28.5	amber bottle glass fragments
302	29	125.0	aqua bottle glass fragments
306	1	20.8	cobalt glass fragment
304	1	0.8	emerald bottle glass fragment
305	2	15.5	blue-green glass fragments
308	7	7.0	red glass fragments
311	1	2.8	lavender tinted glass fragment
310	1	1.0	milk glass fragment
309	33	82.6	windowpane glass fragments
242	1	3.7	clear neck fragment

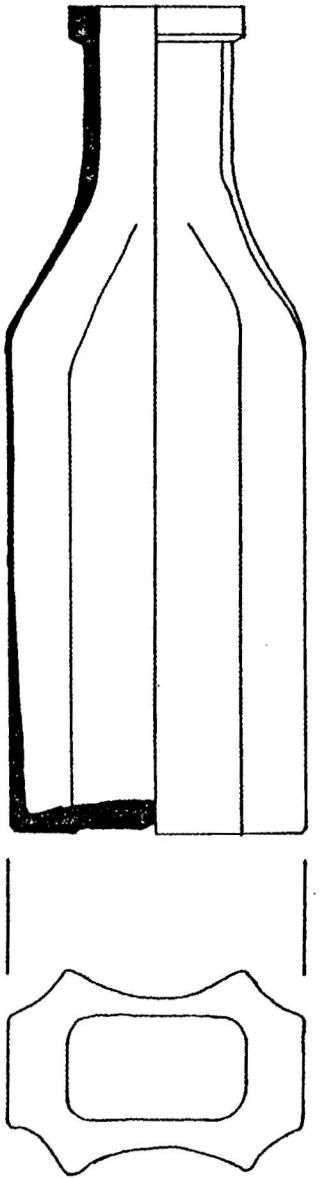


FIGURE 41: Condiment bottle: T.A. 17, no provenience; #262

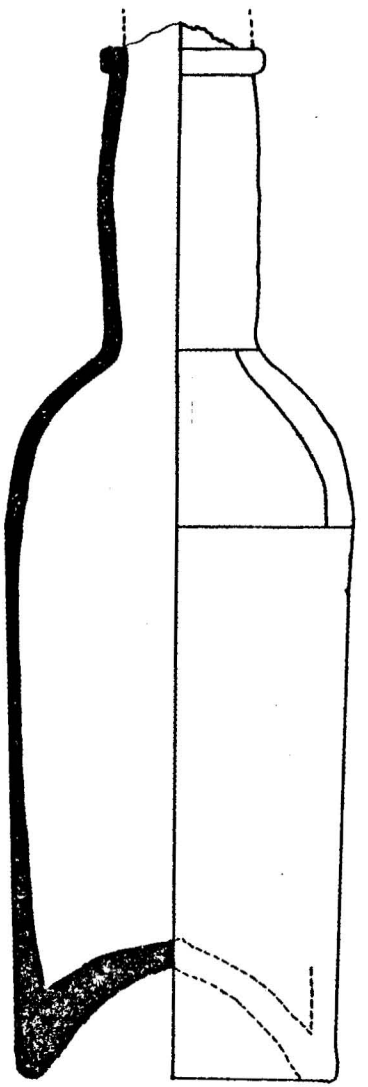
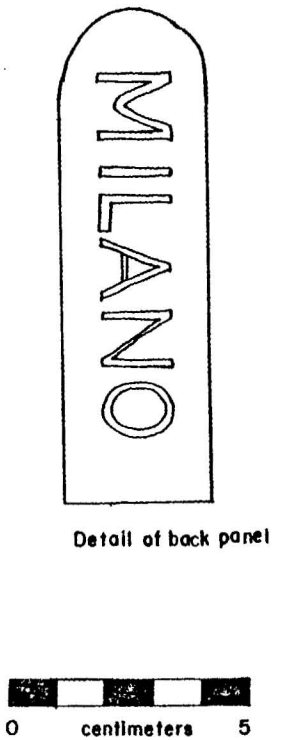


FIGURE 42: Beer bottle; T.A. 15, Level 1; #257



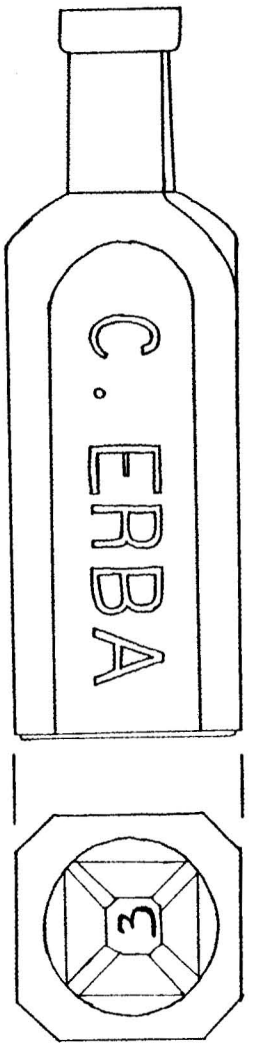


FIGURE 43: Bottle; T.A. 15, Level 1, #261

TEST AREA 11 (cont.)

Cat. #	Items	Wt. in Grams	
Level 6			
247	1	9.3	clear, pressed glass fragment from decorative vessel. Similar to 1.4, 203, and probably from the same vessel.
248	1	20.3	clear base fragment of a fluted drinking vessel (mug or tumbler).
249	1	21.0	olive green bottle base fragment, exhibiting a basal push-up and spun-in-the-mold striations. Probable contents: wine. Date range: *c.* 1870-1920 (composite dating key).
246, 250	2	39.5	olive green bottle base fragments with basal push-up. Probable contents: wine.
251	1	24.4	clear bottle base and body fragment, embossed V on the base and blown in a two-piece, cup bottom mold. Probable contents; toiletry or medicine.
252	1	3.4	olive green finish fragment, formed with a lipping tool. Date range: post 1856 (composite dating key).
253	1	2.1	clear, pressed glass rim fragment, possibly from a lamp chimney.
254	1	2.4	clear lamp chimney rim fragment, exhibiting crimped edge,
245	1	5.2	clear glass rim fragment
315	17	21.9	clear glass fragments
314	12	23.3	olive bottle glass fragments
312	5	9.6	amber bottle glass fragments
313	7	20.2	aqua bottle glass fragments
316	22	49.0	windowpane glass fragments
TEST AREA 13			
Overburden			
317	2	3.7	olive bottle glass fragments
Pit C			
318	4	15.0	olive bottle glass fragments
Pit D			
319	2	7.0	olive bottle glass fragments

TEST AREA 14

Cat. #	Items	Wt. in Grams	
Overburden, Locus 1			
320	2	22.5	olive bottle glass fragments
321	2	3.3	aqua bottle glass fragments
Level 1, Locus 2			
322	2	11.8	olive bottle glass fragments
Level 2, Locus 2			
325	1	0.8	clear glass fragment
323	3	5.7	olive bottle glass fragment
324	2	1.0	aqua bottle glass fragments

TEST AREA 15

Level 1			
257	32	304.5	black glass bottle, body and finish fragmented, embossed N on base. The bottle was handblown in a three-piece mold and finished with a lipping tool. Probable contents: beer. Date range: *c.* 1870-1910 (dating key). Basal diameter: 4.5 cm. (2 9/16"). (Figure 42)
327	4	18.1	clear glass fragments
328	1	8.6	olive bottle glass fragment
326	4	15.8	aqua bottle glass fragments
255	2	16.1	amber beer bottle neck fragments
256	1	15.7	aqua base fragment

TEST AREA 16

Level 1			
272	1	56.3	amber bottle base fragment, handblown in a two-piece, post bottom mold. Date range: *c.* 1857-1913 (dating key).
273	1	30.5	green bottle base fragment, basal push-up present. Probable contents: wine.
274	1	21.4	milk glass body fragment, possibly from toiletry or medicinal bottle.
366	9	185.7	olive bottle glass fragments, probably all from the same bottle.
367	5	56.8	olive bottle glass fragments
368	1	7.4	amber bottle glass fragments
369	2	27.4	aqua bottle glass fragments

TEST AREA 16 (cont.)

Cat. #	Items	Wt. in Grams	
Levels 1 and 2			
275 276	2	21.0	two olive green bottle base fragments, possibly from same vessel, exhibiting a basal push-up. Probable contents: wine.
Level 2			
277	1	87.0	olive green neck and finish fragment, formed with a lipping tool in the laid-on right style. Probable contents: wine. May be part of the same bottle as Nos. 275 and 276. Date range: post 1856 (dating key) (Plate 27e)
278	1	8.2	clear rim fragment from decorative vessel
279	1	3.5	aqua finish fragment, formed with a simple tool. Date range prior to *c.* 1865 (dating key).
280	1	7.9	olive green finish fragment, formed with a lipping tool. Date range: post 1856 (dating key).
281	1	6.4	olive green bottle base fragment, probably from the same bottle as Nos. 275 and 276.
373	2	6.3	clear glass fragments
370	4	29.8	olive bottle glass fragments
371	2	13.4	amber bottle glass fragments
372	4	12.4	aqua bottle glass fragments
Level 3			
374	1	12.9	finish fragment, aqua glass (Plate 26a)
378	2	7.3	clear bottle glass fragments
376	10	40.5	olive bottle glass fragments
377	2	5.1	amber bottle glass fragments
375	3	9.7	aqua bottle glass fragments
379	4	3.2	windowpane glass fragments
TEST AREA 17			
No provenience			
261	1	138.3	aqua bottle, embossed C. ERBA obverse; MILAND, reverse; 3 on base. The bottle was handblown in a two-piece, post bottom mold and finished with a lipping tool. Contents: uncertain. Date range: *c.* 1850-1913 (composite dating key). Height, 14.7 cm. (5 3/4"); width and depth, 4.5 cm. (1 3/4"): aperture, 1.48 cm. (9/16") (Figure 43)

TEST AREA 17 (cont.)

Cat. #	Items	Wt. in Grams	
No provenience (cont.)			
262	8	127.3	aqua, fluted, octagonal bottle, body fragmented. The bottle was handblown in two-piece, post bottom, mold and finished with a lipping tool. Contents: condiment (mustard or horseradish-Amer. Hist. Cat. Coll. 1971; ground pepper - Switzer 1974:60; ground cinnamon - Blumenstein 1965:124). Date range: *c.* 1857-1900 (this style had disappeared by the turn of the century). Height, 17.2 cm. (6 11/16"); width, 6.1 cm. (2 3/8"); depth, 4.1 cm. (1 9/16); aperture, 2.47 cm. (1") (Figure 41)
263	1	10.0	aqua finish fragment, formed with a lipping tool. Date range: post 1856 (dating key).
339	1	1.0	amber bottle glass fragment
264	1	32.1	olive green, alcoholic beverage bottle base.
Locus 1, Level 1			
258	1	96.7	black glass bottle base fragment with basal push-up. Probable contents: alcoholic beverage (wine?).
259	1	1.8	clear glass rim fragment
331	1	1.8	clear tumbler fragment
329	3	7.6	olive bottle glass fragment
330	1	0.9	aqua bottle glass fragment
331	2	1.6	windowpane glass fragment
260	1	8.3	clear glass base fragment
Locus 2, Level 1			
334	5	4.8	clear glass fragments
333	8	14.0	olive bottle glass fragments
335	2	3.3	aqua bottle glass fragments
Locus 3, Level 2			
337	1	0.6	clear tableware fragment
336	1	0.8	olive bottle glass fragment
Locus 4, Level 2			
338	1	6.0	clear bottle glass fragment

TEST AREA 19

Cat. #	Items	Wt. in Grams	
Level 3, Locus 1			
265	1	97.8	olive green bottle base and body fragment, embossed M... along lower body. Probable contents: alcoholic begerage.
266	1	10.7	clear, machine made, finish fragment. Date range: post 1903 (dating key).
342	2	7.1	clear glass fragments
340	2	16.1	olive bottle glass fragments
341	2	6.2	aqua bottle glass fragments
343	1	1.5	windowpane glass fragment
Level 3, Locus 2			
267	1	43.8	aqua handle fragment, base portion. Probably from pitcher or other large vessel.
344	2	15.8	olive bottle glass fragments
TEST AREA 20			
Level 1			
268	1	58.7	clear glass object, function unidentified. Possibly base fragment from pedestaled vase or decorative vessel. (Hole in base from pontil) (Figure 37)
269	1	10.5	olive green bottle base fragment, evidence of push-up present. Probable contents: wine. (Figure
348	3	2.7	clear glass fragments
346	9	12.2	olive bottle glass fragments
347	1	3.1	amber bottle glass fragment
345	6	8.9	aqua bottle glass fragments
348	1	1.5	light blue glass fragment
350	5	13.7	windowpane glass fragments
Level 2			
351	1	2.3	olive bottle glass fragment
Level 3			
352	1	0.4	clear bottle glass fragment
353	1	1.3	olive bottle glass fragment

TEST AREA 20 (cont.)

Cat. #	Items	Wt. in Grams	
Level 4			
354	1	1.5	olive bottle glass fragment
Level 6			
355	1	0.4	amber bottle glass fragment
TEST AREA 21			
Level 1			
359	4	2.4	clear glass fragments
358	1	0.2	olive bottle glass fragment
357	1	1.0	aqua bottle glass fragment
356	1	1.8	light blue bottle glass fragment
TEST AREA 22			
Level 1			
362	1	7.2	olive bottle glass fragment
361	2	2.7	amber bottle glass fragments
360	1	0.6	aqua bottle glass fragment
363	1	0.6	windowpane glass fragment
TEST AREA A6			
Level 1			
270	1	18.3	olive green finish fragment, formed with a lipping tool. Date range: post 1856 (dating key).
365	1	5.7	clear bottle glass fragment
364	11	6.9	olive bottle glass fragments

APPENDIX II.

FAUNAL ANALYSIS

FAUNEL REMAINS FROM 4-LAn-887
La Placita de Dolores*

In this section information is presented on the faunal remains from 4-LAn-887. Excavations at this site by J. Costello resulted in the recovery of approximately 5.5 kg. of bone. Much of this material is from domestic cattle *(Box taurus)*, (Tables 6, 7, and 8). Other mammals present include dog *(Canis domesticus)*, cat *(Felis domesticus)*, sheep *(Ovis aries)*, pocket gopher *(Thomomys bottae)*, and brush rabbit *(Sylvilagus bachmani)*.

Non-mammalian remains from 4-LAn-887 include those of domestic chicken *(Gallus domesticus)*, and unidentified teleost fish (Table 9).

The bones from 4-LAn-887 were grouped according to excavation unit and then identified to the lowest taxonomic level possible, using the comparative osteological collections of the University of California at Santa Barbara and the Santa Barbara Museum of Natural History. The bones were then examined for butchering marks and other evidence for techniques of food preparation. After completing this analysis, individual excavation units were assigned to specific periods, based on association with ceramics and other artifactual remains (see Tables 3 and 4). The Units from each period were then studied to obtain information on temporal variability in butchering practices and diet. A descriptive summary of the faunal remains from each period follows.

Recent American (1915-1953)

Very few identifiable bones were recovered in association with artifacts from this period. All of the *Bos* bones (h=4) in the Recent American period collection have been cut with a saw (Table 7). Several bones from a domestic chicken and a fish vertebrae are the only non-bovid, skeletal material identified in this collection.

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*By Dr. Phillip L. Walker and Cheryl Fecko

Middle American, Including Brothel (1889-*c.* 1914)

The sample of animal remains from this period contains bone from a variety of different species. Fifty-eight percent of the weight of this sample is accounted for by cattle bone (Table 8). Other animals present include sheep, domestic chicken, brush rabbit, teleost fish and an unidentified bird. Of these miscellaneous faunal remains, an *Ovis* long bone fragment and a bird bone exhibit cutting marks made with a knife-like tool held perpendicular to the bone's long axis. The remaining worked bone from the Middle American period, consists of sawed bone from domestic cattle. The sawed *Bos* bones in this collection included three pieces of scapula, one humerus, three pieces of femur, one tibia, several ribs, and a few unidentifiable, long bone fragments. Five of these bones exhibited marks from a knife-like tool. None of the Middle American bones was burned.

Early American (1847-1888)

Cattle are the only animal species present in the remains from this period. Long bone fragments and ribs from cattle are the most common skeletal elements in the collection. A humerus, a femur and two tibias from *Bos* have been cut with a saw (Table 7). The unidentified fragments of bone in this collection may contain remains of species other than *Bos*, but, because of the poor condition of these bones, it was possible to identify them only as mammalian. A small number of these unidentified fragments were burned. One of the unidentified mammal bones exhibited tool marks.

Spanish-Mexican (1781-1846)

Cattle account for more than 90% of the total weight of bone from this period. A *Bos* vertebrae is the only sawed bone from the Spanish-Mexican period. Six additional cattle bones from this period exhibit butchering marks inflicted by a knife-like tool (Table 7). A rib fragment is the only burned bone in the collection. Bones from a pocket gopher, part of a domestic cat's scapula and an unidentified bird bone were also present in this collection.

Significance of the Faunal Remains from 4-LAn-887

The inferences about diet which can be made from this material are limited by the small sample of faunal remains and the lack of information on the cultural activities responsible for the deposits from each period. The predominance of butchered *Bos* bone in the collection suggests that cattle were an important food animal during all of the periods studied. Differerences in butchering marks indicate that Spanish-American period butchering techniques differed from those used during the Recent and Middle American periods. Sharply incised cut marks are common on Spanish-American period *Bos* bones. Many of these butchering marks appear to have been made by a knife during the process of cutting muscle away from the bone. A single vertebrae is the only saw-marked bone in the collection from this period. In contrast to the Spanish-American period, almost all of the Middle American and Recent *Bos* bones have been cut transversely with a saw to obtain steaks and other "sliced" cuts of meat.

Thirty-five cattle bones from these periods evidence saw marks and only six bones have been cut with a knife-like, butchering tool. The Early American cattle bones exhibit saw marks as well as cut marks from a knife-like tool (Table 7). These remains may, therefore, represent a period of transition between Spanish-Mexican butchering practices characterized by cutting meat away from the bone and the later American periods characterized by sawing through long bones to produce steaks.

Table 6 Cattle Bone

Temporal & Spatial Designations				Skeletal Elements						
Period	Test Area	Level	Locus	Scapula	Humerus	Radius	Ulna	Femur	Tibia	Long-bone
Spanish-Mexican 1781-1846	14	S								
		1		1				1		1
		2			2		1	1	1	
	20	2								
		3							1	1
		4								
		5								
		6								
		7								
	21	2				1			1	2
		3								
		4								
		5		1						
		6								
	17	4	4				1	1		
		4	4					1	1	
		3	3							
Early American 1847-1888	11	6			1				2	1
	13	1						1		
		2								
		3								
	17	1	1	1				1		
		2	3							
		2	4							
Middle American 1889-c.1914	4	S			2			2		
		1								
	9	S		1				1		4
		1						1		1
		2								1
	10	1								
	13	S								2
	17	1	2							
		1	4	1		1			1	
	20	1								
	21	1								
	22	1								
	15	S							2	3
(Brothel Period)	11	5							1	1
	16	3						1	1	
Recent American 1915-1953	11	1								
		2								
		3								
		4						1		1
	16	1							1	

from 4-LAn-237

Skeletal Elements									
Metacarpal	Metatarsal	Tarsal	Carpal	Phalange	Vertebrae	Rib	Mandible	Teeth	Total Weight of Ungulate Bone Fragments
								1	62.5 grams
1	1				1	2	1	1	640.5
								1	859.7
		1							109.3
		1							209.5
									194.0
									85.6
									41.3
									4.1
									122.6
				1					24.1
	1								297.6
									41.5
									0.0
						4		5	209.1
					1	2			177.7
									1.2
						2		1	250.2 grams
						2			317.8
					1				31.7
									15.0
									121.5
									13.0
						1			28.2
						1			133.3 grams
									5.5
		1				4			318.9
									18.3
									19.0
									0.0
						1			19.7
									164.1
					1			1	42.5
									10.5
								2	13.0
									1.7
									61.5
			1		1	1			97.3
									83.4
									43.1 grams
									0.0
									0.0
						1			164.9
									12.6

TABLE 7a: BUTCHERING MARKS ON CATTLE BONES FROM 4-LAn-887

Period	Skeletal Element									Total # of Worked Bones
	Scapula	Humerus	Ulna	Femur	Tibia	Mett.	Longbone	Vertebrae	Rib	
Spanish/ Mexican			1B	1B		1B		$1S^1$	3B	7
Early American		1B $1S^2$		$1S^2$	$1S^1$ $1S^2$		$1S^2$	1B	1B	8
Middle American	$1S^1$ $2S^2$	$1S^2$		$2S^2$ $1S^1$	$1S^2$		S^2+B $7S^2$ $1S^1$		$2S^1$ $1B^1$	20
Brothel				$1S^1$+B 1B	S^2		$1S^1$+B $2S^2$		$12S^1$ S^2+B	8
Recent American				$1S^1$+B	$1S^2$		$1S^1$		$1S^1$	4

Key:

S^1 = bone sawn off at one end only

S^2 = bone sawn off at both ends

B = butchering marks made by a knife-like tool

S+B = sawn off with butchering marks made by a knife-like tool

TABLE 7b: BUTCHERING MARKS ON CATTLE BONES FROM 4-LAn887

Period	Total # of Worked Bones	#B	%B	#S+B	%S+B	#S^1	%S^1	#S^2	%S^2
Spanish/ Mexican	7	6	85.6	0	0	1	14.4	0	0
Early American	8	3	37.5	0	0	1	12.5	4	50.0
Middle American	20	1	5.0	1	5	5	25.0	13	65.0
Brothel	8	0	0	3	37.5	2	25.0	3	37.5
Recent American	4	0	0	1	25.0	2	50.0	1	25.0

Key:

S^1 = bone sawn off at one end only

S^2 = bone sawn off at both ends

B = butchering marks made by a knife-like tool

S+B = sawn off with butchering marks made by a knife-like tool

TABLE 8: WEIGHT*OF BONE FROM 4-LAn-887

Periods	Bos	Ungulate	Unidentifiable Mammal	Identifiable Mammal
Spanish/Mexican	1678.0	1369.0	202.3	6.1
Early American	695.3	80.1	97.5	0
Middle American	349.0	65.9	135.5	1.5
Brothel	105.7	54.3	43.2	27.5
Recent American	128.2	92.4	13.6	19.0

*Weight in grams

TABLE 9: SPECIES DISTRIBUTION

Species Represented	PERIOD				Wt. in Grams
	Spanish/Mexican	Early American	Middle American	Recent	
			Brothel		
Dog			1 humerus		7.7
Cat	1 scapula				1.1
Sheep/Goat			1 humerus		17.9
Chicken			3 longbone fragments	36 bones (1 individual)	18.1
Fish			3 unident fragments	1 vrt.	1.5
Rabbit			1 humerus		.9
Gopher	1 mandible				1.0
Aves	6 unident fragments		4 frgs.		4.5

TABLE 10
OCCURENCE OF BONE BY TEST AREA & LEVEL

TEST AREA	STRATUM	LEVEL	QUANTITY	WEIGHT
4	I	OVERBURDEN	7	134.7
4	II	1	13	7.0
A6	I	1	5	11.0
9	I	OVERBURDEN	18	329.2
9	II	1	3	19.3
9	III	2	18	26.8
10	I	1	2	9.6
11	II	1-A	13	43.8
11	II	2-A	1	3.5
11	III	4	84	183.5
11	IV	5	39	82.1
13	I	OVERBURDEN	3	19.7
14	I	"	32	62.5
14	I	1	107	496.6
14	I	2	120	841.9
17	IV	3.3	2	1.4
17	IV	3.4	2	41.0
17	IV	4.3	14	138.3
17	V	4.4	52	230.0
20	I	1	11	12.1
20	II	2	74	107.7
20	II	3	46	210.4
20	II	4	25	194.0
20	II	5	13	86.1
20	II	6	25	29.1
20	II	7	15	4.1
21	I	1	7	13.0
21	II	2	126	114.5
21	II	3	18	25.1
21	II	4	4	297.6
21	II	5	5	41.5
22	I	1	1	1.7