

Archaeological Excavations of the Hooper Warehouse, the Tucson Sampling Works, and the Southern Pacific Railroad Clubhouse, Historic Block 95, Tucson, Pima County, Arizona

Edited by

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Contributions by

Allison Cohen Diehl

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Technical Report No. 2009-08
Desert Archaeology, Inc.

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Technical Report No. 2009-08
Desert Archaeology, Inc.

3975 North Tucson Boulevard, Tucson, Arizona 85716 • June 2010

ABSTRACT

Historic Block 95 is located in downtown Tucson at the northeastern corner of North 4th Avenue and Toole Avenue. The block was developed shortly after the arrival of the Southern Pacific Railroad in March 1880. William Hooper & Company constructed a liquor warehouse and the Southern Pacific Railroad an icehouse. The Hooper warehouse was converted into the Tucson Sampling Works, an ore assaying business, which operated from 1887 to 1901. The Southern Pacific Railroad demolished the assay works and constructed a Clubhouse for employees in 1906. The Clubhouse was open until 1922, after which the building became the railroad

superintendent's office until the mid-1960s. Other railroad-related buildings were located nearby, including a washroom where employees could use the restroom and shower.

Archaeologists explored Historic Block 95 in the Fall of 2009, uncovering building foundations, outhouse pits, and ore waste pits. The block was designated AZ BB:13:809 (ASM). Information recovered allowed research questions to be explored on railroad architecture, changing Tucson lifeways in the late nineteenth century, sanitation, diet, and ore assaying.

COMPLIANCE SUMMARY

Date: 9 June 2010

Report Title: *Archaeological Excavations of the Hooper Warehouse, the Tucson Sampling Works, and the Southern Pacific Railroad Clubhouse, Historic Block 95, Tucson, Pima County, Arizona*, edited by J. Homer Thiel. Technical Report No. 2009-08, Desert Archeology, Inc., Tucson.

Client: City of Tucson

Client Project Name: Plaza Centro Archaeology, City of Tucson Contract No. 09-30, Desert Archaeology Project No. 09-135AO

Compliance Agency: City of Tucson

Compliance Level: City of Tucson

Applicable Laws/Regulations: Cultural resources compliance for City of Tucson projects is mandated from several sources. On 3 October 1983, Tucson's Mayor and Council passed Resolution No. 12443 that first defined procedures for protecting Tucson's rich, multicultural heritage. In 1999, these procedures were formalized in an Administrative Directive titled *Protection of Archaeological and Historical Resources in City Projects*, issued by the City Manager. Updated in 2005, the Administrative Directive includes policies and procedures that apply to City employees, rights-of-way, and projects. It also specifies coordination with other environmental laws and regulations where applicable. This Administrative Directive as well as the State of Arizona statute related to human burials (ARS 41-844), are the primary cultural resources compliance mandates addressed in the present project.

Applicable Permits: Arizona State Museum 2009-128ps

Tribal Consultation: N/A

Project Description: Archaeological Testing and Data Recovery on Historic Block 95, AZ BB:13:809 (ASM), in downtown Tucson prior to the redevelopment of the land.

Fieldwork Dates and Crew Person-days (non-supervisory): 20 October 2009-2 November 2009; 36 crew person-days. William Doelle was the Principal Investigator, and J. Homer Thiel was the Project Director.

Final Disposition of Project Artifacts, Field Notes, Data, and Records: Arizona State Museum, Accession Number 2009-699.

Location [Land Ownership; City, County, State; Legal Description]:

Land Ownership: The property was owned by the City of Tucson at the time of fieldwork.

City, County, and State: Tucson, Pima County, Arizona

Description: Historic Block 95 in downtown Tucson. Section 13, Township 14 South, Range 13 East, Baseline 12, USGS 7.5-minute topographic quad Tucson, Ariz (AZ BB:13 [NW]).

Area of Potential Effects (APE), Definition and Description: The APE for the project is the footprint of the planned construction. The project area is bounded on the south and east by N. Toole Avenue, on the west by the N. 4th Avenue underpass, and north of the modern railroad right-of-way fence. The area was a vacant lot at the time of the archaeological project (see Figures 1.1 and 1.2).

Number of Surveyed Acres: N/A

Number of Sites: 1, AZ BB:13:809 (ASM), Historic Block 95

List of Register-eligible Properties: AZ BB:13:809 (ASM)

Summary of Results: Archaeological data recovery documented the physical remains of the Hooper warehouse (1880-circa 1887), the Tucson Sampling Works (1887-1901), and the Southern Pacific Railroad Clubhouse (1906-circa 1964). Features associated with the buildings yielded artifacts and food remains providing significant data on the lives of the residents and workers associated with the property between 1880 and 1901.

Recommendations: The archaeological data recovery program outlined in the approved treatment plan for the project (A. Diehl 2009) was successfully implemented. Therefore, Desert Archaeology recommends that development of the project area proceed as planned.

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Archaeological work at Block 95 was conducted for the City of Tucson, which funded the excavations. Jonathan Mabry, the Historic Preservation Officer for the City of Tucson, provided oversight for the project.

The archaeological fieldwork was conducted by Allen Denoyer, Ralph Koziarski, Ruven Sinensky, James Whitney, and Benny White. Steve Ditschler of Innovative Excavating operated the backhoe. Tyler Theriot provided mapping expertise.

Artifacts and samples were prepared for analysis by Lisa Eppley, Susan Blair, and Tatiana Yatskeych. Susan Blair also analyzed many of the recovered artifacts. Trish Castalia managed the project. Jean Kramer and Mario Arechederra provided support. The report was edited by Emilee Mead and formatted by Donna Doolittle. Robert Ciaccio illustrated profiles and photographed artifacts.

INTRODUCTION

*J. Homer Thiel
Desert Archaeology, Inc.*

The results of archaeological testing and data recovery to mitigate the impacts of construction associated with the Plaza Centro project, a private development with support from the City of Tucson, are presented in this report. The current project involved a parcel of land along the northern side of North Toole Avenue, east of the newly constructed 4th Avenue Underpass (City of Tucson Project No. 09-30). A survey and archival study (Diehl 2005) indicated that Historic Block 95, AZ BB:13:809 (ASM), once contained the Southern Pacific Employees Club, a facility built and used in the early twentieth century, as well as other buildings.

Archaeological testing was recommended to explore the extent and nature of any surviving cultural deposits, with immediate data recovery should significant subsurface archaeological resources be encountered at site AZ BB:13:809 (ASM). The discovery of outhouse and planting pits, along with the brick foundation of the clubhouse, led to a recommendation that data recovery proceed. Fieldwork began on 20 October 2009, and was completed on 2 November 2009. A total of 36 person-days was expended in this effort. William H. Doelle, Ph.D., was the Principal Investigator, and J. Homer Thiel served as Project Director. All project forms, photographs, and artifacts will be curated at the Arizona State Museum (ASM) under Accession Number 2009-699. The project was conducted under ASM permit 2009-128ps.

The archaeological data recovery program was successfully implemented. Therefore, Desert Archaeology recommends that development of the Plaza Centro project proceed as planned. Additional local and compliance information can be found in the Compliance Summary section in the front matter of this report.

PROJECT AREA LOCATION AND DESCRIPTION

The project area is located in Pima County in Section 13, Township 14 South, Range 13 East on the USGS 7.5-minute topographic quad Tucson, Ariz. (AZ BB:13 [NW]) (Figure 1.1). Specifically, the project area consists of a parcel of land located along Toole Avenue near the 4th Avenue Underpass

(Figure 1.2). This parcel is bounded by North Toole Avenue on the south and east, the railroad right-of-way on the north, and the 4th Avenue Underpass on the west. It covers approximately 1.4 acres. The City of Tucson has entered into a partnership with a private company to develop the parcel.

The Area of Potential Effects (APE) refers to the “geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist” (36 CFR 800.16[d]). The APE for the current project includes the footprint of the construction project area and any other standing historic properties that may be significantly affected by the proposed construction. The closest historic properties are the Rialto Theater, the Congress Hotel, and the recently restored Southern Pacific Railroad station, all west or north of the project area.

ENVIRONMENTAL SETTING OF THE PROJECT AREA

The project area is located in the bajada zone of the Tucson Basin approximately 1.2 km east of the Santa Cruz River floodplain. The surrounding area is currently fully developed, but it once supported vegetation typical of the Arizona Uplands subdivision of the Sonoran Desert Scrub series (Hansen 1996). The elevation of the project area averages approximately 2,395 feet (730 m) above sea level.

CULTURAL BACKGROUND OF THE PROJECT AREA

The history of the Southwest and of the Tucson Basin is marked by a close relationship between people and the natural environment. Environmental conditions have strongly influenced subsistence practices and social organization, and social and cultural changes have, in turn, made it possible to more efficiently exploit environmental resources. Through time, specialized adaptations to the arid region distinguished people living in the Southwest from those in other areas. Development of cultural and social conventions also became more regionally specific, and by A.D. 650, groups living in the

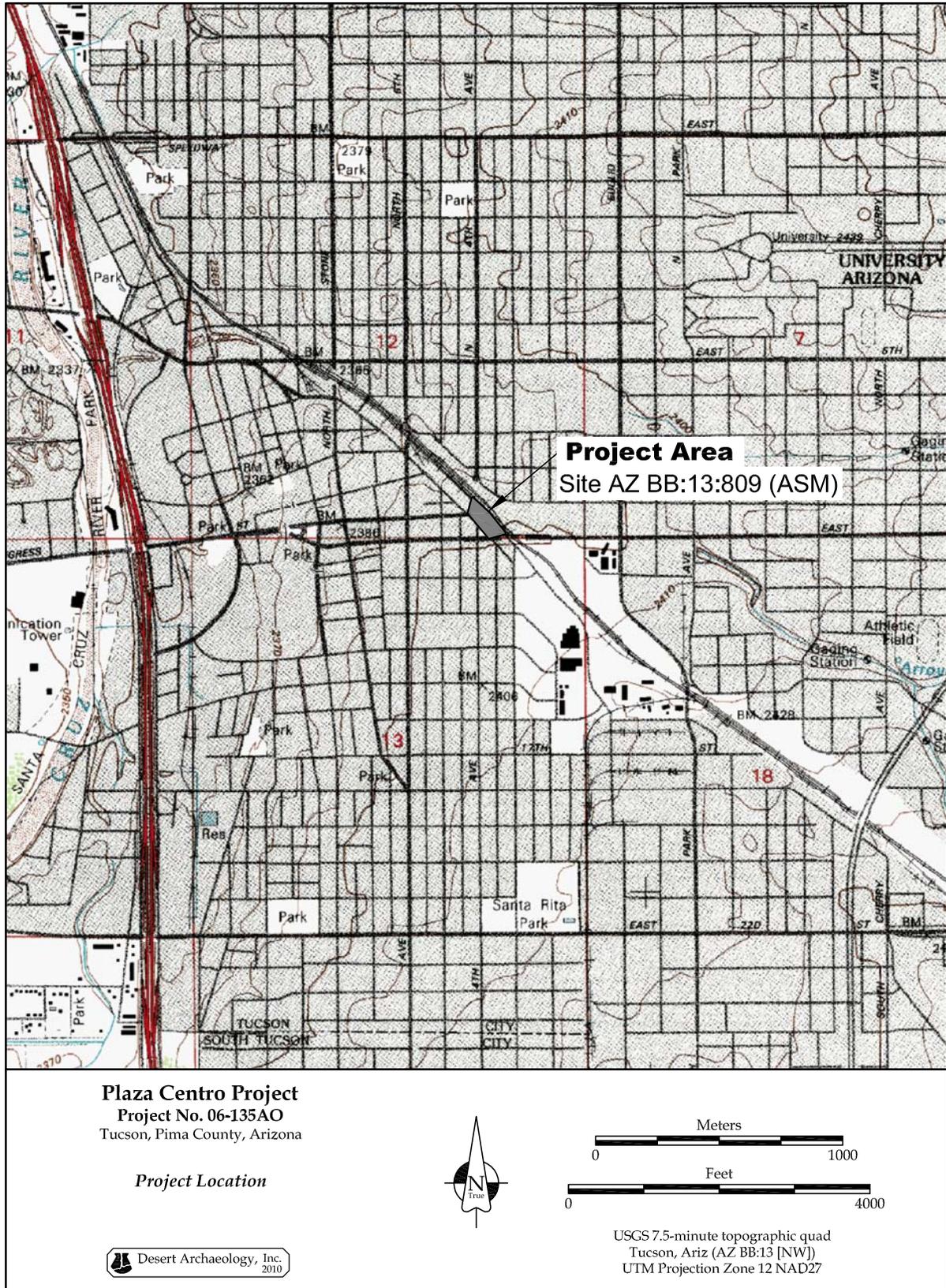


Figure 1.1. Reproduction of USGS 7.5-minute topographic quad Tucson, Ariz. (AZ BB:13 [NW]), showing the location of the project area, Historic Block 95, AZ BB:13:809 (ASM).

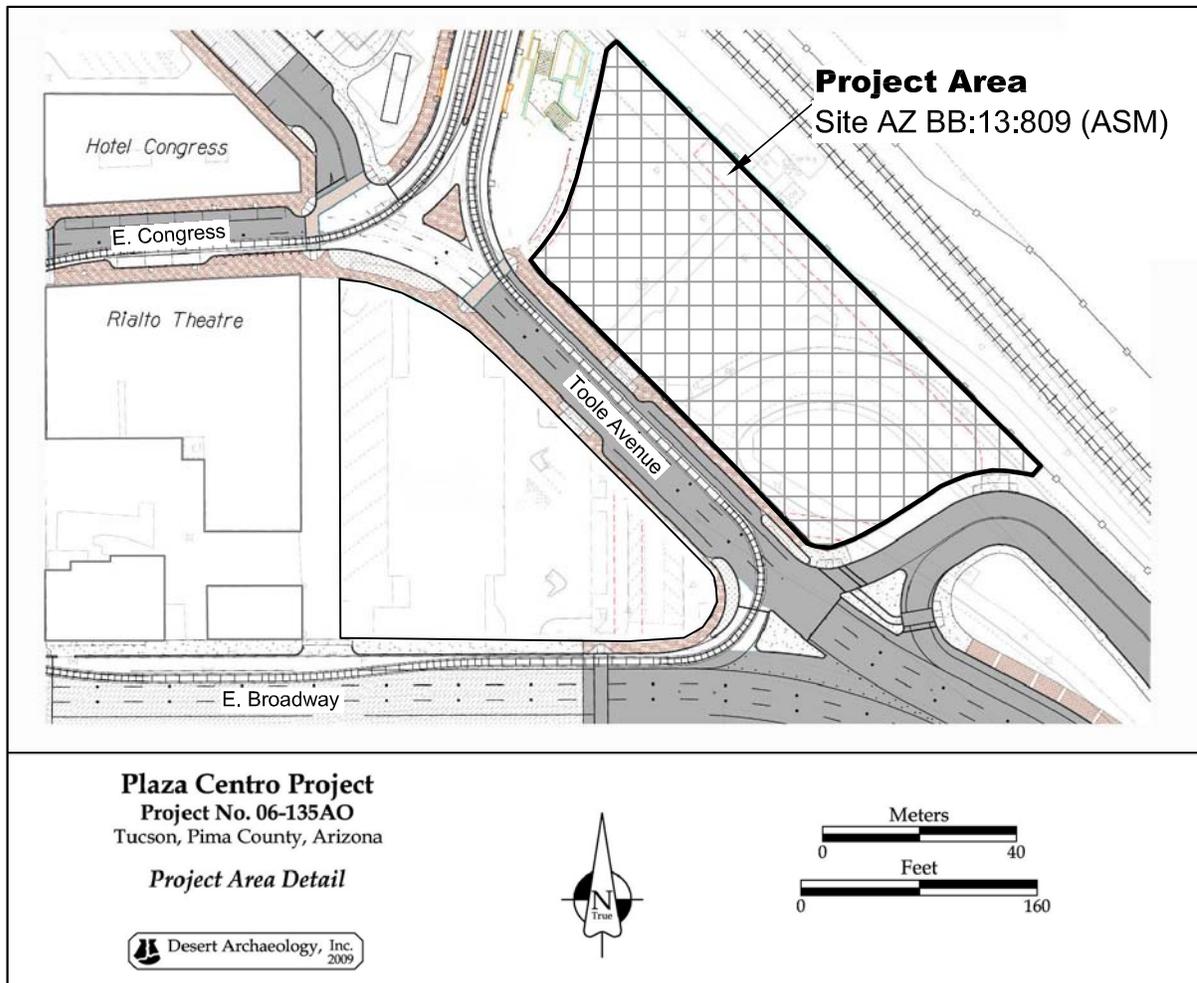


Figure 1.2. The Plaza Centro project area, Historic Block 95, AZ BB:13:809 (ASM).

Tucson Basin can be readily differentiated from those living in other areas of the Southwest. Today, the harsh desert climate no longer isolates Tucson and its inhabitants, but life remains closely tied to the unique resources of the Southwest. The chronology of the Tucson Basin is summarized in Table 1.

Paleoindian Period (11,500?-7500 B.C.)

Archaeological investigations suggest the Tucson Basin was initially occupied some 13,000 years ago, a time much wetter and cooler than today. The Paleoindian period is characterized by small, mobile groups of hunter-gatherers who briefly occupied temporary campsites as they moved across the countryside in search of food and other resources (Cordell 1997:67). The hunting of large mammals, such as mammoth and bison, was a particular focus of the subsistence economy. A Clovis point characteristic of the Paleoindian period (circa 9500 B.C.) was collected from the Valencia site, located along the Santa

Cruz River in the southern Tucson Basin (Doelle 1985:183-184). Another Paleoindian point was found in Rattlesnake Pass, in the northern Tucson Basin (Huckell 1982). These rare finds suggest prehistoric use of the Tucson area probably began at this time. Paleoindian use of the Tucson Basin is supported by archaeological investigations in the nearby San Pedro Valley and elsewhere in southern Arizona, where Clovis points have been discovered in association with extinct mammoth and bison remains (Huckell 1993, 1995). However, because Paleoindian sites have yet to be found in the Tucson Basin, the extent and intensity of this occupation are unknown.

Archaic Period (7500-2100 B.C.)

The transition from the Paleoindian period to the Archaic period was accompanied by marked climatic changes. During this time, the environment came to look much like it does today. Archaic period groups pursued a mixed subsistence strategy, characterized

Table 1.1. Periodization and chronology of the Santa Cruz Valley-Tucson Basin prehistory.

Periods	Phases	Date Ranges
Historic		
American Statehood	—	A.D. 1912-present
American Territorial	—	A.D. 1856-1912
Spanish and Mexican	—	A.D. 1697-1856
Protohistoric	—	A.D. 1450-1697
Prehistoric		
Hohokam Classic	Tucson	A.D. 1300-1450
	Tanque Verde	A.D. 1150-1300
Hohokam Sedentary	Late Rincon	A.D. 1100-1150
	Middle Rincon	A.D. 1000-1100
	Early Rincon	A.D. 950-1000
Hohokam Colonial	Rillito	A.D. 850-950
	Cañada del Oro	A.D. 750-850
Hohokam Pioneer	Snaketown	A.D. 650/700-750
	Tortolita	A.D. 500-650/700
Early Ceramic	Late Agua Caliente	A.D. 350-500
	Early Agua Caliente	A.D. 50-350
Early Agricultural	Late Cienega	400 B.C.-A.D. 50
	Early Cienega	800-400 B.C.
	San Pedro	1200-800 B.C.
	(Unnamed)	2100-1200 B.C.
Archaic	Chiricahua	3500-2100 B.C.
	(Occupation gap?)	6500-3500 B.C.
	Sulphur Springs-Ventana	7500-6500 B.C.
Paleoindian		11,500?-7500 B.C.

by intensive wild plant gathering and the hunting of small animals. The only Early Archaic period (7500-6500 B.C.) site known from the Tucson Basin is found in Ruelas Canyon, south of the Tortolita Mountains (Swartz 1998:24). However, Middle Archaic period sites dating between 3500 and 2100 B.C. are known from the bajada zone surrounding Tucson, and, to a lesser extent, from floodplain and mountain areas. Investigations conducted at Middle Archaic period sites include excavations along the Santa Cruz River (Gregory 1999), in the northern Tucson Basin (Roth 1989), at the La Paloma development (Dart 1986), and along Ventana Canyon Wash and Sabino Creek (Dart 1984; Douglas and Craig 1986). Archaic period sites in the Santa Cruz floodplain were found to be deeply buried by alluvial sediments, suggesting more of these sites are present, but undiscovered, due to the lack of surface evidence.

Early Agricultural Period (2100 B.C.-A.D. 50)

The Early Agricultural period (previously identified as the Late Archaic period) was the period when domesticated plant species were first cultivated in the Greater Southwest. The precise timing of the introduction of cultigens from Mexico is not known, although direct radiocarbon dates on maize

indicate it was being cultivated in the Tucson Basin and several other parts of the Southwest by 2100 B.C. (Mabry 2008). By at least 400 B.C., groups were living in substantial agricultural settlements in the floodplain of the Santa Cruz River. Recent archaeological investigations suggest canal irrigation also began sometime during this period.

Several Early Agricultural period sites are known from the Tucson Basin and its vicinity (M. Diehl 1997; Ezzo and Deaver 1998; Freeman 1998; Gregory 2001; Huckell and Huckell 1984; Huckell et al. 1995; Mabry 1998, 2008; Roth 1989). While there is variability among these sites—probably due to the 2,150 years included in the period—all excavated sites to date contain small, round, or oval semisubterranean pit-houses, many with large internal storage pits. At some sites, a larger round structure is also present, which is thought to be for communal or ritual purposes.

Stylistically distinctive Cienega, Cortaro, and San Pedro type projectile points are common at Early Agricultural sites, as are a range of ground stone and flaked stone tools, ornaments, and shell jewelry (M. Diehl 1997; Mabry 1998). The fact that shell and some of the material used for stone tools and ornaments were not locally available in the Tucson area suggests trade networks were operating. Agriculture, particularly the cultivation of corn, was im-

portant in the diet and increased in importance through time. However, gathered wild plants—such as tansy mustard and amaranth seeds, mesquite seeds and pods, and agave hearts—were also frequently used resources. As in the preceding Archaic period, the hunting of animals such as deer, cottontail rabbits, and jackrabbits, continued to provide an important source of protein.

Early Ceramic Period (A.D. 50-500)

Although ceramic artifacts, including figurines and crude pottery, were first produced in the Tucson Basin during the Early Agricultural period (Heidke and Ferg 2001; Heidke et al. 1998), the widespread use of ceramic containers marks the transition to the Early Ceramic period (Huckell 1993). Undecorated plain ware pottery was widely used in the Tucson Basin by about A.D. 50, marking the start of the early Agua Caliente phase (A.D. 50-350).

Architectural features became more formalized and substantial during the Early Ceramic period, representing a greater investment of effort in construction, and perhaps more permanent settlement. A number of pithouse styles are present, including small, round, and basin-shaped houses, as well as slightly larger subrectangular structures. As during the Early Agricultural period, a class of significantly larger structures may have functioned in a communal or ritual manner.

Reliance on agricultural crops continued to increase, and a wide variety of cultigens—including maize, beans, squash, cotton, and agave—were an integral part of the subsistence economy. Populations grew as farmers expanded their crop production to floodplain land near permanently flowing streams, and it is assumed that canal irrigation systems also expanded. Evidence from archaeological excavations indicates trade in shell, turquoise, obsidian, and other materials intensified and that new trade networks developed.

Hohokam Sequence (A.D. 500-1450)

The Hohokam tradition developed in the deserts of central and southern Arizona sometime around A.D. 500 and is characterized by the introduction of red ware and decorated ceramics: red-on-buff wares in the Phoenix Basin and red-on-brown wares in the Tucson Basin (Doyel 1991; Wallace et al. 1995). Red ware pottery was introduced to the ceramic assemblage during the Tortolita phase (A.D. 500-650/700). The addition of a number of new vessel forms suggests that, by this time, ceramics were utilized for a multitude of purposes.

Through time, Hohokam artisans embellished this pottery with highly distinctive geometric figures and life forms such as birds, humans, and reptiles. The Hohokam diverged from the preceding periods in a number of other important ways: (1) pithouses were clustered into formalized courtyard groups, which, in turn, were organized into larger village segments, each with their own roasting area and cemetery; (2) new burial practices appeared (cremation instead of inhumation) in conjunction with special artifacts associated with death rituals; (3) canal irrigation systems were expanded and, particularly in the Phoenix Basin, represented huge investments of organized labor and time; and (4) large communal or ritual features, such as ballcourts and platform mounds, were constructed at many village sites.

The Hohokam sequence is divided into the pre-Classic (A.D. 500-1150) and Classic (A.D. 1150-1450) periods. At the start of the pre-Classic, small pithouse hamlets and villages were clustered around the Santa Cruz River. However, beginning about A.D. 750, large, nucleated villages were established along the river or its major tributaries, with smaller settlements in outlying areas serving as seasonal camps for functionally specific tasks such as hunting, gathering, or limited agriculture (Doelle and Wallace 1991). At this time, large, basin-shaped features with earthen embankments, called ballcourts, were constructed at a number of the riverine villages. Although the exact function of these features is unknown, they probably served as arenas for playing a type of ball game, as well as places for holding religious ceremonies and for bringing different groups together for trade and other communal purposes (Wilcox 1991; Wilcox and Sternberg 1983).

Between A.D. 950 and 1150, Hohokam settlement in the Tucson area became even more dispersed, with people utilizing the extensive bajada zone as well as the valley floor (Doelle and Wallace 1986). An increase in population is apparent, and both functionally specific seasonal sites, as well as more permanent habitations, were now situated away from the river; however, the largest sites were still on the terraces just above the Santa Cruz. There is strong archaeological evidence for increasing specialization in ceramic manufacture at this time, with some village sites producing decorated red-on-brown ceramics for trade throughout the Tucson area (Harry 1995; Heidke 1988, 1996; Huntington 1986).

The Classic period is marked by dramatic changes in settlement patterns and possibly in social organization. Aboveground adobe compound architecture appeared for the first time, supplementing, but not replacing, the traditional semisubterranean pithouse architecture (Haury 1928; Wallace 1995). Although corn agriculture was still the primary subsistence focus, extremely large Classic period rock-

pile field systems associated with the cultivation of agave have been found in both the northern and southern portions of the Tucson Basin (Doelle and Wallace 1991; Fish et al. 1992).

Platform mounds were also constructed at a number of Tucson Basin villages sometime around A.D. 1275-1300 (Gabel 1931). These features are found throughout southern and central Arizona and consist of a central structure that was deliberately filled to support an elevated room upon a platform. The function of the elevated room is unclear; some were undoubtedly used for habitation, whereas others may have been primarily ceremonial. Building a platform mound took organized and directed labor, and the mounds are believed to be symbols of a socially differentiated society (Doelle et al. 1995; Elson 1998; Fish et al. 1992; Gregory 1987). By the time platform mounds were constructed, most smaller sites had been abandoned, and Tucson Basin settlement was largely concentrated at only a half-dozen large, aggregated communities. Recent research has suggested that aggregation and abandonment in the Tucson area may be related to an increase in conflict and possibly warfare (Wallace and Doelle 1998). By A.D. 1450, the Hohokam tradition, as presently known, disappeared from the archaeological record.

Protohistoric Period (A.D. 1450-1697)

Little is known of the period from A.D. 1450, when the Hohokam disappeared from view, to A.D. 1697, when Father Kino first traveled to the Tucson Basin (Doelle and Wallace 1990). By that time, the Tohono O'odham people were living in the arid desert regions west of the Santa Cruz River, and groups that lived in the San Pedro and Santa Cruz valleys were known as the Sobaipuri (Doelle and Wallace 1990; Masse 1981). Both groups spoke the O'odham language and, according to historic accounts and archaeological investigations, lived in oval jacal surface dwellings rather than pithouses. One of the larger Sobaipuri communities was located at Bac, where the Spanish Jesuits, and later the Franciscans, constructed the mission of San Xavier del Bac (Huckell 1993; Ravesloot 1987). However, due to the paucity of historic documents and archaeological research, little can be said regarding this inadequately understood period.

Spanish and Mexican Periods (A.D. 1697-1856)

Spanish exploration of southern Arizona began at the end of the seventeenth century A.D. Early Spanish explorers in the Southwest noted the presence of Native Americans living in what is now the

Tucson area. These groups comprised the largest concentration of population in southern Arizona (Doelle and Wallace 1990). In 1757, Father Bernard Middendorf arrived in the Tucson area, establishing the first local Spanish presence. Fifteen years later, the construction of the San Agustín Mission near a Native American village at the base of A-Mountain was initiated, and by 1773, a church was completed (Dobyns 1976:33).

In 1775, the site for the Presidio of Tucson was selected on the eastern margin of the Santa Cruz River floodplain. In 1776, Spanish soldiers from the older presidio at Tubac moved north to Tucson, and construction of defensive and residential structures began. The Presidio of Tucson was one of several forts built to counter the threat of Apache raiding groups who had entered the region at about the same time as the Spanish (Thiel et al. 1995; Wilcox 1981). Spanish colonists soon arrived to farm the relatively lush banks of the Santa Cruz River, to mine the surrounding hills, and to graze cattle. Many indigenous settlers were attracted to the area by the availability of Spanish products and the relative safety provided by the Presidio. The Spanish and Native American farmers grew corn, wheat, and vegetables, and cultivated fruit orchards, and the San Agustín Mission was known for its impressive gardens (Williams 1986).

In 1821, Mexico gained independence from Spain, and Mexican settlers continued farming, ranching, and mining activities in the Tucson Basin. By 1831, the San Agustín Mission had been abandoned (Elson and Doelle 1987; Hard and Doelle 1978), although settlers continued to seek the protection of the Presidio walls.

American Period (1856-Present)

Through the 1848 settlement of the Mexican-American War and the 1853 Gadsden Purchase, Mexico ceded much of the Greater Southwest to the United States, establishing the international boundary at its present location. The U.S. Army established its first outpost in Tucson in 1856 and, in 1873, founded Fort Lowell at the confluence of the Tanque Verde Creek and Pantano Wash, to guard against continued Apache raiding.

Railroads arrived in Tucson and the surrounding areas in the 1880s, opening the floodgates of Anglo-American settlement. With the surrender of Geronimo in 1886, Apache raiding ended, and the region's settlement boomed. Local industries associated with mining and manufacturing continued to fuel growth, and the railroad supplied the Santa Cruz River valley with the commodities it could not produce locally. Meanwhile, homesteaders estab-

lished numerous cattle ranches in outlying areas, bringing additional residents and income to the area (Mabry et al. 1994).

By the turn of the twentieth century, municipal improvements to water and sewer service, and the eventual introduction of electricity, made life in southern Arizona more hospitable. New residences and businesses continued to appear within an ever-widening perimeter around Tucson, and city limits stretched to accommodate the growing population. Tourism, the health industry, and activities centered around the University of Arizona and Davis-Monthan Air Force Base have contributed significantly to growth and development in the Tucson Basin in the twentieth century (Sonnichsen 1982).

A complete history of the project area is presented in Chapter 2 (this volume).

PREVIOUS RESEARCH

Archaeological investigations have been conducted in the downtown Tucson area for more than 50 years. Urban renewal projects in the 1960s raised awareness of the archaeological and historical resources of downtown Tucson after numerous important properties were lost without documentation. In response, the City of Tucson and Pima County adopted local historical ordinances. In 1990, Tucson was designated a Certified Local Government by the Arizona State Historic Preservation Office (SHPO). This status allows the city to assume some of the authority for reviewing projects that affect historic resources. City projects that might not have otherwise been covered under the National Historic Preservation Act or comparable state-level preservation laws now undergo review for impacts to both standing historic properties and archaeological sites. Consequently, hundreds of cultural resources assessments and surveys have been conducted in Tucson, especially in the downtown area.

Many of these projects have revealed American Territorial period and early American Statehood period features on downtown blocks or on the adjacent Santa Cruz River floodplain. Data recovered from these sites have been used to study the early history of Tucson, the realities of day-to-day life, patterns of urban development, the interplay of ethnic traditions, socioeconomic forces, and other important themes in the “unwritten” history of Tucson and of the region.

Governmental

Government-related finds include portions of the 1881 County Jail, the 1883 City Jail, and the 1883 Fire

Station (Thiel et al. 1995). These structures were typically built from durable materials, such as fired bricks or concrete, and were located within the historic heart of the community, the original Spanish presidio fortress. The foundations of the early 1900s City Stables were found during another project, located a short distance from the downtown (Thiel 1996a).

Tucson used two cemeteries sequentially during the American Territorial period. The National Cemetery had a civilian area, used from the early 1860s to 1875, and an enclosed military cemetery, used from 1862 to 1881. The cemetery was later converted to residential usage (O’Mack 2006). Recently, Statistical Research, Inc., personnel excavated most of the surviving portions of the National Cemetery, uncovering almost 1,100 human burials (<http://www.pima.gov/JointCourts/PDFs/JCC_EOF_final.pdf>).

The Court Street Cemetery was established in 1875, and was in use until 1909; it was divided into Catholic and Protestant portions. Burials were supposed to have been moved to Holy Hope and Evergreen cemeteries after the Court Street Cemetery was closed, but many burials were left in place. Since the 1940s, 14 human burials have been encountered during utility work or by local residents (Thiel and Margolis 2007).

Archaeological work was also conducted in a municipal dump, which operated in the 1930s and 1940s. Analysis revealed that limited recycling took place during World War II. Also revealed was the extensive variety of consumer goods used by Tucson residents of the time period (Diehl et al. 1997).

Industrial, Commercial, and Agricultural

Relatively few industrial sites have been explored in Tucson. The most noteworthy was the Tucson Pressed Brick Company, which made fired bricks and architectural elements from the early 1890s to the 1960s, in a facility located on the western side of the Santa Cruz River (Diehl 2006; Diehl and Diehl 1996). Archaeologists located many of the buildings associated with the brick factory and conducted petrographic analyses of some of the bricks.

An ore mill located west of the downtown area has been mapped. The mill is particularly interesting because it was used to process tungsten ore during World War II (Diehl 2006).

Portions of the Wieland Bottling Works, in operation in the 1890s to early 1900s, was excavated northwest of the Southern Pacific Depot by Tierra Right-of-Way. In addition to the foundations of the works, several large pits were found that were filled with broken bottles, likely damaged while being

filled with beverages (Jeff Jones, personal communication 2005).

Three hotels have been studied. The Catalina Hotel operated between 1929 and 1989, and primarily served lower income people (Thiel 1993). The rock wall of the front garden of the Cosmopolitan Hotel was located in the City Hall lawn. The hotel began as a house in the 1850s, and was gradually transformed into a hotel, frequented by many important guests before falling into disrepair and ultimately demolished in 1935 (Thiel 2004). A well and an outhouse associated with the Ramona Hotel (also known as the Depot Park, Concordia, and Oberon hotels), in operation from the 1880s to 1926, were located on Block 83 (Thiel, ed. 2009).

An outhouse associated with the Cactus Saloon was also located on Block 83. This saloon operated from 1889 to 1910. Artifacts recovered included glassware, liquor bottles, shoe polish bottles, an Anheiser-Busch mirror, and fragments from a hand-painted front window (Thiel, ed. 2009).

American Territorial period irrigation canals have been documented within the Santa Cruz River floodplain. These canals provided water to agricultural fields and for residents of Tucson prior to city water (Thiel 2005a; Thiel and Mabry 2006).

Residential

Most downtown archaeological projects have explored residences and their backyard spaces, locating foundations, outhouses, wells, borrow pits, and planting holes. The artifacts and remnants of meals have provided new insights into the lives of Tucson residents, information not typically recorded in written contemporary accounts.

Mexican-American households have been examined during several excavations. Adjacent blocks were excavated in the Barrio Libre, including outhouses and a borrow pit associated with an apartment building on Block 136. Residents were quite transient, as reflected by the inexpensive, unmatched dishes and the lower quality meat cuts. A pair of traditional Mexican *horno* ovens was also found (Thiel 2002). Work on Block 139 uncovered features associated with the middle-class Burruel family and the lower income Estrada household. Their differing socioeconomic classes could be observed in the types of dishes they used, with the Burruels purchasing more elaborate serving vessels. The Burruel family chose to live in a traditional lower income neighborhood, probably because they felt more comfortable surrounded by other Mexican-American families (A. Diehl et al. 2003).

Artifacts from the León farmstead, located in the floodplain near downtown, could be linked to indi-

vidual family members, and these artifacts supported documentary evidence for their middle to upper class status (Thiel 2005a).

Statistical Research excavated Block 180 and uncovered borrow pits, privies, wells, and homes associated with occupation of the block by Euro-American, Mexican-American, and Chinese residents beginning in the 1870s. The large borrow pits, which have been located on other residential blocks, were used to collect dirt to make adobe bricks for construction. Afterwards, they were used for trash disposal. Artifacts and food remains from the block indicate little differences in the material culture of the Hispanic and Anglo residents (Ciolek-Torrello and Swanson 1997).

The first Chinese man arrived in Tucson around 1874. A large influx of Chinese immigrants occurred during construction of the railroad in 1880. Archaeologists have excavated features associated with two gardeners, a storekeeper, and a laundry (Thiel 1997, 2002; Thiel, ed. 2009; Thiel and Mabry 2006). All of the households ate Chinese foods using imported Chinese dishes, wore traditional clothing, and smoked opium, perhaps while gambling using Chinese coins.

Euro-American households examined to date included the lot belonging to William and Annie Osborn. William Osborn was a prominent politician and lawyer in Tucson. Artifacts from his household suggested a concern with thrift and a reliance on beef as a meat source. Annie Osborn appears to have purchased more expensive dishes after William's death in 1908 (Thiel 2003a). Excavations at the Radulovich-Brena and Vasquez-Dalton households, middle- to upper-class families, revealed the families ate meals featuring high-quality meats from elaborate serving and drinking vessels (Mabry et al. 1994).

Excavations on Block 228 located features associated with the Peter Brady and Charles von Erxleben households. Brady's wife was Mexican, and she apparently used many more Tohono O'odham and Mexican ceramic vessels in her kitchen than her Euro-American neighbors (Ayres 1990).

Summary

Excavations within downtown Tucson and its adjacent floodplain have documented a variety of sites and provided significant new information about the residents of the community. Governmental buildings have generally been clustered within the boundaries of the Spanish and Mexican period presidio fortress. Cemeteries have been abandoned and moved further away from the center of town, with this process ending after Evergreen and Holy Hope cemeteries were established in 1907. Municipal trash

collection began in the 1910s, and by the 1920s, little domestic trash was discarded on downtown city lots. Future archaeologists will need to explore dumps and landfills to examine the material culture of Tucson residents from the 1920s onward.

American Territorial period irrigation canals are present throughout the Santa Cruz River floodplain. A handful of businesses have been studied. The material culture of saloons and hotels has recently been examined, with documents and artifacts each providing relevant data. Residential excavations have revealed the complexities of Tucson history. While wealthy households often ate more expensive foods and had better quality ceramics, this was not always the case.

SIGNIFICANCE ASSESSMENT

National Register of Historic Places

The National Register of Historic Places (National Register) is the nation's inventory of historic sites. It was established after the passage of the National Historic Preservation Act of 1966, to promote preservation and study of historic resources. Most projects involving federal agencies, federal land, or federal funds require evaluation and mitigation of their impacts on properties eligible for the National Register. Additionally, many state and local laws, ordinances, and regulations require similar evaluations.

For a property to be listed in the National Register, it must meet integrity requirements and at least one of four significance criteria. These criteria are summarized in Table 1.2. An important aspect of significance is a property's historic context (cultural affiliation and dates of use). If a historic context cannot be established, or if the property cannot be shown to be significant within its historic context, it does not meet eligibility requirements for inclusion

in the National Register. Further, except under special circumstances, properties must be at least 50 years old to be considered for inclusion in the National Register.

Significance of the Project Area

Sanborn Fire Insurance maps reveal that during the 1880s and 1890s, the project area was occupied by a warehouse, an ice house, and an ore sampling works. These businesses developed in response to the March 1880 arrival of the Southern Pacific Railroad in Tucson. Warehouses sprang up along the tracks to store the large amounts of goods imported into the region. The ice house provided ice and refrigeration for the passenger trains moving through the community. The ore sampling works used the adjacent railroad tracks to move copper, lead, gold, and silver ore to smelters in New Mexico and California.

From the 1880s through the mid-twentieth century, the Southern Pacific railroad was one of the primary employers in Tucson. Sanborn maps indicate some workers were provided employee housing and other amenities on Block 95. The Southern Pacific clubhouse, built in 1906, replaced an earlier reading room located elsewhere. Its grounds later contained a washroom and a tennis court near employee housing along the tracks.

A concrete floor, later determined to be the remains of a washroom/changing room for Southern Pacific employees, was the only visible feature on the surface of the project area when fieldwork began. Subsequent fieldwork exposed the foundations of the warehouse and ore sampling works, as well as the clubhouse and other buildings. Artifacts and food remains were recovered from many features. These are the first archaeological features excavated in the Tucson area associated with an ore assay works or the Southern Pacific Railroad. As such,

Table 1.2. National Register eligibility criteria (Code of Federal Regulations, Title 36, Part 60).

The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. That are associated with events that have made a significant contribution to the broad pattern of our history; or
 - B. That are associated with the lives of persons significant in our past; or
 - C. That embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
 - D. That have yielded, or may be likely to yield, information important in prehistory or history.
-

these archaeological deposits have the potential to yield important new information about ore assaying and railroad working conditions in the early twentieth century. Therefore, the site is thought to meet National Register eligibility under Criterion D, due to the significant archaeological information contained on the block.

RESEARCH ISSUES

Five research questions were developed for the Plaza Centro testing plan (A. Diehl 2009). An additional research question was developed during the course of fieldwork.

Railroad Architecture

The railroad-related structures built between 1880 and 1916 were constructed of wood, brick, and possibly also adobe. The surviving photographs and insurance maps provide detailed information about the external appearance of these buildings and their floor plans (Myrick 1975). Archaeological work can provide additional details, such as the construction methods for building foundations or internal design elements that do not survive elsewhere. Historic maps, showing the locations of the buildings, can also be digitized and, when combined with data collected by archaeologists, will allow for the accurate placement of all the railroad structures.

Changes in Tucson Lifeways through the Late Nineteenth and Early Twentieth Centuries

The recovery of late nineteenth and early twentieth century refuse from the project area, an ethnically mixed portion of downtown Tucson, will offer the opportunity to reconstruct patterns of consumption and material culture. Important trends that have been observed at contemporaneous sites in Tucson include: (1) development of the modern American pattern of mass consumption; (2) persistence of a traditional Mexican consumption pattern; (3) changing compositions, structures, and functions of households; (4) stratification of economic classes; and (5) a complicated relationship between the relative values of manufactured ceramics and the relative economic statuses of households (A. Diehl et al. 2003; Mabry et al. 1994; Thiel 1993, 2002). These previously observed patterns can be used to form hypotheses about material culture within the project area. The project includes areas where commercial, residential, and railroad-related structures once stood, allowing

for a comparison of different cultural contexts. Further, architectural remains may chronicle the evolution of the area from a site for opportunistic building to a more established business and tourism center.

Trash Disposal and Privy Pits in Tucson

The project area is likely to contain privy pits and other features used for trash disposal. A recent study of privy pits in historic Tucson revealed a bimodal distribution of privy depths. The average is approximately 2 m (a little more than the standing height of the excavators), although there are numerous examples of privy pits that are at least twice that deep (A. Diehl et al. 2003). It is unclear if these deeper privies were functionally different from their shallow counterparts, for example, perhaps having been excavated initially as wells. It is also possible the variation in depths is cultural or reflects evolving attitudes about disposal and sanitation. The dimensions, placement, and contents of privy pits and other pits used for trash disposal will be compared with the growing database of similar features that have been archaeologically investigated in Tucson and elsewhere in the country.

Ethnic and Socioeconomic Factors Influencing Diet in Historic Tucson

Food remains, which consist of animal bones, preserved plant materials, and food and beverage containers, can provide insights into the lives of past Tucsonans. Basic questions about what people consumed have begun to be answered with the results of archaeological investigations in downtown Tucson and in Barrio Libre, a predominantly Mexican-American neighborhood established south of town in the late nineteenth century. Patterns that have been observed at other sites include: (1) a surprisingly large quantity of packaged foods and beverages consumed by families living at or near poverty levels; (2) a correspondence between cuts of meat consumed and socioeconomic status; (3) the partial adoption of Euro-American food preparation techniques by Mexican-American households, but no opposite tendency; (4) contrasts between cuts of meat and boarding houses; and (5) distinction among types and cuts of meat that correspond with specific ethnic groups and income levels.

Food remains recovered from excavation areas will be compared with those recovered from other contemporaneous sites to determine if they correspond with observations made elsewhere in Tucson.

Features without historical documentation about ethnic or socioeconomic background of their users can be compared to known data sets to infer their functions or sources.

Assaying Ore in Nineteenth Century Tucson

Sanborn Fire Insurance maps for 1889 and 1896 document the presence of the Wallace's Tucson Sampling Works. Documentary research revealed this to be an ore assaying business operated by a man named Charles R. Wores. During fieldwork, numerous artifacts associated with the works were located in pit features, many of which contained unusually colored soils. This is the first assaying works excavated in southern Arizona. Examination of historical records, turn of the nineteenth century ore assaying textbooks, the recovered artifacts, and an analysis of the sediments in the pits will provide an

understanding of the science of assaying as practiced by Charles R. Wores between 1887 and 1901.

REPORT ORGANIZATION

This chapter has provided background information about the project, including brief discussions of the questions guiding research. A complete history of the project area is provided in Chapter 2, while the results of archaeological testing and data recovery, including descriptions of the uncovered features, are discussed in Chapter 3. The recovered artifacts are described in Chapter 4. Animal bones and plant remains are examined in Chapter 5 to more completely understand the diet of the people who lived and worked at the site. Finally, the information learned about Block 95 from historical and archaeological research is summarized in Chapter 6.

A HISTORY OF BLOCK 95

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The Village of Tucson was laid out in 1872, by surveyor S. E. Foreman. At that time, Block 95 was located east of the occupied portion of town. When incorporated in 1871, the original Tucson townsite was comprised of Sections 12 and 13. However, the township map drafted for the U.S. General Land Office (GLO) in 1871, indicates development was limited at that time to the SW $\frac{1}{4}$ of Section 12 and the NW $\frac{1}{4}$ of Section 13. No road alignments or buildings are shown in the vicinity of the project area. However, a street grid had already been envisioned and was partly surveyed. A few slightly irregular streets remained on the downtown side of the tracks, reflecting the Spanish and Mexican periods. The Southern Pacific (now Union Pacific) Railroad tracks, constructed in 1880, dramatically changed the urban landscape of Tucson, as they ran at an angle from the previously established street grid. Within only a few years, numerous businesses and commercial facilities served by the railroad were constructed on both sides of the tracks, and development began to spread northeast, joining downtown Tucson with the University of Arizona, which was founded 1887.

The current project area is located adjacent to the Union Pacific (formerly Southern Pacific) right-of-way. Railroad tracks have been reconfigured and replaced with newer materials several times since they were initially laid in this area in 1880. There are four sets of tracks today (two are discontinuous segments), down from a maximum of 16 in the early twentieth century.

On 3 March 1877, the Southern Pacific Railroad acquired the entire block from the Village of Tucson as part of their acquisition of the right-of-way running through the northeast portion of town (Pima County Deed Record Entry 3:651). The O'Quinn Tract Abstracts, housed at the University of Arizona Library Special Collections, indicate the block was owned by the Southern Pacific until at least 1923. However, it appears likely that the Southern Pacific leased the property to various businesses from 1880 to 1901. Research was conducted to determine the history of the buildings, businesses, and businessmen associated with the block. Sanborn Fire Insurance maps, compiled to allow insurance adjusters to determine insurance rates, provide basic information about the buildings, allowing a rough estimate

of their construction and demolition dates (Figures 2.1-2.4; Table 2.1). Searchable newspaper databases provided more detailed data about some of the buildings and the people associated with the block.

Railroad Icehouse

The Southern Pacific Railroad operated an icehouse on the property from the early 1880s to 1904 (it appears on the Sanborn maps from 1883 through 1904). It was apparently built in March 1881, when it was reported that, "The foundation for a large warehouse building is being laid on a line of the railroad track, north from Wm. B. Hooper Co.'s storehouse No. 1" (*Arizona Weekly Star* 1881c).

The Sanborn maps indicate this was a one-story structure, divided into two rooms, with porches extending around the western and southern sides. In December 1904 (*Tucson Citizen* 1904a), it was reported that,

At about 7 o'clock fire was discovered in the old frame building formerly used by the Southern Pacific as an ice house, which is situated south of the depot and freight shed. The place, ever since the establishment, of the modern ice plant, has been used as a store house for materials of a highly combustible nature, such as kerosene waste, etc., and the fire is consequently supposed to have had its origin in spontaneous combustion although there is just a chance that some hobo may have crawled over the fence which surrounded the building and carelessly set fire to it by means of a cigar stump thrown aside.

The gasoline and kerosene in the building caused flames to billow upwards so high that people at San Xavier could see them. "The contents of the storeroom consisted of waste, track tools, packing, oil, kerosene, and in fact all the numerous supplies that go to make up the items used in the ordinary business of a big road for engines, cabooses, section men, car repairers, etc." (*Tucson Citizen*, 1904a). What remained of the building was demolished, and no traces of the structure were found during the 2009 archaeological fieldwork.

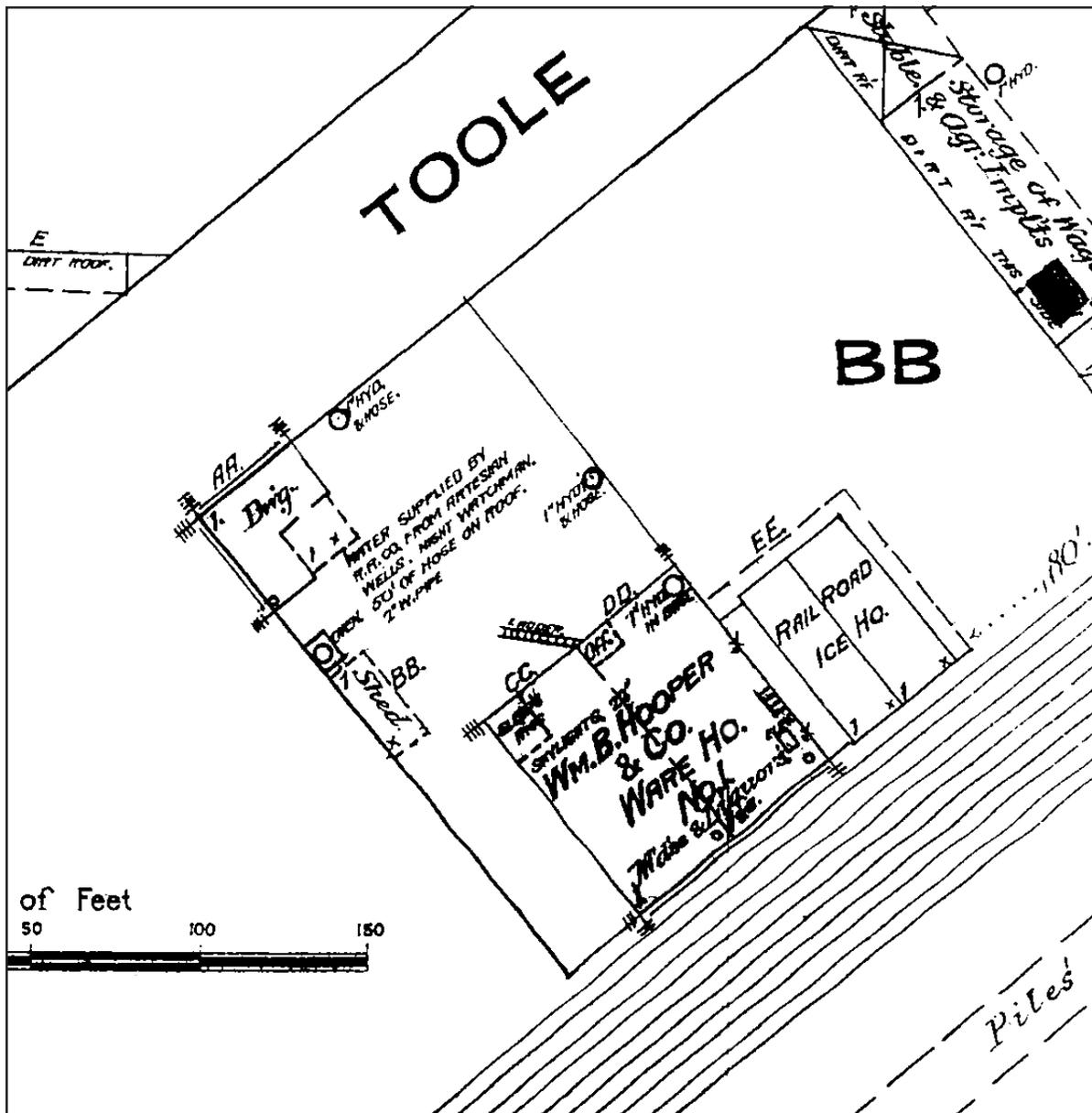


Figure 2.1. The 1886 Sanborn Fire Insurance map for Block 95, Tucson. (North is to the lower right.)

William B. Hooper Warehouse

The 1883 and 1886 Sanborn Fire Insurance maps label one of the buildings in the project area the “Wm. B. Hooper & Co. WareHo. No. 1” (see Figure 2.1). Although the map is somewhat difficult to read, the warehouse was one story tall and was divided in half, with a basement in the western half. Stairs were located along the western wall, leading into the basement, which had a fire hydrant in the southwestern corner. A small office was present on the first floor of the western room, and another small office or storage locker was in the eastern room. Another two hydrants, a shed, an oven, a waste closet (outhouse

or privy), and a dwelling were also present on the lot (the house is discussed below).

William B. Hooper came to Arizona in 1861, as Assistant Quartermaster of the Arizona Volunteers. As part of his duties, he established a warehouse in Yuma for distributing goods throughout the southern part of the Arizona Territory (Farish 1916:252). After he left the army, Hooper used the skills he had developed to set up a warehouse, shipping, and provision business. In 1871, Hooper was living in San Francisco, and was in partnership with A. H. Whiting in the firm of Hooper, Whiting & Co. They operated as general commission merchants in San Francisco, with a general merchandise business at Arizona

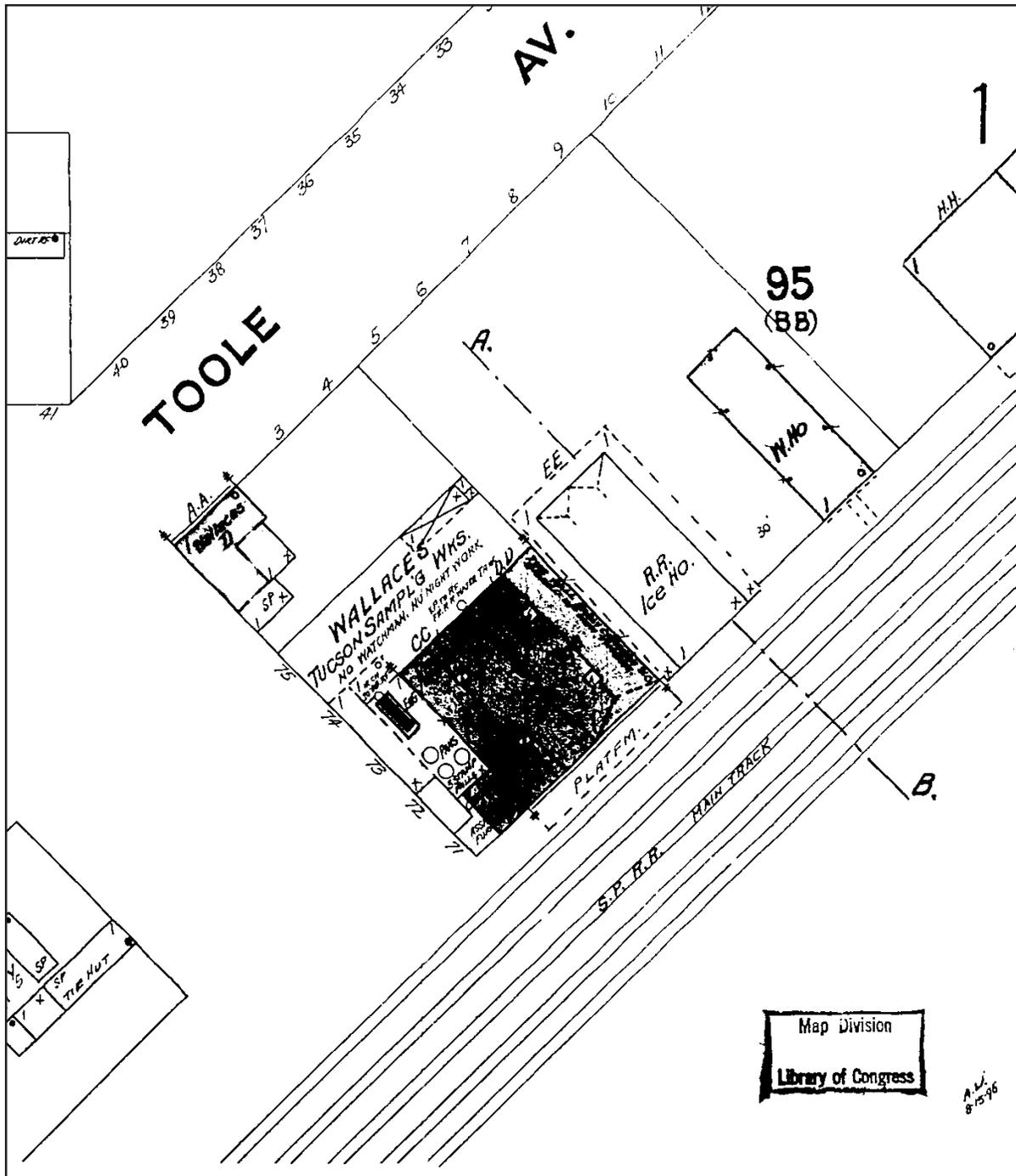


Figure 2.2. The 1896 Sanborn Fire Insurance map for Block 95, Tucson. (North is to the lower right.)

City and Ehrenberg. James M. Barney and John S. Carr served as their agents in the territory (*Tucson Citizen* 1871a, 1871b). Over the next several years, Hooper entered into a partnership with James M. Barney as merchants and wholesalers under the firm name of William B. Hooper & Co. In 1873 (*Tucson Citizen* 1873), the firm advertised that it was “Importers and Dealers in General Merchandise, San Fran-

cisco, California, Ehrenberg, A.T., and Arizona City, A.T.” (Note that A.T. stands for Arizona Territory). The firm purchased bullion and hides, and shipped merchandise and machinery by freight wagons (*Tucson Citizen* 1873).

William B. Hooper & Co. was reported to be “the largest wholesale importers and dealers in wines and liquors in the territory” (*Tucson Citizen* 1880b). The

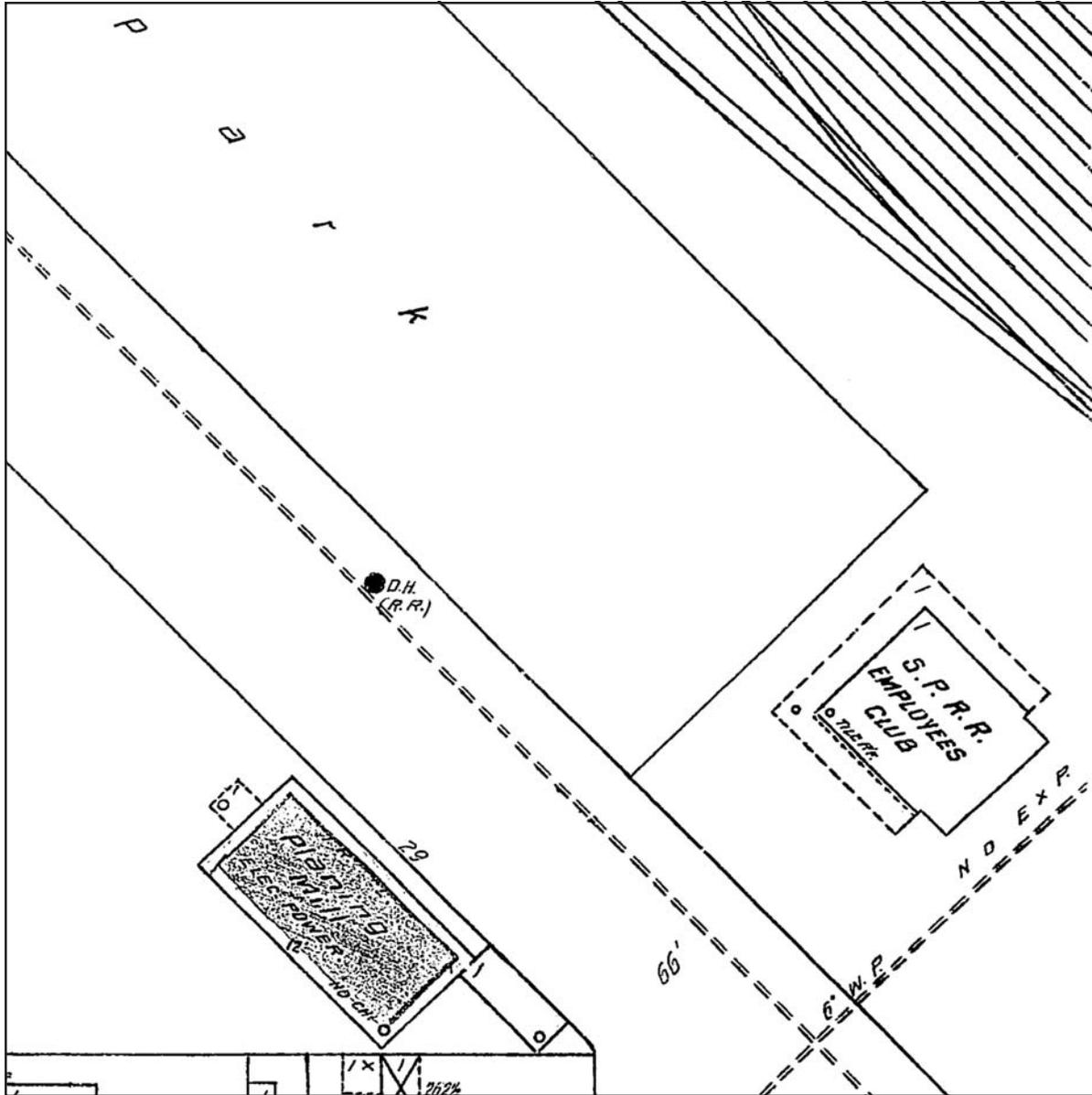


Figure 2.3. The 1909 Sanborn Fire Insurance map for Block 95, Tucson. (North is to the upper right.)

firm was the agent for O. K. Cutter whiskies, and also had a large stock of burgundy, Rhine wine, and Sunny Slope port (*Tucson Citizen* 1880a).

The warehouse in Tucson was built in the summer of 1880:

Messrs. W. B. Hooper & Co. have made a contract with Messrs. Evans and Fitzpatrick to have two warehouses built near the depot, the construction of which is to be begun at once. The first one is to be an oil warehouse located alongside of the railroad track, at the head of Pennington street...The liquor warehouse is to be erected on their 100x150 feet lot at the end of Congress street, also alongside of the railroad track and will be 35x70 feet with a tin roof and a cellar under the warehouse

29x60 feet. All goods will be brought direct from the East and unloaded at the warehouse. Both warehouses will be connected with Messrs. W. B. Hooper & Co's uptown office by telephone (*Arizona Weekly Star* 1880a).

The warehouses were completed in less than a month: "We omitted to mention the other day that Wm. B. Hooper & Co. have now a commodious oil warehouse and a large liquor storehouse near the depot" (*Arizona Weekly Star* 1880b).

Nothing noteworthy appears to have occurred at the warehouse, which remained in use until sometime in 1886 or 1887. A dwelling built along the south side of the property, fronting Toole Avenue, was

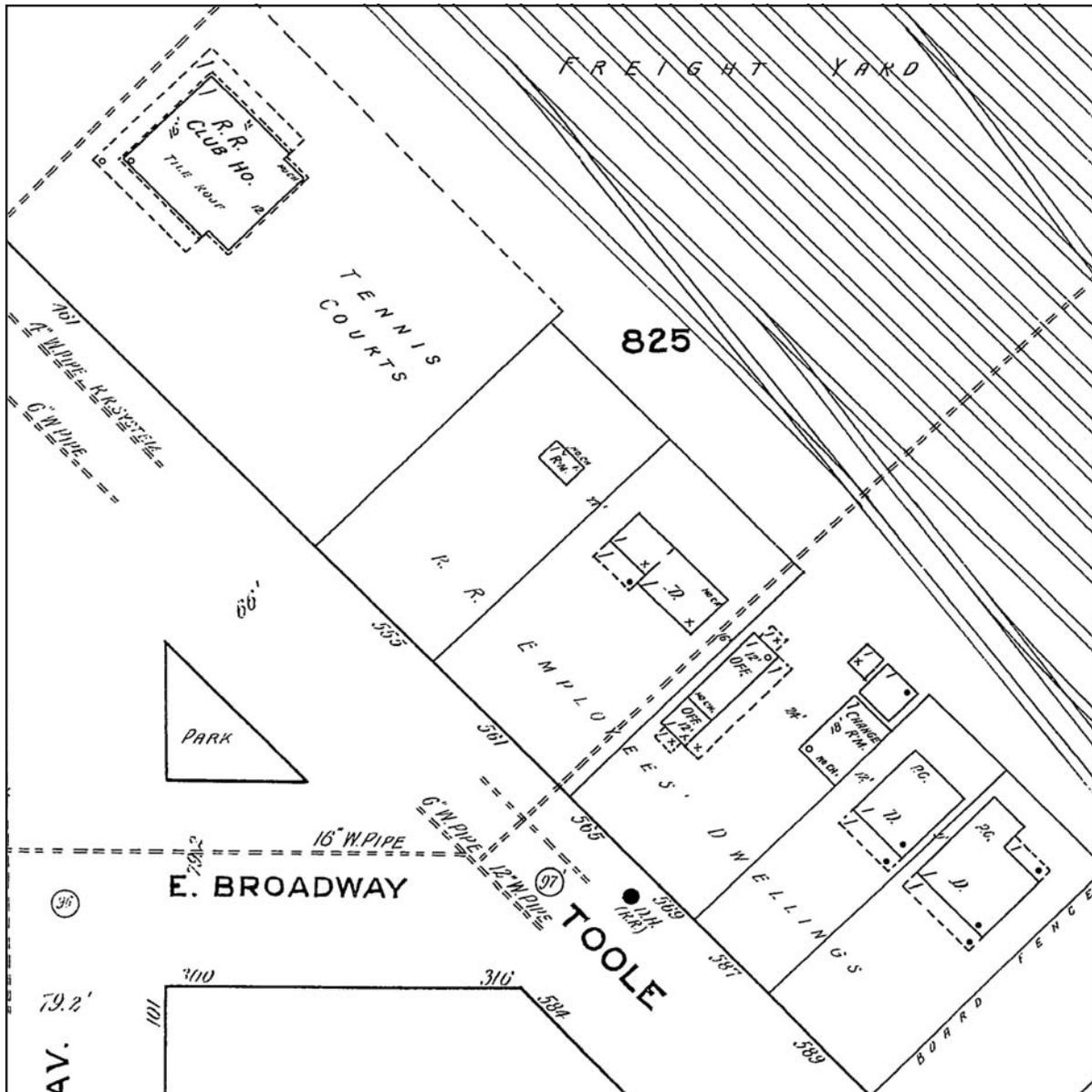


Figure 2.4. The 1919 Sanborn Fire Insurance map for Block 95, Tucson. (North is to the upper right.)

likely occupied by a warehouse employee, or perhaps a night watchman. Sometime in 1887, the structure was converted into the Tucson Sampling Works.

Tucson Sampling Works and Charles R. Wores

The 1889 Sanborn Fire Insurance map indicates the Hooper warehouse had been transformed into the "Wallace's Tucson Sampl'g W'ks" (Figure 2.2 shows the Sampling Works from the 1896 Sanborn Fire Insurance map). It appears that whoever drew the map incorrectly labeled it with the name "Wallace," as historical research indicates Charles

R. Wores operated the facility from 1887 through 1901. It is very likely that the mapmaker in 1889 mistook the name Wores for Wallace, perhaps after talking to Mr. Wores, who may have spoken English with a slight German accent.

Charles R. Wores was born in February 1859, in California, the son of Joseph Wores (born in Hungary) and Gertrude Liebke (born in Prussia). On 25 June 1886, Charles was a young child living with his parents and siblings Rosa and Tedore in San Francisco, where his father was a hat manufacturer (1860 U.S. census, California, San Francisco County, San Francisco District 3, page 14). On 8 June 1870, Charles lived with his parents and siblings Rosa, Theodore, Lucy, Gertrude, Albert, and Josephine in

Table 2.1. Block 95, Tucson, buildings depicted on the Sanborn Fire Insurance maps between 1883 and 1958. (Quantities are provided in parentheses.)

	Dwelling	Oven	Shed	Water Closet	Hooper Warehouse	Railroad Icehouse	Sampling Works	Stables	Warehouse	Clubhouse	Railroad Dwellings	Garages	Washhouse/Storage
1883	X	X	X	X	X	X	-	-	-	-	-	-	-
1886	X	X	X	-	X	X	-	-	-	-	-	-	-
1889	X	-	-	-	X	X	X	-	-	-	-	-	-
1896	X	-	-	-	X	X	X	X	X	-	-	-	-
1901	-	-	-	-	-	X	-	-	X	-	-	-	-
1904	-	-	-	-	-	X	-	-	-	-	-	-	-
1909	-	-	-	-	-	-	-	-	-	X ^a	-	-	-
1914	-	-	-	-	-	-	-	-	-	X ^a	-	-	-
1919	-	-	-	-	-	-	-	-	-	X ^{a,b}	X (2)	-	-
1922	-	-	-	-	-	-	-	-	-	X ^b	X (3)	-	-
1930	-	-	-	-	-	-	-	-	-	X	X (4)	X (3)	-
1944	-	-	-	-	-	-	-	-	-	X	X (4)	X (2)	X (2 storage)
1949	-	-	-	-	-	-	-	-	-	X	X (4)	X (2)	X (2 storage)
1951	-	-	-	-	-	-	-	-	-	X	X (4)	X (2)	X (2 storage)
1958	-	-	-	-	-	-	-	-	-	X	X (4)	X (2)	X (2 storage)

^aA park is present west of the clubhouse in 1909, 1914, and 1919.

^bTennis courts are present east of the clubhouse in 1919 and 1922.

San Francisco. He was attending school (1870 U.S. census, California, San Francisco County, San Francisco Ward 12, page 20). On 5 June 1880, he lived with his parents and siblings Rosa, Lucy, Gertrude, Albert, Josephine, and Jennie at 351 Macallister Street in San Francisco, and he was working in his father's hat store (1880 U.S. census, California, San Francisco County, San Francisco, ED 213, page 18). Charles's brother Theodore (1858-1939) had a very successful career as an artist, painting landscapes and portraits (Preble 1980) (Figure 2.5).

Wores attended public school in San Francisco, and at some time he must have attended a trade school or a university to learn the science of ore assaying. The first known reference to Wores in Arizona is from a list of mining locations, with Wores and Dan Murphy locating the Olympic mine in the Arivaca district on 21 November 1880. On the same day, a James Wores located the Mastodon mine in the same district (*Tombstone Epitaph Prospector* 1880). There is no James Wores in Charles Wores' immediate family, making it possible this was Joseph Wores, Charles' father. On 1 February 1881, Wores purchased the Van Norstrand Millsite from John McCafferty (Pima County Deed Record Entry 9:778). In February 1881, Charles and D. Long owned the Albatross mine near Arivaca. At 20 feet deep, an ore vein was reported to be 8 feet wide. At that time, Wores was returning to San Francisco for a month, presumably to visit his family (*Arizona Weekly Star* 1881b). On 13 December 1881, Charles received \$2,000 from the Consolidated Arizona Gold and Silver Mining Company for the Van Norstrand Millsite, land, four buildings, and a well (Pima County Deed Record Entry 11:358-360).

By 1882, Wores moved to Tucson to take up assaying. He entered into a partnership with H. S. Searles (Pima County Misc. Records 3:210-211). "Charles R. Wores, the assayer on Camp street, has recently received from the manufactory a pair of Froehmer's scales. They will with accuracy weigh down to the two-thousandth part of a grain, which is near enough to suit the most exacting Arizonan" (*Tucson Citizen* 1882c). Wores dabbled for a short time in real estate, partnering with Mr. Searle (*Tucson Citizen* 1882a). On 2 September 1882, he purchased two pieces of land from his sister Lucy Wores for a total of \$2,500 (Pima County Deed Record Entry 11:533-535, 11:535-537). She had purchased Lot 15 of Block 229 in 1879 (Pima County Deed Record Entry 5:540-542, 5:650-653). Also in 1882, Wores traveled to the Mohave Desert to examine a copper ledge. He continued on to San Francisco to claim the property (*Tucson Citizen* 1882b).

Wores soon assembled a large collection of mineral specimens that was displayed at the 1884 World's Industrial and Cotton Centennial Exhibition



Figure 2.5. A portrait of Charles R. Wores painted by his brother, Theodore Wores (courtesy of the Society of California Pioneers, gift of Carrie B. Wores; C002413).

in New Orleans: "A large vertical special case contained the private collection of Charles R. Wores, of Tucson. The specimens numbered 2,500; all were labeled, or rather furnished with number which referred to a written catalogue. The collection consisted principally of Arizona ores and minerals, well selected and displayed" (Hanks 1885:208). Among the specimens were pieces of petrified wood from the Petrified Forest (Perkins 1885:16). Wores continued to add to his collection during his time in Tucson. In 1886, he purchased "a slab of nearly pure white native silver ore from a Gila county prospector on Saturday. It is about eight inches long, four inches wide and an inch and a half thick" (*Tucson Citizen* 1911d).

Wores was partnered with a Mr. Whitney in the assaying work from October 1884 through July 1886. Their business was booming, and they reported that the ore they were examining was increasing in quality (Pima County Misc. Records 3:672-675; *Tucson Citizen* 1911c, 1911e). They assayed gold, silver, copper, and lead ores for one dollar a sample (*Tombstone Epitaph Prospector* 1886). On 20 November 1885, Charles sold Lot 15 of Block 229 to Leonardo Bonn for \$250, a loss of \$750 from when Wores bought the land in 1882 (Pima County Deed Record Entry 15:28).

Charles Wores ran for Territorial Representative on the Republican ticket in the fall of 1886 (*Tucson*

Citizen 1911f). He was elected to the 14th Territorial Legislature as a representative from Pima County, and attended the session in Prescott from 10 January through 10 March 1887. During his time there, he had the Sergeant-at-Arms post placards prohibiting smoking in the assembly chamber or lobby while the House was in session. He introduced House Bill No. 17, which was “an act to prevent the unlawful slaughter of cattle.” A House committee recommended that the bill not pass (Territory of Arizona 1887:280, 324). Wores also planned to put forth a bill to require railroads to pay their employees every 30 days, but this bill was never formally introduced (Territory of Arizona 1887:345). He introduced House Bill No. 61, regulating the practice of dentistry in Arizona. This bill passed the House 18 to 4, but was later postponed by the Council and was not considered in the session (Territory of Arizona 1887:361, 461, 486). Wores did not run for representative again, and one wonders if his lack of success in passing bills was a part of his decision.

The Tucson Sampling Works opened at the former Hooper warehouse location the summer of 1887 (*Tombstone Epitaph Prospector* 1887a). In September 1887, the works sampled silver ore from near Globe, which was sold for \$1,200 (*Tombstone Epitaph Prospector* 1887b). At this time, Wores was negotiating to run five stamping mills at the sampling works (*Tombstone Epitaph Prospector* 1888). An advertisement in 1889 stated:

TUCSON SAMPLING WORKS, Chas. R. Wores Manager, Tucson, Arizona. Purchase Gold, Silver, Lead & Copper Ore. Returns Made within 48 hours. Rates on Ore can be obtained on application in person, or by Mail, at the offices of the Works, Tucson, A.T. Assay Department... Assaying in all its branches. Silver Assay \$1.50, Gold and Silver Assay \$3.00, Lead Assay \$2.50, Copper Assay \$2.00. Special rates for other metals. Prompt attention given samples by mail or express (*Tucson Citizen* 1889a).

The spring of 1889 saw more business for the works than the previous few years. “Yesterday Mr. Wores received seven tons of ore from the Matchless mine, and twelve tons were received the day before from the Silver mine” (*Tombstone Epitaph Prospector* 1889). Wores spent several days in Florence in October, having to spend extra time because he missed the stagecoach to Tucson (*Tucson Citizen* 1889b).

In February 1890, Wores was purchasing ore from the Olive district in Pima County and shipping it to Socorro (*Tombstone Epitaph Prospector* 1890b). It was noted that in March 1890, Wores was “kept continually busy at the sampling works, he receives ores from all the surrounding chloriding camps which

he samples and ships to the smelters” (*Tucson Citizen* 29 March 1890). In October, he reported that he was sampling ores from 10 different mines daily (*Tombstone Epitaph Prospector* 1890a).

Wores was selected to be a delegate to the National Mining Congress in Denver for meetings held in November 1891 (*Weekly Journal Miner* 1891). An advertisement from 1891 indicates he had reduced the price for assaying, and was charging \$2.00 for gold, lead, or copper assays and \$1.50 for silver (*Arizona Republican* 1891) (Figure 2.6).

Wores attended a baseball game in Tombstone in August 1893 (*Tombstone Epitaph Prospector* 1893). He was elected “Outside Watch” at the Arizona Lodge No. 1 of the A.O.U.W., the Ancient Order of United Workmen, in December 1893 (*Tucson Citizen* 1913b). This group was a fraternal organization that provided death benefit life insurance to workers. The group had a plot in the Tucson cemetery (Thiel and Margolis 2007).

Wores and John V. Wilson applied for a United States patent on 14 June 1893, for a

...new and useful Composition of Matter to be Used as a Salve.... The essential ingredient and basis of our salve is derived from a plant or herb of the order *Helianthoideae*, genus *Encelia*, and species *Farinosa*. This plant is common in the southwestern portion of the United States, being found in abundance in the foothills and mountains of Arizona. It is known locally by the name of ‘Yerba-del-Bazo.’ We have discovered that preparations... have peculiarly beneficial properties of a healing nature (United States Patent Office 1984).

Encelia farinosa is commonly known as brittlebush. The concoction was claimed to be useful for healing “pimples, boils, and similar ailments.” The salve was granted U.S. Patent No. 515,455 (United States Patent Office 1894). Wores and Wilson planned to prepare large quantities of the medicine (*Weekly Journal Miner* 1894); however, their dreams of marketing the preparation were never actually realized.

In April 1894, Wores stayed at the Palace Hotel in Tombstone while representing the Selby Smelting Company of San Francisco. He sought to purchase lead ore, offering to assay it and pay for it the next day (*Tombstone Epitaph Prospector* 1894c). Wores made friends in Tombstone, and Mrs. Y. Schmieding hosted a card and dance party in his honor in May 1894. Guests stayed “long after midnight” (*Tombstone Epitaph Prospector* 1894e). He also used a ware room at the Wolcott Store in Tombstone, paying cash for ore brought to him (*Tombstone Epitaph Prospector* 1894f). Ware rooms were present in many hotels, serving as a place where traveling salesmen could display their goods to members of the public. Later in June, Wores purchased ore in the nearby town of

**TUCSON ---
SAMPLING
--- WORKS**

**CHAS. R. WORES,
TUCSON, ARIZ.**

Purchaser of Copper, Lead, Silver
and Gold Ores and Bullion

Cash Returns Made Within
Twenty Four Hours

**ASSAY DEPARTMENT
- OF SAMPLING WORKS -**

Silver Assay	\$1 50
Gold and Silver Assay	2 00
Lead Assay	2 00
Copper Assay	2 00

Special rates for other metals.
Prompt attention given samples by
mail or express

**CASH PAID FOR ORES
AT THE _____**

Tucson Sampling Works.

Ores purchased in
any quantity. . . .

Custom Assaying Promptly Attended to

Gold and Silver Assay,	\$1.00
Copper " "	1.00
Lead " "	1.00

Assay returns made the same day.

CHAS. R. WORES, Manager.

Figure 2.6. Advertisements for the Tucson Sampling Works (*Tombstone Epitaph Prospector* 1894a; *Tucson Citizen* 1900a).

Fairbank and planned a trip north to Globe where he expected to make large purchases (*Tombstone Epitaph Prospector* 1894j). Wores was acting as a middleman, offering to test low silicious silver or gold ores dumped near the railroad and purchase the ore for cash on the spot (*Tombstone Epitaph Prospector* 1894k).

In August, Wores was purchasing silver ore for the going rate (*Tombstone Epitaph Prospector* 1894i).

He traveled to Dos Cabezas to purchase ore that month. The local newspaper noted that "His business dealings are square and liberal, and the miners of Dos Cabezas will find him a pay streak" (*Tombstone Epitaph Prospector* 1894b). He purchased 50 tons of silver and several railroad car loads of ore from the chloriders in September (*Tombstone Epitaph Prospector* 1894d, 1894h). The works had a 20-horse power steam engine (*Tombstone Epitaph Prospector* 1894g).

In January 1895, Wores was back in Tombstone purchasing ore, and he was known as "one of the most liberal ore buyers on the road" (*Tombstone Epitaph Prospector* 1895b). Later that month, he was in Tombstone for five days and "During that time he sorted, sampled, assayed and shipped, not to mention settled for, twelve large lots of ore, aggregating over a hundred tons. This is nearly twice as much as he shipped at any time previous" (*Tombstone Epitaph Prospector* 1895c). He purchased a carload of ore from near the Last Chance district in April (*Tombstone Epitaph Prospector* 1895a).

Wores purchased some 100 tons of ore in Tombstone in May, paying about \$10,000 cash to mine owners and small-scale chloriders (*Tombstone Epitaph Prospector* 1895e). Wores was at Camp Crittenden in July, passing through Tombstone on the noon stagecoach (*Tombstone Epitaph Prospector* 1895d). He was in Prescott in December of 1895 (*Weekly Journal Miner* 1895).

On 6 March 1896, Wores purchased a half interest in the Crown Point and Victoria mines from John F. Bowman for \$200 (Pima County Mine Deeds 21:478-479). In April 1896, Wores had taken over management of the Eureka mine in the Huachuca Mountains. He was devoting his full efforts to the mine, which belonged to Samuel Donuehy. Wores reported that a rich ledge of ore-bearing copper and silver had been located (*Tombstone Epitaph Prospector* 1896). On 25 July 1896, Wores and Manuel Redondo paid George Reynolds \$75 for the White Hill Mining Claim, located in the foothills of the San Luis Valley adjacent to the Crown Point mine (Pima County Mine Deeds 21:550-551). In October 1898, Wores purchased the Doxology and True Blue mines in the Silver Bell District from Pima County. They had been put up for auction after the previous owner had failed to pay taxes (Pima County Mine Deeds 22:269-272).

For much of the time between 1896 and 1898, the Tucson Sampling Works was closed, with Wores working at Johannesburg or Randsburg, California. The sampling works reopened on 1 July 1898 (*Tombstone Epitaph Prospector* 1898; *Tucson Citizen* 1917b). In September of that year, Wores purchased 15 tons of carbonate ore from the Charles C. Retze mine. The ore was being hauled to Tucson in 5-ton loads drawn by six-horse teams. He expected to sample the ore

and then send it to a smelter in either Silver City, New Mexico, or San Francisco (*Arizona Republican* 1898b). Joe Andrada was shipping gold ore to the works the same month and was receiving “good returns” (*Arizona Republican* 1898a).

In 1897, the Tucson Sampling Works was the only assay office in Tucson advertised in a national publication, although it is not clear if assaying work was actually being done (Mine and Quarry News Bureau 1897:367). Wores was also agent for the Silver City Reduction Works in 1897, and was reported to be constantly traveling throughout Arizona (*Tucson Citizen* 1917c). Wores began working the Oceanic group of mines in the area around Arivaca in 1897. In 1899, he purchased the lease for the Copper Glance mine located in the Huachuca Mountains in southeastern Arizona (*Arizona Republican* 1899).

The 1897-1898 city directory lists Charles Wores living at 509 Toole Avenue and working at a “sampling works” (Citizen Printing & Publishing Company 1897). The 1899 directory indicates he was living and working at the sampling works and was an “assayer and ore buyer” (Connell 1899). On 4 June 1900, Wores lived in a rental house in Tucson at 509 Toole Avenue with his older sister Rosa. He worked as an “assayer of ores” (1900 U.S. census, Arizona Territory, Pima County, Tucson, ED 47, sheet 4B).

In 1901, Charles and his sister Rosa lived at 509 Toole Avenue, but the following year, he was living by himself at 227 South 4th Avenue (Connell 1901, 1902). The 1903-1904 directory calls him a “mining man,” and indicates he was still living at 227 South 4th Avenue (Heermans Stationary Company 1903).

By 1900, Wores had shipped ore from the Oceanic mines (*Weekly Republican* 1900). In 1901, he had purchased all the stock for the Oceanic mine, and had also bought a 10-stamp mill, a 100-foot hoist, and five carloads of machinery to haul out to the mine. The mine was located between the Quijotoa and Baboquivari mountains, and Wores claimed he had \$100,000 in ore available (*Tucson Citizen* 1901a).

Wores’ assay work had substantially increased in 1899, with hundreds of evaluations being conducted. He thought the increase was due to the University of Arizona raising its price for assay work. His sampling works was shipping a great amount of lead ore, mostly from the Doxiology mine (*Weekly Journal Miner* 1899). In October 1899, Wores reported that he had sampled four tons of gold ore from the Catalina Mountains and found that the ore contained “exceptionally high grade.” He had also sampled a ton of copper ore from the Tucson Mountains (*Weekly Republican* 1899). By February 1900, it was reported that the works was processing all of the ore it could handle and that the custom assaying department was “especially rushed” (*Arizona Repub-*

lican 1900). Another advertisement from 1900 noted that Charles R. Wores was still the manager and that he would do custom assays of gold, silver, copper, and lead for \$1.00, with the results made the same day (*Tucson Citizen* 1900b).

In August 1901, Wores sent the first shipment of high-grade gold ore from his Oceanic mine to his sampling works. He assayed it at nine ounces, or \$180 per ton. He had to ship the ore to Tucson by freight wagon, and was making plans to erect a mill at the mine if the ore-bearing quartzite continued below the 250-foot level (*Tucson Citizen* 1901c). The first two tons of ore produced 11 ounces of gold per ton (*Tucson Citizen* 1901b). The mine employed six men and was 300 feet deep, although rising water made it impossible to reach the deepest portion of the mine. The poor condition of the roads meant that only two tons of ore could be hauled to the sampling works in each freight wagon (*Arizona Republican* 1901). Wores sold the Oceanic group of mines in the Arivaca Mining District on 19 November 1901, for \$4,500. Among the mines were the Oceanic and Crown Point, as well as six others (Pima County Mine Deeds 22:594-595).

By 1902, Wores was living at the Oceanic Mines, occasionally returning to Tucson (*Tucson Citizen* 1902c, 1902d). In February, he was at the St. Augustine Hotel walking down a corridor and passed Arthur C. Simpkins, who spit in his face. Wores remonstrated with strong language, and Simpkins hit him under the chin, knocking him flat on the floor, kicking him after he was down. The previous summer, Simpkins had accused Howard Bacon of buying a bed at Zeckendorff’s store and charging it to him. Wores had testified against Simpkins, and Bacon was cleared of the charges (*Tucson Citizen* 1902e). The following year, Howard Bacon married Charles’ sister Jennie in San Francisco. She had lived in Tucson briefly, teaching school (*Tucson Citizen* 1903b). Wores’ connection with the courts continued when he was selected to be on a grand jury in April 1902 (*Tucson Citizen* 1902f).

Wores loaned the Tucson Chamber of Commerce his extensive mineral collection in August 1902 (*Tucson Citizen* 1902a). By November 1902, Wores and his partner were disagreeing about management of the Oceanic Mines, and Wores decided to sell his interest (*Tucson Citizen* 1902b). In 1903, Wores sold his mine to Dr. A. G. Brower of Utica, New York (*Tucson Citizen* 1903d, 1904d). Later that year, Wores moved his cabinet of minerals to Los Angeles (*Tucson Citizen* 1903a). He had moved to Los Angeles after the sale, along with his former mine superintendent Harold Bacon (*Tucson Citizen* 1903c, 1904d). The sampling works were described as being “extinct” in July 1904 (*Tucson Citizen* 1904c).

Harold Bacon returned to Tucson for a visit in 1904, and stated that Charles was “largely interested in the Imperial country in Eastern San Diego county and passes much of his time in that section” (*Tucson Citizen* 1904b:4). In October 1905, Wores was in Los Angeles after returning from a trip to visit his mining interests in Nevada (*Los Angeles Herald* 1905). He returned to Tucson for a visit in May 1908, and declared that he hardly recognized the city due to the big improvements that had taken place (*Tucson Citizen* 1908a). He was back in Tucson in June. He had returned his mineral collection to the Chamber of Commerce and came to personally transfer the mineral exhibits when the chamber moved to the Old Pueblo Club (*Tucson Citizen* 1908b).

Wores was living in California by October 1909, when he applied for membership in the Sierra Madre Club in Los Angeles. The club was hoping to obtain his mineral collection, which had recently been exhibited at the Mineral Palace at the meeting of the American Mining Congress (*Bisbee Daily Review* 1909). By 1910, he was a cotton farmer near Brawley, California (*Tucson Citizen* 1910). He purchased numerous pieces of land in Imperial County, California, on 19 March 1915 (BLM Patent records, online at www.glorerecords.blm.gov). Charles returned to Tucson in the summer of 1916, to take care of the affairs of Howard Bacon, who had died (Pollock 1916). He sold his mineral collection to the Tucson Chamber of Commerce in 1916 (*Tucson Citizen* 1917d). Wores was operating mines in the Comobabi district in California in 1917 (Pittock 1917).

On 31 January 1920, Charles was working as a farmer in Brawley (1920 U.S. census, California, Imperial County, Brawley, ED 1, sheet 3A). He has not been located on the 1930 census, and is not listed as living in his brother Theodore Wores’ obituary in 1939 (*Oakland Tribune* 1939). It seems likely that Charles Wores died between 1920 and 1930.

The Southern Pacific Railroad Clubhouse

The Southern Pacific Railroad was a great catalyst of change in Tucson beginning with its arrival in March 1880. It became one of the major employers within Tucson, as well as drawing large numbers of single men to the community for work.

By the early 1900s, the Southern Pacific became concerned with the quality of its workers, wanting to attract men with “clear heads and strong muscles.” The company constructed a series of clubhouses in major communities in California, Nevada, Arizona, New Mexico, and Texas. Amenities typically offered at these clubs included sleeping rooms, writing rooms stocked with stationary, libraries, and billiard and

pool rooms (*New York Tribune* 1907). This “welfare work” instituted by the railroad was thought to help create happier, more content employees who would then treat customers better, helping to boost the profits of the company. Each Southern Pacific employee signed the following pledge to use the new clubs: “I hereby certify that I am a bona fide employee of the Southern Pacific Company, and I hereby agree to conduct myself as a gentleman while enjoying any of the privileges of the club.” It was noted that saloon keepers often protested the construction of these clubs, fearing the loss of income as railroad employees decided to play a game of pool at the railroad club instead of walking to the nearby saloons for a drink (Menkel 1907).

Saloon owners did not protest the planned construction of a club in Tucson, although the Cactus Saloon and a billiards hall were present nearby (Thiel, ed. 2009). In the fall of 1905, it was noted that

Southern Pacific employees are to have a clubhouse which will cost between \$7,000 and \$8,000. Supt. McGovern stated today that the Southern Pacific would furnish the funds to build the clubhouse which, it is expected, will soon become self-supporting. A clubhouse will be greatly appreciated as it will afford the railroad men in leisure moments a fine place to spend the time. The clubhouse will be two stories in height and will have billiard and pool tables and a circulating library on the first floor and lounging rooms on the second floor. It will be built near the new depot (*Tucson Citizen* 1905:4).

The contract for brick work was awarded to Quintus Monier of the Tucson Pressed Brick Company, and the construction work was supervised by F. G. Athearn from San Francisco. Plans for a two-story were abandoned, as it was decided that the second floor restrooms were unnecessary, because railroad employees had many nearby places to stay (*Tucson Citizen* 1906c). Construction of the clubhouse was “going steadily” in late January 1906 (*Tucson Citizen* 1906e:4). In February 1906, it was reported that: “Work is going steadily ahead on the Southern Pacific clubhouse and library. The walls are up several feet. This will undoubtedly be a popular place with the railroad men” (*Tucson Citizen* 1906d:4). The Southern Pacific had built a number of clubhouses for its employees. The club in Tucson was to be “one of the handsomest and best appointed clubhouses and libraries in the Southwest. The building will be equipped with a number of bath rooms” (*Tucson Citizen* 1906a:4) (Figure 2.7).

As construction was completed, F. G. Athearn planned a big reception to mark the opening of the club (*Tucson Citizen* 1906b:4):



Figure 2.7. A photograph of the Southern Pacific Clubhouse, Tucson (Myrick 1975:128).

Several hundred invitations have been sent out by Supt. W. A. McGovern to local citizens requesting their presence at the formal opening of the Southern Pacific clubhouse this evening. The opening will be a great event. There will be a reception from 8 to 9:30 o'clock and music and dancing will follow the reception. The invitations read as follows: 'Yourself and ladies are cordially invited to be present at the opening of the new Southern Pacific clubhouse at Tucson, Saturday evening, April 28, 1906'.

About 500 people attended the event. Lunch and ice cream were served, and tours of the new building were provided. F. G. Athern gave a speech in which he stated that "the idea of the club houses along the Southern Pacific was to afford the employees of the company a gathering place where they could find recreation and amusement under wholesome circumstances" (*Tucson Citizen* 1906f:5).

The railroad planned to build a park between the clubhouse and the railroad depot to the west (*Tucson Citizen* 1906f), and in November 1907, the railroad began work on the park. The land was leveled, walks were installed, and palms and umbrella trees were planted (*Tucson Citizen* 1907a). Work on the park was still ongoing in 1908. The city had also made plans to pave Toole Avenue (*Tucson Citizen* 1908c). In 1914, the park was described as "a stretch of beautiful lawn, packed with umbrella and pepper trees, [illegible], cacti and oleanders" (*Tucson Citizen* 1914d:6).

The clubhouse was under the charge of F. T. Scott in March 1907, and he decided to try a "Ladies' Day." The clubhouse was turned over for the use of area women on Friday afternoons between 1:30 and 5:00. Scott noted that the club was very popular, with its reading room crowded at night. The library was reported to have a wider range of books and was more up-to-date than the nearby new Carnegie Public Library. The Southern Pacific clubhouse received new

shipments of books every few months (*Tucson Citizen* 1907c).

The railroad company maintains a handsome club house for its employees about 100 yards east of the station building. It has well stocked reading rooms, writing desks, and other features for comfort and quiet enjoyment. The club house is valued at \$5,500 (*Tucson Citizen* 1911b).

Another clubhouse was completed in Yuma in October 1907. It was described as being smaller than the one in Tucson. Railroad employees could stay there between "runs." This clubhouse had shower baths, as well as recreation and reading rooms. Another clubhouse was planned for Gila Bend (*Tucson Citizen* 1907b).

The clubhouse (listed in city directories between 1908 and 1911 as the "Library and Club House") appears to have replaced the Southern Pacific Reading Rooms formerly located on 3rd Avenue. By 1913, the building is listed in city directories as the "Southern Pacific Co. Railway Club." In December 1911, "The High Ball Club," a group of railroad employees, issued invitations for the first dance of the season. About 20 couples were expected, and punch and cake were to be served (*Tucson Citizen* 1911g). The dance was held December 16, "and a novelty which has never seen before in Tucson was the beautiful electrical dance." Nine women and 17 men attended the event (*Tucson Citizen* 1911a).

In September 1913, a burglar cut through the front screen door and entered the club. This person found three dollars in the cash register, took four coupon books good at other clubhouses for \$1.50 in trade, and four boxes of cigars, cigarettes, and tobacco. The thief left the building through a window in the pool room. The robbery was discovered by janitor Charles G. Engle the following morning. The secretary of the clubhouse, R. D. Colet, had to pay for the lost goods (*Tucson Citizen* 1913a).

Tennis courts were built on the east side of the clubhouse. In 1914, it was reported that they were "patronized zealously by many of the men" (*Tucson Citizen* 1914d:6). By 1914, the club housed

...billiard rooms, a library, cigar and tobacco stand, barber shop, wash rooms, shower, and tub baths. The library not only contains books and magazine of fiction, but makes a sort of specialty of books and magazines on mechanical subjects, and others that appeal especially to the railroad man in particular lines of work" (*Tucson Citizen* 1914d:6).

In January 1912, a federal employee gave a lecture on the handling of explosives at the clubhouse, "practically every engineman and trainman in Tucson attended" (*Tucson Citizen* 1912:8). Another lecture on the topic, illustrated with stereopticon slides, was given in February 1914. "Wells Fargo employees, merchants and others handling high explosive have been asked to attend" (*Tucson Citizen* 1914c:8). Professor William S. Aldrich of the University of Arizona taught a course in mechanical drawing at the club in early 1914 (*Tucson Citizen* 1914a). Aldrich gave an illustrated lecture in March 1914 on railroad welfare work (*Tucson Citizen* 1914b). The Tucson division staff met in May 1915 to discuss "matters of interest" and safety measures (*Tucson Citizen* 1915:8). The Southern Pacific Division Safety Committee met at the clubhouse in October 1917 (*Tucson Citizen* 1917a). The 1919 Sanborn maps depict tennis courts southeast of the building. The courts were later replaced by wood frame buildings, including "changing rooms" and employee dwellings.

The Southern Pacific Railroad decided to close the clubhouse on 1 May 1922.

The reason given for this action is that the club has been operating at a loss for some time... While not coming from official sources, it is declared that the local club house has been one of the best patronized clubs on the system, but as there has never been a restaurant in connection with this club house, it has been forced to show a loss that might otherwise have been avoided (*Tucson Citizen* 1922a:2).

At the time of its closure, it was run by S. J. Yerkes. Employees hoped that the club would be re-opened in the fall (*Tucson Citizen* 1922a). On the first of June, the club "closed its doors, all fixtures and stock being closed out and shipped to the coast" (*Tucson Citizen* 1922c:2).

In June 1922, Southern Pacific employees met at the former clubhouse to discuss the separation of the Southern Pacific and Central Pacific Railroads (*Tucson Citizen* 1922b).

By 1927, the clubhouse building was labeled in city plans as a "Yard Office," although Sanborn maps through 1960 and various undated city railroad maps continued to label the building as a clubhouse. It is visible in aerial photographs of the downtown (Figure 2.8).

Less information has been found about the use of the building as a yard office. What is known, however, is that it housed Southern Pacific administrative staff, including the superintendent. A 1942 advertisement requested "Men between the ages of 21 and 40 for student yardmen and brakemen. Apply Trainmaster's office, yard office building" (*Tucson*

Citizen 1942). Shortly after the attack on Pearl Harbor, the Southern Pacific hired its first woman to work in the Superintendent's Office. The first two women were Mrs. Ralph Comstock and Miss Julia Dickinson, who worked as a messenger. The railroad men had to learn not to cuss openly. Some insisted that a woman's place was in the home, but admitted that with so many men at war, it was necessary to hire women (Brooks 1942). An advertisement in 1944 requested that married men apply for positions as yard men at the office (*Tucson Citizen* 1944).

In July 1943, a ceremony was held at the yard office to honor the 33 yard clerks and 45 trainmen or yard men who had entered the armed forces. "A flag will be raised on the pole located near the yard office... near a bulletin board on which the names of the servicemen will be posted, while the VFW band plays" (*Tucson Citizen* 1943).

In 1947, two employees were honored in the office. Robert P. Lyle, an engineer, retired after 38 years of service. His friends gathered to congratulate him for his work and to present him with a gift (*Tucson Citizen* 1947b). Edward L. Foust, who had worked for the Southern Pacific Railroad for 45 years, formally retired at the yard office. He was "presented with a gift from his friends" (*Tucson Citizen* 1947a:4).

Also in 1947, train engineers had a brief strike during which they formed picket lines in front of the yard office (*Tucson Citizen* 1947c). Workers signed the locomotive crew register in the yard office before heading out on runs (*Tucson Citizen* 1953).

In 1958, Southern Pacific announced that it was moving its freight yard away from downtown Tucson. As part of the massive project, a new yard office was to be built and the old office, with its "concentration of IBM equipment" was to be moved (*Tucson Citizen* 1958:1).

The building continued to appear on Sanborn Fire Insurance maps until 1960. It was assigned street number 461 North Toole Avenue, according to the maps, but does not appear in the city directories of Tucson. The Arizona Department of Transportation designed the Broadway Underpass in the early 1960s. Two maps, dating to January 1961 and to 14 November 1963, depict the structure and note that it was the Superintendent's Office Building (Figures 2.9 and 2.10). The building was probably torn down sometime in the mid-1960s.

Other Buildings

The Sanborn Fire Insurance maps documented several other buildings on Block 95; unfortunately, limited information was available for most of these.

A dwelling was present along Toole Avenue by 1883 (see Figure 2.1), although little is known about



Figure 2.8. An aerial photograph of Block 95, Tucson, taken in 1924 (courtesy of the Arizona Historical Society; PC 136, B6). (Arrow points to the location of the former Southern Pacific Clubhouse.)

this adobe building. A city directory indicates this was assigned street address 509 Toole Avenue. Charles Wores lived at the house between 1897 and 1901; it is not known if he lived there prior to 1897. The L-shaped, one-story structure was constructed from adobe bricks. A wood frame addition was present in the northwestern corner of the house, perhaps a sleeping porch. A second addition was added to the back of the house between 1889 and 1896. An outdoor oven was located in the backyard, and an outhouse was along the west side of the property. The outhouse was probably used by residents of the house and by employees of the Hooper warehouse and the Tucson Sampling Works. Two fire hydrants, supplied with water by the nearby train depot, were also located in the backyard of the house. The house was apparently demolished in 1901.

A stable was constructed next to the Tucson Sampling Works between 1886 and 1889. The wood frame building was torn down between 1889 and 1896.

A warehouse was built west of the railroad icehouse between 1889 and 1894. The 1901 Sanborn map indicates the firm of Wheeler & Perry occupied

this building. The firm served as wholesalers for groceries and liquor. In 1894, the warehouse was the location of a salt works.

The works are owned and managed by a grocery firm, Wheeler & Perry, who say they can furnish the salt for a less price than it can be delivered elsewhere. The power to run the works is furnished by the 20-horse power engine of the Tucson Sampling Works. The salt is brought from Guaymas by rail to Nogales, and from there to Tucson by teams (*Tombstone Epitaph Prospector* 1894g).

In December 1904, the warehouse escaped destruction when the old railroad icehouse, described as being 30 feet to the south, caught fire and burned. At that time, the Wheeler and Perry warehouse contained groceries (*Tucson Citizen* 1904a). This building was demolished before the 1909 Sanborn map was created.

A series of dwellings for railroad workers was constructed along Toole Avenue in the project area between 1914 and 1919. Two are present on the 1919 Sanborn Fire Insurance map (see Figure 2.4). One, at

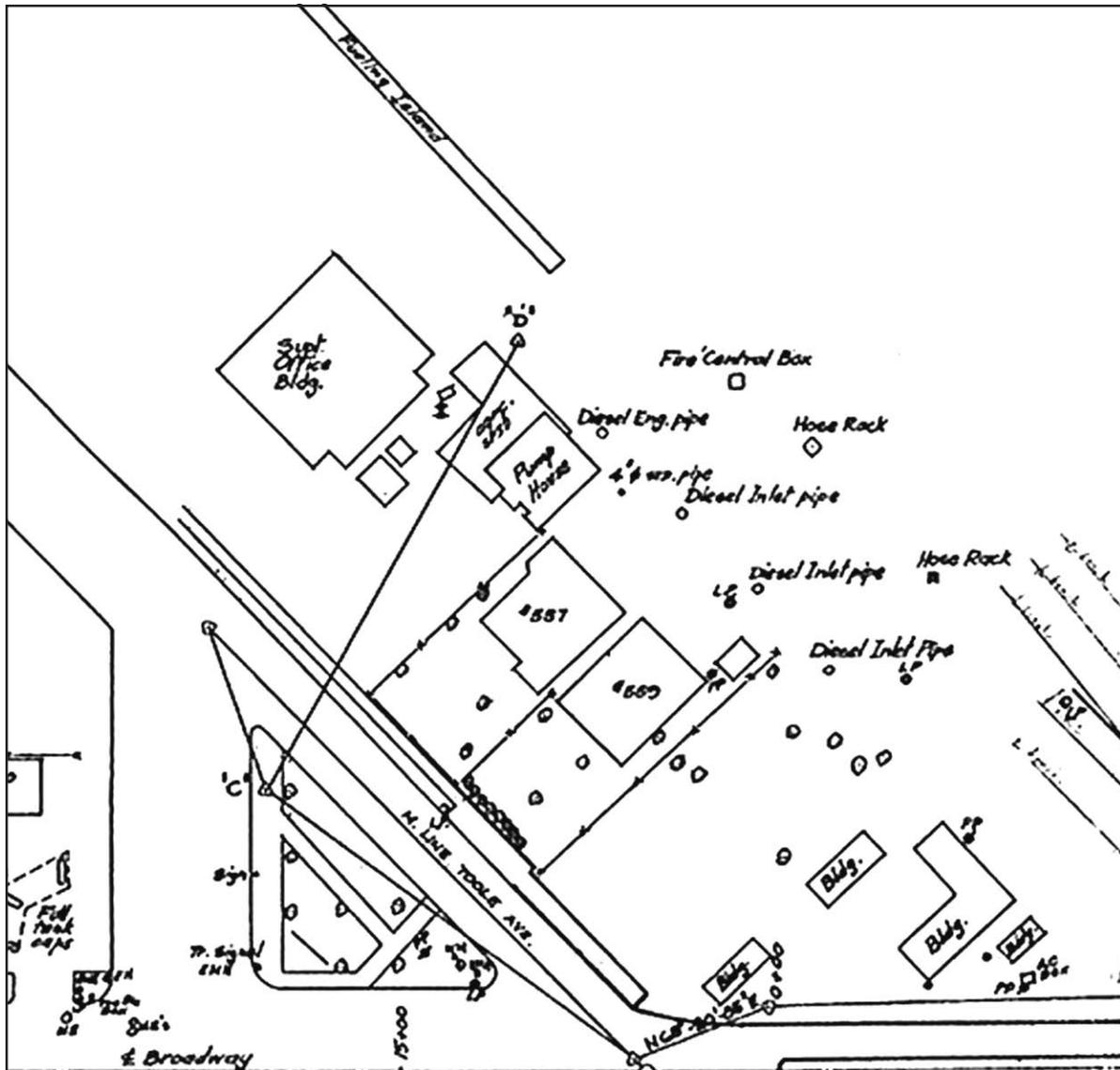


Figure 2.9. A portion of the "Broadway Underpass Survey Preliminary" map, dated January 1961, showing the Superintendent's Office Building (courtesy of Eugene Caywood).

555 Toole Avenue, was labeled "Rm" and was reported to have no chimney. The second was at 561 Toole Avenue, and had two rooms and a porch. This home also did not have a chimney. A 1926 map reveals that the section foreman, switchmen, trainmen, supervisors, and the superintendent's chief clerk occupied these dwellings, with the latter two constructed from box car bodies that had been roofed over (Figure 2.11). The 1949 map depicts three dwellings and a room at 557, 559, and 561 Toole Avenue.

A wash room and changing room were built next to the Southern Pacific Clubhouse after 1930. This structure was described as a concrete slab on a map drawn in January 1961. At that time, a pump room had been built adjacent to the wash room. All of these structures were torn down sometime after 1964.

SUMMARY

Documentary research has identified the history of the buildings on Block 95, and all were closely associated with the Southern Pacific Railroad. The arrival of the railroad in March 1880 spurred growth along and adjacent to the tracks. Warehouses were constructed to hold the consumer goods pouring into the community. A railroad icehouse was built to keep perishable foodstuffs cold, presumably for meals served on the passenger trains passing through Tucson. The property was then occupied by the Tucson Sampling Works, a company that assayed metals and shipped ore to smelters in New Mexico and California. A variety of records provided information about Charles R. Wores, who operated

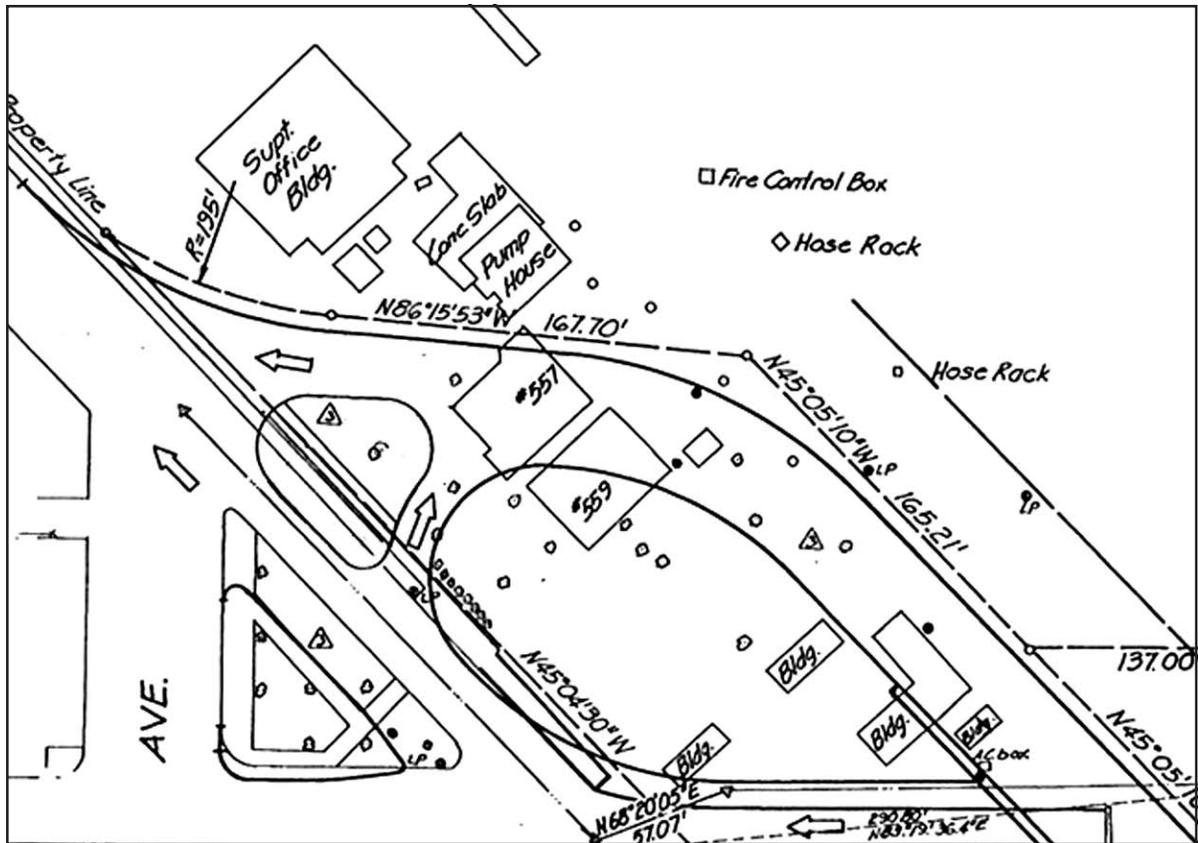


Figure 2.10. A portion of the “Grade Separation Broadway-Southern Pacific Railroad” map, dated 8 February 1963 (courtesy of Eugene Caywood).

the sampling works between 1887 and 1901. He was an industrious man, travelling throughout Arizona to assay and purchase ores from miners. Wores was known as a fair and competent businessman.

The use of the property changed in 1906, with the construction of the Southern Pacific Clubhouse. Between 1906 and 1922, this building provided recreational opportunities for railroad workers. Afterwards, it served as a railroad office until its demolition in the early 1960s. Other railroad-related buildings, including a changing room/wash house

and dwellings, were torn down at the same time, ending the railroad’s use of the land.

In recent years, the property was a vacant lot, serving most recently as a staging area for construction workers building the new 4th Avenue underpass. Archaeological excavations in October 2009 were surprising. A large number of features, including the foundations of the warehouse/sampling works, the clubhouse, and the changing room and washroom were located. These are described in detail in Chapter 3.

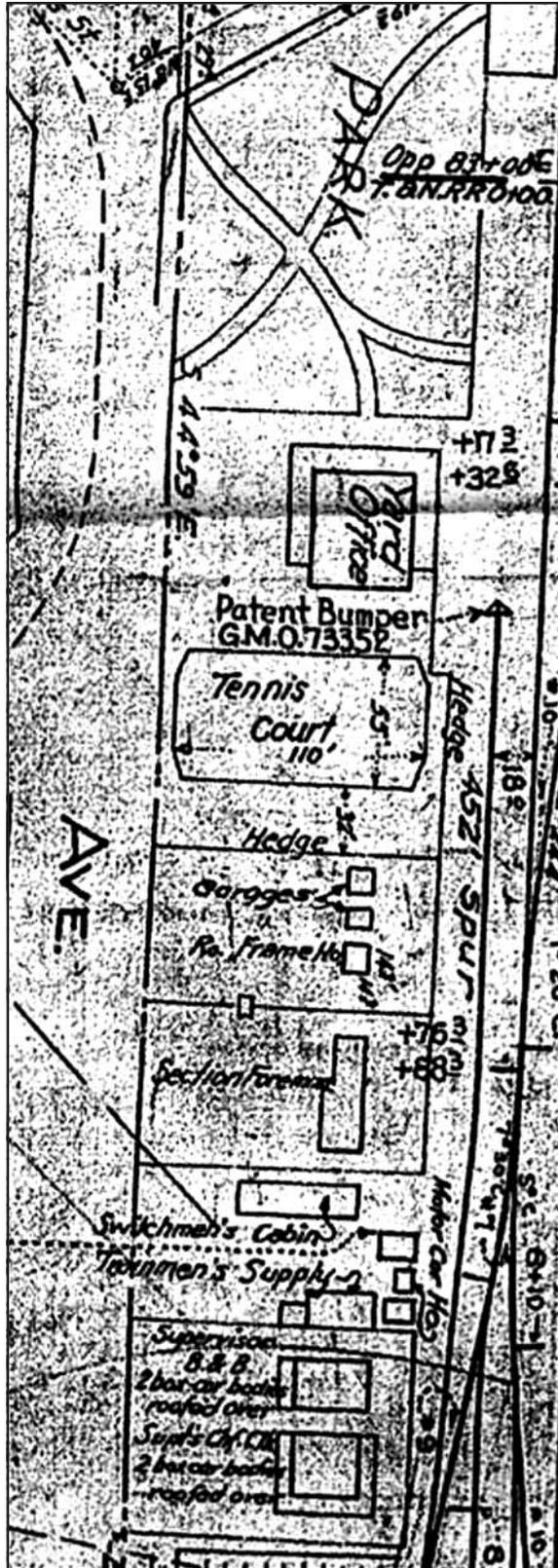


Figure 2.11. A portion of a 1926 map showing the buildings and structures on Block 95, Tucson (courtesy of Eugene Caywood).

ARCHAEOLOGICAL INVESTIGATIONS AT BLOCK 95

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Work began on the project on 20 October 2009, and 10 days were spent uncovering and excavating features associated with use of Historic Block 95, AZ BB:13:809 (ASM), between 1880 and the early 1960s. At the start of the project, the area was a dirt lot with a portion of a concrete foundation visible. It seemed unlikely that many archaeological features would have survived demolition activities and subsequent use of the lot as a staging area for recent construction of the new Fourth Avenue underpass.

A backhoe equipped with a 70-cm-wide bucket was used to excavate four trenches to locate archaeological features and to determine the location of disturbances (Figure 3.1). Unexpectedly, numerous intact subsurface features were located in the first trench; Trench 1 was 75.0 m long, and was positioned across the center of the project area. The trench was excavated down to caliche, a hard layer of calcium carbonate that develops in portions of the desert Southwest. Five features were identified in the trench, including an outhouse pit, a large planting hole, the foundation of the Southern Pacific Clubhouse, and an ore waste pit. Trench 2, 21.5 m long, was excavated north of Trench 1. The basement of the Hooper warehouse was identified within this trench. Trench 3 was then excavated within the basement in an attempt to locate its northern edge. The trench was terminated, however, before the basement edge was found due to the proximity of a buried fiber optic cable. Trench 4 extended eastward from a concrete foundation, north of Trench 1, to determine if the area was completely disturbed; this proved to be the case.

The testing plan for the project required data recovery be conducted immediately if significant subsurface archaeological resources were located (A. Diehl 2009). After an outhouse pit and the clubhouse foundation were uncovered, it was recommended that additional work take place to expose these features and to recover a sample of artifacts. A 7-ft-wide stripping blade was attached to the backhoe, and the area around these two features was stripped, exposing numerous additional features, including ore waste pits, sewer pipe access boxes, and the foundations of the Hooper warehouse and a nearby

dwelling. After the corner of a dwelling depicted on the 1883 Sanborn Fire Insurance map was located, the backhoe was used to strip a small area to expose an outhouse pit that was present on that map.

Archaeologists cleared the Southern Pacific Clubhouse foundation using hand-tools, exposing the brick foundations and floor support piers. Pit features were hand-excavated in arbitrary or stratigraphic levels, with all soil screened through ¼-inch mesh screens. Diagnostic artifacts were collected, and non-diagnostic items, including nails, tin can fragments, and plain bottle glass fragments, were counted and discarded. Flotation and pollen samples were taken from some of the pit features. All features were mapped, and selected features were photographed using a digital camera.

FEATURE DESCRIPTIONS

In all, a total of 46 features were located during the project (Figure 3.2; Table 3.1). Each is described below.

Feature 1, Outhouse Pit

Feature 1 was an outhouse pit located in Trench 1 (Figure 3.3). The pit was 1.10 m long by 1.05 m wide; it was at least 1.75 m deep. The upper fill was light tan brown silty sand with many pieces of gravel; the upper fill measured 1.23 m in depth. This fill appears to have been dumped into the pit as a closing or filling episode, with only a few artifacts present. The remaining 52 cm of fill was a mixture of light green clayey silt, white ash, and charcoal. Among the large number of artifacts recovered from this layer were a decorated O'odham water *olla*, a Mexican ceramic vessel shaped like a duck, tin cans, and assaying cupels. A modern borehole had intruded into the pit and was filled with concrete. The borehole almost certainly removed some artifacts from the feature. The outhouse pit dates to the operation of the Tucson Sampling Works, from 1887 to 1901.



Figure 3.1. Location of backhoe trenches and extent of backhoe stripping, Historic Block 95, AZ BB:13:809 (ASM).

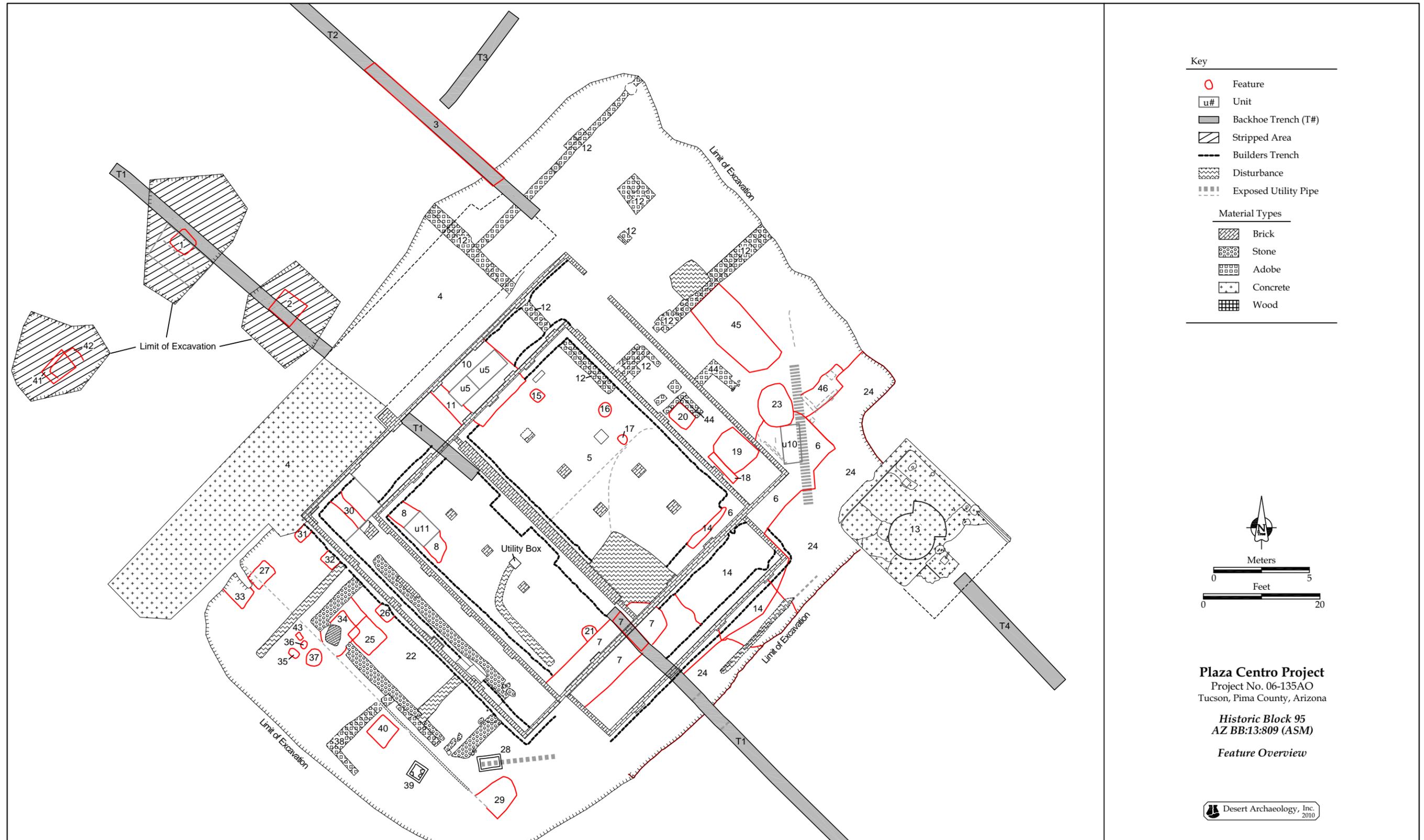


Figure 3.2. All archaeological features located during the project, Historic Block 95.

Table 3.1. Archaeological features located on Historic Block 95.

Feature	Type	Date
1	Outhouse pit	1887-1901
2	Planting hole	Circa 1906
3	Hooper warehouse basement	1880-1906
4	Concrete driveway	After 1906
5	Southern Pacific Clubhouse foundation	1906-1960s
6	Ore waste pit	1887-1901
7	Ore waste pit	1887-1901
8	Planting hole	1887-1901
9	Possible planting hole	Unknown
10	Ore waste pit	1887-1901
11	Trench	1906?
12	Hooper warehouse foundation	1880-1901
13	Southern Pacific washroom	1930s-1960s
14	Ore waste pit	1887-1901
15	Utility box	1906-1960s
16	Small pit	1887-1901
17	Small pit	1887-1901
18	Equipment mount	1887-1901
19	Ore waste pit	1887-1901
20	Small pit	1887-1901
21	Utility access pit	1887-1901
22	Rock house foundation	1890s?
23	Ore waste pit	1887-1901
24	Ore waste pit	1887-1901
25	Planting hole	1887-1901
26	Planting hole	1887-1901
27	Planting hole	1887-1901
28	Sewer pipe access box	1906-1960s
29	Large pit	1887-1901
30	Trench	1880-1901
31	Planting hole	1887-1901
32	Planting hole	1887-1901
33	Planting hole	1906+
34	Planting hole	1906+
35	Small pit	1887-1901
36	Posthole	1887-1901
37	Planting hole	1906-1960s
38	Adobe brick dwelling	1880s-1901
39	Sewer pipe access box	1906-1960s
40	Planting hole	1906-1960s
41	Outhouse pit	1887-1901
42	Outhouse pit	1880-1886
43	Posthole	1887-1901
44	Equipment mounts	1887-1901
45	Ore waste pit	1887-1901
46	Ore waste pit	1887-1901

Feature 2, Planting Hole

Feature 2 was a planting pit found in Trench 1. The hole was 1.50 m long by 1.49 m wide; the pit was 1.14 m deep. Feature 2 was filled with light grayish-brown sandy silt with a large amount of gravel. A small number of artifacts was present, including bottle glass, Native American ceramics, and pieces of ceramic roofing tile. The roofing tile was red and curved, and it matches the tile that was present on the Southern Pacific Clubhouse roof. The pit probably dates to initial construction of the clubhouse, which took place in 1906.

Feature 3, Hooper Warehouse Basement

Feature 3 was a basement located inside the west room of the William B. Hooper & Co. warehouse, Feature 12. It was located in Trenches 2 and 3. The basement was 13.90 m wide, at least 7.30 m long (the full length was not traced), and was 1.98 m deep (measuring from the modern ground surface). The entire north-south length of the basement could not be determined, although a newspaper account indicates the basement was 60 ft long by 29 ft wide (*Arizona Weekly Star* 1880a). The eastern side of the basement was approximately 1.4 m from the interior dividing wall of the warehouse. The 1886 Sanborn Fire Insurance map indicates a stairway on the west side of the basement. The basement was used for storing liquor from 1880 to about 1886. The warehouse was demolished prior to construction of the Southern Pacific Clubhouse in early 1906. The basement was filled with scattered adobe bricks of various colors (brown, tan, and pink were noted). These bricks were 18 inches wide and about 3½ inches thick. A few artifacts and fired bricks had been dumped in, including wine bottles, whiteware ceramics, and fired bricks from a company in Los Angeles.

Feature 4, Concrete Driveway

Feature 4 was a concrete driveway constructed along the western side of the Southern Pacific Clubhouse. The slab was 24.60 m long by an average of 4.28 m wide. The slab was approximately 1 m wider south of the western front steps of the clubhouse, wrapping around the southwest corner of the building. It was divided into five segments when the slab was poured. The concrete slab was 14 cm thick. The construction date is unknown, although must date to after construction of the clubhouse in 1906. The concrete was examined for dates or signatures, but none were located.

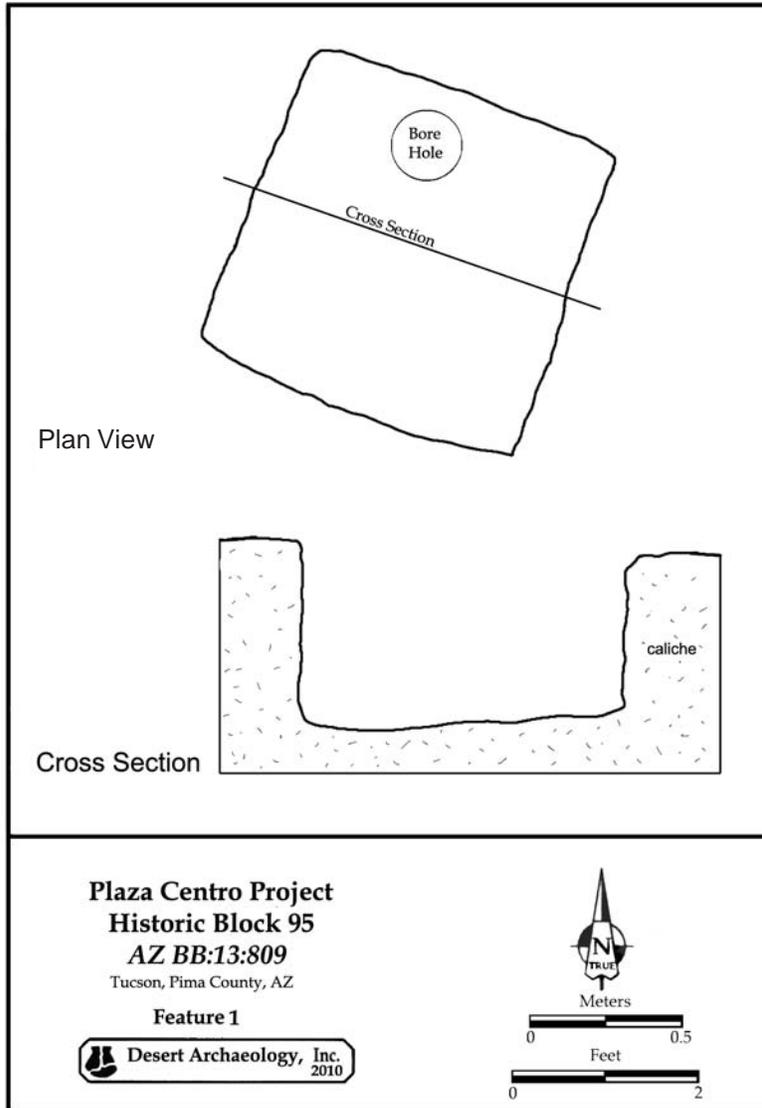


Figure 3.3. Plan view and profile drawing of Feature 1, an outhouse pit dating between 1887 and 1901, Historic Block 95.

Feature 5, Southern Pacific Clubhouse Foundations

Feature 5 was the brick foundation of the Southern Pacific Railroad Clubhouse (Figures 3.4 and 3.5). The foundations were initially located in Trench 1, and were subsequently fully exposed by stripping out around the foundations and floor support piers with a backhoe and then removing the soil immediately adjacent to the brickwork using hand-tools.

The foundations were divided into two large rooms, a U-shaped porch area, and another room or porch located on the eastern side of the building. The overall building was 19.67 m long and 19.50 m wide.

The interior of the clubhouse foundation was divided into two separate areas by an east-west foundation wall. It is not known why the space was di-

vided; an interior wall may have separated the building into two large rooms at one time. The foundation wall running east-west through the interior of the building differed from the other foundations in that the bricks stepped out toward the base, making the foundation wider. This may be because the east end of the foundation cut into an ore waste pit, Feature 7, and the fill of that pit was only loosely consolidated. This is in contrast to the caliche present elsewhere.

The northern area was larger, measuring 12.9 m by 7.7 m (from the inside-to-inside of the foundation). Two rows of four floor joist support piers originally ran east-to-west inside the foundation (Figure 3.6). Six of the piers survived. A water or gas pipe and a larger 4-inch-diameter water pipe ran through the center of the room. The surviving foundations ranged from 5-11 courses of bricks in height (Figure 3.7). The southern area of the clubhouse was also 12.9 m long, but was narrower than the northern area, measuring only 6.0 m wide. A single row of floor support piers ran down the center of the room. Originally, four piers were present, but only three survived the demolition of the building. A gas or water line ran into the room from the eastern wall, with two access boxes present, one

near the center of the building and one adjacent to the eastern wall.

A separate room was on the east side of the building. This room measured 12.8 m in length and 2.9 m in width. The room had sewer, water, and gas pipes running into it, and was probably the location of a bathroom and showers for workers.

The U-shaped porch extended around the northern, western, and southern portions of the building. The porch was 2.65 m wide, and extended 15.60 m along the north and south sides of the building and 16.0 m along the west side. The floor of the porch was supported by brick piers built into the foundation; the piers were present approximately every 6 m.

The individual bricks used in construction of the building measured 8¾ inches long by 4 inches wide and 3 inches tall. They were extruded, unmarked

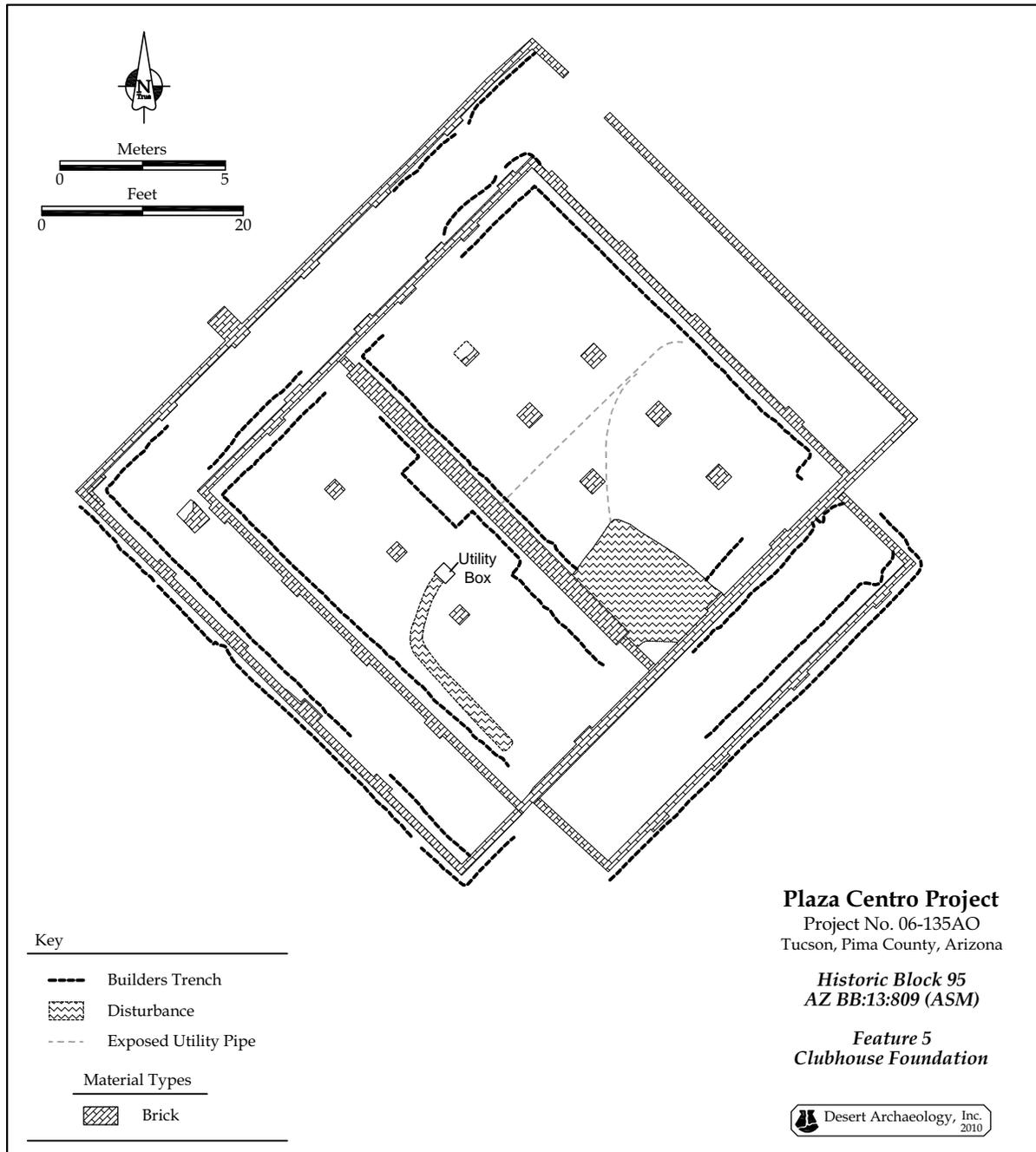


Figure 3.4. Plan view map of Feature 5, the Southern Pacific Clubhouse foundations, Historic Block 95.

bricks. According to the *Tucson Daily Citizen* (1906), the bricks were made by Quintus Monier's Tucson Pressed Brick Company.

Construction materials found in the southeastern corner of the larger room, in an area containing demolition debris, included green wall plaster, red flooring with imbedded chicken wire, and pieces of green asbestos floor tile. A variety of white porcelain electric insulators were also present.

Construction of the clubhouse began in January 1906, and was completed in April 1906. The build-

ing was torn down sometime after November 1963, perhaps in 1964.

Feature 6, Ore Waste Pit

Feature 6 was an ore waste pit created during use of the property by the Tucson Sampling Works. The pit was at least 10.65 m long and 2.77 m wide. It was at least 1.51 m deep. The upper fill of the pit consisted of mottled greenish-brown silt, with



Figure 3.5. Photograph of the Southern Pacific Clubhouse foundations, Feature 5, looking southwest, Historic Block 95.

many pieces of caliche, fired brick fragments, and pieces of ore. Below this was greenish-brown silt with chunks of an unidentified yellow-brown material.

Feature 6 was examined during hand-excavation of a 2-m by 1-m unit. The upper 50 cm of fill was hand-screened, resulting in the recovery of window glass, crucibles, and cupels. The remaining 1.01 m excavated was unscreened and appeared to have no artifacts. The bottom of the pit was not reached.

The feature was extended into by a later ore waste pit, Feature 24. The clubhouse foundation, Feature 5, also cut into the top of the pit, and several pipes and an underground phone line for the house intruded into the ore waste. Feature 6 dates to the Tucson Sampling Works occupation of the site, from 1887 to 1901, and based upon the intrusion of Feature 24, appears to date to the earliest years of the Works.

Feature 7, Ore Waste Pit

Feature 7 was located in Trench 1, appearing as a green stain on both sides of the backhoe trench

(Figure 3.8). The pit was 5.20 m long by 2.53 m wide. It was at least 83 cm deep, although overall depth was not determined. The pit was filled with greenish-blue loosely compacted sandy silt with blobs of yellowish-brown silty sand. The clubhouse foundation, Feature 5, cut through the pit, and due to the soft fill of the pit, the foundations extended much deeper than elsewhere.

The pit is associated with the Tucson Sampling Works and dates to between 1887 and 1901. Feature 7 was not excavated, and the only visible artifacts were a few plain whiteware cup and plate sherds.

Feature 8, Planting Hole

Feature 8 was a planting hole located during stripping inside the Feature 5 foundation. The pit was 1.23 m wide, and 38 cm deep. The upper 20 cm of fill was greenish-gray silty sand, and below that was an 18-cm-thick layer of pinkish-gray soft silty sand with many small bits of caliche. A portion of the feature was cut into by Feature 5, the clubhouse foundation.



Figure 3.6. A floor support pier inside Feature 5, the Southern Pacific Clubhouse, Historic Block 95.

The undisturbed portion of the pit was hand-excavated in two levels. Artifact density was high, and included animal bones, bottle glass, and historic ceramics. The pit was dug during the years the Tucson Sampling Works was in operation, between 1887 and 1901.

Feature 9, Possible Planting Pit

Feature 9 was located in the eastern end of Trench 1. The feature appeared as a circular pit cutting down into the caliche. It was 1.04 m wide and 70 cm deep, and was filled with a homogenous brown compact silty sand. No artifacts were present. The feature may represent the location of a utility pole or perhaps a sign.

Feature 10, Ore Waste Pit

Feature 10 was a large ore waste pit located during stripping (Figure 3.9). The pit measured 3.99 m in length, 3.20 m in width, and 51 cm

in depth. The pit was filled with loosely compacted greenish-gray sandy silt with lumps of yellowish-brown silty sand, similar to the fill in Features 6 and 7. The pit was intruded into by Feature 11, a trench, and Feature 5, the clubhouse foundation.

Feature 10 was examined by placement of two excavation units. One was 2.00 m by 1.00 m, and the adjacent unit was 1.25 m by 1.00 m. A concentration of copper ore was present in the northern portion of the pit. Other artifacts recovered included two Lea & Perrins Worcestershire sauce bottles, a can containing green beetles, and many fragments of other tin cans.

The pit dates to the Tucson Sampling Works use of the area, from 1887 to 1901.

Feature 11, Trench

Feature 11 was a trench uncovered while stripping out the dirt inside the west porch area of the clubhouse. The trench was roughly 2.13 m long by 95 cm wide, and it was filled with about 21 cm of redeposited caliche. Feature 11 was probably originally dug during construction of the Southern Pacific Clubhouse; the trench lines up well with two of the porch floor support piers. If so, it dates to 1906. The trench cuts into the earlier Feature 10, an ore waste pit. The feature was not excavated.

Feature 12, Hooper Warehouse Foundation

Feature 12 was the adobe brick foundation of the William B. Hooper & Co. liquor warehouse (1880-



Figure 3.7. Detail of the foundation brickwork and a built-in floor support pier for Feature 5, the Southern Pacific Clubhouse, Historic Block 95.

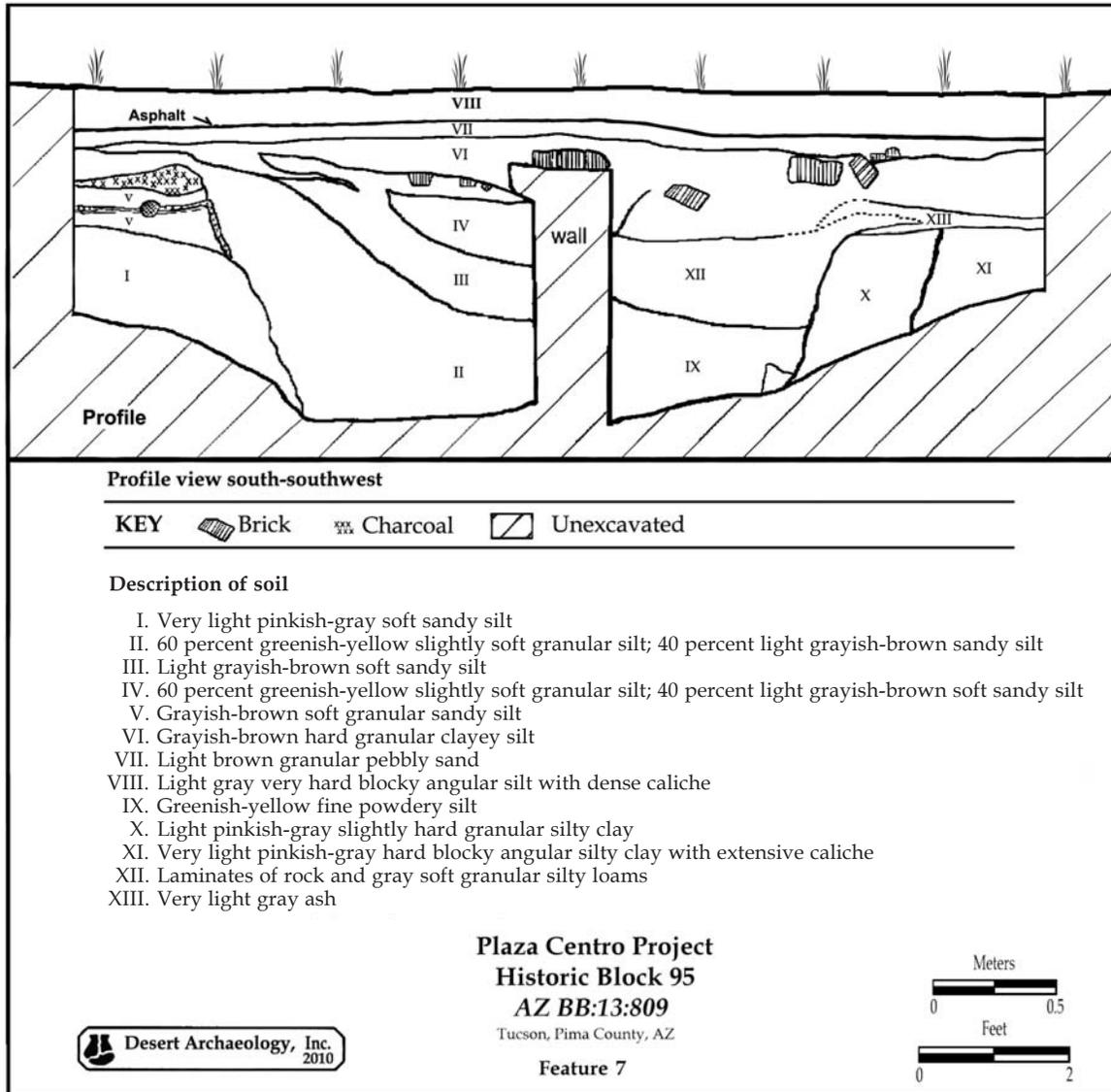


Figure 3.8. Profile drawing of Feature 7, an ore waste pit, Historic Block 95.

1886) and the Tucson Sampling Works (1887-1901) (Figure 3.10). The building was constructed between August and September 1880. According to the *Arizona Weekly Star* (1880a:3), the building measured “35x70 feet with a tin roof and a cellar under the warehouse 29x60 feet.” The 1883 Sanborn Fire Insurance map shows that the warehouse was divided into two large rooms, was 22 ft tall with skylights in the roof, that the basement was entered by a staircase along its western side, and that a fire hydrant was present in the basement. After the building was converted into use as the ore sampling works, the interior was divided into smaller rooms.

The Hooper warehouse was exposed by stripping away overburden and following the surviving adobe brick foundations. Only a portion of the foundation walls for the western room survived. The north

side of the building lay beneath asphalt pavement, and was in close proximity to a modern fiber optic line. Consequently, this side of the building was not traced.

Clearing away the overburden revealed that the warehouse was constructed by excavating a shallow foundation trench, roughly 69 cm wide. Adobe bricks were placed into the trench, directly on the ground surface, with a mud mortar acting to bind; the mortar ranged in color from gray to brown. Individual adobe bricks used in the foundation measured 22 inches by 10 inches, 20 inches by 10 inches, and 11 inches by 10 inches. Smaller bricks were interspersed among the larger ones. Portions of the southern wall were one brick wide, while other parts of the foundation were one-and-a-half bricks wide, averaging approximately 80 cm.

The warehouse was divided into two rooms, with the long axis of each room running north-south. The interior dividing wall was a single adobe brick wide. A square pad of adobe bricks was found in the center of the eastern room. It probably represents the location of a column to support the roof, or perhaps an equipment mount installed when use of the building changed.

It was not possible to determine the complete dimensions of the adobe warehouse. The western portion of the building had been completely removed by demolition or later disturbances, and the northern portion was in an area with a modern fiber optic line, which archaeologists avoided. The surviving portion was at least 17.2 m long (west-east) by 11.9 m wide. As noted, the Sanborn Fire Insurance maps show the building was divided in half by a north-south wall. The eastern room was 10.5 m wide.

The building was in use from 1880 through 1901. It is not depicted on the 1901 Sanborn, making it likely it was torn down that year.

Feature 13, Southern Pacific Washroom

Feature 13 was the concrete foundation for a washroom constructed for Southern Pacific employees. The room was constructed after 1930, and was in use until at least 1949. By 1960, the building was described as a concrete slab.

The foundation was partially visible on the ground surface at the start of the project. The wide scraping backhoe blade was used to expose the rest of the foundation, which was swept clear using a push broom. The eastern side of the foundation was poorly preserved, with the concrete broken up, probably during recent work on the realignment of Toole Avenue. The rest of the foundation was in fair condition.

The concrete foundation measured 7.55 m in length and 5.78 m in width (Figures 3.11 and 3.12). It was constructed from concrete poured-in-place. The center of the floor had a "keyhole" design, which was apparently the location of decorative tiles, probably in the form of the front of either a Southern Pacific insignia, or possibly a train engine with a cattle-catcher. The tiles were missing, but the con-

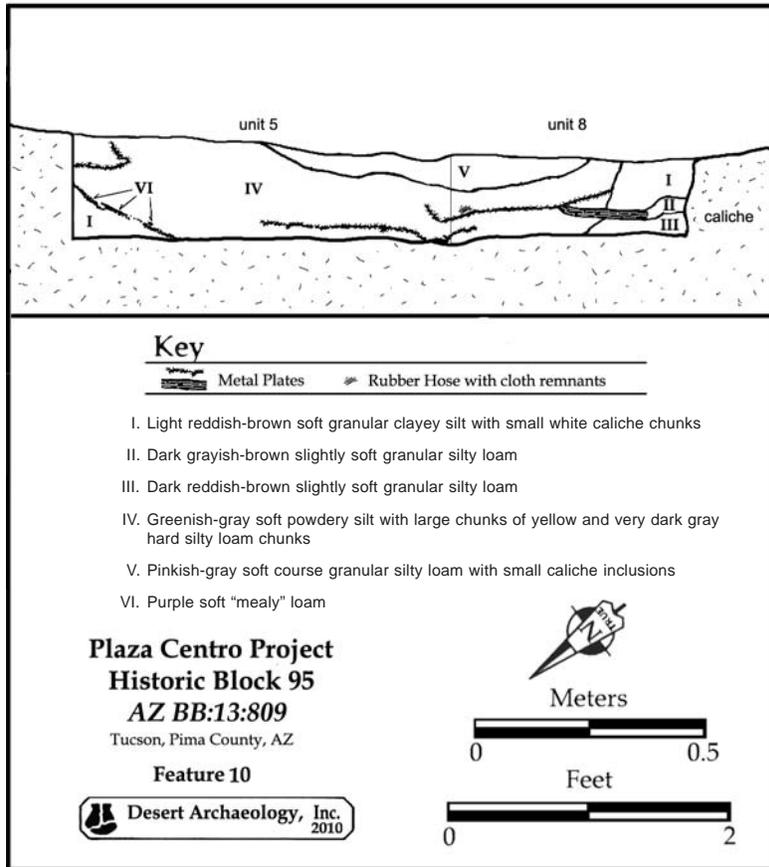


Figure 3.9. Profile drawing of Feature 10, an ore waste pit, Historic Block 95.

crete was noticeably less worn than the surrounding concrete, which was heavily eroded, exposing large gravel aggregate.

The washroom had at least two toilet stalls, a urinal or a sink, and two shower stalls. One of the shower stalls was identified based on the presence of an iron grate over a square iron drain opening. This stall was along the eastern side of the room, and was enclosed by smaller pipes that once supported the stanchion walls and the door of the shower stall. A similar drain, missing a cover grate, was located along the western side of the room. A second shower was likely located here, although no pipes for walls or a door were identified in this area. The concrete had subsided in an east-west line, apparently over the pipe leading from the drain.

Adjacent to the western shower area was another pipe opening in the floor, probably for a sink or a urinal. Another, larger pipe was present in the floor nearby, for either a toilet or a urinal. No pipes for enclosing this area were noted, further suggesting this was a urinal location. To the east, along the northern wall, was a toilet location marked by a large drain pipe and smaller pipes for the toilet stanchion stall walls and floor.

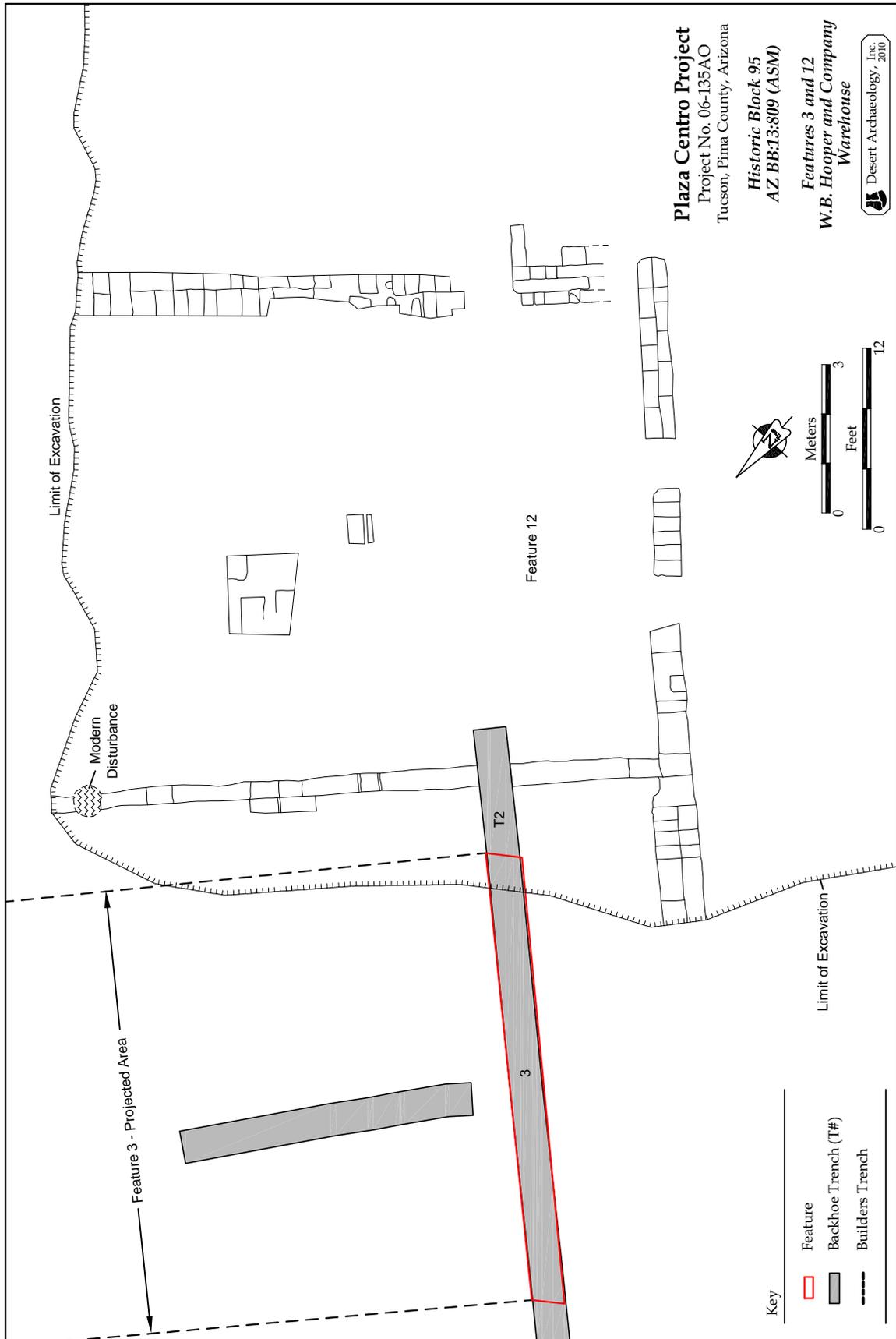


Figure 3.10. Plan view of Features 12 and 3, the William B. Hooper & Co. warehouse, Historic Block 95.

The washroom was installed after the Southern Pacific Clubhouse was remodeled for reuse as offices. Use of the building as the superintendents' office probably made it difficult for workers to come into the building to use the showers and bathroom; thus, the washroom was constructed to meet this need.

Feature 14, Ore Waste Pit

Feature 14 was a shallow ore waste pit or midden created by the Tucson Sampling Works. The feature was found while stripping away soil on the interior of the eastern room of the Southern Pacific Clubhouse and in adjacent areas. It appeared as a large stain with areas of fine black charcoal, redeposited

caliche, gray silt, and greenish-brown silt. A few small pieces of bottle glass were present.

The feature was at least 4.64 m long and 3.89 m wide. The complete dimensions of the feature were not determined. Probing suggested it was relatively shallow, about 15 cm deep in its center. It lay over Feature 6, another ore waste pit. Feature 14 dates to between 1887 and 1901, probably closer to 1901. It was intruded into by the clubhouse foundation, Feature 5.

Feature 15, Utility Box

Feature 15 was located during stripping of the interior of the northern, larger room of the clubhouse, Feature 5. The feature appeared as an area of grayish-brown silty sand. Upon exploration, it was found that this fill lay inside a wooden box that allowed access to a valve attached to an iron pipe, either for water or natural gas. The box was 30 cm square, and about 20 cm deep. Feature 15 dates to construction of the Southern Pacific Clubhouse in 1906. The box could presumably be accessed either through a crawl space beneath the floor or by a removable floor panel.

Feature 16, Small Pit

Feature 16 was a small pit located during stripping of the interior of the northern, larger room of the Southern Pacific Clubhouse, Feature 5. The feature was small, almost circular, and was filled with ore waste, including bits of quartzite and brown sandy silt. It was 90 cm long by 80 cm wide. No artifacts were present. The feature was created when the Tucson Sampling Works was in operation, from 1887 to 1901. Feature 16 was not excavated, and its function is not known.

Feature 17, Small Pit

Feature 17 was a small pit located during stripping of the interior of the northern, larger room

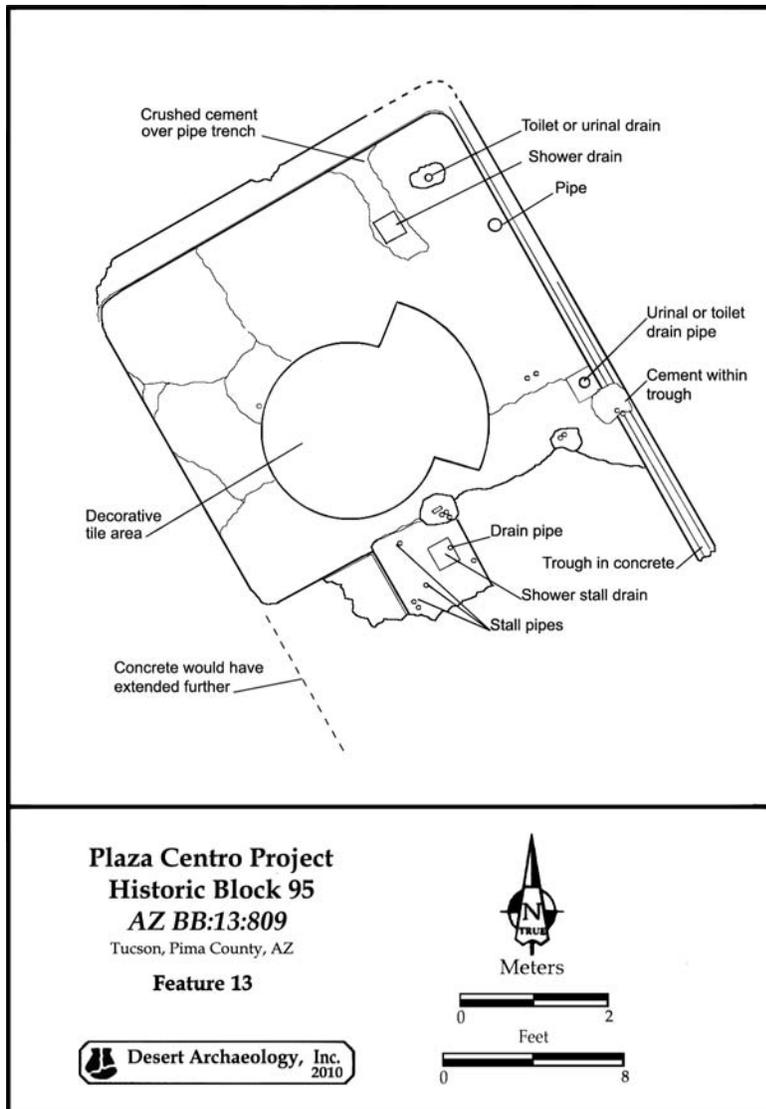


Figure 3.11. Plan view of the Southern Pacific Washroom, Feature 13, Historic Block 95.

of the clubhouse, Feature 5. It was filled with loosely compacted brown sandy silt with gravel and blobs of bright red pigment or paint. The pit measured 55 cm in length and 50 cm in width. Several pieces of butchered cattle bone were visible. The feature was created when the Tucson Sampling Works was in operation, from 1887 to 1901. Feature 17 was not excavated, and the function of the pit is not known.

Feature 18, Equipment Mount

Feature 18 was a set of adobe bricks apparently used as an equipment mount for the Tucson Sampling Works. The set was 1.9 m long and 38 cm wide. Immediately adjacent to the mount was a rectangular ore waste pit, Feature 19. Feature 18 was created when the Tucson Sampling Works was in operation, from 1887 to 1901.

Feature 19, Ore Waste Pit

Feature 19 was a rectangular pit filled with ore waste. It was located while stripping away debris inside the northern porch area of the clubhouse, Feature 5. The pit was immediately north of Feature 18, an equipment mount. Feature 19 was 2.15 m long by at least 1.55 m wide (the northern side was cut by the porch foundation trench). The upper portion of the pit contained dark red gravel and sand lying over laminated, waterlain yellowish-green silt. Bottle glass and nails were visible in the fill, and a complete alcoholic beverage bottle was found along the west edge of the pit. The feature was not excavated. Feature 19 was created when the Tucson Sampling Works was in operation, from 1887 to 1901. It appears to have been used for the disposal of waste generated during assaying.

Feature 20, Small Pit

Feature 20 was a small pit located during stripping of the northern porch area of the clubhouse. The pit was rectangular and measured 1.18 m in length and 1.00 m in width. It was filled with a mottled combination of brown silty sand, caliche chunks, ash, and black charcoal. Bottle glass, nails, and fired brick fragments were present in the fill. The pit was



Figure 3.12. Photograph of the Southern Pacific washroom foundation, Feature 13, looking south, Historic Block 95.

adjacent to a probable equipment mount, Feature 44. Feature 20 dates to use of the area by the Tucson Sampling Works, from 1887 to 1901, although the function of the pit is unknown. It was not excavated.

Feature 21, Utility Access Pit

Feature 21 was a pit located in the southern room of the clubhouse, Feature 5. The pit appeared as a circular stain during stripping. It was about 70 cm in diameter, but was truncated along the eastern side by Feature 7, an intrusive ore waste pit. The pit was filled with yellowish-gray soft sandy silt 11 cm deep. A pipe ran through the center of the pit; the pit may have been an access point to the pipe, later filling with ore waste. Pieces of plain whiteware ceramics were present in the fill. Feature 21 dates to use of the area by the Tucson Sampling Works from 1887 to 1901.

Feature 22, Rock House Foundation

Feature 22 was the rock foundation for a room attached to the back of an adobe brick dwelling (Figures 3.13 and 3.14). The foundations were made from basalt rocks quarried from Sentinel Peak (A-Mountain). The foundation was rectangular, measuring 10.8 m in length and 4.9 m in width. It ranged in width from 35 cm to 62 cm, averaging about 60 cm. A lime mortar was used to hold the rocks together. Remnants of brown adobe bricks were present on

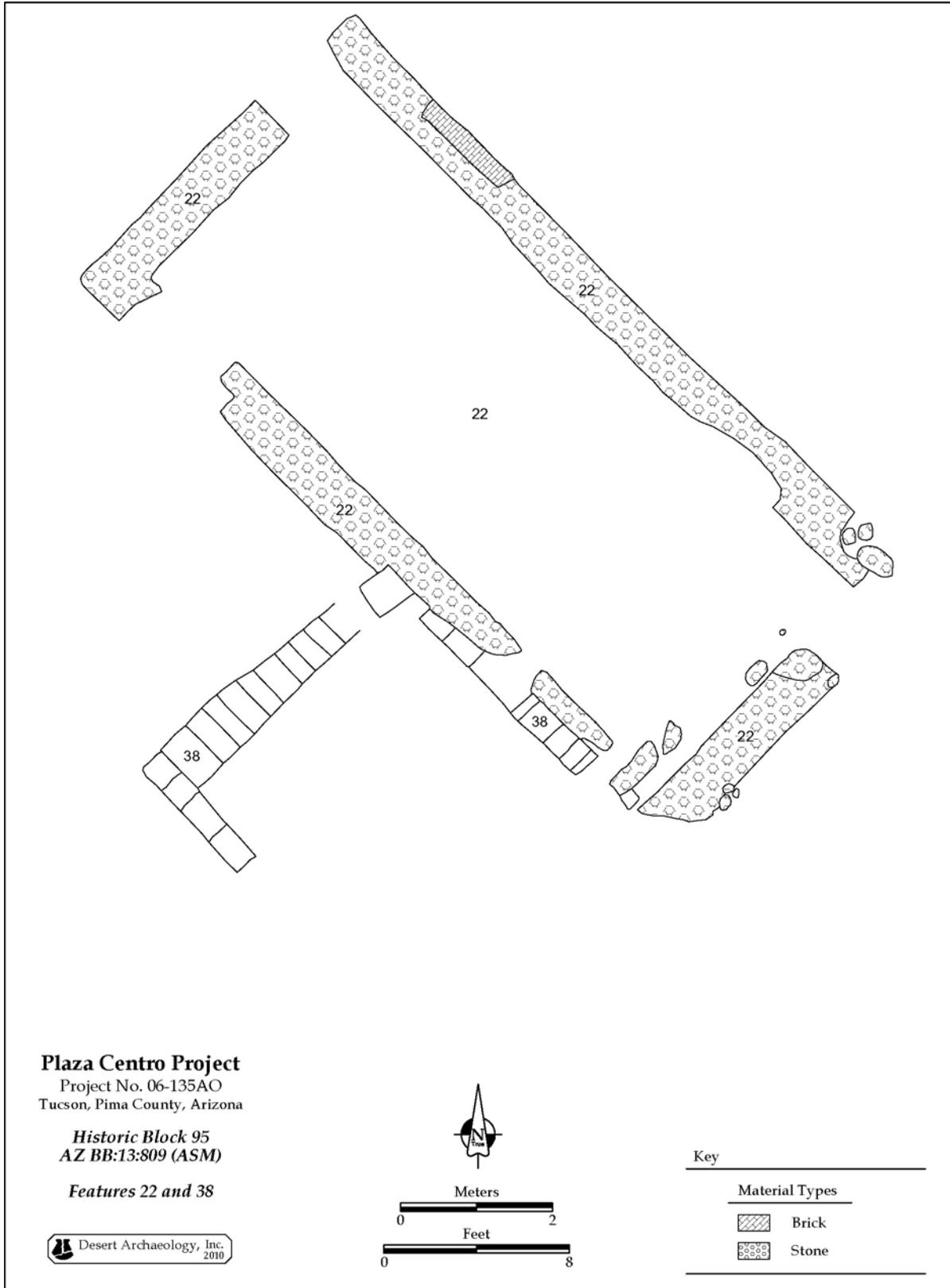


Figure 3.13. Plan view of Features 22 and 38, a house foundation, Historic Block 95.



Figure 3.14. Photograph of the rock foundation of Feature 22, cut into by the later Southern Pacific Clubhouse foundation, Feature 5, looking to the southeast, Historic Block 95.

top of the northern foundation. The room was attached to the northeastern corner of the adobe house, with the rock foundation clearly positioned around the existing adobe walls of that house.

The date of construction for this room is unknown. It is not depicted on the Sanborn Fire Insurance maps, which show the house from 1883 through 1896. The addition may have been present, with the cartographers neglecting to add it to the updated maps after 1883. The house was not depicted on the 1901 Sandborn map, and it was certainly demolished prior to construction of the Southern Pacific Clubhouse in 1906.

A rectangular pit, Feature 25, lay inside the foundation, but apparently predates the rock foundation. The brick foundations of the clubhouse, Feature 5, cut through the foundation, as does planting hole Feature 34.

Feature 23, Ore Waste Pit

Feature 23 was an ore waste pit uncovered during backhoe stripping along the northern side of the

Southern Pacific Clubhouse. It appeared as a sub-rectangular pit filled with concentric circles of various colored sediments, ranging from brown to green to yellow-gray. The pit was 2.5 m long by 2.00 m wide. It was not excavated. Feature 23 dates to use of the area by the Tucson Sampling Works, from 1887 to 1901, and is filled with ore waste.

Feature 24, Ore Waste Pit

Feature 24 was an ore waste pit uncovered during backhoe stripping along the eastern and northern side of the Southern Pacific Clubhouse. The pit was filled with a variety of different colored ore waste, including blueish-gray sand, black charcoal-rich silt, greenish-brown silt with clumps of brown material, as well as waterlaid brownish-green silts. It was 20 m long by 5 m wide. The pit cuts into another ore waste pit, Feature 6, and was, itself, cut by a ceramic sewer pipe and the Southern Pacific Clubhouse foundation, Feature 5. Feature 24 dates to use of the area by the Tucson Sampling Works, from 1887 to 1901.

Feature 25, Planting Hole

Feature 25 was a tree planting hole located between the south side of the Hooper warehouse and the north side of the dwelling. This rectangular pit was at least 2.7 m long and 1.4 m wide. It was 37 cm deep, and was filled with coarse dark brown sand with a large amount of gravel. A test unit measuring 1.6 m by 1.4 m was excavated in the eastern end of the pit. Screening the soil yielded a large number of animal bones, pieces of bottle glass, and ceramics. The pit was cut into by Feature 22, a rock foundation, and by Feature 34, a planting hole. Feature 25 dates to use of the property by the Tucson Sampling Works, from 1887 to 1901, as seen by the presence of assaying cupels. The presence of the foundation over the pit indicates the planting hole likely dates to the earlier portion of this time.

Feature 26, Planting Hole

Feature 26 was a rectangular planting hole located between the warehouse and dwelling. The pit was 94 cm long and 84 cm wide, cutting down into the caliche for 38 cm. It was filled with two layers of sediment. At the top was a circa 34-cm-thick soft, dark brown sandy silt. The bottom 4 cm of fill was a layer of white ash. The pit contained bottle glass, nails, animal bone, and transferprint ceramics. Feature 26 was cut into by the clubhouse foundation, Feature 5. It dates to use of the property by the Tucson Sampling Works, from 1887 to 1901.

Feature 27, Planting Hole

Feature 27 was a rectangular planting hole located between the warehouse and the dwelling (Figure 3.15). The pit was 82 cm long by 70 cm wide, cutting down into the caliche 35 cm. Like Feature 26, it was filled with two layers. The upper 28 cm was dark brown sandy silt with gravel. Below that was approximately 8 cm of white ash. The planting hole contained animal bone, a shell bead, nails, and Native American ceramics.

Feature 27 dates to use of the property by the Tucson Sampling Works, from 1887 to 1901.

Feature 28, Sewer Pipe Access Box

Feature 28 was a rectangular, poured-in-place concrete box that allowed access to a pair of pipes. The box was 1.19 m long and 77 cm wide. The walls were 5 cm thick, and it was 37 cm deep and was filled with demolition debris from removal of the Southern Pacific Clubhouse. The rectangular box allowed access to an 8-inch-diameter ceramic sewer pipe and a 4-inch-diameter iron pipe, which likely brought water from a kitchen or bathroom into the box. Removal of the sediment inside a portion of the

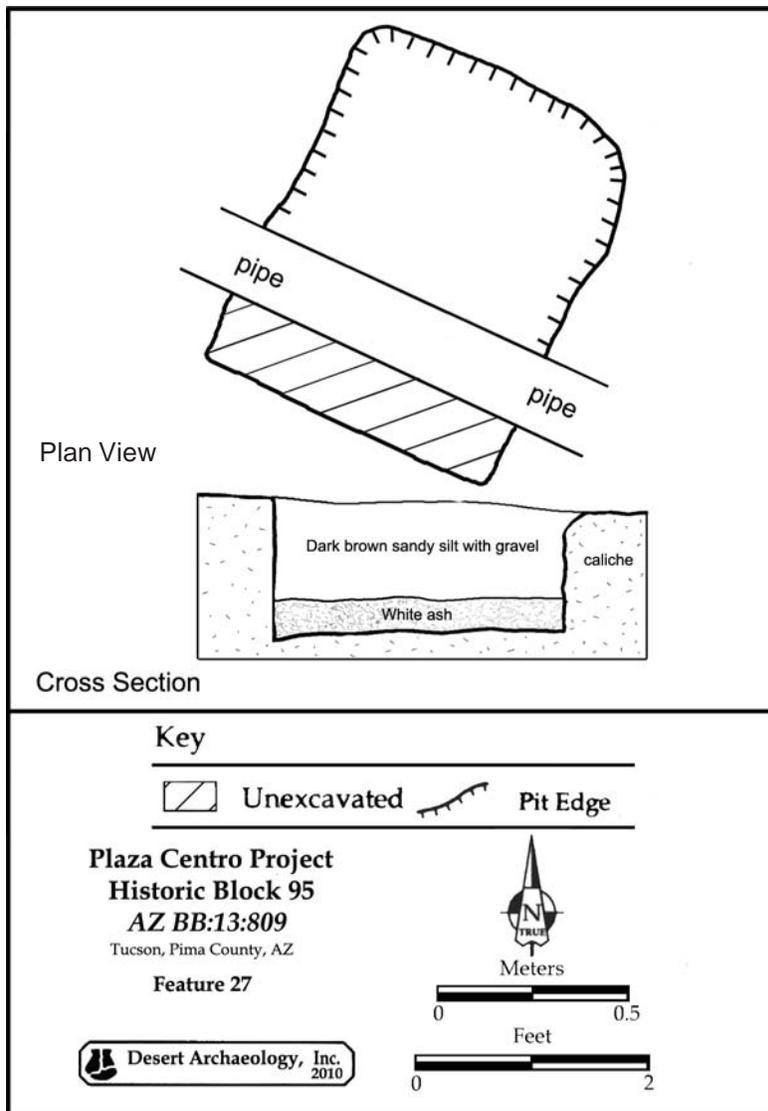


Figure 3.15. Plan view and cross section of Feature 27, a planting pit, Historic Block 95.

ceramic pipe leading into the box resulted in the recovery of a small perfume bottle and a gold ring. Feature 18 dates to use of the Southern Pacific Clubhouse, sometime between 1906 and the early 1960s.

Feature 29, Large Pit

Feature 29 was a large pit uncovered during stripping at the southeastern corner of the clubhouse. The oval pit was at least 1.9 m long by 1.7 m wide. It was filled with pinkish-gray, loosely compacted sandy silt with a high gravel content. It was not excavated. Feature 29 dates to use of the property by the Tucson Sampling Works, from 1887 to 1901.

Feature 30, Trench

Feature 30 was a trench located during stripping of the western porch area of the clubhouse. It appeared as a linear feature, running east-west, and was filled with a brown silty sand with lots of caliche flecks. The trench was at least 1.85 m long, and was 66 cm wide. It was perhaps 20 cm deep, cutting into the underlying caliche. The trench contained bottle glass, nails, and window glass. The feature was not excavated; it was cut into by the clubhouse porch foundation, Feature 5. Feature 30 dates to sometime between 1880 and 1901.

Feature 31, Planting Hole

Feature 31 was a planting hole found while clearing the interior of the south porch of the clubhouse, Feature 5. The rectangular pit was 75 cm wide and at least 55 cm long, with the western side cut by the foundation trench for Feature 5. The pit was 42 cm deep, cutting into the underlying caliche layer, and it was filled with two layers of sediment, identical to Features 25, 26, and 32. The upper 32 cm of fill was dark grayish-brown sand with some gravel. Below that was 10 cm of white ash. A disturbance, perhaps an animal burrow or the location of a large root, lay at the bottom of the pit, extending at least 30 cm below. Artifacts found in the pit included bottle glass, tin can fragments, and animal bone. Feature 31 dates to when the Tucson Sampling Works operated on the property, from 1887 to 1901.

Feature 32, Planting Hole

Feature 32 was a planting hole found while clearing the interior of the south porch of the clubhouse, Feature 5. The rectangular pit was 96 cm long and

at least 91cm wide; its northern edge was cut by the foundation of the clubhouse. The pit was 29 cm deep. The top 22 cm of fill was grayish-brown silty sand with high gravel content. The lower 7 cm was white ash, identical to the fill of Features 25, 26, and 31. Artifacts found in the pit included nails, bottle glass, and animal bone. The pit dates to when the Tucson Sampling Works operated on the property, from 1887 to 1901.

Feature 33, Planting Hole

Feature 33 was a planting pit found while clearing soil from around the adobe dwelling foundation, Features 22 and 38. The pit was at least 1.34 m long and 1.17 m wide. It was filled with compact brown sandy silt with no visible artifacts. The pit was not excavated. Feature 33 was very similar to Features 34, 35, and 40. These pits all date to use of the area after the Southern Pacific Clubhouse was built in 1906.

Feature 34, Planting Hole

Feature 34 was a planting pit found while clearing soil from around the adobe dwelling foundation, Features 22 and 38. The pit was at least 1.72 m long and 1.35 m wide. It was filled with compact brown sandy silt with no visible artifacts. It cut into Feature 22, the rock foundation, and Feature 25, a planting hole. The pit was not excavated. Feature 34 was very similar to Features 33, 35, and 40. These pits date to use of the area after the Southern Pacific Clubhouse was built in 1906.

Feature 35, Small Pit

Feature 35 was a small pit located during stripping of the adobe dwelling area, Features 22 and 38. It was a subrectangular pit measuring 51 cm by 41 cm. It cut into the caliche layer, and was 19 cm deep, filled with loosely compacted brown silty sand. Feature 35 contained a variety of artifacts, including nails, a collar button, animal bone, and bottle glass. The function of this small pit is unclear, although the most likely explanations are as either a small planting hole or perhaps a large posthole. The feature dates to the Tucson Sampling Works occupation of the property, from 1887 to about 1901.

Feature 36, Posthole

Feature 36 was a rectangular posthole located during stripping of the adobe dwelling area, Features

22 and 38. It was 28 cm by 25 cm, and it cut into the caliche 29 cm. The posthole was filled brown silty sand with high gravel content. It contained bottle glass, two O'odham pottery sherds, a nail, a porcelain insulator fragment, and animal bone. Feature 36 dates to the Tucson Sampling Works occupation of the property, from 1887 to about 1901.

Feature 37, Planting Hole

Feature 37 was a circular planting hole found while stripping the area around the adobe dwelling, Features 22 and 38. The pit was 91 cm in diameter, and was filled with compact brown sandy silt. No artifacts were visible, and the feature was not excavated. The pit was probably dug at the same time as Features 24, 33, and 40, all of which have identical fill. This took place when the site was occupied by the Southern Pacific Clubhouse, from 1906 to the 1960s.

Feature 38, Adobe Brick Dwelling

Feature 38 was the adobe brick foundations for a dwelling depicted on the Sanborn Fire Insurance maps between 1883 and 1896 (see Figures 3.13 and 3.14). The L-shaped house was built from adobe bricks and was one story tall, with a wooden porch at the northwestern corner. Using the scale on the map, the dwelling appears to have been 35 ft long by 35 ft wide. A chimney was present in the northeastern corner of the house, probably the location of a cookstove. The house had an addition added along the northern side between 1886 and 1889, perhaps the rock foundation, Feature 22 (although the dimensions of the foundation do not match the 1889 map). The house was missing from the 1901 map, and may have been demolished in that year.

The adobe brick foundations of the northeastern corner of the house were located during stripping south of the clubhouse, with most of the dwelling lying beneath a backdirt pile. The surviving pieces consisted of the adobe foundations of the north and west walls. This portion measured 4.29 m in length and 4.03 m in width. The individual adobe bricks were 20 inches long by 10 inches wide. They appear to have been set directly on the ground surface. The later addition, Feature 22, was added directly onto the north wall, with the rock and mortar foundation molded around the existing adobe bricks of the dwelling.

Feature 39, Sewer Pipe Access Box

Feature 39 was a poured-in-place box used to access a pair of sewer pipes. The box was located while

stripping in the vicinity of the adobe dwelling, Features 22 and 38. Feature 39 was 91 cm long and 83 cm wide. The interior of the box was 62 cm square. The box was 56 cm deep, and was filled with debris from demolition of the Southern Pacific Clubhouse. An 8-inch-diameter ceramic sewer pipe ran from the adjacent concrete box, Feature 28, through this box, and continued toward North Toole Avenue. A second, 5-inch-diameter ceramic sewer pipe entered the box and drained into the larger pipe, whose top had been carefully cut away. The box dates to when the Southern Pacific Clubhouse was in use, from 1906 to the 1960s. No artifacts were recovered from this feature.

Feature 40, Planting Hole

Feature 40 was a planting hole located during stripping of the area on the southern side of the Southern Pacific Clubhouse. The pit was 1.25 m square, and was filled with compact brown sandy silt. The only visible artifact was a nail; the pit was not excavated. This was one of four planting holes with similar fill (the others were Features 33, 34, and 35). All date to when the Southern Pacific Clubhouse was in use, from 1906 to the 1960s.

Feature 41, Outhouse Pit

Feature 41 was an outhouse pit located west of the adobe dwelling (Figure 3.16). The pit was 90 cm square, and was cut into the caliche layer. It was 53 cm deep. The upper 30 cm of fill was mostly white ash; the remaining fill was greenish-brown loamy clayey sand. The pit contained a large number of artifacts, including bottles, dishes, tin cans, a pocket watch, a chamber pot lid, a pencil lead, and cupels. The pit cut into the edge of an earlier outhouse pit, Feature 42. Feature 41 dates to occupation of the site by the Tucson Sampling Works, from 1887 to about 1901. It seems likely that some of the artifacts found in the pit were discarded by Charles Wores.

Feature 42, Outhouse Pit

Feature 42 was an outhouse pit located west of the adobe dwelling (see Figure 3.16). It is depicted on the 1883 Sanborn Fire Insurance map as a small building marked "W.C.," for either Waste Closet or Water Closet. The rectangular pit was 1.58 m long by 81 cm wide. It was cut into the caliche layer, and was at least 1.02 m deep. Measuring from the historic ground surface, the pit would have been 1.3 m deep. The upper portion of Feature 42 contained

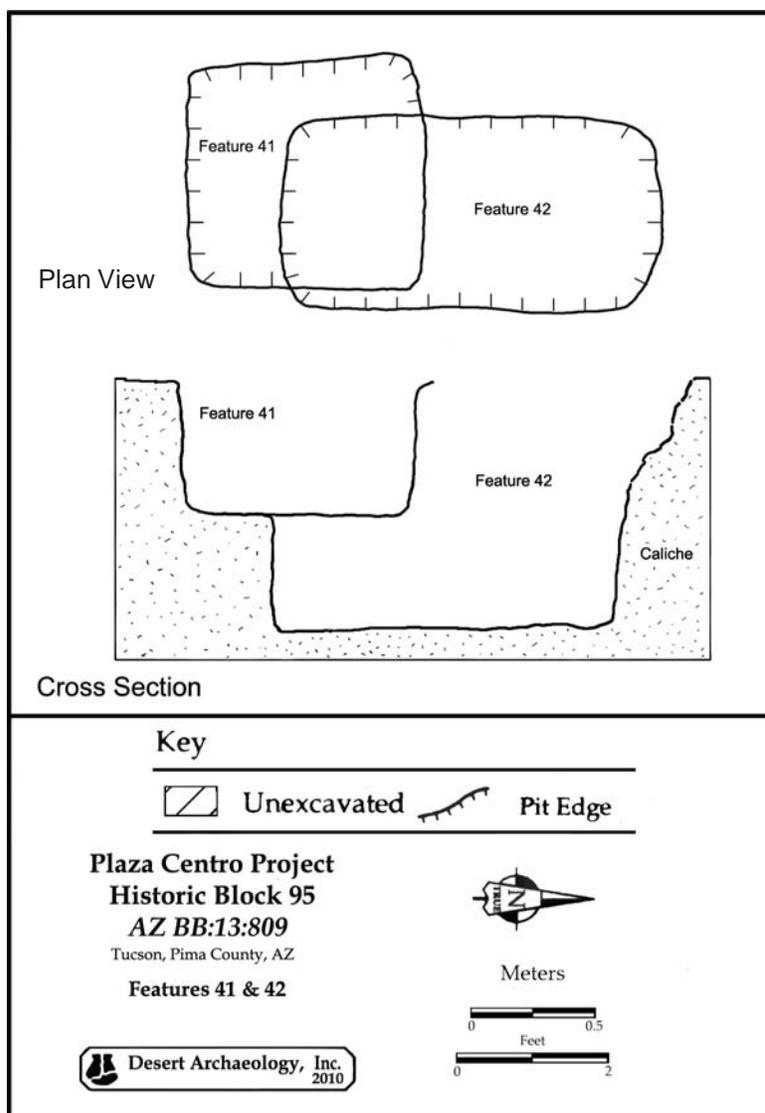


Figure 3.16. Plan view and cross section of Features 41 and 42, two out-house pits, Historic Block 95.

lumps of caliche dumped in as fill. Beneath this was a thick layer of greenish-brown, loosely compacted loamy clay that had a high organic content. The bottom of Feature 42 contained a shallow layer of greenish-brown, compact loamy sandy clay. Artifacts were common in the upper portions of the pit, and included bottles, broken dishes, two dolls, tin cans, nails, buttons, and pencil leads. Of note, no assaying-related artifacts or ceramic ink bottles were found in this feature. Those types of artifacts are ubiquitous in features from the Tucson Sampling Works, and their absence suggests this pit dates to the Hooper warehouse timespan, from 1880 to 1886. Two whiteware dishes recovered from the top of Feature 42 date to after 1906, but were likely intrusive into the pit, settling into the fill from Feature 41.

Feature 43, Posthole

Feature 43 was a posthole discovered during stripping of the area south of the Southern Pacific Clubhouse. It was a rectangular pit measuring 31 cm in length and 22 cm in width. The 4-cm-deep feature was cut into the caliche layer, and was filled with brown silty sand and gravel. It contained a cupel, some sawn animal bones, and a few small pieces of glass, none of which were collected. Feature 43 appears to be a small posthole that dates to occupation of the site by the Tucson Sampling Works from 1887 to 1901.

Feature 44, Equipment Mounts

Feature 44 was a group of adobe bricks located during stripping of the area within and to the north of the northern porch of the Southern Pacific Clubhouse. The clubhouse foundation cut through the center of the adobe brick feature, making it difficult to interpret the original configuration of the probable machinery mount. As it survived, Feature 44 consisted of a pair of L-shaped adobe brick foundations spanning an area 3.08 m long and 1.50 m wide. Two other single adobe bricks are located east of the southern cluster. The northern cluster had several fired bricks attached to the eastern side.

Individual adobe bricks measured 20 inches by 10 inches. Feature 20, an ore waste pit, is located next to the southern L-shaped group of bricks. The feature dates to occupation of the site by the Tucson Sampling Works, from 1887 to 1901. The 1889 and 1896 Sanborn maps indicate a number of small buildings and tanks were present in this area. In particular, Feature 44 may correspond with a rectangular structure present on the 1889 Sanborn map.

Feature 45, Ore Waste Pit

Feature 45 was an ore waste pit located immediately adjacent, to the east, of the warehouse foundation. The rectangular pit was 5.02 m long and 1.97 m wide. It was filled with a mottled collection of

sediments. The upper fill was brown silty sand with fired brick fragments. Below this was a yellowish-brown green silt of undetermined depth. The top of the pit was probed to collect a sample of the cupels, crucibles, scorifiers, and ceramic mineral water bottles that had been discarded into it. Feature 45 dates to occupation of the site by the Tucson Sampling Works, from 1887 to 1901.

Feature 46, Ore Waste Pit

Feature 46 was an ore waste pit located east of the warehouse in an area with several other ore waste pits. The roughly rectangular feature measured 2.43 m in length and 89 cm in width. Its depth was not determined. The pit was filled with mottled greenish-gray silt with lumps of brown material, as well as charcoal and some yellow silt. An upright wooden post, 12 inches square, was present in the northwestern portion of the pit. The post was connected to a north-south running beam measuring 12 inches by 8 inches, extending underground south from the post at least two feet. Two smaller posts were present on the eastern side of the pit, one 4 inches by 2½ inches, and the second 11 inches by 6 inches. Horizontal pieces of wood ran along the eastern and southern sides of the pit. The function of these various wood pieces is unknown; a piece of machinery may have once been mounted above the pit, or the pit could have been lined with wood. However, because the pit was not excavated, this remains unknown.

No artifacts were visible in the fill. Feature 46 dates to occupation of the site by the Tucson Sampling Works, from 1887 to 1901.

SUMMARY

Archaeological work on Block 95 located 46 features. Most of these were created between August

1880 and 1901, when the property was occupied by the William B. Hooper & Co. warehouse, the Tucson Sampling Works, and a dwelling. The uncovered features included remnants of the adobe warehouse, portions of the dwelling, and equipment mounts and ore waste pits from the sampling works. The three outhouse pits uncovered date to this time period, and contain domestic and industrial trash, as do a cluster of planting holes, where trees were once placed. A map overlaying the uncovered features over the 1889 Sanborn Fire Insurance map indicates that persons creating these insurance maps were quite meticulous in their measurements (Figure 3.17). The accuracy of the 1883 Sanborn map allowed for the location of two of the uncovered outhouses, Features 41 and 42. Archaeologists uncovered the corner of the adobe dwelling, Feature 38, which was depicted on the map. The map showed an outhouse 80 ft to the east of the corner, and after measuring this on the ground, a backhoe quickly revealed the two pits.

Block 95 continued to be occupied from 1906 into the early 1960s, in buildings constructed by the Southern Pacific Railroad. A smaller number of features associated with this use of the site were located. They included the foundations of the clubhouse and changing room, several utility access features, and planting pits for some of the trees visible in period photographs. The overlay of the 1909 Sanborn Fire Insurance map with features associated with the Southern Pacific use of the block again shows how carefully the maps were drawn (Figure 3.18).

Excavation of three outhouse pits, two ore waste pits, and some of the earlier planting pits led to the discovery of many artifacts, most of which date between 1880 and 1901. Descriptions of these items are provided in Chapter 4.

ARTIFACTS RECOVERED FROM BLOCK 95 FEATURES

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During excavations on Historic Block 95, AZ BB:13:809 (ASM), artifacts were recovered from 21 of the 46 features revealed, as well as from nonfeature contexts, primarily in the overburden around the Southern Pacific Clubhouse foundations. In all, 4,703 artifacts were found, with the majority coming from the three outhouse pits, several planting holes, and several ore waste pits from the Tucson Sampling Works (Table 4.1). Almost all the items relate to use of the property between 1880 and 1901, and most appear to date between 1887 and 1901, when Charles R. Wores operated the Tucson Sampling Works.

James Heidke examined the Native American artifacts. Manufactured artifacts were analyzed by Susan Blair and Homer Thiel, a shell artifact was identified by Chris Lange, and a few flaked stones were examined by Jane Sliva. The results of these analyses are presented here.

NATIVE AMERICAN POTTERY FROM HISTORIC BLOCK 95

Historic Native American pottery was recovered from 10 features at historic Block 95, AZ BB:13:809 (ASM). All the recovered pottery falls entirely within the American Territorial period (A.D. 1856-1912). The Historic era Native American pottery recovered from Block 95 belongs to the “Papago” (Tohono O’odham) ceramic series, as discussed by Haury (1975), Fontana et al. (1962), Doelle (1983), Thiel and Faught (1995), Whittlesey (1997), and Heidke (2005a, 2005b, 2006, 2008b).

Analysis Methods

The coding index used to record provenience, typological, technological, and morphological data is available in Heidke (2006:Table 7.1). Additional qualitative and metric attribute data were recorded from a subsample of the pottery collection (all rim and decorated sherds); the coding index used for that analysis is also available in Heidke (2006:Table 7.3). Two attributes of the pottery, temper type and vessel function, deserve additional explanation.

Temper Type

Native American pottery produced in the North American Southwest often contains abundant nonplastic “temper,” such as sand, disaggregated rock, and crushed sherd. For example, Tohono O’odham pottery is known to have been tempered with various types of material, including sand, crushed schist, ground potsherds (“grog”), and dried and sifted horse manure (Fontana et al. 1962:57-58, 135). Both sand and crushed rock tempers can be used as indicators of provenance once their geologic sources have been identified (Arnold 1985; Heidke et al. 2002; Shepard 1936, 1942).

During the last two decades, an intensive program of wash sand sampling in the Tucson Basin has provided evidence that many spatially discrete sand temper compositions were available to Native American potters (Miksa 2010). Temper type and provenance were characterized with respect to that petrofacies model, although no sherds were point-counted during the course of this project to verify the provenance assignments. Temper attributes were recorded after examination of each sherd at 15-x magnification, using a Unitron ZSM binocular microscope fitted with a Stocker and Yale Lite Mite Series 9 circular illuminator.

Vessel Function

Two different approaches were utilized to assess the likely uses pottery played in the lives of the site’s occupants. The first approach is strictly typological, and entailed the assignment of rim sherds and reconstructible vessels to vessel form categories originally created to classify the prehistoric pottery of the region (Kelly 1978). The second approach examined a subset of the sherds – those with measurable orifice and/or aperture diameters – and placed them into functional categories determined by their overall morphology and size (Braun 1980). Braun’s morphological classification is based on Shepard’s (1995:230) geometric taxonomy of vessel shape, while the functional categories he developed are based on characteristics of historic and modern Piman, Yuman, and Puebloan pottery. The ethno-

graphically based model that resulted from Braun's work provides an objective and replicable way to examine pottery function, regardless of when or where a pot was made. The interested reader is referred to Heidke (2006:7.5-7.22) for a detailed presentation of the methods used here to implement the functional study.

Unfortunately, most of the Historic era sherds from Block 95 could not be assigned to a vessel form or Shepard-Braun functional category. Those rims were usually classified as an "indeterminate flare-rim" form. Indeterminate flare-rim vessels may represent as many as seven different Tohono O'odham vessel forms: *hí-to-ta-kut*, *íolakitakut*, *bíkut*, *háaicúkaitutakut*, *sú-u-te-ki-wá-i-kut*, *sítotakut*, and *wáikut*. All seven of those vessel forms have everted, or flaring, rims.

HISTORIC NATIVE AMERICAN POTTERY

Dating information for the historic Block 95 contexts was provided by Project Director Homer Thiel. To review the ceramic data for temporal trends, contexts were assigned to one of three temporal sets: 1880-1901, 1887-1901, or circa 1906. Feature 12, the adobe brick foundation of the William Hooper & Co. warehouse and, later, the Tucson Sampling Works, is the only context in the 1880-1901 set. The 1887-1901 deposits consist of those associated with the Tucson Sampling Works: outhouse pit Features 1 and 41, ore waste pit Feature 6, and planting hole Features 25, 26, 27, 31, and 32. Planting hole Feature 2 is the only context in the circa 1906 set.

Data tables are formatted following a standardized approach developed during the last decade. It has been used previously to report attributes of historic Native American pottery recovered from Block 83, AZ BB:13:401 (ASM) (Heidke 2009), Block 136, AZ BB:13:513 (ASM) (Heidke 2002), Block 139, AZ BB:13:644 (ASM) (Heidke 2003a), Block 172, AZ BB:13:668 (ASM) (Heidke 2003b), Block 181, AZ BB:13:13 (ASM) (Heidke 2006, 2008b), Block 185, AZ BB:13:757 (ASM) (Heidke 2008a), and the León farmstead, AZ BB:13:505 (ASM) (Heidke 2005a, 2005b). Following a standardized method of reporting facilitates the synthesis of data gathered from multiple contexts at one site or many.

The excavations at historic Block 95 yielded 203 sherds, representing portions of at least six vessels (Table 4.2). However, a higher minimum number of vessel count of 12 can be arrived at by counting each ceramic type present in each individual feature. Sample sizes ranged from one to 148 sherds per feature, with a median of three. Additional information regarding characteristics of the red-slipped pottery is provided in Table 4.3.

The temper type data are summarized in Table 4.4. One composition, sand and fiber (presumably manure, 98.2 percent of examined sherds), dominates the collection. One other temper type, sand, represents the remaining 1.8 percent of the collection. Temper provenance data recorded from rim sherds and/or painted ceramic types are summarized in Table 4.5. Two source compositions were observed. Four vessels contain sand from the Black Mountain Petrofacies (Figure 4.1). The other two sherds were assigned to a granitic source; seven granitic sources are recognized in the greater Tucson area (the Cañada del Oro, Western Tortolita, Central Tortolita, Eastern Tortolita, Sierrita, Amole, and Sutherland petrofacies).

The vessel form of American Territorial period O'odham pottery recovered from Block 95 contexts is reported in Table 4.6. The only distinct vessel form identified was the tall flare-rim jar. Classification of that vessel using the Shepard-Braun approach indicates this Papago Black-on-red jar would have been a temporary storage container well-suited to water cooling (Figure 4.2; Table 4.7). Based on its partial reconstruction, this jar had a diameter of 32 cm and a height of 30 cm. Assuming it had a roughly spherical shape, it would have held approximately 3.75 gallons (14.1 liters) of liquid.

A Brief Review of O'odham Pottery Technology as Reflected in the Block 95 Ceramics and Comparison with Other Collections Recovered from 1890-1901 Deposits

Information recorded from pottery recovered from the 1887-1901 deposits at Block 95 and at two contemporary sites is summarized in Table 4.8. The ceramic attribute data used for comparison comes from pottery recovered from Block 139 deposits dated 1890-1895 (Heidke 2003a) and Block 172 deposits dated 1891-1901 (Heidke 2003b). The attribute frequency data reported in Table 4.8 reflect decisions made by the potters, such as temper type, occurrence of folded rim coils, location of red slips, and decorated paint and slip color schemes, as well as consumer preference, such as type frequency and vessel function implied by slip location. All of these attributes are characteristics of "Papago" pottery that contributed to Fontana and others' (1962:101-116) ceramic typology. The temper type, slip location, and ware frequency data are based on sherd counts, while the folded rim data are based on minimum number of vessel counts.

Review of the temper type and folded rim percentage data shows that the values recorded from the Block 95 pottery fall within the ranges established at Blocks 139 and 172. The same pattern is true for

Table 4.2. Native American pottery types recovered from Historic Block 95.

Ceramic Type	1880-1901 Context				1887-1901 Contexts				Circa 1906 Context										
	Body		Neck		Body		Neck		Rim		Reconstructible Vessel		Body		Rim		Row Total		
	Sherd Count	Sherd Count	Sherd Count	Sherd Count	MNV ^a	Sherd Count	Sherd Count	Sherd Count	Sherd Count	MNV	Sherd Count	MNV	Sherd Count	Sherd Count	MNV	Sherd Count	MNV	Sherd Count	
Prehistoric, Protohistoric, or Historic Type																			
Plain Ware	0	0	0	0	N/A	1	0	0	0	0	0	0	0	0	0	0	0	N/A	1
Historic Types																			
Papago Red	7	7	0	3	N/A	31	3	3	3	3	0	0	0	0	0	0	0	3	51
Papago Plain	0	0	0	0	N/A	0	0	0	0	0	0	0	0	1	1	1	1	1	2
Papago Black-on-red	0	0	0	0	0	0	0	0	0	0	1	140	0	0	0	0	0	1	140
Papago White-on-red	0	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0	1	9
Column Total	7	7	7	3	1	41	3	3	3	3	1	140	1	1	1	1	6	6	203

^aMNV = Minimum number of vessels.

the frequency of plain ware. Those three attributes are temporally sensitive to potter behavior, regardless of consumer preference. Their consistent expression shows that sand- and sand-and-crushed sherd-tempering, folding the rim over to make a rim coil, and applying a red slip to pottery that was not tempered with fiber/manure were approaches to pottery-making that Tohono O’odham potters in the Tucson area rarely followed at this time, or if they did, pottery exhibiting those traits did not enter the local economy.

The greatest differences between the Block 95 collection and those recovered from the contemporaneous deposits at Blocks 139 and 172 are reflected in the absence of Papago Plain pottery, the lower frequency of Papago Red pottery, and the greater abundance of decorated Papago types. Consumer preference, therefore, seems to have emphasized the purchase of Papago Red, Papago Black-on-red, and Papago White-on-red pottery over Papago Plain. The high percentage of Papago Red sherds slipped on their exterior surface suggests most of those vessels were jars. As noted, the Papago Black-on-red reconstructible vessel was likely used for storing and cooling water, an interpretation supported by other observations (*Arizona Citizen* 1876; *Arizona Weekly Citizen* 1883; Dobyns 1972; Hand 1994; Hosmer et al. 1991; Naranjo 2002). The sherds of exterior-slipped Papago Red vessels probably represent portions of other pots that served the same purpose (Heidke 2008b: Figure 6.5). Based on nineteenth century accounts, those types of jars typically held from three to five gallons of water (*Arizona Weekly Citizen* 1883; *New York Times* 1859), and needed regular replacement as their pores filled with mineral precipitates (*Tucson Daily Citizen* 1909). Prices reported in 1876 and 1909 indicate water storage jars cost anywhere from \$18 to \$50 at current (2008) rates, after accounting for inflation (Table 4.9).

COMMERCIALY MANUFACTURED ARTIFACTS

Artifacts manufactured in the United States, Mexico, Asia, and Europe were recovered from the site. These are examined below by functional category.

Kitchen Artifacts

Artifacts used to store, prepare, and serve food and beverages are placed in the kitchen category. A total of 1,828 kitchen artifacts (including the Native American sherds) was collected, representing 39

Table 4.3. Location of slip on Papago Red pottery recovered from Historic Block 95.

Slip Location	1880-1901	1887-1901		Row Total
	Context	Contexts		
	Body	Body	Rim	
Exterior only	13	33	0	46
Fully slipped	1	1	3	5
Column Total	14	34	3	51

percent of the overall artifact assemblage. No preparation artifacts were found during the project, although fragments from a yellowware mixing bowl were recovered during environmental testing of one of the ore waste pits after the archaeological work was completed.

Food service artifacts are used to serve foods and beverages during meals; 214 artifacts were placed in this category. Most numerous were pieces from cups and drinking glasses, followed by parts of pitchers and plates.

Dishes from Feature 1 included a small pitcher, probably made in Japan, decorated with blue flowers and a sponge-printed bowl.

Serving vessels from Feature 41 included a plain whiteware plate and a plain whiteware platter. Another whiteware plate had molded lines and a scalloped rim, marked “Ursula.” A small bowl had a green transferprint design of roses and foliage. The flowers and leaves had been hand-painted red, yellow, and green. The scalloped rim had a gilt line, marked “East Liverpool Potteries Co.”

Five dishes were found in Feature 42. Four of these, a cup, a plate, a small plate, and a small pitcher, were plain whitewares. The small plate and the pitcher date much later than other artifacts from Feature 42 (after 1906) and may actually have come from Feature 41. A brown transferprint cup had brown primroses, foliage, and branches (Figure 4.3). The English registry mark on the bottom reveals that the pattern was registered on 4 August 1880. Matching fragments were found in other features, as were pieces from two other brown transferprint sets featuring foliage and flowers, one in the aesthetic style popular in Tucson in the 1890s.

Food storage artifacts, typically bottles and cans, are used to store foodstuffs. All of the recovered Native American ceramics were placed in the storage functional category. Tin cans, which are usually poorly preserved, were represented by 163 fragments. At least one lard can and several smaller food cans were present. Glass storage containers included two LEA & PERRINS Worcestershire sauce bottles and a canning jar. Two unusual jar lids had a patent

Table 4.4. Four-way classification of Native American pottery temper type from Historic Block 95, reported by context date, ceramic type, and vessel part. (The “body” sherd category includes body and neck sherds.)

Temper Type	1880-1901 Context			1887-1901 Contexts					Circa 1906 Context		
	Papago Red		Plain Ware	Papago Red		Papago Black-on-red		Papago White-on-red		Papago Plain	
	Body			Body	Rim	Reconstructible Vessel	Body	Body	Body	Rim	Row Total
Sand and fiber	14		0	34	3	1	1	1	1	1	55
Sand	0		1	0	0	0	0	0	0	0	1
Column Total	14		1	34	3	1	1	1	1	1	56

Table 4.5. Four-way classification of Native American pottery temper provenance from Historic Block 95, reported by context date, ceramic type, and vessel part (rim sherds, reconstructible vessels, and/or painted types).

Temper Source	1887-1901 Contexts			Circa 1906 Context	
	Papago Red	Papago Black-on-red	Papago White-on-red	Papago Plain	
	Rim	Reconstructible Vessel	Body	Rim	Row Total
Black Mountain Petrofacies	1	1	1	1	4
Indeterminate granitic source	2	0	0	0	2
Column Total	3	1	1	1	6

date of 25 November 1884. This patent was assigned to Thomas G. Otterson and John H. Otterson for a “cap or cover for jars or cans.” (United States Patent No. 308,571, www.google.com/patents). The lid was sealed to the jar by a rotary clamp that could easily be unscrewed, allowing the jar to be opened.

Beverage containers were common at the site, with at least 51 bottles represented. Alcoholic beverage bottles included 16 brown beer bottles, 23 olive green wine or champagne bottles, 4 ceramic ginger beer or stout, 1 clear whiskey flask, 1 brown bitters bottle, and an aromatic schnapps bottle. Stoneware mineral water bottles from Amsterdam and Czechoslovakia were also common; however, the water in these bottles may have been used for assaying purposes.

Architectural Artifacts

Artifacts used to construct buildings are included in this category, with a total of 1,202 individual artifacts, representing 26 percent of the artifact assemblage. Most common were fragments of window glass ($n = 240$) and nails ($n = 915$). Many of the window fragments were found in an ore waste pit, Feature 6, where several panes of glass were dumped. Nails are somewhat problematic, however, because they are also found in furniture and in packing or shipping containers, such as crates.

A few other types of architectural artifacts were found. Electrical wire and insulators came from features associated with both the Tucson Sampling Works and the clubhouse. A white porcelain door knob was probably used on a door in the dwelling. The roofing tile came from the ceramic tile roof of the Southern Pacific Clubhouse. Pipe fragments were most common in Feature 10, an ore waste pit. The Sanborn Fire Insurance maps indicate water was available across the site, flowing from an artesian well at the adjacent train depot.

Household Furnishings

Artifacts used to furnish dwellings or businesses are placed in this category. Relatively few furniture artifacts have been identified in previous excavations in downtown Tucson, a reflection of the long use-life of furniture, the recycling of some parts, and the difficulty in identifying nails and screws as coming from a piece of furniture. Only 85 artifacts were placed in this category, comprising 2 percent of the assemblage.

Furniture artifacts found at Block 95 included fragments of glass lamp chimneys and a kerosene lamp reservoir. Kerosene lamps were commonly used in Tucson prior to the introduction of electric lights in individual homes and businesses. A small white porcelain pull knob, which would have been used on a blind, curtain, or lamp, was found in Feature 42. A clock part could have been used in either the dwelling or at the sampling works. At the sampling works, clocks or watches were almost certainly used to determine how long samples were in the furnace or muffle.

Perhaps most interesting was a charming ceramic duck effigy pot made in Mexico (Figure 4.4). The duck was 8.75 inches tall and 11.00 inches long. It was hand-made, with the bottom and top halves made separately and then joined; the two legs and a third peg leg were attached on the bottom. The duck was then painted light brown with black, red, and blue designs, including flowers on the neck and a star or flower around a vent hole in the back. Two small loop handles are present, although it is unclear if the duck was designed to hang in the air.

Arms and Ammunition

Many residents of historic Tucson carried firearms. Although it is very rare to find pistols, revolvers, or rifles, a variety of ammunition is frequently

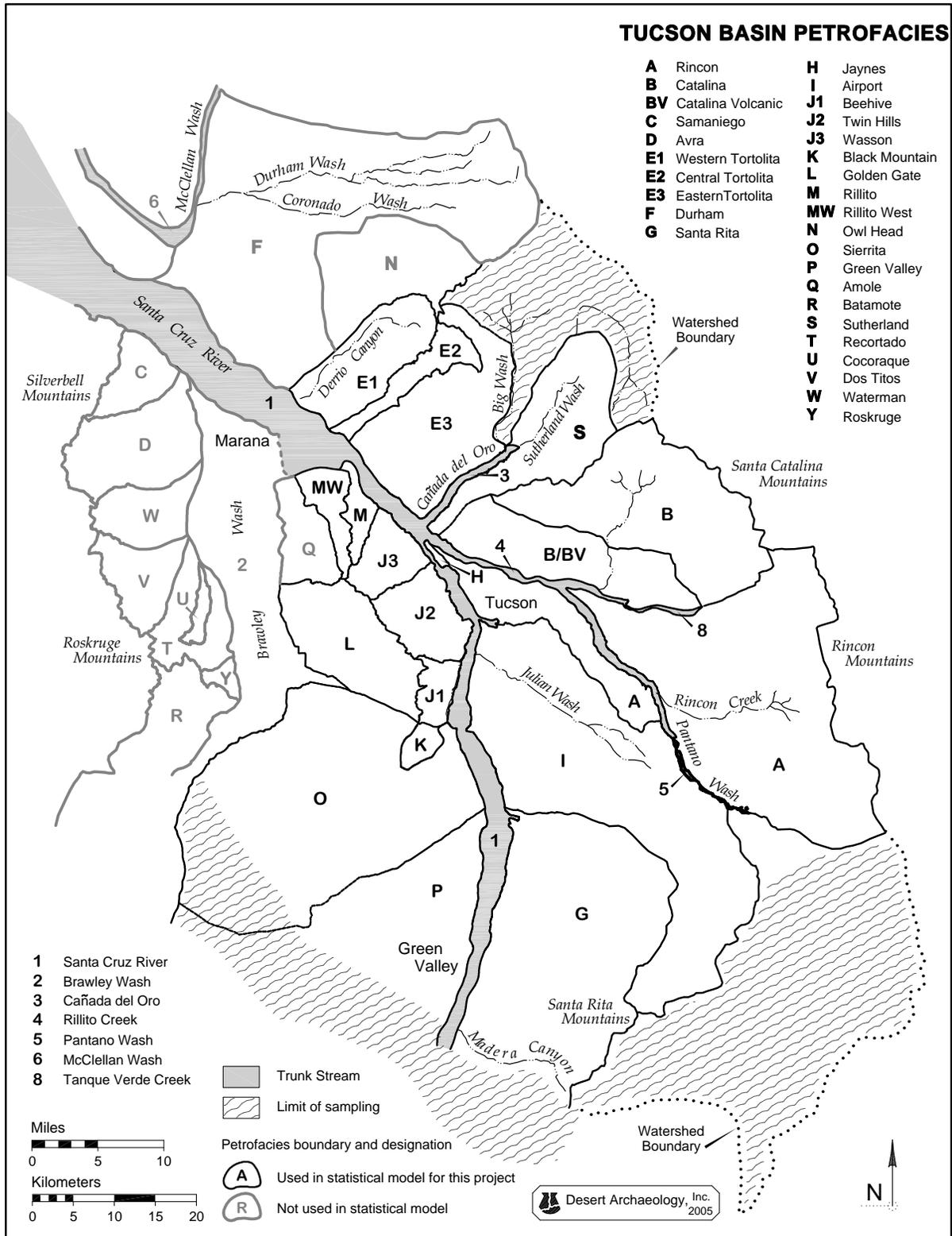


Figure 4.1. Current petrofacies map of the Tucson Basin and Avra Valley.

Table 4.6. Frequency of rim sherds and reconstructible vessels in each vessel form class, from Historic Block 95.

Vessel Form	1887-1901 Contexts		Circa 1906 Context		Row Total
	Papago Red	Papago Black-on-red	Papago Plain		
	Rim	Reconstructible Vessel	Rim		
Jar Form					
Tall flare-rim jar	0	1	0		1
Indeterminate Form					
Indeterminate flare-rim form	3	0	0		3
Indeterminate vessel form	0	0	1		1
Column Total	3	1	1		5



Figure 4.2. Papago Black-on-red jar recovered from Historic Block 95 Feature 1 (2009-699-2).

found at excavations on downtown blocks. Further, it is not atypical to find four or five different calibers at a single site.

Four poorly preserved shotgun cartridges were found, one in Feature 1 and three in Feature 42. Unfortunately, the headstamps were all too corroded to read. These items represent an insignificant part of the artifact assemblage. No newspaper stories about Charles Wores mention him in association with weapons.

Clothing

Clothing artifacts include basic components of a person’s attire, as well as jewelry. Items recovered from Block 95 included 41 buttons (represented by 42 fragments), 1 pants rivet, 4 suspender buckles, and 1 shell bead, discussed below as possibly being a prehistoric artifact. They represent 1 percent of the overall artifact assemblage.

The buttons were primarily shell ($n = 16$) or Prosser, often called milk glass ($n = 20$), suitable for shirts or undergarments. Four brass and one bone button were also found. The brass buttons were likely used for a coat. The clothing items look masculine, which is not surprising, given that most were probably lost or discarded by employees of the sampling works or by Charles Wores.

A whole shell bead manufactured from a *Conus californicus*, or California cone shell, was recovered from the fill of planting hole Feature 27. The bead was manufactured by grinding down the apex of the spire to create a perforation, and then removing the interior columella structure. This facilitated stringing the bead through the perforation and the aperture. The shell is a small, cream- to gray-colored gastropod that is slightly rounded with a low spire. It is a common shore-loving species whose range extends from the coast of San Francisco, California, south to Baja Sur, California (Keen 1971:663).

This shell may have found its way to Tucson as part of a necklace or bracelet that was a souvenir from a journey to the California coast, or it may

Table 4.7. Shepard-Braun functional category of Papago Black-on-red tall flare-rim jar, from Historic Block 95.

Functional Category	1887-1901 Context
Independent Restricted Vessel	
C: Temporary storage and/or water cooling (13.0-25.5 cm aperture diameter)	1

Table 4.8. Summary of temporal changes in select technological attributes of historic Native American pottery recovered from excavations at Historic Blocks 95, 139, and 172.

Sample	139	95	172
Block number	139	95	172
AZ ASM site number	BB:13:644	BB:13:809	BB:13:668
Date range	1890-1895	1887-1901	1891-1901
Midpoint	1892	1894	1896
Sample size (MNV ^a)	1,098(44)	187(5)	1,131(36)
Temper Type			
Sand	2.3	0.5	0.0
Sand/Sherd	0.0	0.0	0.0
Sand/Fiber	97.7	99.5	100.0
Rim Coil			
Folded-rim Percent	0.0	0.0	0.0
Type Frequency			
Plain ware	0.4	0.5	1.3
Red ware	0.0	0.0	0.0
Papago Plain	46.5	0.0	14.9
Papago Red	38.5	19.8	82.8
Painted/Slipped	14.6	79.7	0.9
Slip Location			
Interior	11.0	10.8	8.5
Exterior	89.0	89.2	91.5
Painted Types ^b			
Black-on-red	P	P	P
Red-on-brown	a	a	a
Red-on-buff	a	a	a
Black-on-buff	a	a	a
White-on-red	a	P	a
Black-on-brown	a	a	a
Red-on-white	a	a	a
Buff	a	a	a

^aMNV = Minimum number of vessels.

^b"P" indicates presence of a type while "a" indicates its absence.

have been imported similarly to oysters. It was lost or discarded at some point, ending up in the fill of the planting hole.

An unusual find was a gold finger ring found inside sewer pipe Feature 28 (Figure 4.5). The ring has a geometric design on its oval face, with foliage-like

designs on the sides. It was found next to a small perfume bottle. The feature dates to after 1906, and relates to the clubhouse/superintendent's office. It was likely a valued item accidentally dropped into a sink or toilet, probably much to the regret of its owner.

Table 4.9. The price of a Papago water storage vessel at various times in the past and in 2008 dollars.

Publication Date	Price at Time of Publication	Value in 2008 Dollars ^a	Citation
1959	\$5.00	\$36.50	Dedera 1959
1909 (large vessel)	\$0.75-\$1.00	\$18.00-\$23.75	<i>Tucson Daily Citizen</i> 1909
1876	\$1.00-\$2.50	\$20.00-\$50.00	<i>Arizona Citizen</i> 1876

^aThe inflation calculator <<http://www.westegg.com/inflation/infl.cgi>> was used to arrive at 2008 valuations, the latest year for which data are available.

Personal

Personal artifacts are those likely to be used by a single individual, and they are relatively uncommon at sites. A total of 100 artifacts was placed in this category, forming 2 percent of the assemblage.

A brass pocket watch was found in an outhouse, probably falling into the pit from a man’s pocket (Figure 4.6). The watch was heavily corroded, and no maker’s mark was visible. A small perfume bottle was found with a gold ring in Feature 28. A milk glass cold cream bottle was recovered from Feature 1.

Medical artifacts consisted of 76 fragments of medicine bottles and a pipette. Five of the bottles were marked with either product or pharmacy names (Figure 4.7a-c). These were: (1) BOTICA DE LA PROVIDENCIA PEDRO GUERRERO; (2) TA SLOCUM CO. MANFG CHEMISTS NEW YORK

LONDON FOR CONSUMPTION AND LUNG PROBLEMS; (3) FELLOWS AND CHEMISTS ST. JOHN NB; (4) FRED FLEISCHMAN & CO. DRUGGISTS TUCSON; and (5). BALSAMO EL PRODIJIOSO AMERICA DE OCCIDENTE POR FRANCO FERNANDEZ DE CORDOVA. The lung medicine bottle indicates someone discarding trash



Figure 4.3. A brown transferprint cup from Feature 42, Historic Block 95. (The pattern was registered on 4 August 1880 [2009-699-01].)



Figure 4.4. A Mexican duck effigy vessel from Feature 1, Historic Block 95 (2009-699-3).



Figure 4.5. A gold ring found in a sewer pipe running into Feature 28, Historic Block 95 (2009-699-5).



Figure 4.6. A pocket watch from Feature 41, Historic Block 95 (2009-699-4).

into the Feature 42 outhouse may have had tuberculosis, a common disease in Tucson in the late nineteenth and early twentieth centuries. The two bottles embossed with Spanish are unusual, and suggest a Mexican-American discarded the bottles into the outhouse. It is unlikely that Charles Wores would have visited a Mexican pharmacy in Tucson, and this is supported by the presence of the Fred Fleischman bottle, which once held prescription medicine.

The top and base of a ceramic toothpaste jar were found in a nonfeature context and a bone toothbrush was found in a planting pit. The jar lid was fragmentary, although complete examples were marked with a transferprint picture of a woman and the phrases "CHERRY TOOTH PASTE PATRONIZED BY THE QUEEN" and "FOR BEAUTIFYING AND PRESERVING THE TEETH & GUMS."

Eleven small SOZODONT tooth powder bottles were found in Feature 42. Prior to 1920, most Americans did not regularly brush their teeth. In Tucson, toothbrushes are only occasionally recovered from historic features.

Two adult human teeth were recovered from the fill of outhouse Feature 41. One tooth was an adult right maxillary central incisor. The tooth had moderate wear and had no caries or tartar buildup. However, several growth stoppage lines are visible on the enamel, probably representing times when the individual was sick during childhood. The second tooth was an adult right central maxillary molar. A dental caries is present on the lateral side of the molar at the junction between the enamel and root. A small pit is present on the occlusal surface, possibly representing a second caries.

Charles Wores introduced a bill into the Arizona Territorial Legislature in 1887 to regulate the practice of dentistry in Arizona (Chapter 2, this volume). It is possible that the two teeth and some of the other dental care items originated from Mr. Wores.

Hygiene artifacts consisted of a chamberpot lid and three fragments of wash basins or pitchers. Although the house next to the sampling works probably had running water in the backyard, it did not have an indoor bathroom. Residents used a chamberpot when they did not want to walk out to the backyard outhouse. The chamberpot lid may have accidentally dropped in while emptying the container.

Activities

The activity category includes a variety of items used for work or recreation; 608 artifacts were placed in this category, representing 13 percent of the assemblage.

The most common activity artifacts were found scattered around the sampling works building, a large number of cupels and smaller numbers of scorifiers and crucibles. These items were used by Charles Wores to conduct assays of copper, lead, silver, and gold ores at his company on Block 95 from 1887 through 1901.

Cupels are small, shallow dishes made from fine bone ash that has been compressed in a form; the best cupels were made using a machine (Figure 4.8).



Figure 4.7. Three medicine bottles, Historic Block 95: (1) a clear bottle from Feature 42 is marked “FRED FLEISCHMAN & CO. DRUGGISTS TUCSON” (2009-699-6); (b) a clear bottle from Feature 42 is marked “BALSAMO EL PRODIJIOSO AMERICA DE OCCIDENTE POR FRANCO FERNANDEZ DE CORDOVA” on its reverse side (2009-699-7); (c) a light green bottle from Feature 41 is marked “BOTICA LA PROVIDENCIA PEDRO GUERRERO” (2009-699-8).

Cupels are disk shaped, some 0.75 to 1.00 inches thick, with a rounded indentation on the surface. After being pressed in a mold, cupels were allowed to dry. The absorption properties of the cupels were important. If too porous, precious metals, such as silver or gold, could be lost. If not porous enough, the metals placed into the indentation could spatter and be lost.

Cupels were used to extract silver or gold from base metals, such as lead, copper, zinc, or arsenic. In small-scale cupellation, the purpose was to determine the silver or gold content of a sample. Lead was often added to the sample, sometimes in the form of lead foil. The weight of the sample was recorded, and it was then placed in a furnace and heated until the sample had melted. Some of the lead was absorbed into the cupel, and a button of silver and/or gold formed in the center of



Figure 4.8. A pair of cupels from Feature 45, Historic Block 95, one with the number 2 written in its interior in pencil and the other with the number 10 (2009-699-9 and 10).

the depression. The silver and gold was later separated by a process called parting (Fulton 1907).

In all, 252 cupels were collected from the site, and numerous other examples were scattered around the site. Many of the collected examples had

numbers written in pencil lead on their interior, representing sample numbers assigned them by Charles Wores. The numbers included six 1s, three 2s, three 3s, three 4s, three 6s, two 7s, a 22, and a U. Many had green or brown residue adhering to the interior. The cupels were used for a single assay and then discarded.

Pieces from eight scorifiers were collected (Figure 4.9). Scorifiers are shallow dishes, 2¼ or 2½ inches in diameter, that were used for ore samples of less than 5 gm. Silver ore was assayed by placing the ore, lead, and other materials (soda, borax, or powdered glass) in an oven called a muffle. The assayer observed the sample through a window and added additional materials, as needed, to the sample. After a ring of slag formed around the silver ore, the scorifier was removed and the silver ore poured into a mold. The slag might be saved and processed a second time to recover more silver or other metals. Samples larger than 5 gm were processed using ceramic crucibles (Beringer and Beringer 1906:88). Five of the scorifiers had maker's marks, all from the Battersea Works in England.

A total of 186 fragments of crucibles, crucible lids, or ceramic-lined furnaces was found (Figure 4.10). Crucibles were used to process larger ore samples. Many had numbers or letters written on their exterior, the samples numbers assigned by Charles Wores or an assistant. Only one of the marks, a "13," was legible. Five crucibles had maker's marks, all from England. One was from the Morgan Company, and four were from the Battersea Company. A number of pieces of thick, square, or rectangular ceramic fragments were found that probably came from a ceramic-lined furnace or muffle.

The only hand tool found was a pickaxe in the bottom of outhouse Feature 1. Three unidentifiable machinery parts were also recovered.

Literacy artifacts included a pen nib, parts from four pencils, two pieces of chalk, and fragments from a book written in Spanish.

A large number of bolts was recovered ($n = 121$), in addition to one nut and one washer. Most of the bolts were found in an ore waste pit, Feature 10. Eight pieces of iron wire were found.

Four flowerpot fragments were found. They probably date to the use of the property by the clubhouse, and likely once held small flowers or herbs. Planting pits were located for both the sampling



Figure 4.9. A scorifier found near the Feature 12, Historic Block 95, foundation (2009-699-11).

works and the clubhouse, and indicate a concern with landscaping the property.

A small number of toys was found at the site. Two dolls were located in Feature 42 (Figure 4.11). One was an inexpensive small Frozen Charlotte baby. The other was a hollow-headed porcelain doll, probably from Europe, with black hair and hand-painted eyes, lips, and cheeks. The doll head was once attached to a cloth body. The other three toys were a doll dish, a polychrome glass marble, and a ceramic checker or gaming piece. These items suggest a child, almost certainly a girl, lived at the site in the early 1880s.

Nine pieces of flaked stone were recovered from Feature 1; six of these are unremarkable pieces of unaltered debitage, representing a range of local raw materials. The other three artifacts include a notched flake of fine-grained rhyolite, a fragmentary chert piece that appears to be a strike-a-light, and a relatively long, narrow chert flake that would have been an appropriate size and shape to snap into a gunflint. These items may originally have been collected as curios. The nearest known prehistoric site is located five blocks northwest of Block 95.

Transportation

Transportation artifacts are those used to move people and goods from one place to another. They are usually found in small numbers, and only 77 artifacts, comprising approximately 2 percent of the assemblage, were placed in this category.

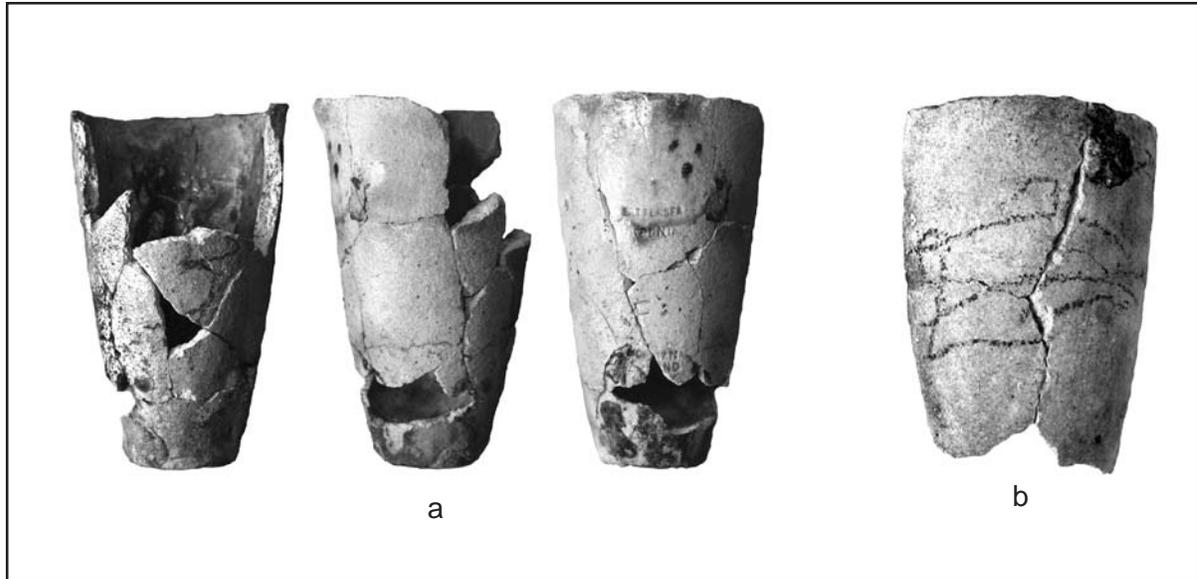


Figure 4.10. Two crucibles recovered from Historic Block 95: (a) from Feature 45, with an illegible mark scrawled on its exterior (2009-699-12); (b) marked BATTERSEA WORKS ENGLAND (2009-699-13).

Given the close proximity to the Southern Pacific Railroad track, it is not surprising that four railroad spikes were found. Also recovered were a horseshoe and four pieces of harness. Charles Wores was known to have used horses to transport ore to the sampling works.

Fragments of a bicycle inner tube were found in an ore waste pit dating between 1887 and 1901. Bicycles arrived in Tucson in the early 1880s. An 1881 newspaper article indicated they were still a novelty at that time (*Arizona Daily Star* 1881). The following year, a bicycle club formed in Tucson (*Daily Arizona Citizen* 1882). It is unknown whether Mr. Wores rode a bicycle.

Unidentified Artifacts

Unidentified artifacts include those that cannot be identified because they are too poorly preserved or are too fragmented. A total of 739 items (16 percent of the assemblage) was placed in this category, including many pieces of rusted iron, some of which may have been nails or tin cans.



Figure 4.11. A pair of dolls from Feature 42, Historic Block 95 (2009-699-14 and 15).

Summary

Artifacts recovered from Block 95 provide information about the people who lived and worked at the site. Most of the recovered items date to the occupation of the block by the William B. Hooper & Co. warehouse complex and the Tucson Sampling Works between 1880 and 1901. Historical research has only identified one of the actual occupants, Charles Wores. He likely handled many of the ore assaying artifacts and probably wrote sample numbers on the cupels and crucibles. Other artifacts that might have originated from Mr. Wores include a pocket watch, the matching brown transferprint ceramics, and the clothing artifacts.

Artifacts associated with other people were also recovered. Children's toys, especially the dolls, indicate a girl once lived or visited the property. A Mexican-American individual is also suggested by the presence of two Spanish-language medicine bottles. It seems unlikely that Charles Wores would have purchased these medicines.

Artifacts from other downtown Tucson excavations are summarized in Table 4.10, which lists the percentages of the eight functional categories (unidentified artifacts and Native American ceramic were not included). These sites are: (1) artifacts from the Osborn family occupation of Block 172 (Thiel 2003b:82-83); (2) features dating to the 1880s-1890s at the Léon Farmstead (Thiel 2005b:120); (3) Block 83, which had hotels, saloons, and boarding houses (Thiel 2009a:108); and (4) artifacts from the Siqueiros-Jácome household and the Dodge Boarding House on Block 181 (Thiel 2008:176-180).

Large numbers of kitchen and architecture artifacts are typically recovered, with much smaller quantities of the other functional categories. Artifacts from Block 95 differ dramatically from these other collections, with fewer kitchen items, more architectural artifacts, and a much larger number of

activity artifacts. However, given the industrial activities that occurred on this block, as compared with the primarily residential nature of the other sites, this is not surprising.

Socioeconomic status is often examined using ceramic artifacts. Plain ceramics are much less expensive to purchase than decorated ceramics. Matching decorated sets are also more expensive. However, purchasing plain whiteware vessels may suggest lower income or thriftiness, but it allowed purchasers to maintain a matched set.

A total of 12 food service vessels were discarded into the three outhouse pits, Features 1, 41, and 42 (Table 4.11). Eight vessels were plain whiteware with minimal decoration (one plate had molded designs around its rim). Four vessels were decorated: a spongeware bowl and a Japanese porcelain cream pitcher from Feature 1, a hand-painted transferprint bowl from Feature 41, and a transferprint cup from Feature 42. Fragments from other brown transferprinted vessels were scattered across the site, with at least three matching patterns present.

While the sample size is too small to make observations about socioeconomic status, it is apparent that the individuals discarding trash into the outhouses were pursuing a mixed strategy of ceramic purchases, buying whiteware dishes piecemeal (none of the vessels had marching maker's marks) and also purchasing a few matched decorated vessels (typically cups and saucers).

People living and working on Block 95 also purchased living and working on local Tohono O'odham potters. Historic photographs depict O'odham women carrying pots through the streets of Tucson in large burden baskets. They peddled the jars door-to-door. Residents purchased the vessels primarily for water storage. The porous nature of the ceramics, which were tempered with manure, allowed water to evaporate from the exterior or the pot, cooling the contents. The decorated example from Feature

Table 4.10. Percentage of artifacts, by functional category, for contemporary Tucson downtown sites.

	Block 95	Block 172	Léon Farmstead, 1880s-1890s	Block 83	Block 181, Siqueiros- Jácome House	Block 181, Dodge Boarding House
Kitchen	43	73	67	61	67	72
Architectural	32	21	24	26	20	20
Furniture	2	1	1	0	0	3
Arms	0	0	0	0	0	0
Clothing	1	1	4	2	3	1
Personal	3	1	0	1	2	2
Activity	16	1	3	1	6	1
Transportation	2	0	0	0	0	0

Note: Categories with less than one whole artifact are listed as "0," although some items were found.

Table 4.11. Ceramic food dishes from Features 1, 41, and 42, Historic Block 95.

Feature	Vessel Form	Decoration	Maker's Mark
1	Bowl	Sponge print	–
1	Pitcher	Japanese porcelain	–
41	Bowl	Hand-painted transferprint	East Liverpool Potteries Co.
41	Plate	Plain whiteware	A. A. Bonn [castle]
41	Plate	Molded whiteware	Ursula
41	Platter	Plain whiteware	Warranted/E.D. MvN P. Co./Liverpool
42	Saucer	Plain whiteware	–
42	Cup	Brown transferprint	[pattern registered 4 August 1880]
42	Cup	Plain whiteware	–
42	Pitcher	Plain whiteware	–
42	Plate	Plain whiteware	Royal Semi Porcelain/John Maddock & Sons/England
42	Plate	Plain whiteware	Royal Semi Porcelain/John Maddock & Sons/England

1 (see Figure 4.2) was partially reconstructible and once held about 3.75 gallons of water. These pots quickly fell out of favor with Euro-American residents after indoor plumbing was installed. They continued to be used by local Mexican-American families into the 1930s or 1940s, with some people

preferring the taste of the water, which they described as being “seasoned.”

Animal bones, charred plant remains, an oyster shell, and a tin can filled with insects were also found in features on Block 95. These are described in Chapter 5 (this volume).

DIET AND ENVIRONMENTAL STUDIES

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During recent excavations on Historic Block 95 AZ BB:13:809 (ASM), archaeologists recovered a variety of materials that provide information about the diet, the environment, and the use of wood by late nineteenth century residents of the block. Data from animal bones, plant remains, a shell, and a tin can filled with insect remains are presented in this chapter. All of the material dates between 1880 and 1901, when the block was occupied by the William B. Hooper & Co. warehouse, a dwelling, and the Tucson Sampling Works. None of the recovered material relates to later occupation of the block by the Southern Pacific Clubhouse.

FAUNAL BONE

Four features from the Block 95 excavations were selected for faunal analysis. Features 1, 25, and 41 were associated with the residence and commercial structures occupied by Charles Wores between 1887 and 1901, and Feature 42 was associated with the William B. Hooper & Co. warehouse, thought to have been occupied from 1880 to 1887. Features 1, 41, and 42 were privies, and Feature 25 was a trash-filled planting hole in the backyard of the house Charles Wores lived in during the late 1890s. The primary goal of the faunal analysis was to reconstruct the meat portion of the diet at these two businesses/residences, and to use these findings to help determine the economic status of the individuals associated with the properties. The results suggest Charles Wores ate foods most commonly associated with wealthy individuals, while the foods consumed at the William B. Hooper & Co. warehouse are more commonly associated with middle class individuals.

Methods

All elements were identified using comparative collections housed at the Desert Archaeology, Inc., laboratory, along with materials curated at the Arizona State Museum (ASM) Zooarchaeology Lab.

Osteological texts (Gilbert 1990; Gilbert et al. 1985) were also used to assist in identifications. Primary data collected, in addition to taxon, included element type, side, and portion present. Data on human and natural modifications, such as the presence of cutmarks, sawmarks, or chopmarks, in addition to rodent and carnivore damage and the degree of thermal alteration, was also recorded for each element.

Data were quantified using the standard number of identified specimens (NISP) count, as well as by bone weights, which were later used as a proxy measure for meat weights (see Kubasiewicz 1956). Rather than estimating the minimum number of individuals (MNI) at the site, domestic mammal frequencies were calculated in terms of minimum number of butchered units (MNBU); that is, by the frequency of each meat cut. MNI counts can artificially inflate or deflate the importance of a food item in an assemblage that was composed of individually purchased meat cuts rather than of complete carcasses.

The minimum number of butchered units were calculate by adding the elements present within each standardized commercial meat cut and assigning any repeating element to a new butchery unit. For example, because 22 lumbar vertebrae were recovered, none of which refit with one another, the MNBU for cattle short loin is 22, or to put that into perspective, at least 22 t-bone steaks were purchased and subsequently consumed at the site. Similarly, when sheep femoral, ischial, and pubic elements were added together, only three proximal femoral fragments were present, making the MNBU for mutton rump three. An additional category of rib or chuck was created to include the many thoracic vertebrae fragments that could not be accurately counted.

Many of the elements identified to class could not be identified more specifically. However, due to their size or density, they were assigned to a size category within their respective class. In this study, then, many elements could be assigned to a large mammal, large-medium mammal, medium mammal, and small mammal category. The small mammal category included any species of mammal smaller than a cottontail rabbit. The medium mammal category encompassed species ranging in size from

cottontail rabbit to sheep and goats, while the large-medium mammal category referred to species larger than sheep/goats, but smaller than white-tailed deer. Large mammals were any species larger than white-tailed deer.

At Historic Block 95, unidentified small mammal bones almost certainly came primarily from rodents, medium mammal elements were most likely sheep or goats, large-medium mammal elements were probably from pigs, and large mammal elements were likely cattle. The results summarized later include unidentified large mammal remains with cattle, the large-medium remains with pig, and the medium and unidentified artiodactyl remains with ovicaprid remains.

Results

An assemblage of 883 specimens, weighing a total of 3,176.7 gm, was analyzed. From that, 840 of the specimens were identifiable to at least class, including mammal, reptile, amphibian, bird, or fish. An additional 29 specimens, primarily long bone shaft fragments, were identified as either small mammal or bird, and finally, 14 specimens could not be identified to class. Of the 95 percent of the assemblage identified to class, almost 86 percent are mam-

mal remains ($n = 719$), 14 percent are birds ($n = 118$), and less than 1 percent are amphibians ($n = 2$) and fish ($n = 1$). All dietary faunal remains identified beyond family were from domestic animals, and included cattle, sheep or goats (henceforth ovicaprids), pig, chicken, turkey, and carp. Remains from animals thought to be intrusive included unidentified frogs, squirrels, and rodents (Table 5.1).

Fauna from Feature 42, a privy used by workers or residents of the William B. Hooper & Co. warehouse and adjacent dwelling, consists almost entirely of large and large-medium mammal remains, in addition to a few avian remains (Figure 5.1; Table 5.2). If Feature 42 is representative of diet at the warehouse and dwelling, and if bone weight is used as a proxy to represent meat weight, cattle contributed the majority of the dietary protein. Domestic cattle bones and unidentified large mammal bones, which are probably cattle, comprised nearly 80 percent of the Feature 42 assemblage by weight. Large-medium and medium mammals, most of which are likely pigs and ovicaprids, respectively, contributed approximately 8 percent and 11 percent of the dietary protein, with ovicaprids only slightly more common. Chicken remains were the least common from Feature 42, accounting for less than 1 percent of the assemblage by weight. Avian bones, however, may not represent avian meat weight in the same

Table 5.1. Taxa identified from Features 1, 25, 41, and 42, Historic Block 95, AZ BB:13:809 (ASM).

Taxon	Common Name	NISP ^a	Percent NISP	Weight (gm)	Percent Weight
Mammalia	Unidentified mammals	409	48.7	691.4	22.01
	Large mammals	47	5.6	525.7	16.74
	Large-medium mammals	89	10.6	334.7	10.66
	Medium mammals	47	5.6	150.6	4.79
	Small mammals	5	0.6	0.5	0.02
Artiodactyla	Unidentified artiodactyl	1	0.1	2.3	0.07
Artiodactyla md.	Goat, sheep, deer, or pronghorn	5	0.6	8.8	0.28
<i>Bos taurus</i>	Domestic cattle	61	7.3	835.1	26.59
<i>Sus scrofa</i>	Domestic pig	13	1.5	161.7	5.15
<i>Ovis/Capra</i>	Domestic sheep or goat	26	3.1	347.9	11.08
Sciuridae spp. ^b	Unidentified squirrel	7	0.8	1.2	0.04
Rodentia spp. ^b	Unidentified rodent	9	1.1	1.3	0.04
Aves	Unidentified birds	43	5.1	1.2	0.04
<i>Meleagris gallopavo</i>	Domestic turkey	4	0.5	14.1	0.45
<i>Gallus gallus</i>	Domestic chicken	71	8.5	62.5	1.99
<i>Anura</i> spp. ^b	Frog or toad	2	0.2	0.6	0.02
<i>Cypriniformes</i> spp.	Carp	1	0.1	1.6	0.05
Total Identified Fauna		840	100	3,141.2	100
Unidentified bird or small mammal		29		5.4	
Unidentified animal		14		30.1	

^aNISP = Number of identifiable specimens.

^bProbably not a dietary item.

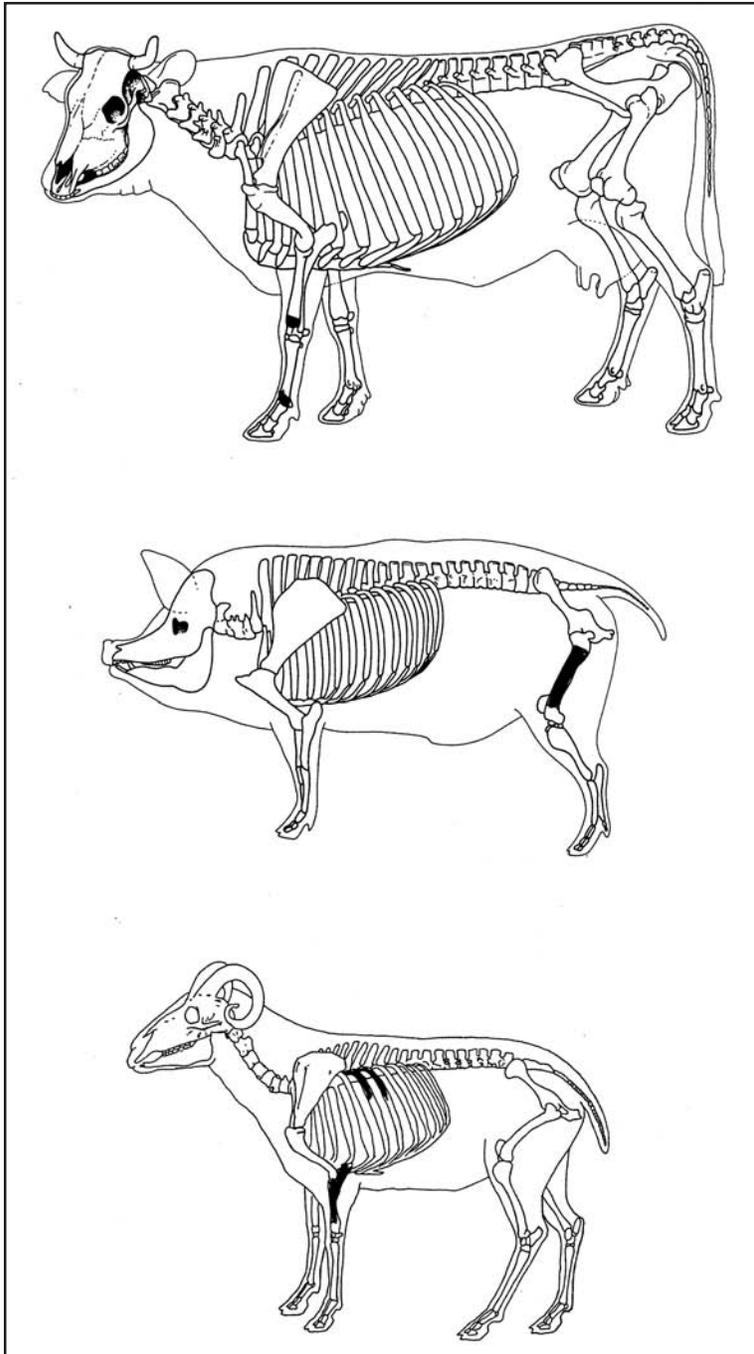


Figure 5.1. Meat cuts from Feature 42, Historic Block 95, associated with the William B. Hooper & Co. warehouse and adjacent dwelling. Elements from left and right sides shown on same side; specific vertebrae and ribs not known.

proportion that mammalian bones reflect mammalian meat. Because bird bones are hollow and light, they may underrepresent the meat portions they bore; thus, chicken meat and eggs (not included in these counts) may have made a larger relative contribution to dietary protein than the total in Table 5.2 suggests.

Due to the size of its meat cuts, cattle may have made the largest relative contribution to diet at the Hooper & Co. warehouse, but NISP and MNBU counts suggest mutton may have been eaten with greater frequency. Minimum number of butchered units summarized in Table 5.3 indicates the ovicaprid elements in Feature 42 account for three cuts of mutton, two rib and one foreshank, as opposed to one cut each of beef and pork. An additional five medium artiodactyl vertebral fragments, including three thoracic, and 11 unidentified medium mammal ventral rib fragments suggest additional rib or chuck cuts of mutton. However, due to their fragmentary nature, a precise number is unknown. Cuts of pork from Feature 42 include a single ham, while beef is represented by a single foreshank.

Unidentified elements from Feature 42 include a large portion of a large mammal (probably cow) longbone and an unidentified large-medium mammal rib fragment. An additional five large mammal elements are likely small vertebral or innominate fragments, suggesting a medium- to high-quality axial meat cut of beef. Chicken protein in Feature 42 comes from a single wing and an unknown number of eggs, perhaps as few as one. Although incomplete, the MNBU data seem to mirror what the NISP counts suggest (see Table 5.2), that is, mutton was eaten more frequently than other types of meat at the William B. Hooper & Co. warehouse and by residents of the adjacent dwelling.

In the Wores house and workshop features, cattle, while still the largest contributor of dietary protein, did not appear to contribute as much as in the earlier Hooper & Co. warehouse assemblage. A summary of NISP and weight counts from faunal remains in Features 1, 25, and 41 is provided in Table 5.4 (Figure 5.2). Elements of identified species have been subsumed under the mammalian size categories in this table. Cattle and large mammal remains are again the most common by

Table 5.2. Domesticates and probable domesticates consumed at the William B. Hooper & Co. warehouse, Historic Block 95.

Taxon	NISP ^a	Percent NISP	Weight (gm)	Percent Weight
Large mammals, including cattle	7	23.3	191.8	79.9
Large-medium mammals, including pig	2	6.7	21.2	8.8
Medium mammals, including sheep/goat and artiodactyla	19	63.3	26.5	11.0
Birds, including chicken ^b	2	6.7	0.4	0.2
Total, not including unidentified mammals	30	100	239.9	100

^aNISP = Number of identifiable specimens.

^bCount does not include eggshell.

Table 5.3. Estimates of the minimum number of butchered units of domestic mammals.

Meat/Cuts	Features 1/25/41	Feature 42	Meat/Cuts	Features 1/25/41	Feature 42
Beef			Pork		
Brisket	-	-	Short loin	-	-
Short loin	22	-	Rib	-	-
Rib	-	-	Sirloin	1	-
Sirloin	2	-	Ham	1	1
Round	-	-	Chuck	2	-
Rump	-	-	Arm	1	-
Chuck	10	-	Cross/Short rib	-	-
Arm	-	-	Brisket	-	-
Cross/Short rib	-	-	Short plate	-	-
Brisket	-	-	Neck	-	-
Short plate	-	-	Foreshank	-	-
Neck	1	-	Hindshank	-	-
Foreshank	2	1	Rib or chuck	2	-
Hindshank	1	-	Head	-	-
Rib or chuck	Unknown	-	Trotter (feet)	2	-
Head	1	-	Mutton		
Trotter (feet)	1	-	Short loin	-	-
Mutton			Rib	-	2
Short loin	-	-	Sirloin	-	-
Rib	-	2	Round	5 ^a	-
Sirloin	-	-	Rump	3	-
Round	5 ^a	-	Chuck	1	-
Rump	3	-	Arm	-	-
Chuck	1	-	Cross/Short rib	-	-
Arm	-	-	^a Feature 25 includes five nearly complete ovicaprid hind-legs.		
Cross/Short rib	-	-			

weight (1,287.9 gm), contributing approximately 55 percent of the total weight of dietary remains. Ovicaprids and other unidentified medium mammals and artiodactyls contribute 21 percent by weight (501.2 gm), while pigs and unidentified large-medium mammals contribute 20 percent (471.7 gm). Chicken and turkey together contribute 3 percent of the total weight (76.8 gm).

With an NISP of 97, cattle and large mammal remains comprise 28 percent of the dietary remains assemblage. Ovicaprid and medium mammal re-

mains, and pig/large-medium mammal remains, each occur at a slightly lower NISP of 85, or 24 percent. Also recovered were 76 bird elements consisting of chicken and turkey (NISP of 71 and 5 respectively, or 22 percent of the total NISP), and a single carp vertebra (<1 percent of the total NISP). While the NISP pattern suggests cattle, ovicaprids, pigs, and birds, especially chickens, occur at roughly similar frequencies at the site, MNBU calculations indicate beef may have been more common than mutton and pork.

Table 5.4. Domesticates and probable domesticates consumed at the Charles Wore dwelling, Historic Block 95.

Taxon	NISP ^a	Percent NISP	Weight (gm)	Percent Weight
Large mammals, including cattle	97	28.2	1,287.9	55.1
Large-medium mammals, including pig	85	24.7	471.7	20.2
Medium mammals, including sheep/goat and artiodactyla	85	24.7	501.2	21.4
Birds, including chicken ^b	76	22.1	76.8	3.3
Carp	1	0.3	1.6	0.1
Total, not including unidentified mammals ^c	344	100	2,339.2	100

^aNISP = Number of identifiable specimens.

^bCount does not include eggshell.

^cDoes not include non-dietary items.

Estimates of the MNBU indicate that cuts of beef are more numerous than either mutton or pork. Particularly abundant are axial cuts, such as short loin (t-bone steaks) and rib and chuck cuts (see Table 5.3). A total of 22 cattle lumbar vertebrae, with sawcuts on both the anterior and posterior ends and bisected along the sagittal plane, represents 22 individual portions of beef short loin. Similarly, 10 chuck steaks are represented by 10 separate scapular blade fragments with parallel sawmarks along the sagittal plane. An additional 17 transverse process fragments of unidentified thoracic vertebrae represent an unknown number of chuck or rib cuts. Other units of beef include two cuts of sirloin. Lower-quality cuts include two foreshank cuts, a neck cut, a cut of foot elements, and a possible cranium, represented by an atlas and a molar fragment.

Mutton cuts include 3 rump, 5 round, 4 hindshank, and a single trotter cut. The lack of sawcuts or fused epiphyses on any of the hindlimb elements suggests these cuts were purchased as five complete legs of lamb. Other mutton cuts include a single rib or chuck cut and a possible cranium represented by a single molar fragment. It is almost certain that the 39 unidentified medium mammal rib and thoracic vertebrae fragments from Features 1, 25, and 41 represent additional cuts of mutton rib or chuck.

Cuts of pork include a loin, a ham, two chucks, an arm, a rib or chuck, and two feet. The discrepancy between the relatively high NISP counts of ovicaprids/medium mammals and pigs/large-medium mammals may be partially due to the fact that many of the unidentified medium and large-medium fragments, which are almost certainly from ovicaprids and pigs, could not be included in the MNBU estimates.

To determine the quality and value of meat cuts eaten during the two time spans represented, data summarized in Table 5.3 were compared against an index of meat value originally created by James (1991) and expanded upon by M. Diehl et al. (2003:73-74). Because the index was originally designed to mea-

sure the economic value of cuts of beef, only MNBU data for cattle were examined. The cattle assemblage within the Wores features consists of 24 high-ranked cuts of short loin and sirloin, 10 medium-ranked chuck cuts, and 6 low-ranked cuts of distal limb and cranial portions (Table 5.5). Only one low-ranked foreshank cut could be identified within the Hooper warehouse feature, but the unidentified large mammal (probable cattle) long bone fragment also present in Feature 42 might be the remaining portion of either a middle-ranked round or an arm steak. This is based on the cross-sectional shape and thickness of the bone, which suggests either a humeral or femoral shaft fragment.

An index of mutton cuts was based on mutton prices listed in Parloa (1908). To follow conventions used in Table 5.5 (James 1991), the mutton index assigned a value of 5.0 to the highest price elements, and ranked all lesser-priced elements relative to that. Minimum number of butchered unit cuts from Table 5.3 were compressed into the priced cuts described by Parloa (1908). Distal limb elements not described by Parloa (1908) were ranked as being half the price of the lowest price units she listed. The scales of the two ranking systems are meant to be independent from one another. That is, while ovicaprid distal limbs are ranked 1.0 and cattle distal limbs rank 0.5, it does not imply that cattle distal limbs necessarily rank higher than those of sheep or goats.

As with beef cuts, the Wores' features include a collection of both high- and low-ranked cuts. Six to eight cuts rank moderately high to very high (Table 5.6), while three to five cuts rank moderately low to very low. Ovicaprid ribs that could not be specifically numbered make more precise estimates impossible. The Hooper warehouse assemblage yielded one very high rank and one very low rank cut of mutton. An index for pork was not assembled, although all cuts present in both assemblages are from medium to high meat utility axial and proximal limb elements, suggesting medium- to high-priced cuts.

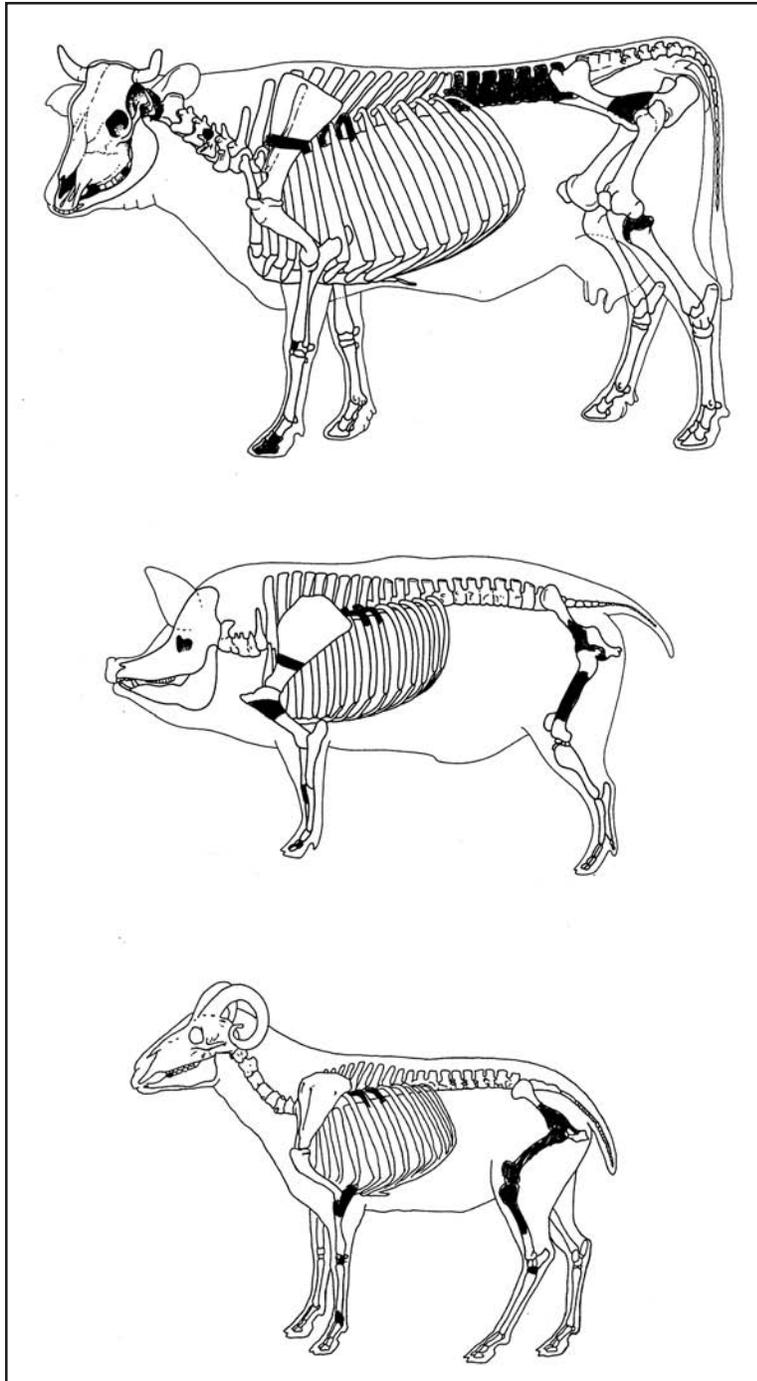


Figure 5.2. Meats cuts from Features 1, 25, and 41, associated with the Tucson Sampling Works and the Wores family, Historic Block 95. Elements from left and right sides shown on same side; specific vertebrae and ribs not known.

The only exception may be the two low-utility cuts of pig's feet in Feature 25.

In summary, the indices in Tables 5.5 and 5.6 demonstrate the presence of both high- and low-priced cuts of meat eaten at both the Wores and Hooper warehouse properties. The percentages of

high-, medium-, and low-priced cuts of beef recovered from both properties are provided in Table 5.7. The remains from the William B. Hooper & Co. warehouse show a fairly equal distribution between low and medium to high cuts of meat, while slightly more than half the remains from the Wores property came from expensive cuts of meat. Given the small sample size, however, statistical significance of the results cannot be demonstrated. But, together with other data sets described, Charles Wores likely had a higher economic status than the workers and occupants of the William B. Hooper property.

Discussion and Conclusions

The results of the faunal analysis show what appears to be a middle class diet by people associated with the warehouse property occupied from 1880 to 1887, and an upper class or upper middle class diet at the Wores property, occupied from 1887 to 1901. The diet at both properties consists primarily of beef, mutton, and pork, but differs slightly in the relative composition of these meats, as well as in the quality of meat cuts purchased. Cattle appear to have provided the bulk of dietary protein for the workers and occupants when the Hooper warehouse operated. If the small sample of identifiable butchered units is representative of the entire diet, both cheap, low-quality cuts, and more expensive medium- and high-quality cuts of beef were purchased. Ovicaprids, most likely sheep, were also common in the diet, and based on the much higher NISP count, mutton might have been purchased with greater frequency than beef. M. Diehl et al. (2003:74) argue that mutton may

have been more expensive than beef in Tucson at the turn of the twentieth century, as most ranchers focused on raising cattle, making sheep rare. The mutton cuts, like the beef cuts, were equally divided between expensive, high-utility, and cheaper, low-utility meats.

Finally, dietary protein at the Hooper property was supplemented by pork and chicken. It is currently unclear if the food remains from Feature 42 are associated with someone associated with the warehouse who lived on the property, or if it is the remains of foods consumed by workers at the warehouse. Thiel (2009b:68) reports that saloons on nearby Historic Block 83 served lunches, and workers from the warehouse may have dined at such an establishment. Further, the large bone fragments from Feature 42 suggest substantial meals. By the late nineteenth century, a late-day dinner as the largest meal of the day was common (Smith 2004:66), making it less likely that the Feature 42 remains are from workers' lunches, but instead, are from the meals of an onsite resident.

Dietary remains from features on the Wores property suggest a more elaborate diet, consisting of a broader range of species and more expensive cuts of meat. Similar to the faunal remains recov-

ered from the outhouse pit associated with the Hooper warehouse occupation of the block, beef appears to have contributed the most dietary protein, and here, might have been the most frequently eaten type of meat. Mutton and pork also appear to have been common in the Wores diet, although MNBU estimates suggest many more beef cuts in the assemblage. Unlike the Hooper assemblage, where inexpensive meat cuts accounted for nearly half the MNBU estimates, the meat cuts associated with the Wores occupation are composed primarily of high- and medium-priced cuts. Less than a quarter of the beef and mutton cuts at the Wores property were identified as inexpensive meats. While no economic index for pork is available, only 22 percent of pork cuts were from low meat-bearing elements, in this case, from two foot elements.

The most common meat cut in the Wores assemblage was the beef short loin, in the form of 22 t-bone steaks. According to the James' (1991) economic index, short loin would have been the most expensive cut of beef available, and based on Lyman's (1987) cost efficiency index, short loin yielded less meat per unit of cost than less expensive cuts of beef, suggesting indiscriminate spending, and by extension, greater wealth and status. With the addition of chicken, turkey, and carp to the diet of mutton, beef, and pork, the Wores assemblage also compares favorably with the faunal assemblage excavated

Table 5.5. Economic rankings of beef cuts at the Wores and Hooper properties, Historic Block 95.

	Features 1/25/41	Index	Feature 42
Short loin	22	5.0	-
Sirloin	2	4.0	-
Rib	-	3.5	-
Round	-	3.0	1 ^a
Rump	-	3.0	-
Chuck	10	2.5	-
Arm	-	2.5	1 ^a
Cross/Short rib	-	1.8	-
Brisket	-	N/A	-
Short plate	-	1.8	-
Neck	1	1.0	-
Foreshank	2	1.0	1
Hindshank	1	1.0	-
Rib or chuck	Unknown	N/A	-
Head	1	0.5	-
Trotter (feet)	1	0.5	-

^aUnidentified large mammal long bone fragment.

Table 5.7. Relative contribution of high, medium, and low cost meat cuts to diets at the Wores and Hooper properties, Historic Block 95.

	Features 1/25/41	Feature 42
Beef		
High	60	50? Or see below
Medium	25	50? Or see above
Low	15	50
Mutton		
High	55 to 73	50
Medium	9 to 27	0
Low	18	50

Table 5.6. Economic rankings of mutton cuts at the Wores and Hooper properties, Historic Block 95.

	Features 1/25/41	Index	Feature 42
Hindquarter (leg and innominate/sacrum)	1	3.75	-
Leg (femur and proximal tibia/fibula)	5	4.25	-
Loin (thoracic vertebrae, ribs 5-12)	2 ^a	5.00	1
Forequarter (scapula and humerus, ribs 1-5)	1 or 3 ^a	2.00	-
Distal limbs (shank)	1	1.00	1
Head	1	1.00	-

^aIncludes count of two unknown chuck or rib mutton cuts.

from the wealthy, early twentieth century Osborn residence in Tucson (M. Diehl et al. 2003).

Finally, the faunal assemblage recovered from around the Wores dwelling suggests communal dining. According to city directories and the 1900 census (Chapter 2, this volume), Charles Wores lived alone at this dwelling except for a short period here with his sister Rosa. At the same time, some of the larger cuts of meat, particularly the five legs of lamb, indicate some cuts of meat purchased by Mr. or Miss Wores were intended to feed larger groups of people. Given the lack of refrigeration, it is unlikely that an entire leg of lamb was purchased for consumption by one or two individuals. As a local businessman and former Arizona state legislator, Charles Wores may have hosted parties at his residence. The juxtaposition of very expensive and very inexpensive meat cuts further supports this. High-quality meats, such as the 22 t-bone steaks, may have been served to distinguished guests, with the more modest cuts being consumed on a daily basis.

LATE NINETEENTH CENTURY CHARRED PLANT MACROREMAINS

Plant remains recovered from outhouse pits and planting on Block 95 are discussed in this section.

Seven flotation samples from excavated features yielded wood charcoal fragments representing seven kinds of wood, which are consistent with the burning of refuse or with discarding ash from wood used to heat a home. Five types of seeds, including both burned and unburned types, were consistent with discarded weeds and small quantities of food debris. The parcel was associated with both a residence and the Tucson Sampling Works. Although the sampling works was associated, in part, with the production of a medicinal agent derived from brittlebush (*Encelia farinosa*), a perennial shrub related to the Aster family, no brittlebush wood charcoal or seeds were observed in the assemblage.

Procedures

The procedures used for field collecting flotation samples followed standards described in Pearsall (1989:16, 19-23). The samples were processed at Desert Archaeology's laboratory using a Flot-tech Model 1 flotation tank and catchment system fitted with a fine synthetic mesh similar to organza. The collected light fractions were air-dried and stored in zip-lock plastic bags.

Both charred and non-charred plant tissues were identified. When flotation samples are collected from

prehistoric sites not located in caves or rockshelters, commonly, only charred plant remains are identified because only burned tissues are likely to be preserved intact after centuries of microbial deterioration. In such instances, non-burned tissues are presumed to represent modern contaminants introduced from plants growing in the vicinity of the site (Minnis 1981). However, sites associated with historic occupations are of such recent temporal provenance that non-charred seeds and woods may be expected to survive, intact, their relatively brief (as compared with prehistoric sites) interments in the ground.

Identifications were substantiated by comparison with an extensive comparative collection of southwestern seeds and woods, and with illustrations in comprehensive seed and wood manuals and relevant botanical texts (Hitchcock 1971; Martin and Barkley 1961; Montgomery 1978; Parker 1990; Schopmeyer 1974; U.S. Department of Agriculture 1971). All seeds were counted. In each light fraction sample, 20 randomly selected wood fragments larger than 2 mm were counted; in the current study, all observed wood fragments were charred.

Sample Quality Assessment

The overall quality of the samples is very good, even though the total number and variety of seeds in the assemblage is low. The Block 95 flotation samples did not exhibit strong evidence of disturbance that would lead to deterioration of the contents with respect to the kinds or quantities of plant tissues originally deposited in the features. Further, there is no evidence of sampling bias introduced by inadequate sampling.

As shown in Table 5.8, six of the seven flotation samples contained small quantities of terrestrial snail shells, and two contained small quantities of insect exoskeleton fragments in the form of small, miscellaneous carapace fragments. Although these tissues may be indicative of intense insect disturbance or regular disturbance and saturation, small quantities of these tissues are common in most prehistoric and historic flotation samples. Moreover, evidence of rodent disturbance in the form of rodent feces was not observed. Overall, the quantities and kinds of contaminants observed in the Block 95 assemblage are neither exceptional nor indicative of intense natural disturbance.

Sample volumes ranged from 4.0 to 6.0 liters, with a mean volume of 5.6 liters. Based on previous analyses, Desert Archaeology endeavors to recover samples of six or more liters in volume to maximize the range of identifiable taxa in each sample. Al-

Table 5.8. General characteristics of flotation samples from Historic Block 95.

Feature	FN	Volume (l)	Weight (gm)	Insect Fragments	Snails
1	16	6.0	82.0	1-50	1-50
1	31	6.0	56.5	0	1-50
25	90	4.0	52.6	0	1-50
26	96	6.0	73.9	0	1-50
27	97	6.0	88.1	0	1-50
41	124	5.0	89.0	0	1-50
42	135	4.5	21.3	1-50	0

though few seed taxa were observed, all samples yielded the standard minimum count of 20 wood charcoal fragments 2 mm or larger in size. Although the Block 95 samples are light, their volumes are consistent with very productive assemblages from other sites.

Discussion

The charred plant macroremain assemblage from Block 95 is consistent with trash deposited from the consumption of food, expended fireplace or stove ash, and deposition of trace quantities of yard weeds. Only one irrefutable food taxon was observed. Unburned raspberry (*Rubus* sp.) seeds were observed in two outhouse pits, Feature 1 (FN 16) and Feature 42, with most recovered from the latter. The large quantity ($n = 66$) from Feature 42 is consistent with by-products of human consumption of either the fruit or raspberry preserves.

Potential weed taxa observed in the assemblage included 1 saltbush (*Atriplex* sp.) seed, 1 saguaro cactus (*Carnegiea gigantea*) seed, and 1 milkvetch (*Astragalus* sp.) seed. Milkvetch, however, is a mildly toxic weed that would not have been consumed by humans. Both saguaro cactus and saltbush seeds have extensive ethnographic records of consumption by Native Americans. Given, however, that only one of each was observed, and given the contexts of deposits strongly associated with activities of Euro-Americans, they and the milkvetch seed are most consistent with discarding weedy or ornamental plant waste collected from Block 95.

The wood charcoal assemblage is dominated by Sonoran Desertscrub wood, possibly branches, which were probably available within Block 95. Of the 140 counted wood charcoal fragments, four were unidentifiable (too badly heat-distorted to identify), and 105 were either acacia/mesquite (*Acacia/Prosopis* sp.), or more generally, "desert tree legumes" (acacia, ironwood, mesquite, or paloverde). These may represent the remnants of fuel wood,

because all the desert tree legumes have a high specific gravity and are resinous; it is these properties that make them excellent as sources of fuel wood (National Academy of Sciences 1980). However, they could also simply be remnants of branches and twigs shed by acacia or mesquite trees growing on the parcel.

The remaining wood charcoal taxa were probably from scrap construction material or furniture wood that was burned either to reduce its volume or as fuel. The cottonwood/willow fragments (two from Feature 27) represent a common Sonoran Desert riparian tree. Juniper, pine family/juniper (Pinaceae/*Juniperus* sp.), and douglas fir (*Pseudotsuga menziesii*) are all endemic to the Santa Catalina Mountains north of Tucson, from which much of early Euro-American Tucson obtained lumber for construction.

SHELL

A nearly complete oyster (*Ostrea* sp.) valve was recovered from Feature 5, the Southern Pacific Clubhouse foundation. The edges of the valve have been chipped from being pried open, probably for consumption.

Several species of oysters inhabit the coastal waters off North America, including the warmer waters of the Gulf of California. These are often difficult to identify to the species level, due to the variations of form induced by their manner of living, which is to attach themselves to rocks on the ocean bottom. All oysters are edible and have been enjoyed as a food source since prehistoric times (Keen 1971:82), as evidenced by shell middens on the coastline of the Gulf of California. Oysters were imported from the coasts as a delicacy during the Historic era, particularly with the arrival of the railroad in the 1880s (Vokes 2006). It was actually only with the arrival of the railroad to inland communities that oysters could be obtained and enjoyed without spoilage. Because oysters were imported and

probably relatively costly, they were viewed as a luxury item. The presence of an oyster shell in the fill of the clubhouse suggests it was probably consumed by a visitor enjoying the amenities at the clubhouse. Oyster shells have been recovered from other historic contexts in Tucson, especially during the Tucson Urban Renewal Project (Lister and Lister 1989:Figure 3.35) and the Rio Nuevo Archaeology Program (Vokes 2006).

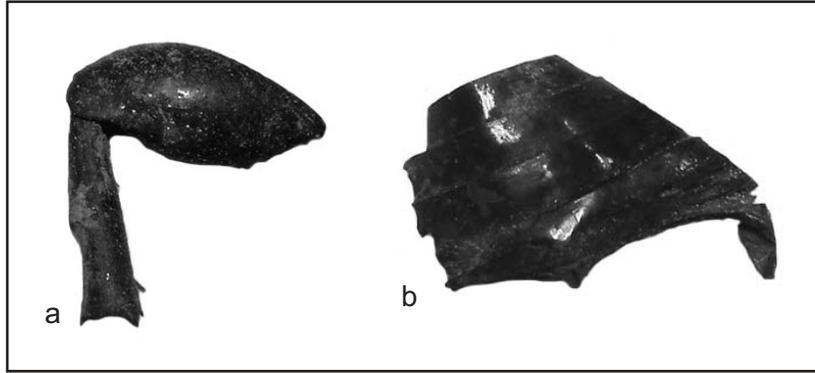


Figure 5.3. Insect remains from a tin can from Feature 10, Historic Block 95: (a) leg; (b) sternites (photograph by Douglas Taron).

INSECT REMAINS

An unexpected find in Feature 10 was a tin can filled with insect remains. The most abundant insect parts in the sample were fragments from what appeared to be beetles (Figure 5.3). Although many of the fragments were small, some of the larger fragments were sufficiently intact to allow identification of specific body parts. These fragments included legs (femora and tibiae only), sternites, and pronota. The legs and sternites were green with a metallic luster. The pronota were caked with dirt, and were reddish-brown without metallic luster. In all, 18 intact pronota were present in the sample.

Tibial length averaged 6.46 mm ($n = 8$), and femoral length averaged 6.97 mm ($n = 8$). Pronotal dimensions ranged from 9.92 mm long by 10.84 mm wide to 12.16 mm long by 13.56 mm wide. The posterior margins of the pronota bore protrusions that would have covered the scutella in intact specimens. Thus, these fragments were parts of a large beetle, lustrous green ventrally, with similarly lustrous green legs. Those characteristics, in conjunction with the distinct shape of the pronotum, indicate this is a member of the genus *Cotinis* (Goodrich 1966). Pronotal size and shape were consistent with those observed in pinned, intact specimens of *C. mutabilis*; further, the collection location suggests *C. mutabilis* rather than *C. nitida* or *C. boylei*.

Cotinis mutabilis (Gory and Percheron), also known as the figeater beetle, is an abundant member of southeastern Arizona fauna. The species ranges throughout much of the southwestern United States, from Texas to California and south into Mexico. Flight time in southern Arizona is primarily timed to the summer monsoon rains, generally from July to September. Adults feed on ripe and overripe fruit, and may have been attracted to the tin can recovered from

Feature 10 if it contained fruit or fruit residue. Eggs are laid in rotting organic material or dung, on which the larvae feed.

SUMMARY

Animal, plant, shell, and insect remains recovered from Block 95 provide a variety of information. People living and working on the block ate primarily domesticated animals, with beef providing the majority of meat. Charles Wores and his sister Rosa Wores ate higher-quality meats than those who preceded them. Legs of lamb may suggest the Wores entertained at the house, which is not surprising given Charles's business and political connections. The oyster shell recovered represents a luxury item that was brought to Tucson via the railroad, perhaps in a barrel of sea water. Another imported food is represented by the raspberry seeds found in Feature 42. As noted in Chapter 4 (this volume), other foodstuffs recovered from the site included two bottles of Worcestershire sauce and many tin can fragments.

Wood from several tree species was found in the features. Pieces of probable mesquite and cottonwood/willow were likely used for fuel in cook stoves and at the sampling works furnace. Scrap lumber was also apparently used, not surprising given the close proximity of the depot, and the likelihood that many packing crates arrived daily on the railroad.

Finally, an unusual find included the well-preserved remnants of figeater beetles found inside a tin can recovered from one of the ore waste pits. The metals or chemicals in the waste were apparently conducive to the preservation of these fragile remains. It is unknown, however, if the beetles were collected by someone or if they crawled into the can, perhaps attracted by syrup or fruit juice.

CONCLUSIONS

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Archaeological excavations on Historic Block 95, AZ BB:13:809 (ASM), located 46 archaeological features and over 5,000 artifacts, most dating to the American Territorial period occupation. Documentary research uncovered significant information about Charles Wores, the Tucson Sampling Works, and the Southern Pacific Clubhouse. Taken together, these sources can be used to evaluate the five research questions raised in Chapter 1 (see also A. Diehl 2009).

RAILROAD ARCHITECTURE

The Southern Pacific Clubhouse was constructed between January and April 1906. The Southern Pacific Railroad wanted a place where workers could socialize and educate themselves. Railroad executives thought happier workers would become better workers, providing higher quality service to the railroad's customers. Toward that end, the railroad constructed a series of clubhouses in places like Gila Bend, Benson, and Tucson. These clubhouses operated for only about 20 years before being relegated into other uses, the railroad apparently deciding this experiment in social engineering was not profitable enough to maintain.

The Southern Pacific built numerous buildings and structures in Tucson, beginning with the original railroad track constructed in early 1880. The railroad later built a passenger depot (rebuilding it after a fire in 1907), a roundhouse where engines could be serviced and repaired, an icehouse, freight storage areas, employee housing, garages, a tennis court, parks, and the clubhouse. To date, only the clubhouse and the adjacent wash room have been explored by archaeologists.

The clubhouse was probably designed by in-house architects working for the Southern Pacific Railroad. The railroad contracted with F. G. Athearn of San Francisco to supervise the construction. Either he or the railroad then contracted with the Tucson Pressed Brick Company for the bricks used in the one-story building.

A period photograph shows the building with a colonnaded porch with brick columns and molded concrete pilasters along the side of the porch. Con-

crete or stone steps were present on the western side of the porch, leading into the front door of the clubhouse. Numerous windows allowed natural light into the building. The top of the window openings were arched, and the lower window could slide upwards, allowing ventilation. The building had a peaked tile roof with gutters in each corner channeling water into the surrounding area. A water spigot was present along the northern wall of the building (Myrick 1975:128).

Demolition, probably in 1964, consisted of the removal of all aboveground portions of the building. Archaeological evidence for the clubhouse consisted primarily of the well-preserved brick foundations. Examination of the foundations, utility lines, and other features provided new information about the building and use of the adjacent property.

Site preparation prior to construction of the clubhouse likely involved removal of the existing warehouse/ore sampling works and whatever left-over equipment and aboveground waste was present. The builders must have soon become aware that several ore waste pits were present within the footprint of the new clubhouse foundation. These pits were filled with loosely compacted sediments, much softer than the surrounding caliche. As a result, the builders had to dig to the base of the pits to reach the caliche before setting the clubhouse foundations. In some areas, the foundation was 1.0-1.2 m deep. This may also explain why the central foundation wall was stepped outwards toward its base, allowing the wider wall to add extra strength to the structure.

Other building materials were found in a planting pit and in a deep pit inside the foundation, the latter apparently dug to discard some of the demolition debris. The items found included fragments of the red ceramic tile used for the roof. These tiles may have been made by the Tucson Pressed Brick Company, or they may have been imported from elsewhere. Also present were green asbestos linoleum floor tile, red flooring with imbedded chicken wire, and green wall plaster, as well as numerous pieces of electrical porcelain.

The internal layout of the building is unknown, although the building was known to originally have had a library and reading room, a pool and/or billiards rooms, showers, and bathrooms. There was

probably also an office for a club overseer. After the building was converted into the Superintendent's Office, the space was remodeled with offices and a desk or cashier's window where workers could obtain their pay.

Archaeological evidence for the internal organization of the building is scarce. Correspondence with the Union Pacific Museum archives in Council Bluffs, Iowa, which houses the Southern Pacific Railroad records, indicated the archive does not have the blueprints for the building.

Sewer, gas, and water pipes were concentrated in the eastern room of the building, which was probably the location of the crew member showers and bathroom. These facilities were moved to a separate building, constructed sometime after 1930, a few years after the clubhouse became the Superintendent's Office. Gaslines that appear to run into the center of the structure probably provide gas for lamps to illuminate the interior.

The earliest photographs of the clubhouse indicate the surrounding area was not landscaped. Within a few years, however, a park was built between the clubhouse and the depot to the west. Aerial photographs show the area around the clubhouse as landscaped with a number of trees and bushes. Planting holes for at least four trees were located along the southern and western sides of the building.

The second railroad-related building uncovered was the wash room and changing room. This building does not appear on the 1930 Sanborn Insurance map, and the exact date of construction is unknown (it was present by 1944). The building housed showers, toilets, (probably) urinals, and lockers for Southern Pacific workers. It was torn down prior to 1960, when the building was described as a concrete slab. Perhaps the most noteworthy thing about the wash room was the apparent presence of an elaborate tile mosaic in the center of the room, probably with the Southern Pacific logo.

Additional railroad-related buildings were once present east of the clubhouse and wash room, including a series of automobile garages and dwellings. An unusual feature of some of the dwellings was that they were made from boxcars. This area was extensively disturbed, and no archaeological evidence for these buildings survived.

TUCSON LIFEWAYS IN THE LATE NINETEENTH CENTURY

The arrival of the railroad in Tucson in March 1880 was the impetus for the development of Block 95, with construction of the William B. Hooper & Co. liquor warehouse and the Southern Pacific ice-

house. The presence of the railroad tracks also allowed Charles Wores to operate his ore assaying works, making it easier to ship ore from Tucson to smelters in New Mexico and California.

The railroad also made it convenient to import goods into the once-isolated community. Prior to the railroad, goods were brought overland in freight wagons from Los Angeles, San Diego, Albuquerque, and Guaymas. It could take weeks or even months for goods to arrive, and, at times, the Apache would raid freight wagons, taking or destroying goods. This did not prevent merchants and consumers from ordering a wide variety of goods, but these were very expensive due to the added shipping costs. The railroad allowed stores in Tucson to acquire goods to stock their shelves at much lower prices. Consumers could also mail order goods from newspaper or magazine advertisements or catalogues and travel to the train depot to pick up the items.

Approximately 4,900 artifacts were recovered from trash-filled features on Block 95, a relatively small number for a downtown site. The items came from three outhouse pits, planting holes, ore waste pits, and the general site area. As noted in Chapter 4 (this volume), kitchen and architecture artifacts dominated the assemblage, but at a considerably lower frequency than contemporaneous sites in Tucson. This was the result of the large number of activity artifacts, most of which were from the Tucson Sampling Works. The recovered artifacts date primarily to the period between 1880 and 1901. Most are from 1887 to 1901, when Charles R. Wores operated the ore assaying works.

The nineteenth century saw the development of large, industrialized factories in the United States and foreign countries. Many of the artifacts found at Block 95 were manufactured in the United States. Maker and product marks identified some of these items, including bottles that once held beer, liquor, Worcestershire sauce, and medicine (Udolpho Wolfe Aromatic Schnapps), in addition to a few dishes. Other unmarked items, such as the shell buttons, were also likely made in factories in the eastern and midwestern United States.

Other goods traveled long distances to reach Block 95. Items imported from foreign countries included medicines from Mexico and Canada, mineral waters from Ireland (Dublin), Germany (Selters Nassau), and the Netherlands (Amsterdam), stout beer from Scotland (Murray, Glasgow), dishes from England (Liverpool), Germany (Bonn), and Japan, and a ceramic duck figurine from Mexico.

Almost all of the recovered food service vessels were manufactured in England. Prior to the early 1900s, most of the ceramic vessels used in Tucson came from Europe. The 1897 Sears, Roebuck & Co. catalogue noted: "American made crockery is well

known to be inferior to the English and French manufacture" (Sears, Roebuck & Co. 1897:678). A few years later, the same company advertised "American Made" dishes, reflecting the improved quality of ceramics made in the United States (Sears, Roebuck & Co. 1902:788).

Ceramics recovered from the site included plain whiteware dishes manufactured by several different companies and likely purchased from different stores. This was a common occurrence in Tucson, allowing thrifty households to maintain the appearance of owning a matched set. If a dish was broken, one could go to a store and buy another plain vessel that resembled the undecorated vessels. This has been observed at numerous downtown blocks (Thiel 2003; Thiel, ed. 2009).

Pieces from three different matched sets of brown transferprint dishes were found in features or scattered in the backyard next to the adobe house foundation, Feature 38. Individual or matched sets of decorated vessels were more expensive than plainware vessels. Most households in Tucson had some decorated vessels, and upper class households usually had entire matched sets (Mabry et al. 1994). It was also possible to buy similarly decorated vessels piecemeal, a few at a time, to create the illusion of a matched set. This may have been the case for Charles Wores, as the three different patterns were fairly similar (all had brown foliage and flowers). The sample size, however, is too small to draw inferences about socioeconomic status based on the serving dishes found on Block 95.

The recovered items indicate Charles Wores fully participated in the consumer culture of the late nineteenth century. This was not particularly surprising, given what is known about the availability of goods in Tucson after the railroad arrival. Still, it seems strange that mineral water was packaged in glass or ceramic containers in Europe, packed in shipping crates and taken from the bottling works and transported to a port, carried by ships across the Atlantic Ocean, and then brought via railroad to Tucson. Obviously, Wores and his fellow Tucsonans placed great value on certain imported goods.

SANITATION IN TUCSON

Sanitation was an ongoing concern for residents of nineteenth century Tucson. Early descriptions of the town portrayed a dirty, smelly community. Incorporation in 1871 led to numerous ordinances directed toward maintaining sanitation (A. Diehl 1997:16). These included: (1) requiring slaughterhouses to operate outside of town; (2) prohibiting the dumping of trash onto other people's properties; and (3) banning the discard of garbage into irrigation

ditches. However, problems must have been ongoing, because a new set of ordinances were enacted every few years.

Archaeological evidence for trash discard during the American Territorial period suggests residents used empty lots, arroyos, *acequias*, soil mining pits, and well and outhouse shafts for trash garbage disposal. The community did not have systematic trash collection until the 1910s (A. Diehl 1997:20-21).

Another concern for American Territorial period residents was the need for clean drinking water. Late nineteenth century Tucson was located on the first terrace overlooking the Santa Cruz River. The water table was quite high, and irrigation canals once ran through the floodplain, including a canal that extended along the base of the terrace and provided water to the residents of the Spanish and Mexican period presidio fortress. Springs, called Los Ojitos, were present south of the community, near present-day Carrillo School. During the early American Territorial period, a peddler traveled the streets of Tucson with a water-filled tank, selling the water to customers for a small amount of money.

Some residents dug wells in their backyards using local laborers, who needed to cut through the hard caliche layer (up to 2 m) and carefully excavate a shaft into the underlying sand and cobble layer to the water table. This was a somewhat dangerous task, because the sand and cobble layer was very unstable and prone to collapse. Poisonous gases could accumulate in the bottom of a well, suffocating the person digging the well or during periodic cleaning of the well. The close proximity of well shafts to backyard outhouses was a concern to local doctors, who understood that diseases might be spread through contaminated water.

The desire for a better water source led Sylvester Watts to establish the first water company in Tucson in 1881, building a pumping system south of Tucson and bringing water to the community through a flume. By the following year, wells were drilled in the Barrio Libre, and pipes were laid throughout downtown Tucson. Water remained in private hands until 1890, when the City of Tucson took over the business (Sonnichsen 1982:110).

The railroad depot had an artesian well, dug prior to 1883, which provided a constant stream of water to the depot, the adjacent hotel, and to tenants of Block 95. Consequently, no well shafts were present on the property. The people who lived in the dwelling and worked on the property had a steady source of clean water, a situation many of their neighbors did not enjoy.

Human waste was another problem Tucsonans had to contend with. No outhouse pits have been located that date to the Spanish or Mexican periods,

from 1775 to 1856, and human waste was likely discarded onto plazas, streets, or over the walls of the fort. Although unpleasant to contemplate, swine and dogs probably consumed human waste during occupation of the presidio.

Outhouses were present in backyards throughout downtown Tucson in the American Territorial period. Laborers would dig shafts, sometimes stopping within the caliche layer, sometimes continuing into the underlying sand and cobble layer. The pits were unlined. A small wooden structure was built over the pit, usually with one seat but sometimes with two (the width of the outhouse hole is indicative of the number of seats). The contents of the pit might have occasionally been cleaned out, but eventually a new outhouse pit was dug. The wooden superstructure was either moved or dismantled and rebuilt. The old pit was then used for refuse disposal. A layer of dirt typically sealed the hole, enough to completely fill the pit. As the contents settled, additional dirt or trash was occasionally added.

Among the first city ordinances were several that regulated the use of outhouses or privies. Revised Ordinance No. 1 became law in 1877, and required that privy vaults be periodically purified with lime. Revised Ordinance No. 6 required outhouses be well-ventilated and have doors. Ordinance No. 438, which prohibited trash from being discarded into privy pits, was enacted in 1915 (Diehl 2003:24). This latter ordinance was apparently never obeyed—every outhouse pit excavated in Tucson has yielded garbage.

Archaeologists have excavated dozens of outhouse features in downtown Tucson (Table 6.1). The pits range in length from 2.5 ft to 12.0 ft, and in width from 1.6 ft to 7.0 ft. The average length is 5.6 ft, and the median length is 5.2 ft. The average width is 4.0 ft, and the median width is 3.6 ft. Most of the outhouse pits are rectangular, and the majority appear to have been single occupant structures. However, 13 of 70 (19 percent) were 7 ft long or longer, and as such, probably contained two seats. Depth varied dramatically from less than 1.0 ft deep to almost 15.0 ft deep; most were 2.0–6.0 ft deep. The average depth is 6.4 ft, and the median depth is 5.7 ft. Some shafts were deeper than 10.0 ft; these likely started out as wells and were later converted to outhouses.

Three layers are usually found in Tucson outhouse pits. A layer of greenish-gray organic material, representing decomposed human waste, is almost always present at the base of outhouse pits. Above this is a layer of discarded trash, sometimes several feet deep. Finally, the upper shaft is usually filled with dirt dumped in to close the hole. Due to subsidence, however, several episodes of fill dirt may be present.

Individual city lots that have been fully explored by archaeologists typically have between two and

five outhouse pits. It seems likely that the use-life for an outhouse was eight or nine years, when the structure was replaced, perhaps as the wooden superstructure weathered or the outhouse was perceived as no longer sanitary.

The three outhouse pits found on Block 95 are quite typical of those found in downtown Tucson. They were average in size, and each appears to have had a single seat. They contained greenish-gray organic soil at their base, representing decomposed human waste. A few artifacts found in the pits, such as a pocket watch and a chamber pot lid, likely represent items that were accidentally dropped in during their use. However, most of the artifacts found were discarded after initial use of the feature as an outdoor bathroom ceased. The uppermost fill of the three pits consisted of fill dirt. The outhouses were used between 1880 and 1901; the clubhouse had indoor flush toilets. As the entire lot was not stripped, it remains unknown if other outhouse pits are present.

DIET IN AMERICAN TERRITORIAL PERIOD TUCSON

The types of food people ate in American Territorial period Tucson depended on several factors. Ethnicity and cooking traditions were strong determinants to what types of food were consumed and how they were prepared. The diets of the Euro-Americans, Mexican-Americans, and Chinese residents of Tucson differed in the types of meats, fruits, and vegetables preferred by each group. Documentary and archaeological evidence indicates Mexican-Americans preferred wheat flour tortillas over corn, ate menudo and other dishes made from cattle heads and feet, and grew fruit trees such as quince, peach, and fig. Euro-Americans imported a significant amount of canned and bottled fruits, along with canned vegetables and bottled condiments. They preferred beef, pork, and mutton butchered into standardized cuts. The Chinese ate more diverse meats, and imported a variety of foods and seasonings, including seafood, soy sauce, and cuttlefish. The Chinese farmers in Tucson grew many different types of fruits and vegetables, eating some and selling the remainder to stores, restaurants, and to customers door-to-door.

When the presidio was occupied, large herds of cattle and sheep were raised in Tucson. This practice continued into the American Territorial period. The federal government collected census information every 10 years, and agricultural census records for the period between 1870 and 1910 provide livestock counts for Pima County (Tables 6.2 and 6.3). Census takers were required to collect data from all farm-

Table 6.1. Outhouse pit dimensions in feet from historic downtown Tucson.

Site	Name	Feature	Length	Width	Depth	Date	Reference
Block 83	-	4	7.5	3.0	6.5	1880-1896	Mabry et al. 1994
Block 83	-	9	6.5	3.5	3.0	1890-1901	Mabry et al. 1994
Block 83	-	14	3.3	3.3	6.0	-	Mabry et al. 1994
Block 83	-	16	4.0	2.5	4.0	1884-1904	Mabry et al. 1994
Block 83	-	18	5.5	5.5	18	1893-1920	Mabry et al. 1994
Block 83	-	21	5.0	-	2.5	1890-1901	Mabry et al. 1994
Block 83	-	145	11.8	10.5+	-	-	Thiel, ed. 2009
Block 83	-	207	6.2	3.6	8.7	1897-1905	Thiel, ed. 2009
Block 83	-	219	9.0	6.6	7.5	1891-1910	Thiel, ed. 2009
Block 83	-	240	6.5	5.3	6.6	1891-1900	Thiel, ed. 2009
Block 83	-	252	5.0	2.2	1.9	1885-1910	Thiel, ed. 2009
Block 83	-	253	4.6	3.8	6.9	1880-1895	Thiel, ed. 2009
Block 83	-	259	4.3	2.4	2.0	-	Thiel, ed. 2009
Block 83	-	286	3.9	3.0	12.8+	1880-1915	Thiel, ed. 2009
Block 83	-	329	7.5	6.6	12.5+	1891-1915	Thiel, ed. 2009
Block 83	-	330	5.2	5.2	5.1+	1900-1910	Thiel, ed. 2009
Block 83	-	333	5.9	2.6	10.7	1895-1910	Thiel, ed. 2009
Block 83	-	336	3.8	3.2	9.9	1894-1905	Thiel, ed. 2009
Block 83	-	339	6.6	4.8	9.0	1891-	Thiel, ed. 2009
Block 83	-	340	6.6	4.3	7.3	1880-1895	Thiel, ed. 2009
Block 83	-	342	4.9	3.8	1.9	1901-1915	Thiel, ed. 2009
Block 83	-	346	5.6	5.2	4.2+	-	Thiel, ed. 2009
Block 83	-	348	3.9	-	-	1930s	Thiel, ed. 2009
Block 83	-	349	5.4	3.9	-	1915+	Thiel, ed. 2009
Block 83	-	353	3.4	2.5	3.1	1895-1910	Thiel, ed. 2009
Block 83	-	356	5.4	5.3	2.3	1890-1910s	Thiel, ed. 2009
Block 94	Hotel Catalina	6	6.0	6.0	5.0	-	Thiel 1993
Block 95	-	1	3.6	3.4	5.7	1887-1901	This volume
Block 95	-	41	3.0	3.0	1.7	1887-1901	This volume
Block 95	-	42	5.2	2.7	4.3	1880-1887	This volume
Block 136	-	13	4.4	2.4	1.9	1905-1929	Thiel 2002
Block 136	-	44	4.2	2.5	2.2	-	Thiel 2002
Block 136	-	59	6.4	5.2	11.1	-	Thiel 2002
Block 136	-	60	7.2	7.0	4.5	1898-1911	Thiel 2002
Block 138	-	4	8.3	4.7	-	1890-1930	Thiel and Desruisseaux 1993
Block 138	-	17	3.3	2.3	-	1890-1930	Thiel and Desruisseaux 1993
Block 138	-	28	-	3.6	-	1890-1930	Thiel and Desruisseaux 1993
Block 138	-	41	11.0	5.7	-	-	Thiel and Desruisseaux 1993
Block 139	-	2	4.4	-	-	pre-1910	A. Diehl et al. 2003
Block 139	-	5	4.0	3.9	3.5	-	A. Diehl et al. 2003
Block 139	-	6	4.7	4.2	20.0+	1905-1929	A. Diehl et al. 2003
Block 139	-	19	5.5	4.3	14.6	1890s	A. Diehl et al. 2003
Block 139	-	21	8.0	6.5	5.0+	1930s	A. Diehl et al. 2003
Block 139	-	28	4.3	-	-	-	A. Diehl et al. 2003
Block 139	-	31	5.6	5.6	23.0	1905-1929	A. Diehl et al. 2003
Block 139	-	36	6.0	-	-	-	A. Diehl et al. 2003
Block 172	-	7	2.6	2.6	0.6	1900-1910	Thiel 2003a
Block 172	-	8	3.2	3.0	0.5	1900-1910	Thiel 2003a
Block 172	-	11	3.9	3.0	-	-	Thiel 2003a
Block 172	-	38	3.0	2.2	1.1+	1903-1910	Thiel 2003a

Table 6.1. Continued.

Site	Name	Feature	Length	Width	Depth	Date	Reference
Block 172	-	54	6.6	1.6	2.5	1890s	Thiel 2003a
Block 172	-	108	3.1	2.7	-	1900-1910	Thiel 2003a
Block 180	-	7	3.5+	3.5	12.0+	1900-1905	Ciolek-Torrello and Swanson 1997
Block 180	-	17	0.0	4.3	5.6+	1896-1920	Ciolek-Torrello and Swanson 1997
Block 180	-	70	0.0	6.1	6.9	1920s	Ciolek-Torrello and Swanson 1997
Block 180	-	71	4.6	3.4	5.9	1890s+	Ciolek-Torrello and Swanson 1997
Block 180	-	108	3.4	2.6	6.2	pre-1880	Ciolek-Torrello and Swanson 1997
Block 180	-	113	4.9	4.9	8.6	1879-1881	Ciolek-Torrello and Swanson 1997
Block 183	-	-	5.4	3.5	8.3	1880s-1890s	Tucson Urban Renewal Notes, ASM Archives
Block 186	-	2	3.6	2.6	-	-	Thiel 1996b
Block 186	-	5	5.5	5.0	-	-	Thiel 1996b
Block 186	-	6	9.7	2.3+	-	-	Thiel 1996b
Block 192	-	13	0.0	6.6+	6.0+	1900-1929	Thiel et al. 1995
Block 192	-	22/14	0.0	5.6	2.0+	-	Thiel et al. 1995
Block 192	-	236	0.0	2.0	-	1890-1920	Thiel et al. 1995
Block 228	-	4	7.0	7.0	4.2	-	Ayres 1990
Block 228	-	6	6.0	6.0	14.8	-	Ayres 1990
Block 228	-	7	7.3	4.0	3.2	-	Ayres 1990
Block 228	-	10	7.0	4.0	6.9	-	Ayres 1990
Block 228	-	15	8.0	6.0	11.0	-	Ayres 1990

ers and ranchers, although it is unclear if the reported numbers are accurate, as it was more difficult to count free-range cattle. The reported counts reveal that cattle represented approximately half the live-stock raised prior to arrival of the railroad. Most of the animals raised in 1870 were almost certainly for consumption by local residents.

By 1880, the number of cattle and sheep raised had increased tenfold. The imminent arrival of the railroad meant ranchers could ship livestock via boxcars to markets in the west and east. By 1890, cattle ranching dominated the region, a trend that continued until at least 1910, after which time the census bureau did not provide counts by county. Smaller amounts of poultry, primarily chickens, were also reported in the censuses. These were probably raised for local consumption. Some downtown households had flocks of chickens in their backyards.

Newspaper accounts indicate hunting was a recreational endeavor in Tucson. Quail, ducks, jackrabbits, cottontails, and deer were occasionally captured, and were sometimes available in local butcher shops. However, residents of the community relied primarily on domesticated meats. Some canned and cured meats were imported, as was fresh and salted seafood, mostly from the west coast of the United States.

Farmers on the Santa Cruz River floodplain grew a variety of grains, fruits, and vegetables. Agricultural censuses suggest corn, wheat, and barley were the most popular grains grown for food and live-

stock fodder (Table 6.4). Peaches and strawberries were also grown in large quantities in Pima County. Newspaper accounts and diaries indicate fresh fruits and vegetables were available seasonally in Tucson (Table 6.5). Other crops were imported from the Gila River (wheat), the San Pedro River, and from Hermosillo, Sonora (oranges).

Bottled, canned, and dried foodstuffs were also imported into Tucson, at first by freight wagon and later by railroad. Foods brought overland in wagons were typically very expensive, because freight costs were prohibitive. The price of imported foods dropped dramatically after the railroad arrived in 1880, and this made it easier for the Euro-Americans and immigrant Chinese to replicate their traditional diets.

Archaeological work at several downtown city blocks over the last 20 years has provided information about what people were consuming in the late nineteenth century. Unfortunately, the excavations of Block 95 produced very little in terms of plant remains or bottled foods. Raspberry seeds were found in outhouse Feature 42. Worcestershire sauce bottles were found in an ore waste pit. Two canning jar lids were also found. Large numbers of tin can fragments were present, but were too poorly preserved to identify their contents. The small sample limits interpretation.

Previous ethnobotanical research has shown that raspberries and grapes are more likely to be

Table 6.2. Livestock counts from United States Agricultural Censuses, 1870-1910.

	1870	1880	1890	1900	1910
Cattle (total)	1,268	11,742	19,163	99,804	46,121
Dairy	482	3,171	584	1,885	2,705
Cows	-	-	-	44,388	20,223
Yearling heifers	-	-	-	9,433	5,249
Calves	-	-	6,086	17,474	2,758
Yearling steers and bulls	-	-	-	-	3,863
Other steers and bulls	-	-	-	26,624	5,583
Working oxen	512	218	8	-	-
Horses (total)	200	1,328	1,316	9,954	6,760
Mature horses	-	-	1,088	7,047	5,111
Yearling colts	-	-	-	1,506	1,027
Spring colts	-	-	228	1,401	622
Mules (total)	72 ^a	208 ^a	79	400	301
Mature mules	-	-	75	311	252
Yearling colts	-	-	4	58	38
Spring colts	-	-	-	31	11
Asses and burros	-	-	43	326	160
Swine (total)	692	636	538	783	732
Mature	-	-	-	-	491
Spring	-	-	-	-	241
Sheep (total)	803	-	2,031	7,079	1,806
Rams, ewes	-	11,125	-	5,778	1,360
Spring lambs	-	-	3	1,301	446
Goats	-	-	-	294	2,613
Poultry all kinds	-	2,395	-	8,945	18,163
Chickens/Guinea hens	-	-	2,930	8,187	-
Turkeys	-	-	120	457	-
Geese	-	-	55	4	-
Ducks	-	-	75	297	-
Beehives or swarms	-	125 ^b	-	500 ^c	46,600 ^c
Sold or slaughtered	-	-	-	-	-
Calves	-	-	-	-	301
Other cattle	-	-	3,345	-	3,620
Swine	-	-	10	-	166
Sheep and goats	-	-	4	-	1,223

^aIncludes asses.^bIn pounds.^cSwarms of bees.**Table 6.3.** Frequency of cattle, sheep/goat, and pigs from the United States Agricultural Censuses, 1870-1910 (counts have been rounded to the nearest percentage).

	1870	1880	1890	1900	1910
Cattle	46	50	91	93	95
Sheep/Goat	29	47	9	7	4
Pig	25	3	2	1	1

Table 6.4. Grains, fruits, and vegetables from the United States Agricultural Censuses, 1870-1910.

Agricultural Product	1870	1880	1890	1900	1910
Corn	32,011	9,486	5,518	3,741	17,699
Oats	25	-	48	1,200	-
Wheat	27,052	9,890	1,024	210	5,198
Barley	54,907	33,511	-	2,130	5,456
Kafir corn and milo maize	-	-	-	-	75
Dry edible beans and peas	3,417	-	-	456	3,757
Tame and cultivated grasses (tons)	-	-	-	-	2,462
Potatoes	591	4,639	-	0	1,720
Sweet potatoes and yams	-	-	-	-	2,200
Onions	-	-	-	40	-
All other vegetables	-	-	-	-	428
Apples	-	-	310	100	-
Peaches and nectarines	-	-	185	2,582	51
Pears	-	-	2	65	175
Plums and prunes	-	-	-	27	3
Cherries	-	-	200	-	-
Apricots	-	-	10	530	171
Grapes (pounds)	-	-	-	18,100	1,000
Figs (pounds)	-	-	-	18,000	650
Oranges (boxes)	-	-	-	100	-
Strawberries (quarts)	-	-	-	10,500	3,520
Almonds (pounds)	-	-	-	8,000	100

Note: Unless indicated, all measurements are in bushels.

Table 6.5. List of grains, trees or vines, and planted crops grown in Tucson, according to nineteenth and twentieth century sources.

Grains	Trees/Vines	Planted Crops
Wheat	Quinces	Beans
Corn	Peaches	Lentils
Barley	Pears	Cabbages
Pulses	Apples	Pumpkins
	Grapes	Squash
	Apricots	Peppers
	Apples	Peas
	Pomegranates	Green beans
	Apples	Onions
	Fig	Cantelope melons
	Olive	Watermelon
	Almond	Cotton
		Sugar cane
		Garlic
		Chili peppers
		Garbonzo beans
		Carrots
		Sweet potatoes
		Potatoes
		Strawberries

associated with mercantile contexts, such as saloons and businesses, than with domestic residences and that raspberries are more commonly found in deposits generated by Euro-Americans (M. Diehl 2009). On Block 95, the seeds were probably in preserves eaten by residents of the dwelling next to the Hooper warehouse.

Animal bones were recovered from four features, one associated with the Hooper warehouse and residents and three with the sampling works and the Wores residence. The Hooper warehouse sample was dominated by beef, with smaller amounts of pork, mutton, and chicken. The overall sample size is quite small. The Wores features contained many high-quality cuts of beef, including t-bone steaks and legs of lamb. This matches the documentary evidence indicating Charles Wores was middle to upper class, and further suggests that Charles and his sister Rosa entertained guests.

ORE ASSAYING IN NINETEENTH CENTURY TUCSON

Sanborn Fire Insurance maps for 1889 and 1896 document the presence of Wallace's Tucson Sam-

pling Works on Block 95 (see Figure 2.2). Documentary research suggests, however, that the maps were incorrectly labeled. The cartographer may have misheard Charles Wores' last name, perhaps because Wores had a slight German accent (his parents were German immigrants).

The documentary research, detailed in Chapter 2 of this volume, further revealed that Wores operated the sampling works between 1887 and 1901, processing samples of copper, lead, silver, and gold ore to determine the amount of valuable metal content present. He utilized the former William B. Hooper & Co. liquor warehouse, a large adobe building divided into two rooms. He used the northeastern corner of the eastern room as an office, and probably stored ore for shipping elsewhere in the main rooms of the warehouse. The Sanborn maps indicate Wores built a stamp mill, a reverberating furnace, and three fuel or water tanks on the eastern side of the warehouse. Unfortunately, the microfilmed versions of the Sanborn maps are all but illegible, and it is impossible to determine other labeled features.

What happened at an assaying office? Wores traveled to communities around the Territory of Arizona to obtain ore. He apparently did some ore testing on site in places like Tombstone, because he purchased ore directly from miners during visits there. He also assayed ore samples sent to him in Tucson, charging \$1.00-\$2.00 per sample. If the sample proved to contain valuable ore, Wores served as a middleman, purchasing the ore from the miners, shipping it to Tucson, and then selling it to smelters located in California or New Mexico.

Wores likely followed the standard assaying protocols of the day. Examination of early twentieth century assaying texts provide an overview of the assaying process. Small samples, submitted by miners interested in determining if their mining claims contained valuable metals, were sent to the works in small sacks. Larger samples, known to be rich in ore, were carried to the works in wagons or by the railroad, perhaps in burlap sacks.

The sample may have been weighed at the onset. It would have then been dumped into a pile on the floor of the former warehouse. Shovels would have been used to thoroughly mix the sample. Afterwards, the pile was divided into quarters or some other smaller, equal-sized piles. One pile was selected for further processing, which might include smashing the ore into smaller-sized pieces with the stamp mill. The sample was then re-mixed and divided again. Further processing might take place, finally reducing the ore to a powder and the sample size to a relatively small amount.

The sample would then be placed in a cupel, scorifier, or crucible along with lead, borax, ground glass, or other materials (see Figures 4.8-4.10). The

sample number was often written on the interior of the cupel or the exterior of the crucible, which suggests multiple samples were processed simultaneously. The sample was then put inside a furnace and heated until it melted and interacted with the lead or other ingredients. The assayer might observe this process through a window or door in the furnace. When the desired ore had separated from the other materials, the sample was withdrawn from the furnace and the button of material removed. The button might be subjected to further processing, or it might be weighed to determine the ore content of the sample.

Wores used scorifiers and crucibles manufactured in England for his business. The Battersea Works were known for their high-quality ceramic assaying wares. He may also have used mineral water imported from Europe at the works, as the number of recovered ceramic and glass mineral water containers is quite high. He likely made his own cupels onsite using a hand-operated press.

It is unknown where Wores learned the science of assaying, although it was probably in San Francisco. Accounts in contemporary newspapers indicate he had a good reputation and was well liked by miners because he treated them fairly and paid cash. After some 14 years, he left assaying to go into mining full time. He probably sold his equipment in 1901, but no records recording the transaction have been located.

MANAGEMENT SUMMARY

The excavations on Block 95, AZ BB:13:809 (ASM), while small scale in size, uncovered significant information about the life of Charles Wores, the role the railroad played in the development of early Tucson, the activities of an ore assaying office, and the social engineering efforts of the Southern Pacific Railroad in the early twentieth century.

The site is believed to be eligible for inclusion in the National Register of Historic Places under Criterion D due to the significant historical information contained in the archaeological features present. Archaeological excavations have documented the site in detail, locating 46 features and recovering thousands of artifacts and animal bones.

The archaeological data recovery program outlined in the approved project treatment plan (A. Diehl 2009) has been successfully implemented. The results of the data recovery program are summarized in this report, and the research potential of Block 95, AZ BB:13:809 (ASM), has been exhausted. Therefore, Desert Archaeology recommends that construction and other development of the project area proceed as planned. If human remains, which

are not expected to be present, are encountered, construction in the immediate area of the remains should cease until an assessment can be made by a qualified archaeologist.

Additionally, a hazardous waste assessment of the site by the firm EEC located potentially hazard-

ous waste in the Sampling Works ore waste pits (K. Pierce, personal communication 2010). The waste was subsequently removed in the Spring of 2010, and is therefore, no longer thought to be an issue. However, the EEC report should be consulted prior to construction activities.

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- 1907b Clubhouse is completed. 4 October, p. 8. Tucson.
- 1907c Ladies' day for S. P. Club. 6 March, p. 4. Tucson.
- 1908a Former mining man visitor. 29 May, p. 5. Tucson.
- 1908b Moving into new quarters. 1 June, p. 5. Tucson.

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