# AN OVERVIEW OF THE RIO NUEVO ARCHAEOLOGY PROJECT, 2000-2003

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Between October 2000 and January 2003, Desert Archaeology, Inc., conducted archaeological investigations at seven locations (Figure 1.1) for the City of Tucson as part of the Rio Nuevo Archaeology project. Hundreds of cultural features were excavated, with more than 160,000 artifacts recovered. This work documented 4,100 years of occupation and 3,500 years of irrigated agriculture in the floodplain of the Santa Cruz River just west of downtown Tucson, Arizona. Some well-preserved remains of the late eighteenth century Spanish period mission and mission gardens were also revealed on the western side of the river, as was a portion of the Tucson Presidio – founded in 1775 – on the eastern side. These findings establish Tucson as one of the oldest continuously occupied settlements in the United States. Significant discoveries include:

- the remains of a 4,100-year-old farming settlement with pithouses, storage pits, maize (corn) remains, and sherds decorated with incised designs—the oldest known pottery in the southwestern United States;
- two Early Agricultural period villages occupied between about 2,600 and 2,200 years ago, and Hohokam occupations dating between approximately 1,250 and 700 years ago;
- a sequence of 36 irrigation canals buried in the upper layers of the floodplain, the earliest dating to 3,500 years ago—the oldest known canal in North America—and the most recent being the "Acequia Madre Primera" shown on an 1862 map of Tucson's agricultural fields (Figure 1.2);
- the surviving fragments of the San Agustín Mission and the Tucson Presidio, both constructed in the late 1700s;
- a hand-dug well filled with trash discarded by Chinese gardeners in the 1890s; and
- foundations of the Tucson Pressed Brick Company factory, where bricks for many prominent southern Arizona buildings were manufactured between the 1890s and the 1960s.

Some of these discoveries have dramatically changed current understanding about Tucson prehistory and history, while others have added sub-

stantially to the information obtained during previous archaeological work. Portions of the three major archaeological sites — the San Agustín Mission and Mission Gardens loci of the Clearwater site, AZ BB:13:6 (ASM), the canal systems west of the Santa Cruz River, AZ BB:13:481 (ASM), and the Tucson Presidio, AZ BB:13:13 (ASM) — will lie undisturbed in the planned Tucson Origins Heritage Parks scheduled for construction in the coming years. Additional archaeological work is necessary in several locations to mitigate the impacts of Rio Nuevo construction projects and interpretive exhibits. The results of all archaeological work completed through 2003 is summarized in this report.

#### **EAST OF INTERSTATE 10**

Archaeological testing of the area at the south-eastern corner of the Interstate 10 (I-10) frontage road and Congress Street (see Figure 1.1) was conducted in two phases in October 2000 and May 2001. Back-hoe trenches were excavated throughout the area. No significant archaeological features were discovered, although a small number of prehistoric and historicera artifacts were found scattered throughout the area.

#### THE SAN AGUSTÍN MISSION

Archaeological exploration at the San Agustín Mission locus began on 20 November 2000, and was completed on 12 February 2001. Many layers of occupation were uncovered there, at Tucson's birthplace at the base of A-Mountain. During the 9-week project, 206 cultural features were identified as being associated with prehistoric and historic occupations of the site (Figure 1.3). Historic-era features included a well filled by Chinese farmers, a pit containing Carrillo family trash from the 1860s, and the last remnants of the Spanish mission established in the 1770s. Below these were a Hohokam canal built 1,000 years ago and a much older early farming village.

#### An Early Agricultural Community

Remnants of an early farming village occupied between 2,500 and 2,400 years ago during the Early Cienega phase of the Early Agricultural period were preserved beneath the remains from the mission occupation over a large area west and south of the 1950s landfill. Pithouses (or rather, houses in pits), outdoor pits for cooking and food storage, human burials, and two canals were identified and investigated. These features, including the burials, were relatively evenly distributed across the exposed area. The superpositioning of some pithouses indicates continuous or repeated occupations over a period of time.

Of the 45 Early Cienega phase pithouses identified, 21 were excavated completely or partially; 43 of the 124 pits were excavated wholly or in part. Following the procedures of a burial agreement developed through prior consultations, four human burials dating to this prehistoric occupation were excavated and subsequently repatriated to the Tohono O'odham Nation for reburial.

On the floor of one of the pithouses were found two complete knobbed stone trays—a rare, possibly ritual-related artifact type that had only been found previously as fragments. A few sherds of crude pottery, another rare artifact type from this period, were also recovered. Segments of two canals dating to this occupation were documented.

These features are related to the Early Agricultural period features previously found in archaeological test trenches in the City of Tucson properties west of Brickyard Lane and north of Mission Lane (Elson and Doelle 1987). Based on current knowledge, Early Agricultural period features are probably also preserved beneath Brickyard Lane in this area.

#### A Hohokam Canal

A large canal built and used by the Hohokam between about 1,200 and 700 years ago was found crossing the investigated area from southeast to northwest. Just under 2 m wide and 1 m deep, it was probably the main canal that diverted water from the Santa Cruz River onto the western floodplain along this stretch of the river for several centuries. Only a few Hohokam canals have previously been found and investigated in the Tucson area; this is one of the largest to date. More of this canal is probably preserved beneath Brickyard Lane and in City of Tucson properties to the west.

A handful of other Hohokam features were identified, including a bell-shaped pit, two cremations, three burials, and a pithouse. The burials and cremations were repatriated to the Tohono O'odham Nation. The area investigated was likely used pri-

marily as an agricultural field, with the main Hohokam community located to the northwest, perhaps at the current location of St. Mary's Hospital.

# The San Agustín Mission and a Piman Ranchería

In 1694, Father Kino, Captain Manje, and Lieutenant Martín, some of the earliest European visitors to the region, traveled along the Santa Cruz River and visited a Piman Native American community located at the base of what is now known as A-Mountain. Manje described the area:

Here the river runs with much water . . . there is good pastorage, and agricultural land with many canals to irrigate it. From this land they harvest much maize, beans, cotton from which they make their clothing, and other fruits of squash, cantaloupe and watermelon (Burrus 1971:348).

Pima groups from the Tucson area, the Gila River Valley (Gileños), the San Pedro River Valley (Sobai-puris), and the desert to the south and west (Papagos) were all residents of the mission during its history.

San Agustín became a visita of San Xavier and was visited regularly by priests stationed at Bac. The local Native Americans asked that a church be built at San Agustín, and one was completed in 1771. After construction of the Franciscan structures at San Xavier were finished in 1797, the workers apparently moved to San Agustín and built a two-story convento (a priest's residence and possibly a trade school), a chapel, a granary, cemetery areas, and a surrounding compound wall. Historical descriptions, drawings, and oral histories indicate that, by the 1840s, the mission was abandoned and the adobe structures were decaying. In 1956, the area where the convento and church had stood - and where visible remnants of adobe walls remained - was destroyed when the city used the area as a landfill.

During the Rio Nuevo Archaeology project, the stone foundations of three mission-occupation structures were discovered and excavated. The granary was located along the western side of the mission and was about 17 m long by 8 m wide. This structure had a row of pillar bases running down the center of the building; central pillars were necessary, because there were no timbers available in the Tucson area long enough to span the entire width of the building. The western wall of the mission was preserved along a 97-m-stretch, with the southwestern corner and a short segment of the southern wall also preserved (Figure 1.4). This wall foundation was 0.6 m wide. It was made by digging a shallow trench, or by placing rocks on the existing ground surface. The wall foundation was two to four rocks wide, with up

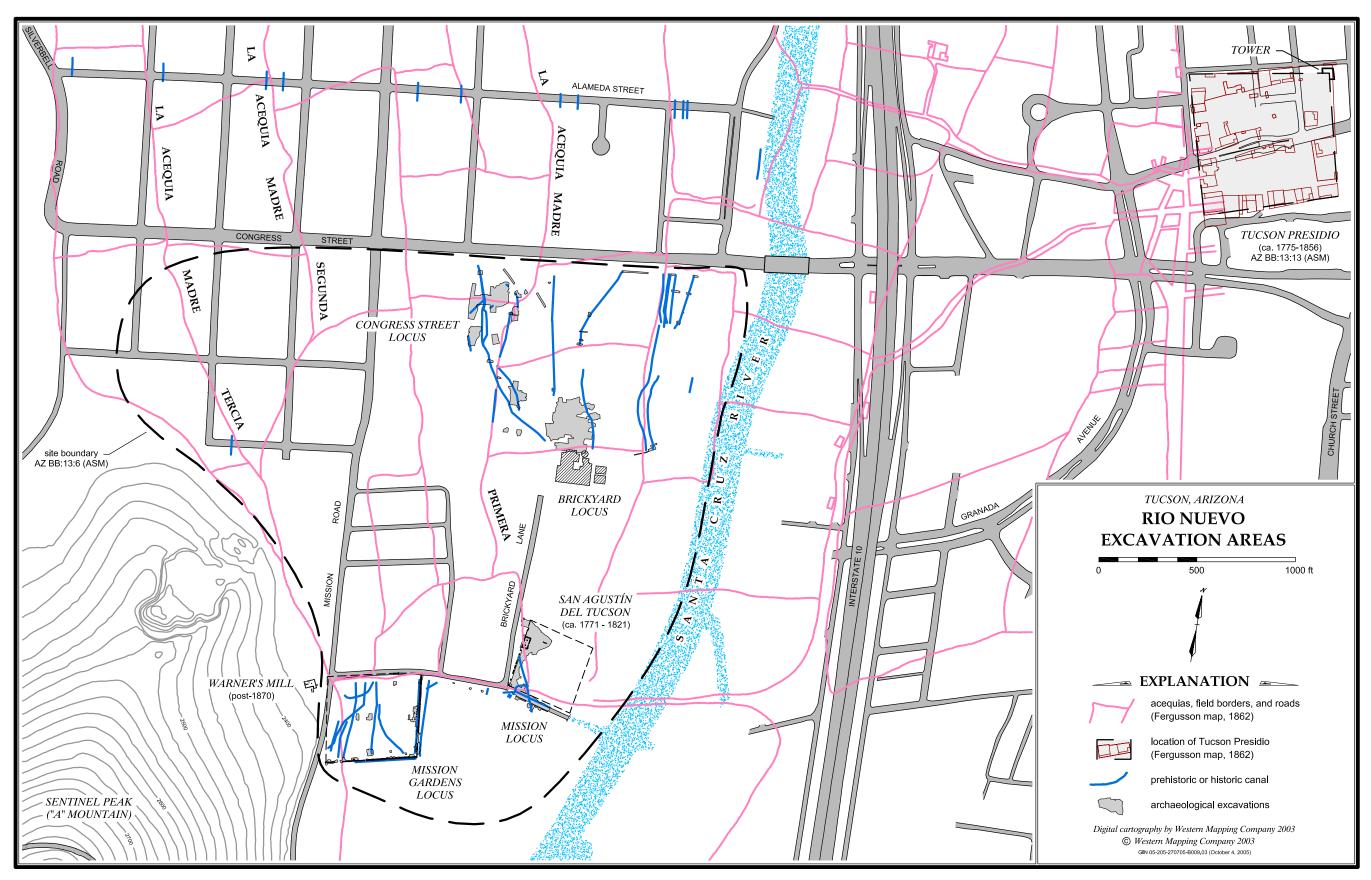


Figure 1.1. Map showing loci of archaeological investigations of the Rio Nuevo Archaeology project, 2000-2003.

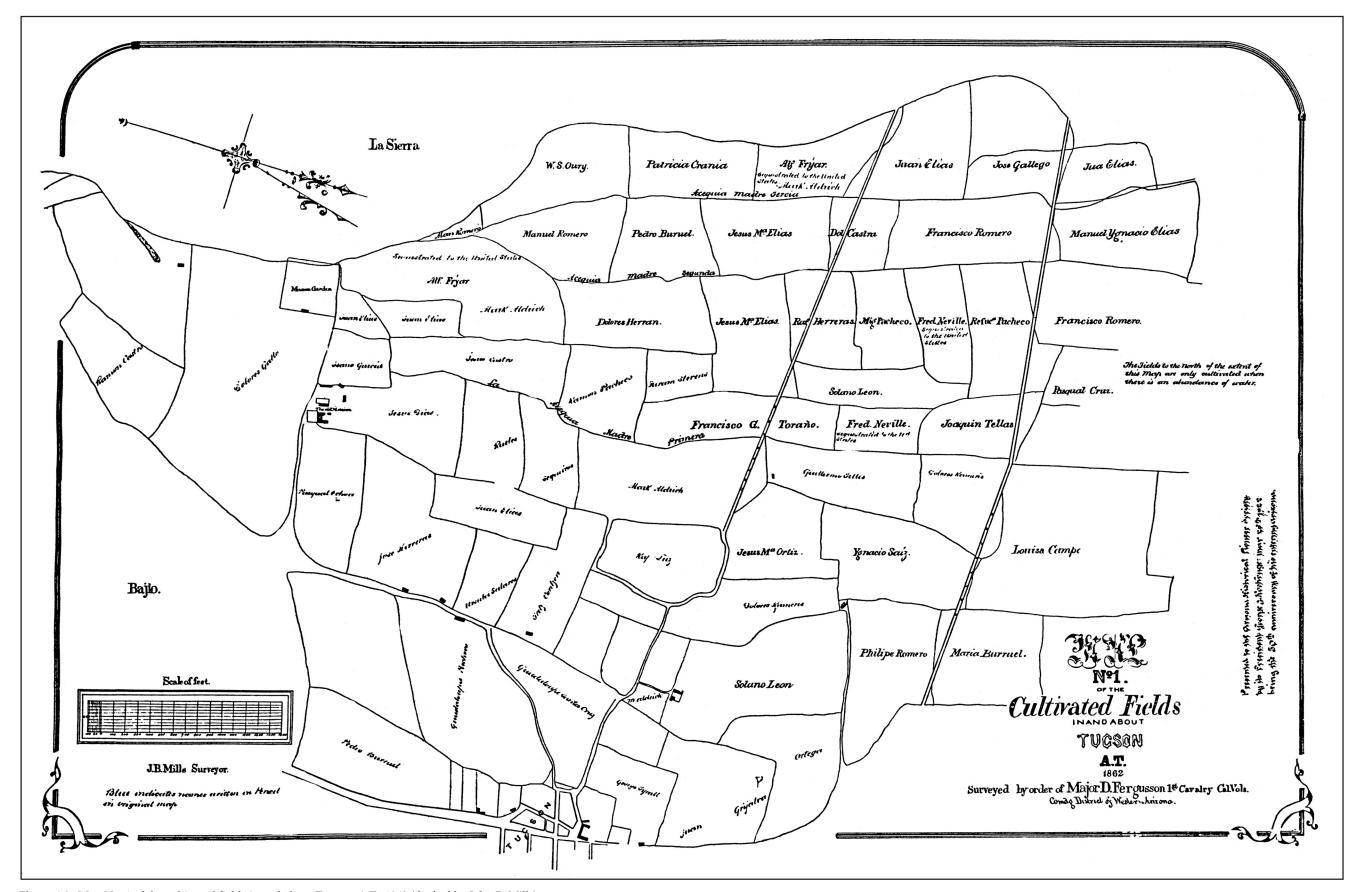
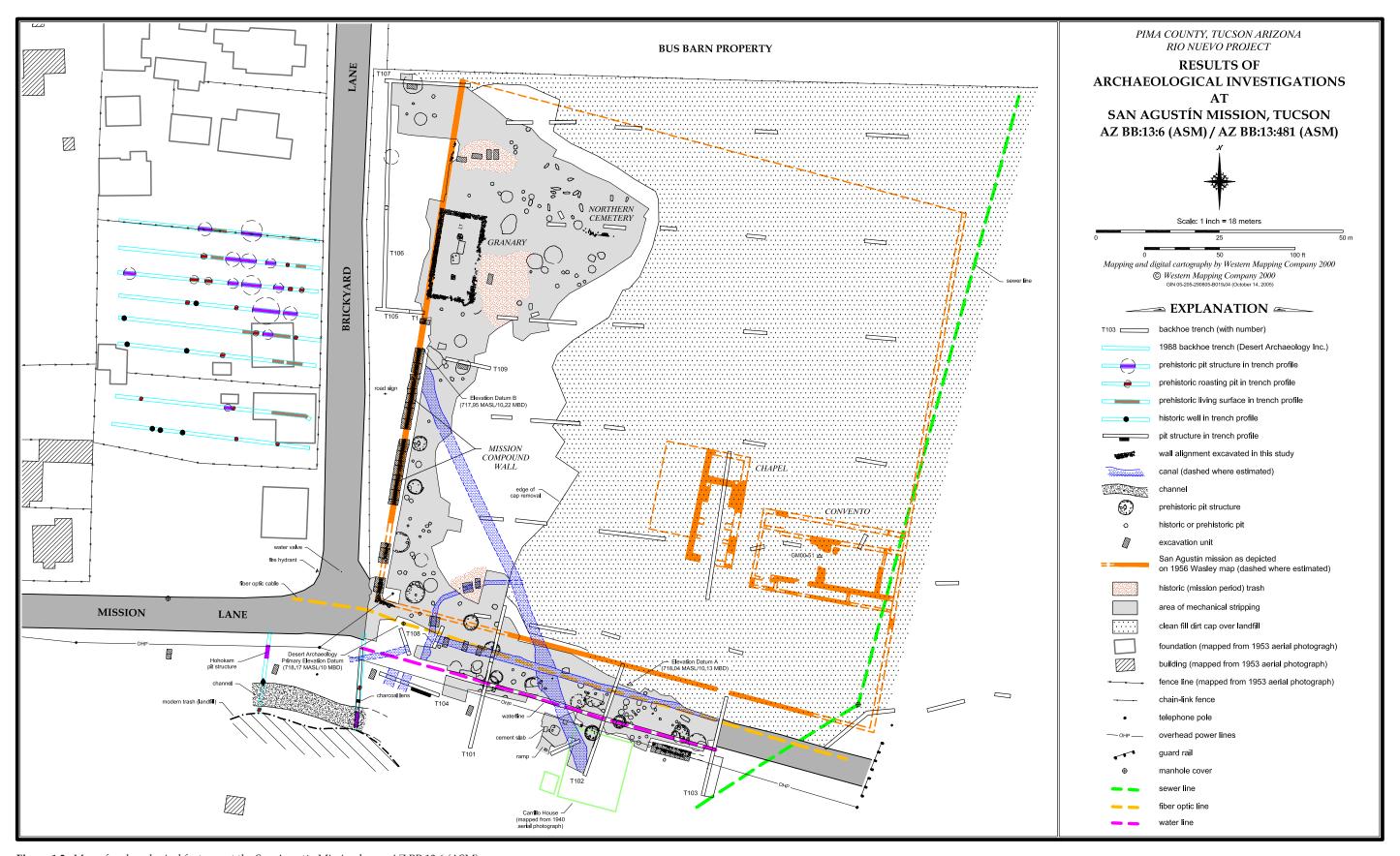


Figure 1.2. Map No. 1 of the cultivated fields in and about Tucson, A.T., 1862 (drafted by John B. Mills).



**Figure 1.3.** Map of archaeological features at the San Agustín Mission locus, AZ BB:13:6 (ASM).

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**Figure 1.4.** A volunteer clears a section of the western compound wall foundation at the San Agustin Mission, AZ BB:13:6 (ASM).

to two courses of rock preserved. Adobe was smeared over the rocks, forming a flat base upon which an adobe wall was built.

A portion of the foundation of the southern wall of the northern mission cemetery was also discovered. Although poorly preserved, the surviving fragment marks the southern boundary of the cemetery. Four burials and nine additional possible burials were present north of the wall. This area was partially excavated between 1949 and 1953, by archaeologists from the Arizona State Museum (ASM). The discovery of intact burials during the Rio Nuevo investigations was particularly important. The exposed graves were left in place, following the burial agreement which required that any mission-occupation burials be left in place. Additional graves are likely present within the backhoe-stripped area and also in the area immediately to the north and to the east, where a large backdirt pile prohibited further stripping.

Three trash dump areas dating to the mission occupation were discovered. Excavation units were placed in each, resulting in the recovery of chopped animal bones, Native American pottery sherds, small Piman arrow points, and several pieces of colorful Mexican majolica pottery. These items provide information about the lifeways of the mission's Native American residents. Three trash-filled pits and one roasting pit were located nearby and also yielded artifacts, animal bone, and charred plant materials. No other Piman cultural features of this period have previously been excavated in Tucson.

Backhoe trenches were cut in the locations of the chapel and the convento, known from historical maps, photographs, and archaeologists' surveying notes. These trenches probed 4.9 m below the modern ground surface, penetrating the recent landfill and reaching about 3.7 m below the Spanish period

ground surface. Only layers of the 1950s landfill were exposed. None of the foundations of these structures have survived.

# Leopoldo Carrillo's House

Leopoldo Carrillo, one of Tucson's founding fathers, purchased the property on the southern side of the mission from Dolores Gallardo in May 1871 (Pima County Deed Record Book 1:527-529). Carrillo was already living at the farm and may have been growing crops there. Carrillo's residency at the property was relatively short, because he soon moved to the eastern side of the Santa Cruz River into what is now called the Sosa-Carrillo-Frémont House, used as a museum by the Arizona Historical Society (AHS).

Two features associated with the Carrillo occupation of the site were discovered. A small, trashfilled pit was excavated that included a few decorated European ceramic sherds, animal bone, and Native American pottery; the pit was filled prior to 1880. An 1880 photograph from Carrillo's backyard shows a ditch running along the northern side of Mission Lane, and this ditch cuts through this earlier pit. No trace of Carrillo's house, which was torn down in the 1940s, was found. However, aerial photographs from the early 1940s allow for its accurate placement on today's topography. The house was visited in 1937, as part of the Works Progress Administration's (WPA) work on the Historic American Buildings Survey in Tucson, and the resulting floor plans, facade drawings, and photographs document the structure in great detail and are available on the Library of Congress website.

The railroad reached Tucson in March of 1880. Chinese laborers laid much of the track, and the 1880 census found over 900 men still building the railroad (Lister and Lister 1989). Several hundred of the men stayed in Tucson and, of these, about 35 became gardeners, growing produce along the Santa Cruz River. Carrillo rented his property to these men, and an 1885 lawsuit ensued after Carrillo and other businessmen arbitrarily cut off water to downstream Mexican farmers north of St. Mary's Road. The Chinese gardeners required a larger share of water for their produce, which included watermelon, strawberries, and cabbages sold in town. Chinese farmers continued using the area as late as the 1930s.

Excavations revealed a hand-dug well and an adjacent pit containing artifacts discarded by the Chinese gardeners (Figure 1.5). These included an iron wok, soy sauce jugs, rice wine bottles, rice bowls, wine cups, fish bones, and cuttlefish bone (from a squid-like creature). Only one other Chinese gardener's



**Figure 1.5.** Archaeologists excavate the well filled with Chinese artifacts, the San Agustin Mission locus, the Clearwater site, AZ BB:13:6 (ASM).

site has been excavated, several blocks west along Spruce Street (Thiel 1997). Analysis of the artifacts and food materials from the Rio Nuevo project provides information about the everyday lives of these men, information that was not typically written down. An exhibit on "Carrillo's Chinese Gardeners" was displayed from 2001 to 2003, first in the Sosa-Carrillo-Frémont House and then in the AHS Museum on Second Street, Tucson.

#### The 1950s Landfill

Work also delineated the boundaries of the 1950s landfill (see Figure 1.3). The western side of the site was partially mined for clay for bricks, and a small amount of trash was discarded in the area. Toward the east, the landfill drops off dramatically and is approximately 6.0-7.5 m deep in the eastern one-third of the mission area. The southern boundary of the landfill begins within 3 m (10 ft) of the northern side of Mission Lane, and again drops steeply downward. Artifacts found within the edges of the landfill included newspapers from November 1957, bottles, dolls, and cloth. Once the top of the landfill was revealed, no attempt was made to excavate. The exception was the area within the convento and chapel, where exploratory trenches were monitored by the city's Department of Waste Management.

#### Future Work at the San Agustín Mission

In sum, archaeological exploration has revealed that a roughly L-shaped area east of Brickyard Lane has survived the twentieth century brick-mining and landfill operations. While a sample of the 206 features was excavated, many other features remain unexcavated and undiscovered. For example, in the area beneath Mission Lane, archaeologists uncovered over 50 archaeological features, including pit structures, outdoor pits, a canal, human burials and cremations, and historic pits. The site has multiple layers of cultural features, and additional features lie beneath the levels uncovered.

Because impacts of construction from the City of Tucson's Rio Nuevo project at the San Agustín Mission were not known during the current project, the archaeological fieldwork conducted during this phase was only an initial exploration of the area to identify the types of archaeological resources present and their states of preservation. Not all of the property was tested, not all identified cultural features were excavated, and not any portion of the property was adequately investigated to allow clearance for construction at this time. However, the impacts of construction on prehistoric and historic cultural resources can be mitigated through further archaeological testing and data recovery fieldwork once the areas of planned construction are identified.

#### **Public Involvement and Open Houses**

A principal goal of the archaeological work was informing and involving the public. Of the 580 person-days expended in investigating the site, 80 person-days (14 percent) were provided by volunteers. Well over 2,000 individuals visited the site during the fieldwork. A tour guide was on duty from 10:00 a.m. to 2:30 p.m. daily, taking approximately 500 persons through the site in small groups. Five groups of grade school and high school students visited the site on specially arranged tours, as did a group of Pima County planners. The official open-house day was rained out; however, approximately 500 people toured the site the previous day, drawn by a newspaper article that incorrectly reported the open-house date.

On 3 February 2001, over 1,000 people toured the site, watching archaeologists at work, examining artifacts and exhibits, viewing a reconstructed pithouse (Figure 1.6) and a computer simulation of the mission, and witnessing demonstrations of spearthrowing and stone toolmaking. Visitors were enthusiastic about the archaeological project and expressed excitement about the proposed cultural park. Most stated an interest in the proposed reconstructions,



**Figure 1.6.** An Early Agricultural period pithouse was reconstructed in its original pit, the San Agustin Mission locus, the Clearwater site, AZ BB:13:6 (ASM).

and many specifically asked that one or more of the pithouses be reconstructed.

Media coverage was consistently high throughout the project. Approximately 12 television news stories were aired (all three major channels, public television, and the City of Tucson channel), and eight newspaper articles appeared in the *Arizona Daily Star* and the *Tucson Citizen*. Newspaper articles and photographs of the project were carried in several other communities, including Phoenix and Dallas. After each media event, a rise in the number of visitors occurred. An article also appeared in the magazine *American Archaeology* (Bawaya 2001).

#### THE MISSION GARDENS

The Mission Gardens are located 122 m west of the San Agustín Mission (Figure 1.7). This area was once surrounded by an adobe wall built on a stone foundation, probably constructed in the late 1790s or early 1800s. An 1862 map of Tucson's fields depicts the wall and a small structure built along its eastern side. Historic photographs from the 1880s and 1890s indicate the wall was partially intact until the end of the nineteenth century.

Testing of the gardens began in October 2001, and continued through December of that year. A series of backhoe trenches were cut, revealing numerous features underlying a shallow plowzone. Unlike the mission, few Early Agricultural period features (only three burials) were located, and these were found along the southern side of Mission Lane between the Mission Gardens and the San Agustín Mission. Two Early Ceramic period pithouses and two Hohokam pithouses were located, as were several Hohokam pits, two caches of stone hoes, and a hearth. Eight

Hohokam burials and cremations were also discovered within the gardens. All the identified burials were excavated and repatriated to the Tohono O'odham Nation. The plowzone contained large quantities of Hohokam artifacts, and many additional features from that horizon were likely destroyed by historic-era plowing (Figure 1.8).

The eastern and southern foundations of the garden walls were completely exposed by the excavations. The rock foundations are mostly intact, and include small buttresses spaced every 12-15 m along the interior of the wall. A probable gate area was discovered along the southern wall. The structure along the eastern wall had four interior column bases and was approximately 17 m long by 8 m wide — very similar to the size of the granary at the mission. Fragments of English transfer-print ceram-

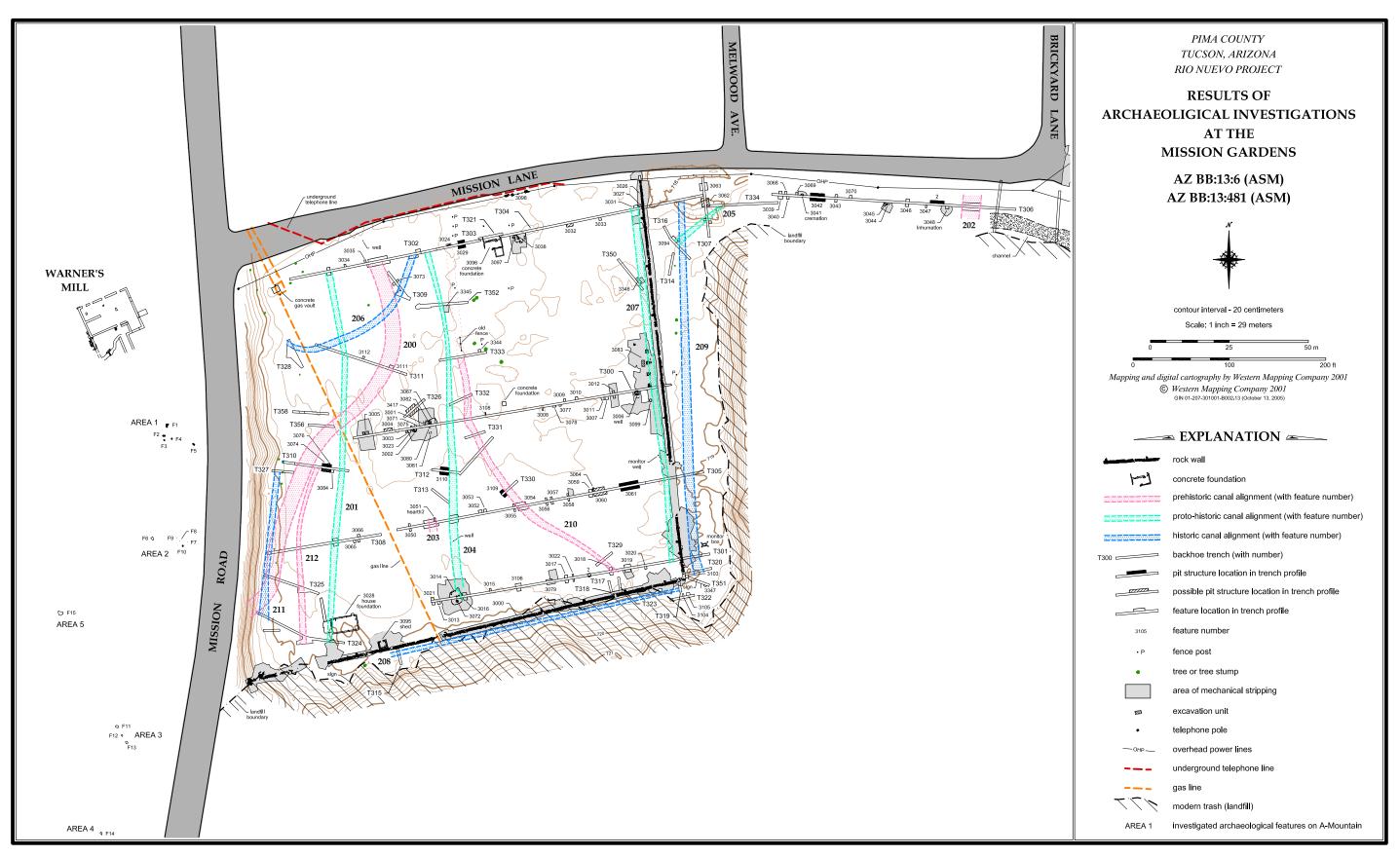
ics suggest that the building was a house and that it was occupied from at least the 1850s to the 1880s. A nearby well was located and partially excavated, and it likely supplied water to the house. Several historicera to modern houses and a shed were also mapped.

A total of 13 prehistoric to historic-era canals were documented within or adjacent to the gardens area. These canals include the largest Hohokam canal found, to date, in the Tucson Basin. This canal was 7.95 m wide and 2.20 m deep, large enough to divert the entire flow of the Santa Cruz River at that time. Four other canals were much smaller, most of them running roughly south to north. Four Protohistoric period canals also crossed the area from south to north. Four Historic era canals were identified — two crossing the western interior of the gardens and two running along the exteriors of the southern and eastern garden walls.

During fieldwork, a tour guide took visitors, including many school groups, through the site. An open house at the end of the project attracted several hundred people. An article describing the experience of a volunteer on the project appeared in *Smithsonian* magazine (Lichtenstein 2002).

#### **Future Work at the Mission Gardens**

Many of the features found at the gardens were located directly beneath the shallow plowzone. These included several of the Hohokam burials. The identified prehistoric burials were scattered across the property. Dozens of additional burials are likely present within the garden walls and undisturbed areas outside the walls. Any ground-disturbing activities at this location will have to be monitored by archaeologists. If the area is going to be used as a



**Figure 1.7.** Map of archaeological features at the Mission Gardens locus, AZ BB:13:6 (ASM).

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**Figure 1.8.** Hohokam pottery sherds found in the plowzone at the Mission Gardens locus, AZ BB:13:6 (ASM).

demonstration or community garden, it is recommended that additional soil be added to the area to prevent disturbance of archaeological features during routine plantings and plowings.

#### THE CONGRESS STREET LOCUS

The archaeological remains located west of I-10, south of Congress Street, and north of the bus barn are referred to as the Congress Street and Brickyard loci of the Clearwater site (Figure 1.9). The first stage of fieldwork was conducted in the summer and fall of 2001, and a second stage was carried out during the summer of 2002. This work was designed to mitigate the impacts of construction during the city's Rio Nuevo Project, clearing the area for building activities.

#### A 4,100-year-old Farming Settlement

The earliest occupation preserved in the Congress Street locus was a small farming settlement buried in a layer of alluvium (Stratum 504) approximately 1.5 m below the present ground surface (Figures 1.10-1.11). In one area, a cluster of seven pithouses and numerous storage pits were exposed and excavated. These features contained grinding tools made from river cobbles, flaked stone dart points resembling the San Jose or "Armijo" style of the Colorado Plateau, Cortaro points, a flat stone used for processing ochre, a few pottery sherds made of untempered, low-fired clay and decorated with incised patterns, fired-clay figurine fragments, and charred maize remains. Several maize samples have provided radiocarbon dates of roughly 2100 B.C. (calibrated). The pit structures and the maize are among the oldest that have been found in the Southwest, and the pottery

and figurines are the oldest fired ceramics known from the region.

# A 3,500-year-old Canal

A canal and several pits were identified as originating in the layer of alluvium (Stratum 503) overlying the 4,100-year-old farming settlement (see Figure 1.10). Radiocarbon dates on plant remains from two nearby pits indicate the canal was built around 1500 B.C. This is the oldest known canal north of central Mexico. It shows that canal irrigation was used by some of the earliest farmers in the Sonoran Desert, and it extends the beginning of canal technology back to 1,500 years before the oldest known Hohokam canal in southern Arizona.

#### A Cienega Phase Village

Beneath the historic brick factory (see below) in the Brickyard locus, and in some other portions of the Clearwater site, remains of an early farming village were found (Figure 1.12). The village was occupied from about 2,600-2,400 years ago, during the Early Cienega phase. A smaller area of this Cienega phase occupation was investigated in 1995 (Diehl 1997). During the Rio Nuevo project, 22 pithouses, numerous outdoor pits for storage and cooking, and four burials were found in the area beneath the brick factory. Several of the pithouses appear to have been arranged in a ring around a shared courtyard. A large, deep, and carefully constructed pithouse that may have been a ceremonial building was nearby. It is one of a small number of examples now known for this phase, which are the earliest "kiva"-like buildings in the Southwest. In other areas, another five burials and four canals dating to this phase were found. Two canals passing west of the village have been radiocarbon dated to about 2,500 and 2,100 years old. Many of the burials were clustered along one of the canal alignments, outside the habitation area, in the manner of a cemetery.

#### Later Prehistoric Canals and Fieldhouses

In the area of the historic brick factory, two pithouses and a roasting pit dating to the Early Ceramic period (circa 1,900-1,500 years ago) were found. Dating to later Hohokam phases (between circa 1,500-500 years ago) were eight canals, three isolated pithouses (probably fieldhouses located away from villages), and one burial in the Clearwater site area.

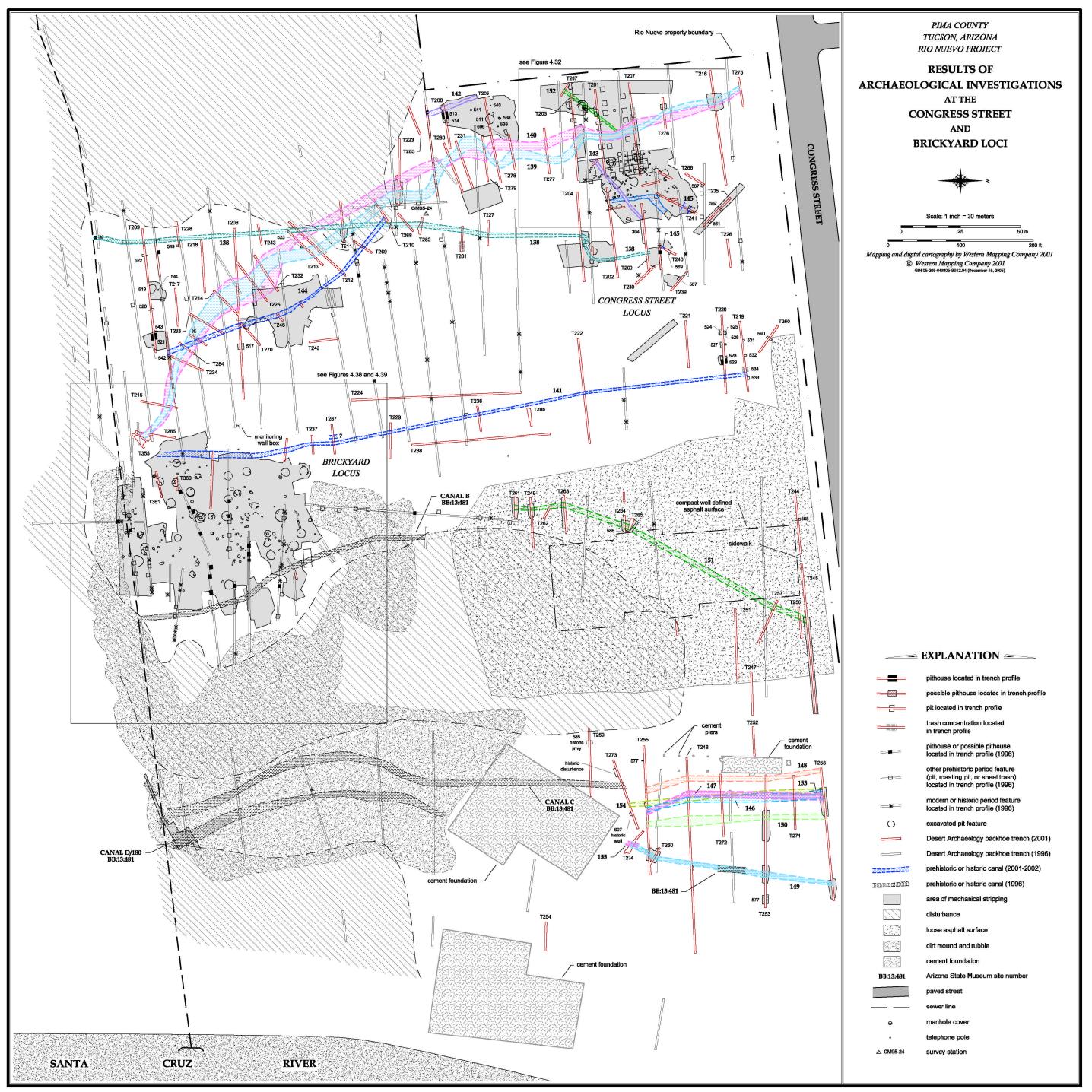


Figure 1.9. Map of archaeological features at the Congress Street and Brickyard loci, the Clearwater site, AZ BB:13:6 (ASM).

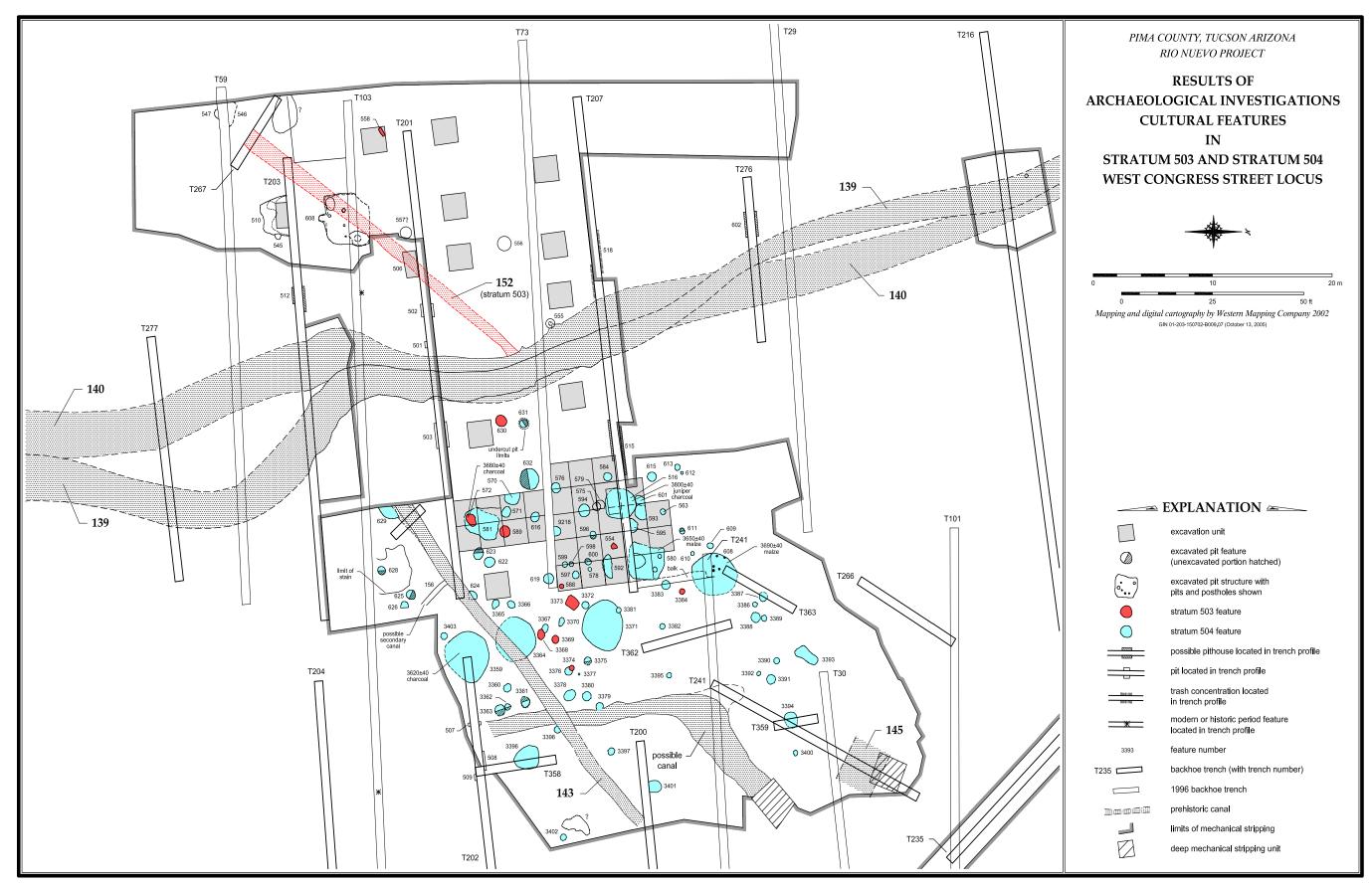


Figure 1.10. Map of archaeological features in strata 503 and 504, Block 5, Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM).

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**Figure 1.11.** Archaeologists uncover the remains of a 4,100-year-old farming settlement at the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM).

# A Long Sequence of Canals

In addition to the numerous prehistoric canals, seven historic canals, including the Acequia Madre Primera shown on an 1862 map of Tucson's fields, were found (Figure 1.13). With the most recent canals built to convey pumped groundwater during the early twentieth century, this represents 3,500 years of continuous irrigated agriculture in this part of the floodplain. The canal dating to 3,500 years ago is the oldest canal that has been found north of Mexico.

For most of the last 4,000 years, the reliable springs, river flow, and high water table in this location sustained an oasis that was the focus of habitation and irrigated agriculture. This continued until the water table dropped and the river channel became incised during the late nineteenth century, largely due to drought and modern human impacts such as groundwater pumping, overgrazing by cattle, and construction of very large canals.

# The Tucson Pressed Brick Factory

The Tucson Pressed Brick Factory was established in the 1890s by the architect Quintus Monier. The factory was in operation until 1962, and it provided bricks for many important structures in Tucson, including numerous University of Arizona buildings. Portions of the brick factory were discovered in 1995 during the A-Mountain Drainage project (Diehl 1996). Additional portions were discovered in the summer of 2002, including foundations of scove kilns, drying racks, the pug mill, offices, outhouses, and borrow pits (Figure 1.14). Pieces of machinery and samples of bricks, cornice pieces, and tiles were recovered.

#### **Public Outreach**

Visitors were invited to tour the Clearwater site on two occasions, once after the exposure of the brick factory features and again after the prehistoric features were excavated. Approximately 400 people came to the site to see the brick factory, including many former brickworkers and family members, some of whom brought photos and other items from the factory. The second open house coincided with the nearby Fiesta de San Juan, and despite the extremely hot weather, drew some 200 visitors.

# THE TUCSON PRESIDIO

The Tucson Presidio was established in August 1775, by Captain Hugo O'Conor of the Spanish military. Soldiers moved north from Tubac the following year, and the fort was first enclosed with a wooden palisade, later replaced by a 2.4- to 3.7-mhigh adobe wall that was approximately 213 m on each side. The presidio remained in use until the American entrance into Tucson in March 1856, and was quickly dismantled afterward. The last standing segment of the wall was torn down in 1918. In the years since then, efforts have been made to mark and locate portions of the walls. City Engineer Donald Page discovered the eastern and southern walls when the 1929 Pima County Courthouse was being constructed. This wall was relocated by staff from the Center for Desert Archaeology in 1992, and is marked with a polished granite strip set into the central sidewalk of the courthouse courtyard. The western wall was found in the western lawn of City Hall by the Center for Desert Archaeology in 1998 and 1999 (Thiel 2004; Thiel et al. 1995).

## **Courthouse Testing**

Archaeological work has been conducted in three areas within the boundaries of the Tucson Presidio as part of the Rio Nuevo Archaeology project. The first project consisted of the excavation of two 2-m by 1-m test units in the area on the eastern side of the colonnade of the 1929 Pima County Courthouse, in an area that was to be relandscaped. Undisturbed deposits were found beneath fill associated with the courthouse construction. The only feature located was the rock and mortar foundation of the 1883 City Firehouse. The work suggests other intact features are likely to be present, but deeply buried, in this general location.



**Figure 1.12.** Map of prehistoric archaeological features in the Brickyard locus, the Clearwater site, AZ BB:13:6 (ASM).

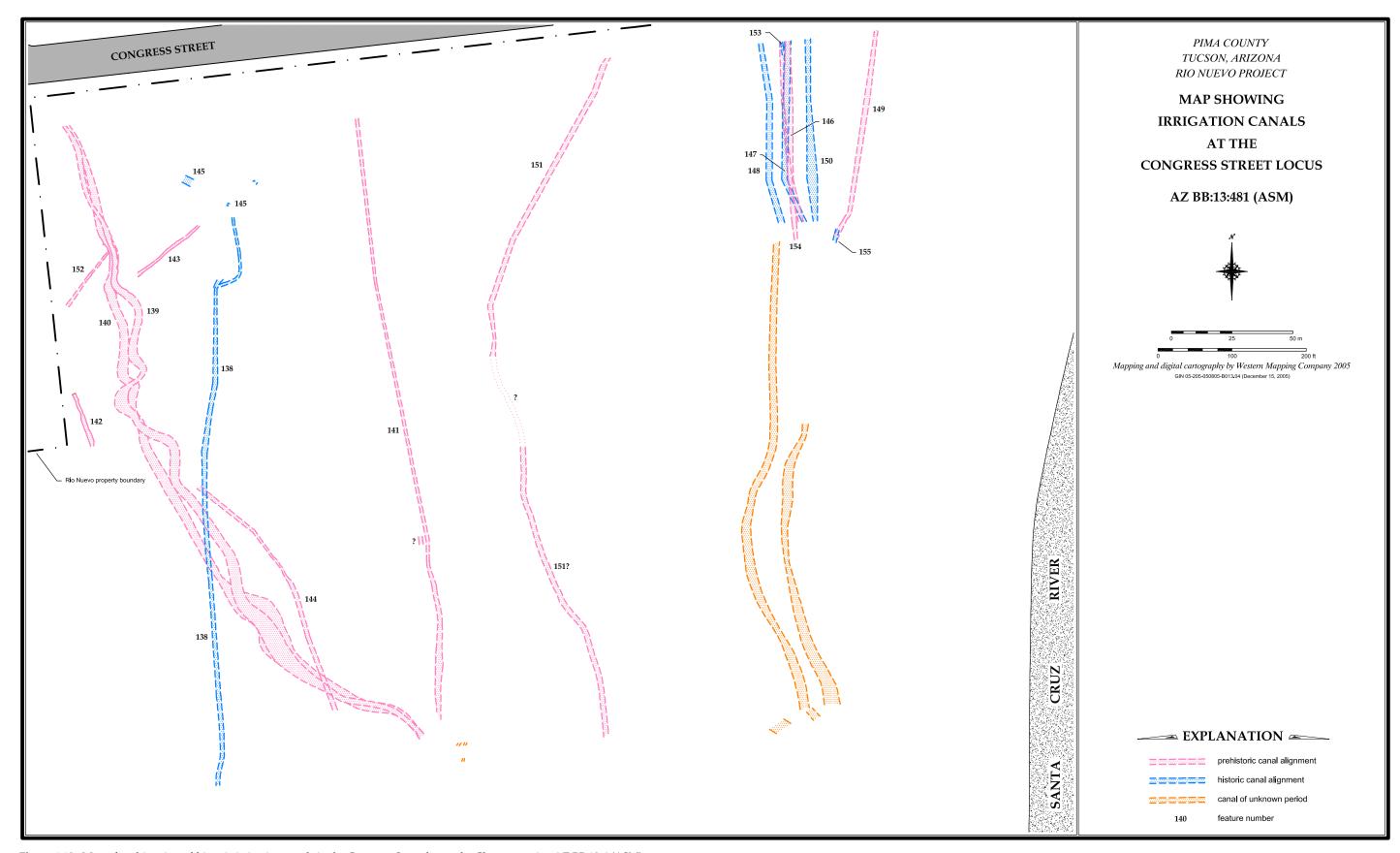


Figure 1.13. Map of prehistoric and historic irrigation canals in the Congress Street locus, the Clearwater site, AZ BB:13:6 (ASM).

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## **Art Museum Testing**

In January 2002, work shifted to the area between the Edward Nye Fish and Hiram Stevens houses on Main Street (Figure 1.15). Plans by the Tucson Museum of Art to enclose this area and to install a drainpipe led to the excavation of the drainpipe trench by archaeologists. A room constructed in the 1860s once stood at this location; it was torn down in the early 1900s. Remnants of its adobe foundations were quickly found. A series of floors and adobe walls dating to the presidio occupation was beneath these foundations (Figure 1.16). Walls from two rooms were found, probably built against the western wall of the presidio. The earlier room had a thin adobe wall on a rock foundation. A fireplace was discovered in the northwestern corner of the room, with a sample of the ash and charcoal yielding wheat and saguaro cactus seeds.

This room was demolished and a much thicker adobe-walled room constructed on top. The function of this later room is unknown, and, after demolition of the presidio wall, the room was partially demolished as well. One wall was reused for a probable corral or boundary wall, depicted on the 1862 map of Tucson. Many presidio-occupation artifacts were recovered from soil layers in the trench, including Mexican majolica, Native American pottery, a crucifix, coins, buttons, lead musket balls, gun flints, and animal bones. The western presidio wall could likely be discovered if excavations could proceed beneath the sidewalk or the eastern edge of Main Street.

#### A Surprise Beneath a Parking Lot

In December 2002 through February 2003, efforts turned to the parking lot at the southwestern corner of Church Avenue and Washington Street (Figure 1.17). This area was previously partially excavated in 1954, by University of Arizona archaeologists under the direction of Dr. Emil Haury and Alan Olson. They discovered a wide adobe wall that turned a corner, which they thought was the northeastern corner of the presidio. A Hohokam pithouse, dating to circa A.D. 900, was found to lie beneath this wall. After the excavation was completed, the area was backfilled and became a parking lot (Olson 1985).

During the current testing project, only a limited number of individual parking spaces could be explored because the lot was still needed for parking after the project was completed. Backhoe operator Dan Arnit removed the asphalt and then switched to his wide scraping blade. His first scrape in the area explored in 1954 revealed the

wide adobe brick wall. The area next to the wall was then emptied of backfilled dirt, and most of the Hohokam pithouse was uncovered.

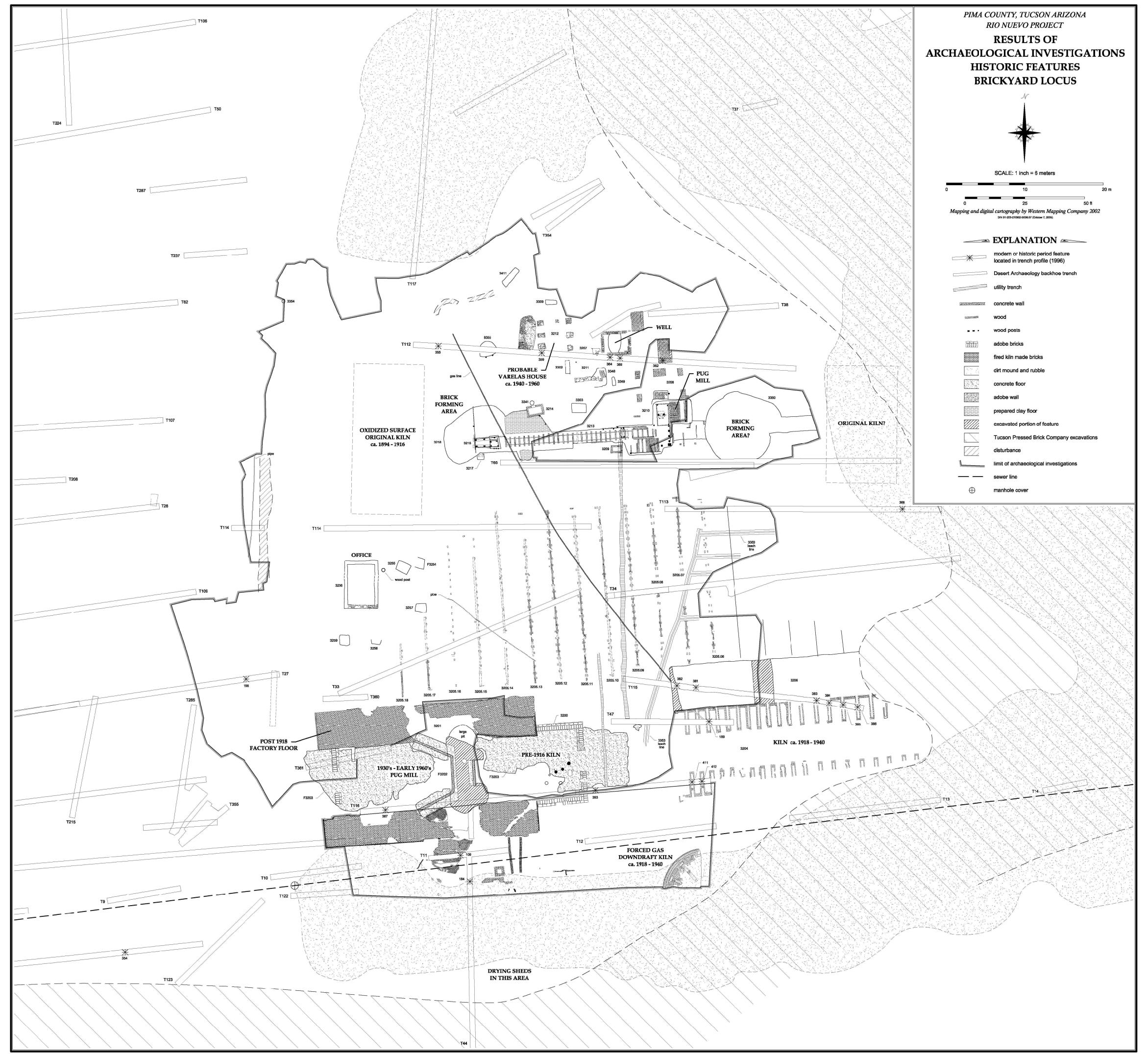
As the pithouse was cleared by hand, archaeologist Avi Buckles joked, "Are we going to find a time capsule?" It didn't seem possible, but when he cleared out one of the floor pits within the house, he discovered an 8-inch-tall pickle jar, lying on its side (Figure 1.18). Through the glass could be seen a folded envelope with a return address from Tucson Newspaper, Inc. George Chambers, who had organized the 1954 dig, had been the business manager for this company. Two days later, an opening ceremony was held, and after the jar lid was removed, Mayor Bob Walkup reached in and pulled out the envelope. The letter inside, on George Chambers' letterhead, stated: "To whomever may be as much concerned as I: and more successful in arousing public interest in this historic site." Also inside the jar was a copy of the Arizona Daily Star from 26 December 1954, which featured a story on the backfilling of the site, and three 1954 coins: a penny, a nickel, and a dime.

#### The Northeastern Tower

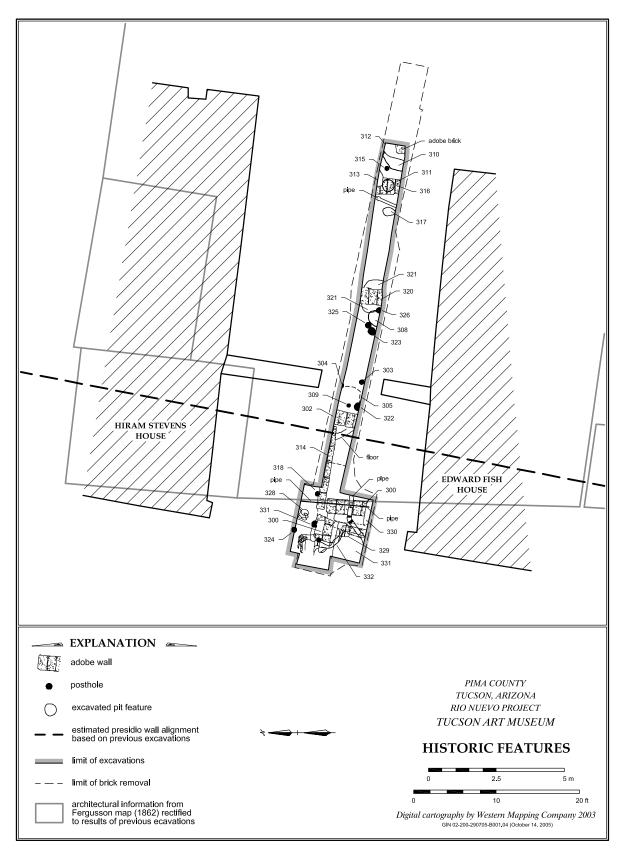
Archaeologists soon moved into previously unexplored areas. An additional segment of the wall was found south of the wall and pithouse. However, instead of continuing south, which is what the outer wall of the presidio should have done, it turned and headed to the west. Similarly, the northern wall found in 1954 was 15 m long before turning to the south. This structure was not the actual presidio wall; instead, it was a two-story, corner *torreón* (tower). The eastern wall of the presidio had been found in 1992, and its location projected across the parking lot.



**Figure 1.15.** Archaeologists document adobe walls in a trench between the Edward Fish and Hiram Stevens houses along Main Avenue, the Tucson Presidio, AZ BB:13:13 (ASM).



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**Figure 1.16.** Map of historic archaeological features between the Stevens and Fish houses, Tucson Museum of Art, the Tucson Presidio, AZ BB:13:13 (ASM).

Archaeologists eventually found a small intact segment of the eastern wall, within 41 cm of where it was expected. The wall was 56 cm wide, in contrast to the tower foundations, which were 122 cm wide. The thicker walls were needed to support the height of the 6-m-tall tower. Inside the *torreón*, an adobe and stone post support was found, probably for a wooden walkway that lined the inside of the structure. Soldiers would have stood on the walkway and peered through the tower's gunports, allowing them to fire their muskets down the length of the wall.

A number of borrow pits, dug to mine dirt to make adobe, were found inside the presidio. These small pits were filled with trash, including: English ceramics from the 1820s to the 1840s; jars, tortilla griddles, bowls, and cups made by local Native Americans; brightly colored Mexican majolica pottery; musket balls and gun flints; beads; buttons; and a bone hair comb. Bones of cattle, sheep, and chickens indicate the presidio residents primarily ate domesticated animals. Charcoal recovered from flotation samples have revealed the types of plants eaten or used for firewood and building materials. Altogether, these items form the largest collection of presidio-occupation artifacts found since the excavations conducted during Tucson's Urban Renewal project, and they provide information that has not survived in written records about the lives of Tucson's presidio soldiers and their families.

#### Other Parking Lot Finds

Beneath the presidio-occupation features were four other pithouses, dating from the Hohokam Pioneer and Colonial periods (A.D. 500 to 950). At least

six other pithouses have been found within 305 m of the parking lot, all dating to the same timespan. This suggests a small, relatively long-lived village was present on the eastern terrace above the Santa Cruz River floodplain, in what is now downtown Tucson. Residents of the village likely walked down from the terrace to care for their fields and canals in the floodplain.

Features postdating the presidio were also common in the parking lot. Archaeologists excavated two parking lots west of the 1954 dig area. In one corner, they found a borrow pit dating to the early 1900s, which yielded infant-food bottles, ceramic dolls, and a yellow-and-blue chamber pot and lid. In the opposite corner, an outhouse from the same period was found. Unfortunately, bottle

hunters had dug into the area before the parking lot had been built, removing artifacts and destroying the upper portion of the feature.

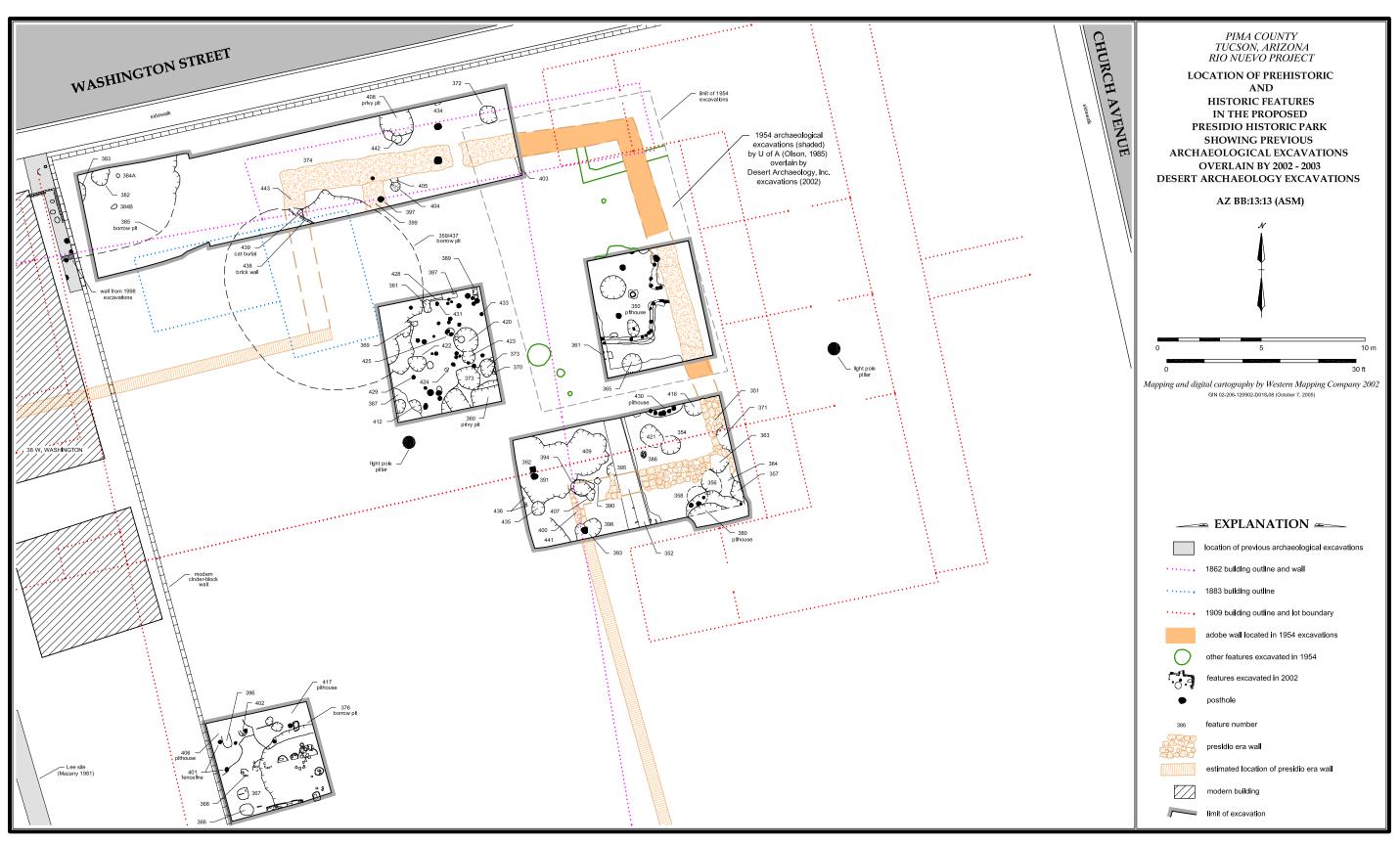
The archaeologists then began stripping away soil layers in the 5.5-m by 4.6-m area. They came down onto a series of hard layers, formed where people had walked or purposely compacted the area. A series of postholes were found, once part of ramada-like structures built against the presidio wall in the 1850s and 1860s.

At the southwestern corner of the parking lot, workers excavated an area that contained a massive borrow pit filled with trash dating from the late 1870s to 1890s, probably dug for material to build the homes constructed on the block during the late nineteenth century. Large numbers of artifacts were found, including pieces of jewelry, a reconstructible Mexican ceramic canteen, marbles, and numerous tin can fragments. A pit found along the northern tower wall turned out to be a second outhouse pit, this one undisturbed by bottle hunters. When the upper fill was removed, medicine bottles, syringes, buttons, and even a kitchen sink were found. These American Territorial period artifacts were discarded by the Mexican, Anglo, and Chinese residents of the lot, individuals who lived in an adobe house and an apartment house from the early 1880s until the 1910s. After about 1915, trash collection began in Tucson, and most garbage was hauled to the dump. The artifacts recovered provide a good selection of items used in everyday life during this timespan.

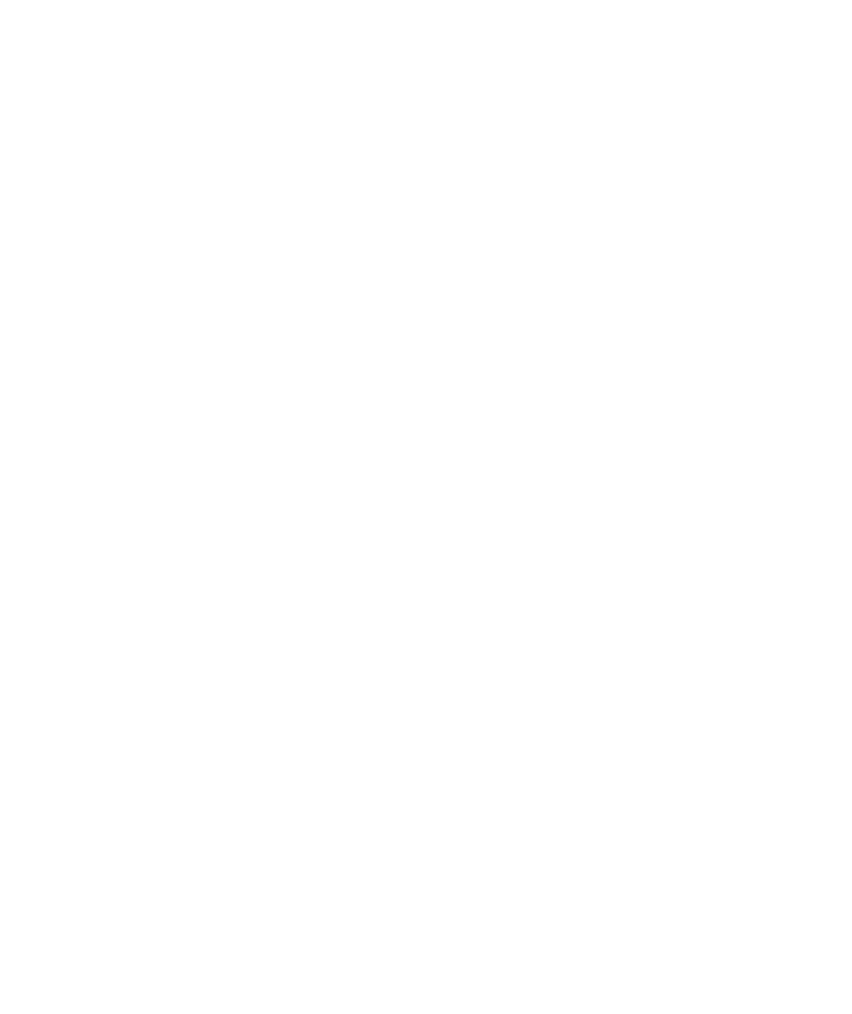
A tour guide was on duty throughout the project. Approximately 1,500 people visited the site, with 500 attending a weekend open house, despite relatively poor publicity.



**Figure 1.18.** An archaeologist removes the time capsule from a pit inside a Hohokam pithouse, the Tucson Presidio, AZ BB:13:13 (ASM).



**Figure 1.17.** Map of archaeological features at the Tucson Presidio, AZ BB:13:13 (ASM).



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#### **Future Work at the Tucson Presidio**

Historic and prehistoric era features and artifacts are well preserved beneath the parking lot. The best-preserved section of the Tucson Presidio is probably within this area. Any ground-disturbing activities in this area, such as the construction of new walls for the Tucson Origins Presidio Park, should be preceded by archaeological excavations. Many visitors to the site hope to see portions of the presidio tower wall and the underlying pithouse exhibited in some manner in the park.

#### **Historical Research**

In addition to archaeological fieldwork, Desert Archaeology has been conducting historical research. Family histories of all individuals who lived in Tucson prior to 1856 have been compiled and will be published in the near future.

# **Report Organization**

Summary data on the archaeological features, artifacts, and historical data uncovered during the Rio Nuevo project are presented in this report. Each chapter is self-contained, with text, figures, tables, and reference materials. All project materials, including artifacts, samples, and fieldwork records, are curated at the Arizona State Museum (ASM).

#### Acknowledgments

A large number of people participated during the course of the project. Luis Gutierrez, former City of Tucson City Manager, conceived the use of tax increment financing to bring tax money back to the community for revitalization measures. Proposition 400 was placed on the ballot, and passed by a large margin in November 1999. The City of Tucson asked for proposals to conduct archaeological and historical research, and Desert Archaeology, Inc., submitted the winning proposal.

John Jones, the first director of the Rio Nuevo Project, and Karen Thoresen, the Assistant City Manager, were instrumental in helping the archaeological work. Marty McCune, the City of Tucson's Historic Program Administrator, served as the city's point person for the project. Her assistant, Kristi Jenkins, provided valuable assistance, as did J. T. Fey.

Other City of Tucson personnel who helped make the projects run smoothly included John Updike, Lucy Amparano, Chris Leighton, and Mike Carson.

The archaeological field crew excavated in a variety of conditions. The crew consisted of Richard "Sonny" Antone, Jesse Ballenger, Patti Bell, Andrew Bockhurst, Avi Buckles, Brandy Ciaccio, Robert Ciaccio, Coya Coleman, Michael Cook, Patti Cook, Edward Corella, Frances Cote, Jennifer Dejong, Allen Denoyer, Steve Ditchler, John Fino, Ned Gaines, Diedre Hayden, Gloria Inserra, Adam Kiel, Tom Klimas, Michael Lindeman, Dottie Ohman, Fred Perry, Sara Plescia, Mary Prasciunas, Paul Rawson, Stacy Ryan, Ray Sanchez, Karl Seitz, Gaylen Tinsley, Catherine Treat, Ochirkhuyag Tseveendorj, Sandra Wadsworth, Greg Whitney, and Caramia Williams. Dan Arnit, owner of Innovative Excavating, performed most of the backhoe work for the project.

At times, specialists were asked to handle certain aspects of the excavation or analysis. John McClelland and Bob Dayhoff coordinated the excavation and analysis of human remains. Fred Nials provided information on site geomorphology. Western Mapping Company (formerly Geo-Map, Inc.) provided essential mapping assistance. Rachel Diaz de Valdez and Felicia Coppola-Pavao assisted in the analysis of the zooarchaeological materials. Charla Hedberg and Stacy Ryan conducted preliminary analysis of Native American ceramics. Stacy Ryan and Caramia Williams helped analyze historic artifacts.

Desert Archaeology's proposal called for an extensive public education program. Personnel from the Arizona Historical Society, supervised by Dr. Anne Woosley, Executive Director, and Thomas H. Peterson, Director of the Southern Arizona Division, spearheaded the effort to bring the Rio Nuevo Project to local residents and tourists. Staff members of the Education Department - Gwen Harvey, Kyle McKoy, Brooke Myers, and Emily Spargo-Guerrero – prepared a teacher's guide and elementary classroom activities book, hosted several lecture series, and mounted an impressive exhibit of Rio Nuevo archaeology. The construction of the exhibit required the skills of Kevin Mills and Leslie Roe, who built new cases, prepared elaborate enlarged photographs, and created an interactive children's backhoe. An earlier exhibit, "Carrillo's Chinese Gardeners," which opened at the Sosa-Carrillo-Frémont House Museum, was designed by curator Julia Arriola. Bruce Hilpert, Beth DeWitt, and Annamarie Schaecher of the Arizona State Museum coordinated efforts to bring the Rio Nuevo project to local grade schools.

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