
FEATURE DESCRIPTIONS: PART 5. TUCSON PRESIDIO, AZ BB:13:13 (ASM)

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Archaeological work conducted during the Rio Nuevo Archaeology project resulted in the discovery of hundreds of features—areas in which human activities took place. Descriptions of excavated features and summarized data on unexcavated features are presented in this chapter. Descriptions of human burials found during the project are provided in Chapter 18 (this volume).

Work during this project was conducted at four different archaeological sites. The San Agustín Mission, Mission Gardens, Brickyard, and Congress Street loci were located at the Clearwater site, AZ BB:13:6 (ASM), on the western side of the Santa Cruz River. AZ BB:13:481 (ASM) were the Prehistoric, Protohistoric, and Historic era canals, ditches, and a spillway, also located on the western side of the Santa Cruz River. The Tucson Presidio has been designated AZ BB:13:13 (ASM), and the site includes both prehistoric- and historic-era features. Finally, a portion of a historic-era residential block on the northern side of Clark Street and east of the Interstate 10 (I-10) frontage road was designated AZ BB:13:735 (ASM).

The feature descriptions in this chapter are grouped by locus, except for canals, which are described in Part 6 and which are grouped by time period. All site numbers in this chapter are Arizona State Museum (ASM) numbers. Radiocarbon dates are reported in both uncalibrated radiocarbon years before present (b.p.), and in calibrated calendar years at the 1-sigma range of probability. Excavated and unexcavated features are listed, by site/locus and time period, in Table 4.1 (see Part 1 of this chapter).

Excavations within the Tucson Presidio were conducted at three locations (Figure 4.68). One phase included two units on the eastern side of the 1929 Pima County Courthouse and a long trench between the historic Edward Nye Fish House and the neighboring Hiram Stevens House. More extensive excavations took place at the northeastern corner of the presidio beneath a parking lot as part of another phase.

TEST EXCAVATIONS ALONG THE EASTERN SIDE OF THE PIMA COUNTY COURTHOUSE

Previous excavations in the courtyard area of the Pima County Courthouse in 1992 uncovered deeply stratified deposits dating to the presidio occupation (Thiel et al. 1995). Pima County plans to remove a pair of curving sidewalks along the eastern side of the courthouse for installation of new landscaping and irrigation pipes. This led to a small archaeological testing program. Two 2-m by 1-m excavation units were dug in May 2001. The unit on the southern side of the sidewalk was excavated in seven levels, reaching caliche at about 1.4 m below current ground sur-

face. Fill and construction/demolition debris from the 1929 courthouse was found from the surface to 75 cm below the surface. Beneath this was the historic lawn surface from the 1881-1929 period, approximately 24 cm thick. Beneath the lawn was a 23-cm-deep fill layer from when the 1881 courthouse was constructed. The last level consisted of a 15-cm-deep pre-1881 layer of dark brown clayey sand with a horseshoe, Native American sherds, and two pieces of hardpaste earthenware ceramics. Caliche was found at the base of this layer, dipping downward to the north and east.

The second unit was excavated north of the existing sidewalk. Seven levels were also excavated in this unit. Level 1 was landscaping material put in place in 1992. Levels 2 and 3 contained fill material associated with construction of the 1929 courthouse. Within Level 3, a live electrical line was discovered, preventing excavation of half the unit. The next level, Level 4, contained more construction and demolition debris, while Level 5 was a layer of caliche that may have been dumped in the area during courthouse construction. Beneath this, in Level 6, several rocks cemented together with mortar were found. This represents a wall foundation for the 1883 Tucson City

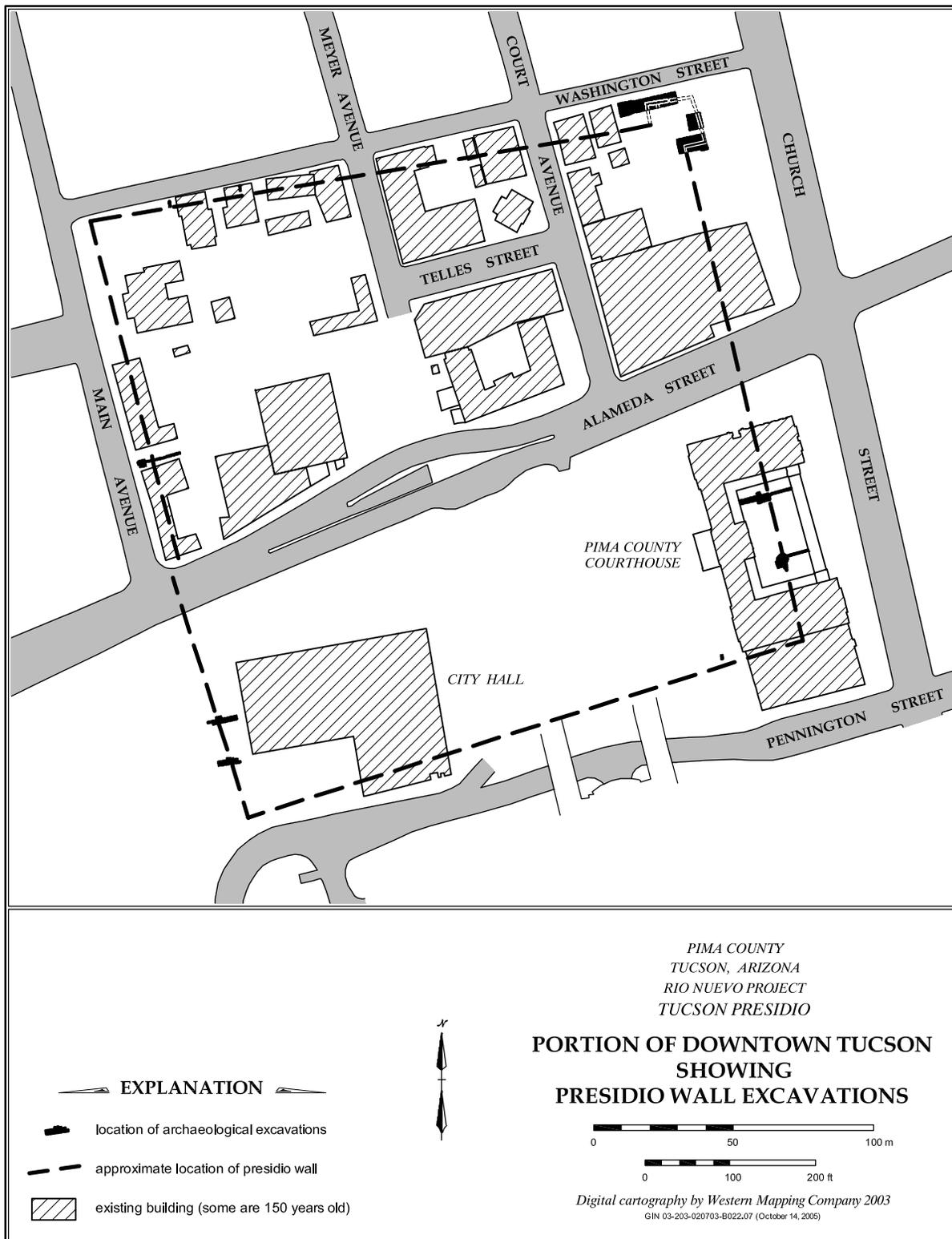


Figure 4.68. Location of excavation areas within the Tucson Presidio, AZ BB:13:13 (ASM).

Firehouse. The 1992 excavation uncovered the northern courtyard wall from this firehouse (Bayman et al. 1995:127); the firehouse was torn down in 1929.

Although sterile caliche was not encountered, excavation was terminated at the base of Level 7, at roughly 1.2 m below the modern ground surface.

The limited test excavations in the area east of the Pima County Courthouse indicate that undisturbed archaeological resources are present, deeply buried beneath fill layers associated with the 1929 construction of the building. The improvements were subsequently made along the front of the courthouse, since plans did not include any deep subsurface disturbances. It is likely that a variety of Prehistoric era, presidio-occupation, and American Territorial period archaeological features are present between the courthouse and Church Avenue, and probably extend beneath Church Avenue. Future ground disturbance in these areas should be preceded by test excavations and/or monitoring.

TEST EXCAVATIONS AT THE FISH-STEVENS-DUFFIELD HOUSE

Plans for construction of a room bridging a gap in the National Register-listed Fish-Stevens-Duffield House led to archaeological excavations at the historic-era house in February 2002. The Tucson Museum of Art plans called for placement of a long drainage pipe through the center of the area, removing water from an inner courtyard out to Main Street. Six excavation units of varying size, totaling 14 m in length, followed the alignment of the pipe. All the trenches were 80 cm wide. When the project was completed, the western end of the dig was expanded to provide additional details about several adobe structures discovered in that area (Figures 4.69-4.70).

The excavations revealed a complex set of soil layers, compact surfaces, and adobe walls, in addition to a number of other features. This situation is similar to what was uncovered during excavations within the Pima County Courthouse courtyard (Thiel et al. 1995) and in recent work conducted in the lawn on the western side of the Tucson City Hall. Preservation of features was excellent, and very little disturbance was found. Much of the area below the house and its adjacent courtyard are in a similar condition.

Thirty-three archaeological features were identified during the project (see Table 4.1 in Part 1). Most of the features predate construction of the adobe room in this location in the late 1860s and date to the occupation of the Tucson Presidio (1775-1856). More detailed descriptions of the features are presented below.

Methods

Ten excavation units were dug, for a total of 18 m². Work began with removal of the modern brick patio, set in place in 1980. Below the patio was a bed of sand that was removed without screening. A zone

of post-1909 soil was under the sand, which was removed mostly without screening. All soil from below this disturbed zone was screened through ¼-inch mesh. All artifacts were collected, sorted by material type, and returned to the laboratory for processing. Flotation samples were taken from a variety of contexts. Plan view and cross-section drawings were made after each feature was uncovered, and profiles were drawn from a variety of sidewalls. Features and profiles were extensively photographed. Elevations were taken from three datum stakes, one of which was arbitrarily set at elevation 10.00, with the other two stakes measured in using a level to provide comparable elevations. These stakes, the unit corner nails, and profile nails were shot in using a computerized surveying device by Western Mapping Company (formerly Geo-Map, Inc.) personnel, who subsequently prepared plan view and profile maps.

After the project was completed, the entire trench was lined with a geotextile to help preserve the features in place. Small pea gravel was then poured into the fill to help stabilize the adobe walls, as well as to allow adequate drainage through the area. Construction of the two rooms connecting the Fish and Stevens Houses was completed in the summer of 2002.

Archaeological Features

Work at the Fish-Stevens-Duffield House was atypical for a historical archaeology project in Tucson in that well-preserved, deeply stratified deposits were present throughout the entire area. Most historic-era sites in the downtown area have shallow deposits, or are disturbed by construction and demolition activities or utility trenches. Exceptions to this rule have included the courtyard of the Pima County Courthouse, the area on the western lawn of City Hall, and the northeastern corner of the presidio. The following feature descriptions for those features found during the Museum of Art project begins with the oldest features and progresses to the most recent.

Early Presidio Features

The earliest features documented in the trench were found resting on, or cutting into, the underlying natural sediment, which was a consolidated tan silty sand with a high gravel content. This sediment was documented in Units 201, 203, and 206. The sediment appears to be culturally sterile, and prehistoric features do not appear to be preserved in this area.

The earliest structure, Feature 331, was found in the west side of the trench (Figures 4.71-4.72). The portion exposed consisted of an L-shaped adobe brick wall identified in excavation Units 200, 217, and 229.

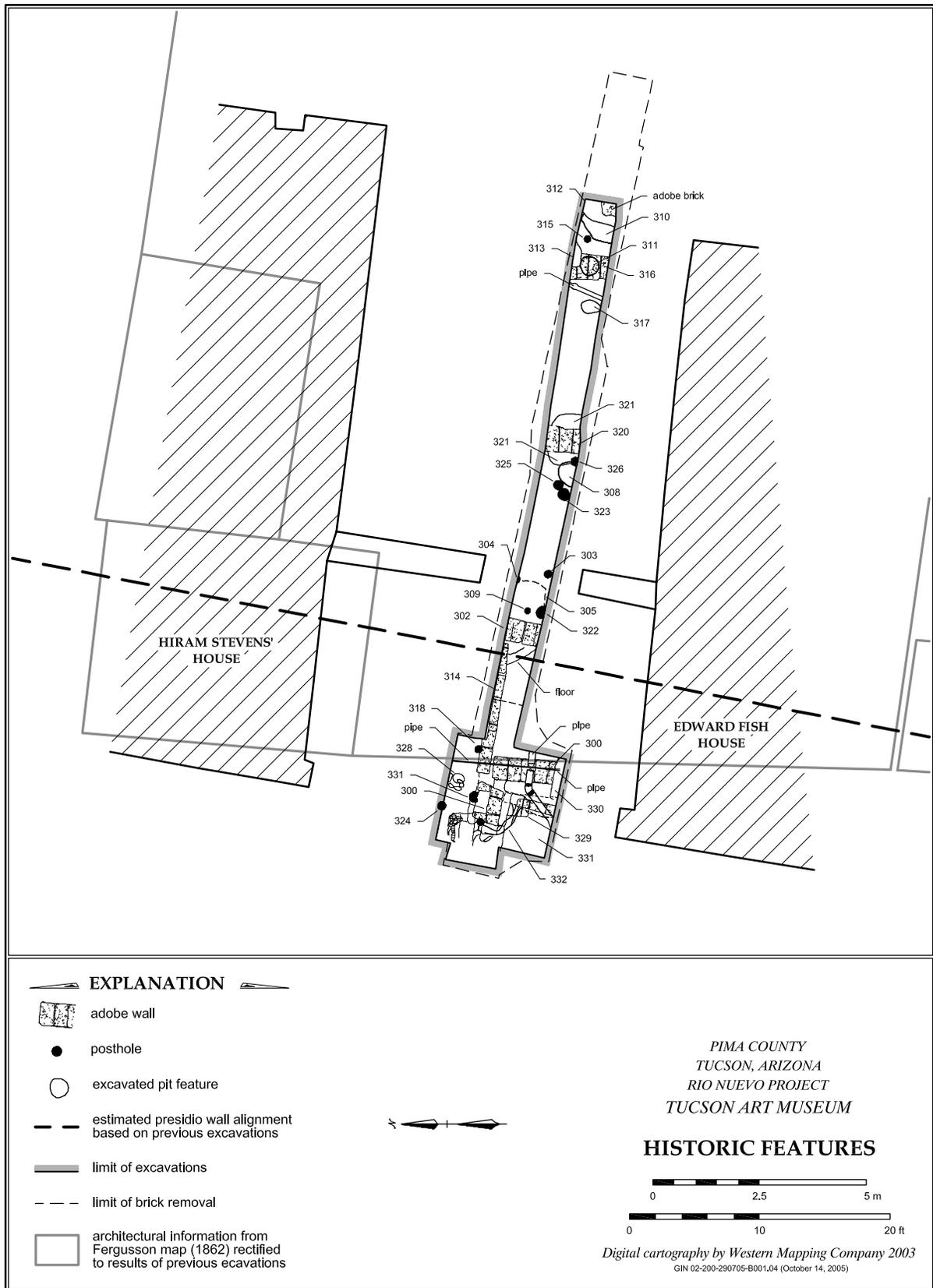


Figure 4.69. Archaeological features found at the Tucson Museum of Art project area, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.70. Overview of the excavations at the Tucson Museum of Art complex, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.71. Archaeological features at the western end of the Tucson Museum of Art project area trench, Tucson Presidio, AZ BB:13:13 (ASM).

The northern and eastern walls of the building were partially present within the excavation area, extending into the western and southern sidewalls. The adobe walls had cobble foundations upon which up to two courses of brick survived. The brown adobe bricks were poorly preserved, and were between 23



Figure 4.72. Features 331 and 332, an adobe wall and a molded adobe corner fireplace from an early presidio home, Tucson Presidio, AZ BB:13:13 (ASM).

cm and 42 cm in length and 22 cm in width. The wall was preserved to a height of roughly 42 cm above the hard-packed dirt floor present inside the room, at elevation 11.43.

Feature 332 was the fireplace found in the north-eastern corner of the Feature 331 room in excavation Unit 332 (see Figure 4.72). The fireplace consisted of a quarter-circle of adobe, 8-13 cm high. The adobe was quite irregular, and appears to have been molded in place by hand. The interior of the fireplace contained a dark gray-to-brown soft sandy silt with a large amount of ash and charcoal. A flotation sample was collected from the interior, but the rest of the fill was left in place.

The interior of the room was filled with a loosely compacted brown sandy silt, with a moderate amount of gravel and pieces of broken adobe. Artifacts were abundant in this fill and included Native American sherds, animal bone, and Mexican majolica sherds. There was no evidence of burning and no in situ artifacts on the floor. The structure appears to have been torn down so that another structure, Feature 300, could be built on top of it.

Two postholes found immediately north of the structure appeared to date to the same time frame. Feature 328 was an oval-shaped hole, 26 cm long by 22 cm wide, found in excavation Unit 328. The hole had vertical sides, was 39 cm deep, and was filled with a brown silty sand with a few small sherds, flaked stone, and pieces of animal bone. The top of the posthole was at elevation 11.35. Feature 318 was found in excavation Unit 200; it was 22 cm long by 14 cm wide. It had straight sides and a flat base. The top of the posthole was at elevation 11.13, and its base was at elevation 11.63. It was filled with a loosely compact brown silty sand.

Several meters east of the structure was a shallow borrow pit, Feature 327, that was documented in excavation Units 201, 203, and 205. The pit was

5.1 m long (east-west) and was exposed within the 80-cm-wide trench. The top of the pit was at elevation 11.18, and it was 31 cm deep at its deepest point. The pit was filled with a moderately compact gray brown silty sand. Native American sherds, flaked stone, ground stone, animal bone, and majolica sherds were found in the excavated fill. This pit was probably excavated to obtain material to make adobe bricks and was then filled with trash and soil, some of which may have washed in from upslope.

A pair of postholes was found between the early structure and the borrow pit. Feature 325 was a circular posthole located in Unit 203. The posthole had vertical sides and was 19 cm deep, originating at elevation 11.38. It was filled with a loose, brown silty coarse sand. No artifacts were found within the posthole. Feature 326 was located in the southeastern corner of Unit 203. This post was 16 cm long and at least 10 cm wide, extending into the wall of the unit. It had vertical sides and was filled with a brown silty coarse sand with no artifacts. The two posts may have been for a ramada built in this area, but due to the limited exposure, their exact function remains unknown.

Further east, a small arroyo, Feature 317, was discovered. The arroyo ran southeast to northwest through excavation Unit 206, and was 34 cm wide. It was approximately 54 cm deep, and contained a yellowish-brown sand with a high gravel content. Among the artifacts found in the arroyo were animal bones, Native American sherds, flaked stone, metal, and majolica sherds.

The earliest presidio-occupation features suggested a small, poorly built home was built against the western wall of the presidio at this location. The actual presidio wall is probably beneath the sidewalk or on the eastern side of Main Street, a few meters west of the excavation area. The postholes found in the area east of the structure may have been from a ramada or a corral. A shallow borrow pit indicated some dirt was mined for adobe inside the presidio. A small arroyo is indicative of the natural environment of the area. Drainage may have been an issue for residents of the western side of the presidio, because there must have been considerable runoff from the higher elevations to the east after monsoon rains.

Late Presidio Features

The length of time Feature 331 stood is unknown. The upper portions of the building were eventually torn down, probably with some recycling of materials, and another building was constructed in its place. In the units at the western end of the trench, a portion of the northern and eastern walls of Feature 300, a substantial adobe brick structure, was uncovered on top of a layer of soil covering the remains of the

earlier building. It was found in excavation Units 200 and 217. The northern wall was two adobe bricks wide, placed with their long ends facing outward (east-west), and was 49 cm wide. The eastern wall was a single brick wide, with the short ends on the interior and exterior face of the wall; it was roughly 46 cm wide. The bricks were pink adobe, with a thin grayish-tan mud mortar cementing them together. The mortar was some 3 cm thick between each course. The wall survived to a height of four courses, with the base of the wall at elevation 11.16 and its top at elevation 10.63.

Unlike the earlier structure, this building was built without a stone foundation; the adobe bricks were simply placed on the existing ground surface. There was no indication of a floor surface inside the structure, although the building probably originally had a dirt floor. The use of the structure stopped when the western side of the building was dismantled, perhaps with destruction of the western presidio wall and the widening of Main Street in the 1850s.

A post, Feature 324, was found north of the structure in excavation Unit 221. The post was about 23 cm in diameter, with its top at elevation 10.87 and its base at elevation 12.05. The upper half of the post was a hollow area, and the lower half was a brown sandy silt. Native American sherds, an animal bone, and a round lead disk were found in its fill. Another posthole, Feature 309, was found in excavation Unit 201, and based on its elevation, probably dates to the same time frame. The post was 13 cm in diameter, and had straight walls. The top of the hole was at elevation 10.86 and its base at elevation 11.28. It was filled with a brown, highly organic sandy silt that was loosely compacted and had charcoal in its upper portion.

A hard surface, Feature 319, was present in much of the trench, extending from the eastern side of Feature 300 8 m to the east, just beyond Feature 320, the western wall of another structure. It was uncovered in excavation Units 201, 202, 203, and 205. The surface was a compact reddish-brown coarse sand that ranged in elevation from 10.62 at the western end, sloping downward to 11.00 on the eastern side of the trench. Laminated coarse silty sand layers lay on the surface, indicating it was covered by sheetwash from upslope.

A pit, Feature 321, was cut through this hard surface into the underlying borrow pit, Feature 327. It was found in excavation Unit 205. This basin-shaped pit was 1.25 m long east-west, and was at least 72 cm long north-south. It had sloping sides, and was 28 cm deep. The pit was filled with a moderately compact gray-brown silty sand. Native American sherds, flaked stone, ground stone, animal bone, and majolica sherds were found in the fill. Only a portion of the feature could be excavated, because it lay below Feature 320, a wall.

Features 320 and 316, two adobe walls, were constructed during the presidio occupation. Feature 316 was found in excavation Unit 206, and Feature 320 was found in Unit 205. The structure was located several meters east of Feature 300, and had been built on top of the hard surface, Feature 319. Both walls were made from dark brown adobe bricks that measured about 61 cm in length, 31 cm in width, and 8 cm in thickness. Three courses of bricks were preserved, with a lighter gray mortar bonding the bricks together. The structure was 3.35 m wide (measuring from exterior to exterior of the bricks). The structure does not appear to have been completed, and the area outside and inside the walls was filled with water-deposited silty sands that apparently traveled downslope from the southeast. The structure was built above an earlier pit, Feature 321.

East of the Feature 316 wall was a small posthole, Feature 315, found in excavation Unit 206. It was roughly 14 cm in diameter, with the top at elevation 10.90 and the base at elevation 10.97. The hole contained a brown silty sand with a high amount of charcoal. No artifacts were found within the posthole.

The late presidio-occupation features suggested the early presidio structure may have been replaced with a more substantial, durable building at this location. Trampling by humans and/or animals formed a compact surface, upon which a second adobe structure was constructed. It is unclear, however, if this second building was completed. Slopewash from the east eventually filled portions of the area.

Late Presidio-Early American Territorial Period Features

The arrival of the Americans in 1856 marked the end of the Tucson Presidio fort. A rapid increase in population and the reduced threat of Apaches led to the demolition of many presidio structures, including the western wall. Feature 300, the structure with thick adobe walls, had the northern wall truncated, probably as Main Street widened. The eastern wall was reused, with an east-west wall, Feature 314, appended to the northern corner (Figure 4.73). Feature 314 was a single-brick-wide adobe wall, sitting on Feature 319, a hard surface. It was found in excavation Units 201 and 202. The wall was 4.29 m long and 27 cm wide. It turns north at the eastern end, beyond the trenched area. The top of the three-course-tall wall ranged

from elevation 10.71-11.77, and its base ranged from elevation 11.06-11.13. The area inside the corner formed by Features 314 and 300 was filled with broken adobe bricks, several clumps of lime, Native American sherds, animal bone, and majolica. One oxidized area, measuring roughly 22 cm by 20 cm, was present beneath the fill.

East of Feature 314 was a hard surface, Feature 307, that was located in excavation Units 201, 202, 203, 205, and 206. Feature 307 was a gray-brown silty sand with a high ash content. It was very compact and sloped to the west, ranging in elevation from 10.61 to 10.76 over the roughly 12.5 m the surface was traced. Resting on top of the surface were layers of greenish-gray silty sand, which had an unpleasant organic odor, covered by a layer of brown silty sand.

Three features cut through this surface, either originating at the surface level or in the fill layer immediately above it. Feature 303 was a 16-cm-diameter posthole found in excavation Unit 201. The top of the posthole was noticed at 10.74; it was 20 cm deep, filled with gray ash and a brown, highly organic sand. The entire contents of the posthole were submitted as a flotation sample. Feature 304, another posthole, was nearby. This feature was 10 cm in diameter, with its top found at elevation 10.73 and its base at elevation 11.00. It was filled with gray ash and brown highly organic silty sand. The fill of this post was also floated. The two posts may have been part of a ramada, although the limited exposure prevented a more accurate interpretation. Feature 311 also cut this surface, and it was located in excavation Unit 206. This pit was some 47 cm in diameter, and was 18 cm deep, originating at elevation 10.65. It was filled with a homogenous brown



Figure 4.73. Feature 314, a late presidio-occupation to early American Territorial period adobe wall, Tucson Presidio, AZ BB:13:13 (ASM).

silty sand that was loosely compact. Native American sherds were found in its fill.

The 1862 Fergusson map of Tucson depicts a wall in the area of the excavation. The wall runs south to north, turns a corner, runs west-east for a short length, and then heads north again. Features 300 and 314 probably represent the remains of this structure.

The Fish House

In the mid-to-late 1860s, Edward Nye Fish constructed a house adjacent to Hiram Stevens' and Milton Duffield's dwellings. The Fish House was built in the Sonoran Row House style and was several rooms long by one or two rooms wide. The northern pair of rooms were torn down around 1909 (Fortier 1980; Lyons 1981). Some accounts suggest a fire precipitated the demolition, although no archaeological evidence was found supporting this.

The 1860s Fish House was built on top of an existing hard ground surface, designated Feature 306. This surface was found in three excavation units, Units 201, 202, and 203. Along the eastern side in Unit 203, it was at elevation 10.55, rising to elevation 10.62 in Unit 201, before sloping upward at its western end in Unit 201 to elevation 10.45. The surface was a gray, burned layer lying below an organic-rich brown clayey silt fill layer. Some of this layer probably contained decomposed straw, perhaps suggesting that prior to construction of the Fish House, the area was used as a stables.

Portions of two adobe brick wall foundations were found on the surface of Feature 306, immediately beneath the disturbed fill layer below the brick pavement. Feature 329 is the western wall of the room and was found in excavation Units 200 and 229. This foundation was very fragmentary and consisted of only three adobe bricks that had been partially damaged by a modern sewer line. Edward Fortier identified another segment of this wall at the exterior of the southwestern corner of the Stevens-Duffield House (Fortier 1980). The pink bricks were 48 cm wide, with their top at elevation 10.52 and their base at elevation 10.58.

Feature 302 was the eastern foundation found in excavation Unit 202 (Figure 4.74). Two complete and two partial bricks, pink in color, were exposed in the trench. The complete bricks were 51 cm long, 26-27 cm wide, and 7-8 cm thick. The top of the foundation was at elevation 10.58, and the base was at elevation 10.64. The structure represented by the two adobe walls was 4.7 m wide.

Inside the foundation, Feature 330, a brick-and-concrete pad, was found in excavation Unit 229. The pad was at least 1.16 m long east-west, with only 12 cm protruding into the excavated area. The concrete



Figure 4.74. Features 301 and 302, the eastern foundation of the late 1860s Fish House and an adjacent hard ground surface; several postholes are also visible; Tucson Presidio, AZ BB:13:13 (ASM).

was 7 cm thick, with one complete brick and impressions from other bricks. The top of the pad was at elevation 10.53, and the base was at elevation 10.60. The most likely explanation for the feature is that it was the base of a brick fireplace, although other options, such as a floor support pier, are also possible. The use of concrete and brick suggested this was constructed sometime after the 1860s, probably after the 1880s, when both concrete and bricks became widely available in Tucson.

A second hard surface, Feature 301, was found inside the structure, extending outside to the west for a total length of roughly 12.5 m. It was uncovered in excavation Units 201, 202, 203, 205, and 206. The surface was at elevation 10.45 on the western side, sloping downward through the rest of the trench at between elevations 10.58 and 10.61. This fairly flat surface was comprised of a blocky brown silty clay with a high organic content, some of which appeared to be straw. The amount of organic material declined on the eastern side of the trench.

A pit, Feature 308, cut through the hard surface Feature 306 and may date to the American Territorial

period. It was found in excavation Unit 203. The pit was 62 cm long and at least 38 cm wide, extending beyond the trenched area. The top of the pit was at elevation 10.70, and it was only 3 cm deep. The pit was filled with a brown silty sand with a high gravel content. Native American sherds, flaked stone, and animal bone were recovered from the fill. The function of the pit is unclear.

Oral histories have suggested a portion of the Fish House was constructed from the eastern presidio wall. The current excavations have shown this is not the case. Instead, the presidio wall is further west, beneath the modern sidewalk or the eastern edge of Main Street. Some of the materials used to make the adobe bricks for the house may derive from presidio-occupation structures, but within the trench area, all the presidio walls are found beneath Feature 306, a hard surface that developed in the area after these features were demolished.

Post-1900 Features

A number of features discovered during the project date to the American Territorial or American Statehood periods, reflecting continued use of the area. Feature 305 was a pit discovered in excavation Unit 201 directly below the disturbed layer. Only a portion of the feature was within the trenched area; this segment was 40 cm long and 30 cm wide. The top of the pit was at elevation 10.56, and it was 31 cm deep. It contained a homogenous gray brown silty sand that was loosely compacted. Native American sherds, ground stone, and animal bones were found in the fill. The pit may predate the demolition of the Fish House room, although this remains uncertain because the top of the pit was disturbed.

Feature 310, an ash-filled pit, was stratigraphically below the organic layer in excavation Unit 206 and was cut into by Feature 312. The pit extended into the southern and eastern profiles of Unit 206, with an area measuring 76 cm by 40 cm excavated. Feature 310 was 18 cm deep. Artifacts found in the pit included Native American sherds, animal bone, glass, metal, and an adobe brick. A flotation sample was also collected.

Feature 312 was a pit revealed in excavation Unit 206. It was 76 cm long north-to-south, and 50 cm wide. The top of the pit was found at elevation 10.60, and it was 28 cm deep, filled with a crumbly greenish-brown silt with a high organic content. A piece of red adobe brick lay at the top of the feature. The pit was thought to be the location of a planting hole in the Fish House backyard.

A portion of a dog burial, Feature 313, was found in excavation Unit 206. The top of a pit was found at elevation 10.74, extending down to elevation 11.09.

The pit was 53 cm long, with 23 cm extending into the trench. It was filled with light reddish-brown silty sand with many pieces of gravel. Articulated dog skeletal elements were found at the base of the pit, indicating that sometime during the American Territorial period, a family pet was buried in the backyard of the Fish House.

Feature 322 was a posthole found in excavation Unit 201. The post was 26 cm in diameter, with the top at elevation 10.63 and the base at elevation 11.13. It was filled with a loose brown silty sand with a high gravel content. The post was modern and likely dated to within the last 50 years.

Posthole Feature 323 was found in excavation Unit 203. The posthole was approximately 24 cm in diameter, with the top at elevation 10.63 and the base at 11.23. It was filled with a brown silty sand with a large amount of gravel. The post was modern, put in place in the last 50 years, and was pulled out of the ground rather than left in place.

The features dating to the post-1900 period indicated that after demolition of the connecting rooms, the backyard area was used for typical backyard activities. The postholes may have held up a porch, or may have been used to support plants. Small planting pits were found nearby, and some of the posts may have also held up trellises or arbors. Pet burials are frequently found in backyards, and the discovery of a small dog was not unexpected.

EXCAVATIONS AT THE NORTHEASTERN CORNER OF THE TUCSON PRESIDIO

In December 2002 and January 2003, Desert Archaeology conducted test excavations in a paved parking lot at the southwestern corner of Church Avenue and Washington Street. In December 1954, the University of Arizona conducted excavations in the area, just prior to construction of the lot, uncovering a thick adobe wall that turned a corner, as well as an underlying Hohokam pithouse. Questions remained regarding if the wide adobe wall was the exterior wall of the presidio or the tower that was reported to have existed at this location. In this section, detailed feature descriptions are preceded by a short history of the block and an interpretation of the uncovered features.

The History of the Block

Block 181 was laid out in 1872 into nine lots. Lots 1 and 2 were located at the northeastern corner of the block, with Lot 3 immediately to the south. Lot 1 was roughly 34 m long, north-south, and 19 m wide, east-west. Lot 2 was located to the west, and was

approximately 29 m on the northern side, 33 m long along the western side, 27 m wide on the southern side, and 35 m along the eastern side. The actual measurements vary slightly because the lots were irregular.

The initial sale of the property occurred a few years after the Village of Tucson survey (Table 4.4). Anastasio Telles purchased Lot 1 on 1 March 1875. He was born circa 1833, in Sonora, Mexico. He was married prior to 1858, to Manuela Vilderray¹ [spelled Vildoragga in 1858 and Bilderalla in 1864]. In 1860, the couple lived in Tucson with their daughter Luisa. Anastasio worked as a laborer (1860 Census, New Mexico, Doña Ana County, Tucson p. 5). In 1864, Anastasio was a farmer in Tucson, with \$200 in personal possessions. He lived there with his wife and daughter.

A number of other Telles lived nearby and are probable relatives: Cristiana (27), Maria (15), Prun-

dencio (20), Hilario (22), Polonio (25), and Susanna (25) (1864 Census, A.T., Pima County, Tucson lines 408-411, counted also on lines 1292-1294, where he is a farmer owning \$300 in real estate and \$200 in personal property). In 1866, Anastasio and Manuela lived with daughter Louisa in Tucson (1866 Census, A.T., Pima County, Tucson lines 642-644). The family lived in Tucson until at least 1875, but is missing from the 1870 census and could not be located on the 1880 census. Antonio Baldonado purchased Lot 2 on 4 February 1875.

The adjacent lot, Lot 2, was purchased by Herbert Dodge in 1885. Dodge was born in December 1861, in Illinois. He was married circa 1888, to Julia [Royce?]. Julia was born in January 1872, in Michigan. She had five children, one of whom died in childhood. The other four children were: William C. (born in October 1889), Charles H. (born December 1888), Winnifred (born January 1892), and Hazel M. (born January

¹Names are spelled as recorded and may vary.

Table 4.4. Early property owners of Lots 1 and 2, Block 181, Tucson Presidio, AZ BB:13:13 (ASM).

Lot	Grantor	Grantee	Date	Pima County Deed Record Entry (Book:Page)
1	Village of Tucson	Anastasio Telles	1 March 1875	2:764
2	Village of Tucson	Antonio Baldonado	4 February 1875	4:627
1	M. Telles	William C. Barden	19 May 1875	2:762
2	Antonio Baldonado	John S. Warner	—	4:629
2	John S. Warner	James H. Toole	9 May 1881	10:350
2	James H. Toole	John N. Brown	22 December 1881	11:23
1	William C. Barden	S. W. Carpenter	29 July 1881	10:609
1	S. W. Carpenter	John N. Brown	—	10:610
1, 2	John N. Brown	Mrs. June Ramboz	5 June 1882	11:377
1, 2	Mrs. June Ramboz	J. McC. Elliott	6 June 1882	11:383
1, 2	James McC. Elliott	Charles K. Drake	31 July 1892	5:514
1, 2	James McC. Elliott	H. B. Dodge	10 January 1885	13:32
1, 2	H. B. Dodge	C. F. Schumacher	12 October 1888	14:720
1, 2	C. F. Schumacher	H. B. Dodge	11 April 1889	15:316
1, 2	J. McC. Elliott	H. B. Dodge	11 September 1888	16:107
1, 2	H. B. Dodge	Julia Dodge	30 January 1890	21:382
1, 2	Julia A. Dodge	A. W. Ashbrook	25 April 1891	23:24
1, 2	Alice W. Ashbrook	H. B. Dodge	25 April 1891	26:16
1, 2	H. B. Dodge	Jas. H. Borland	1 June 1896	25:780
1, 2	Jas. H. Borland	H. B. Dodge	2 June 1896	25:796
1, 2	M. G. Ashbrook	H. B. Dodge	5 June 1896	27:92
1, 2	H. B. Dodge	Julia A. Dodge	22 October 1899	27:783
1, 2	Herbert B. Dodge	Oscar T. Richey	16 April 1902	33:609
1, 2	Herbert B. Dodge	E. P. Van Kuren	21 February 1903	35:80
1, 2	E. P. Van Kuren	Charles F. Hoff	29 June 1905	37:384

1895). On 18 June 1900, the couple, their four children, Julia's grandmother Julia Simpson, and a lodger named Lorenzo Haley lived at 187 North Church Avenue. Herbert was working as a grocer clerk and William, Charles, and Winnifred were attending school (Herbert Dodge household, 1900 U.S. census, Pima County, Arizona, Tucson, ED 49, sheet 18A).

The 1908 city directory indicated William Dodge was working as a driver for the Union Meat Market, while Charles was a machine helper at the Southern Pacific Railroad shops.

On 15 April 1910, Julia headed a household at 187 North Church Avenue. She was now divorced from Herbert, an unusual situation for her time and place. She worked as a bookkeeper for a furniture store, with her eldest three children working at a grocery store. Living with the family as boarders were four women—A. Barker, Anne Barker, Maude McCormick, and Mamie McFadden (Julia Dodge household, 1910 U.S. census, Pima County, Arizona, Tucson, ED 102, sheet 17A). The 1910-1911 city directory lists Julia Dodge was a bookkeeper at W. Golding, Winifred was a bookkeeper at the Pacific Grocery, that William worked at the Union Meat Market, and Charles was working at the Southern Pacific Railroad as a machine helper.

The family moved out of the house prior to collection of data for the 1918 city directory, when four individuals lived in the home. The boardinghouse they operated on the adjacent Lot 1 had a variety of occupants through the years, none of whom stayed for very long. The boardinghouse was torn down in 1954.

Structures on Lot 1

The 1883 Sanborn Fire Insurance map reveals that a house was present on Lot 1 at that time (Figure 4.75). The adobe structure is called "old" and appears to have had two rooms. The structure is not present on the 1886 map, however. The 1889 map also indicates that the lot was vacant, with the Dodge family constructing a house on the adjoining Lot 3 to the south. Between 1889 and 1896, the Dodges built a two-story apartment house along the eastern side of Lot 1. The boardinghouse was divided into four separate living units.

By 1901, a small outbuilding and stables had been constructed at the southwestern corner of Lot 1 (Figure 7.76). These structures were demolished by 1909. An automobile garage was present along the western side of the lot prior to 1944. This garage was demolished prior to 1954. The boardinghouse was torn down in 1954.

AN OVERVIEW OF THE PRESIDIO-OCCUPATION FEATURES

Northeastern Presidio Corner

The largest of the three test excavations within the presidio were at a parking lot located at the southwestern corner of Church Avenue and Washington Street. This area had been examined in 1954, and a primary goal was to relocate the previously excavated area and to determine if the thick wall found at that time was the exterior presidio wall, or a tower that was reported to have stood at this corner.

The area was still needed for parking after work was completed, so only a small number of individual spaces could be examined. Archaeologists excavated 15 parking spaces (each measuring about 4.5 m by 2.7 m) in December 2002 and January 2003, revealing a wealth of features dating from the Hohokam Colonial period to the American Territorial period. Among these were many presidio-occupation features, including architectural remains and pits filled with large numbers of artifacts and food materials (Figures 4.77-4.78).

A backhoe was used to strip away asphalt from the parking lot surface. The thick adobe wall found in 1954 was quickly re-exposed, almost directly beneath the pavement. The wall was designated Feature 351 during the current project. Instead of being the exterior perimeter wall of the presidio, the wall turned out to be the eastern wall of a square tower that projected out from the presidio walls. This tower, as described by several people who saw it while it standing, was about 6 m (20 ft) tall and had gun ports, or slots, in the upper portions, allowing soldiers to fire their muskets down the length of the walls.

The foundations of the tower were made from adobe bricks and measured between 0.98 m and 1.15 m wide. The bricks ranged from pink to brown in color, and many seemed to be irregular in size and shape. Only one course survived along the south wall, Feature 377 (Figure 4.79). The eastern and northern walls, Features 351 and 374, had one course that was in turn covered with a thick layer of dirt that was molded into place while wet (Figure 4.80). This type of construction method was also found in the western presidio wall in the City Hall lawn. Its use and the presence of irregularly sized bricks suggested an attempt to speed construction of the wall and tower, perhaps after the 1782 Apache attack. Only a small portion of the western wall of the tower, Feature 443, was found. This wall had been cut into by an American Territorial period pit that had destroyed a portion of the foundation.

The southern wall of the tower projected 7.59 m from the eastern wall of the fort. The eastern wall of

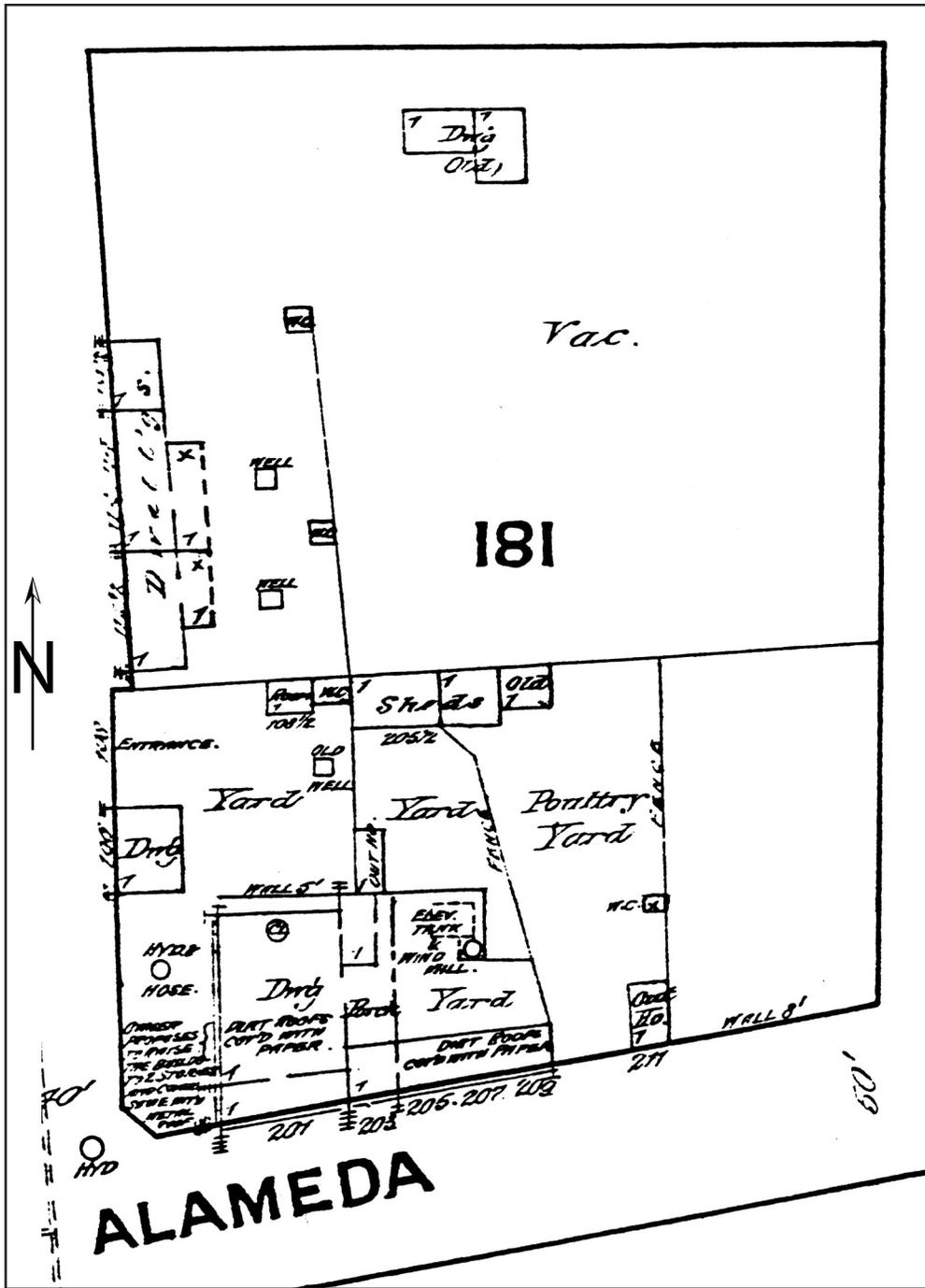


Figure 4.75. The 1883 Sanborn Fire Insurance map for Block 181, Tucson Presidio, AZ BB:13:13 (ASM).

the tower was 17.81 m long and the northern wall was 17.25 m long. The length of the western wall of the tower was not determined, but was probably similar to the southern wall. The tower was basically a square structure projecting outward from the north-eastern corner of the fort.

The interior of the tower was lined with a wooden walkway. Two small, round features found just in-

side the tower foundations probably represent post supports for the walkway. Feature 386 was a small cluster of 10 flat-lying rocks found some 50 cm north of the southern tower wall (Figure 4.81). The rocks lay in a 30-cm-diameter circle. Along the northern wall, archaeologists found Feature 404, a circular adobe area that probably served the same purpose (Figure 4.82). The adobe was 45 cm in diameter and

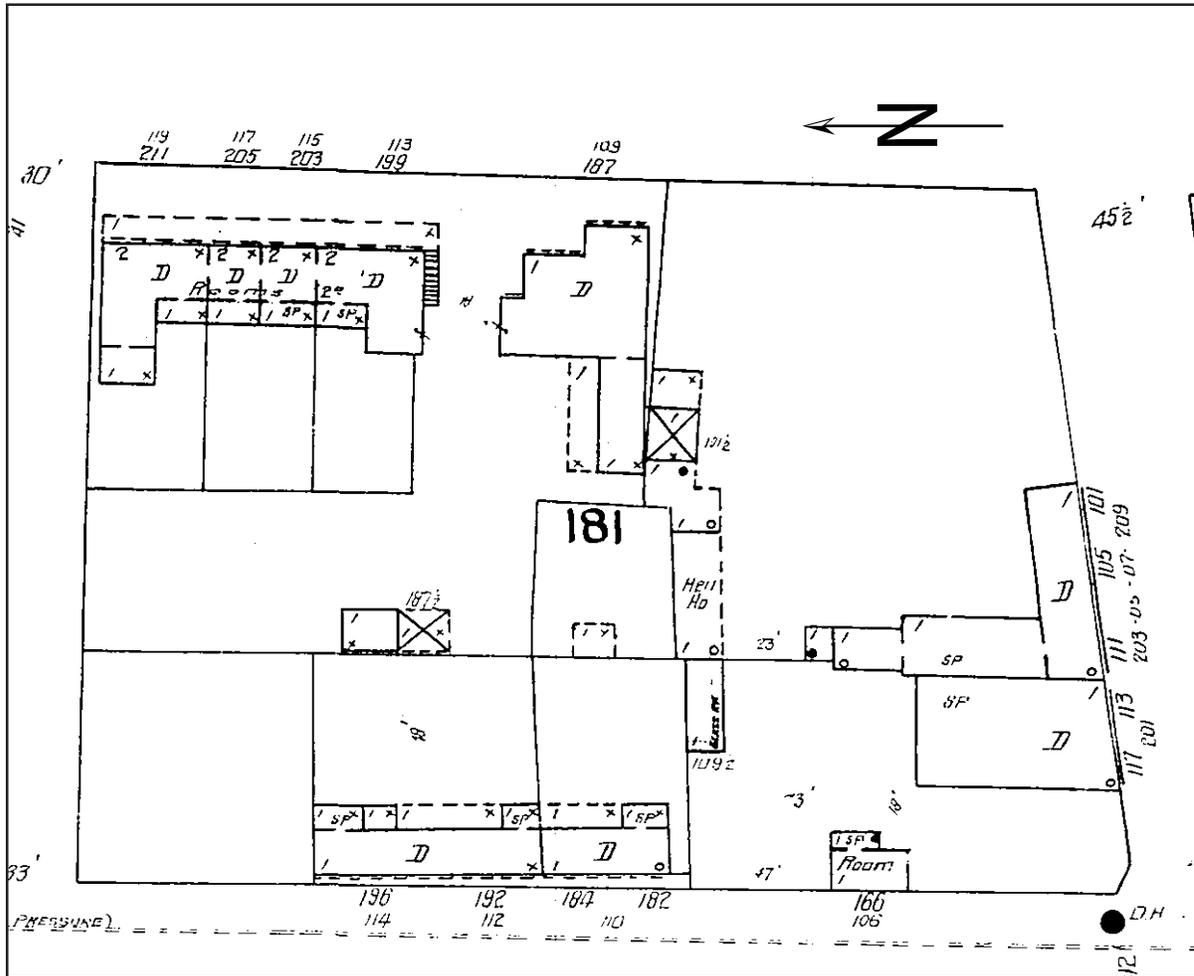


Figure 4.76. The 1901 Sanborn Fire Insurance map for Block 181, Tucson Presidio, AZ BB:13:13 (ASM).

18 cm thick. It is unknown if additional support features were once present. Many may have been accidentally removed during the 1954 excavation.

The only other features that directly relate to the tower were a pair of adobe walls, Features 399 and 403, that extended from the southern side of the northern wall of the tower (see Figure 4.82). Feature 399 was 1.04 m wide, and a 1.09-m-long segment was uncovered, with the wall running into an unexcavated area. The wall was made from adobe bricks of varying sizes and colors, indicating it was probably built from recycled bricks. The function of the wall is uncertain, although it may have been the eastern wall of a small structure built inside the northwestern corner of the tower. Another possibility is that a staircase up to the wooden walkway lining the tower may have been located in this area. A third possibility is that it was a buttress built to help hold up the tower wall at this location. The second wall, Feature 403, it was at least 1.02 m long, mostly extending into an unexcavated area, and it was at least

49 cm tall. In 1954, this wall was uncovered and called a puddled adobe wall. This wall may represent a portion of a small structure built along the interior of the tower.

Some details about construction of the tower remain unknown due to either the incomplete excavation of the area, or because the 1954 excavations may have removed small internal features.

The eastern wall of the presidio had been previously located within the Pima County Courthouse courtyard in 1992, and at the southern side of Alameda Street in 1991. The location of this wall was projected north into the parking lot, and a new segment was found within 41 cm of where it was expected (Figure 4.83). The surviving portion, Feature 400, had been badly damaged by American Territorial period pits, but enough survived to verify that it was also 56 cm (22 inches) wide, the length of a standard Spanish period adobe brick. Unfortunately, the juncture between the wall and the tower had been disturbed, making it impossible to determine how they

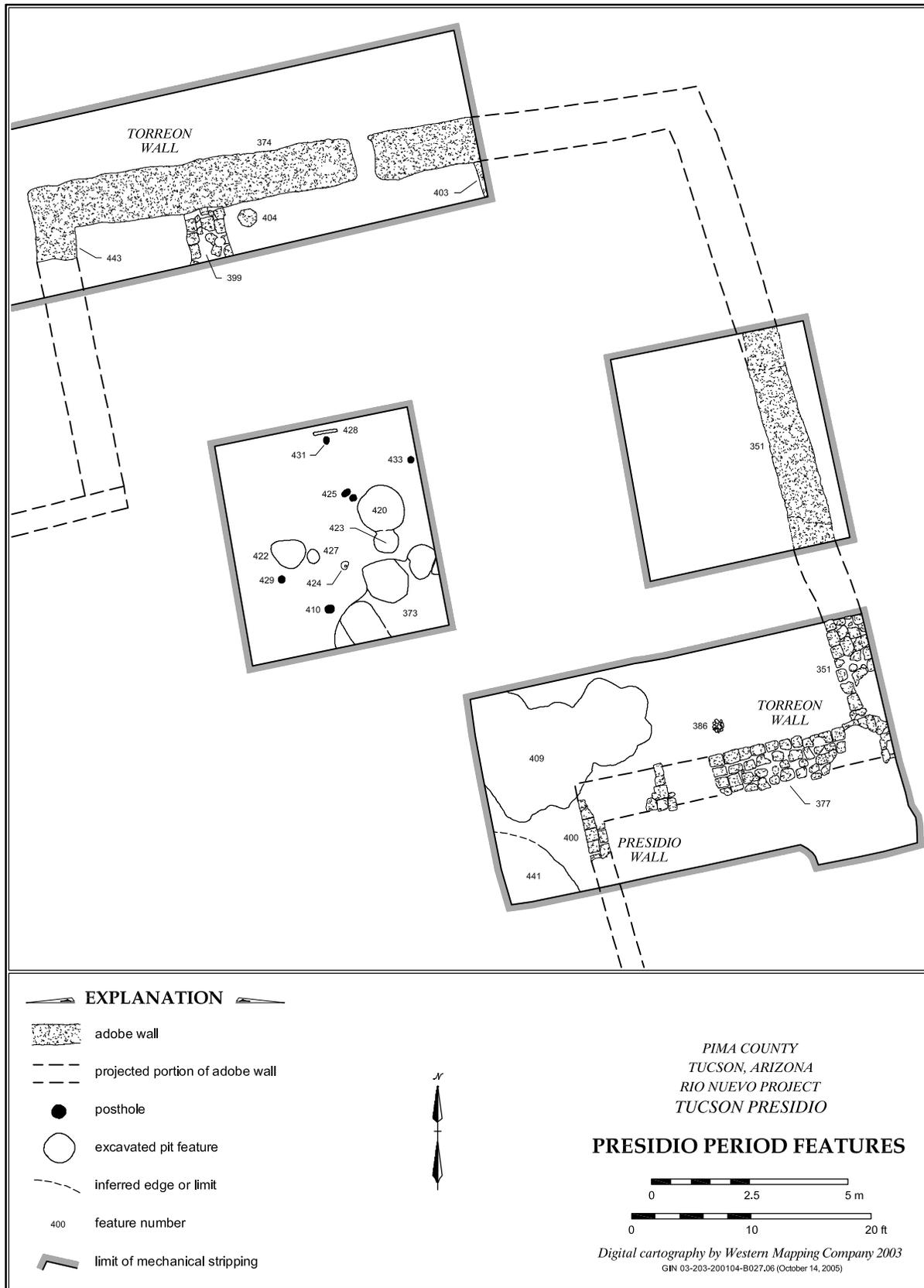


Figure 4.77. Presidio features found beneath the parking lot, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.78. An overview of the presidio corner excavations, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.79. Feature 377, the southern foundation of the tower, looking to the west, Tucson Presidio, AZ BB:13:13 (ASM).

were joined. The eastern exterior wall did not extend northward inside the tower. The location of the northern exterior wall of the presidio was not determined during the excavations, and at least some of this wall had probably been removed by a large American Territorial period borrow pit present in that area.

Other Presidio Features

A number of presidio features were found inside the area within the tower and the wall. In one excavation block measuring 5.6 m by 5.0 m, archaeologists uncovered a compacted ground (see Figure 4.77). This ground surface was formed either on purpose by people pounding the ground to harden it, or by accident as people and animals walked over the area. Four pits, Features 373, 420, 422, and 423; an area of puddled adobe, Feature 387; and six postholes, Features 410, 425, 428, 429, 431, and 433, cut through the surface. The postholes were probably for a ramada-like structure, although it was impossible to determine the size or

shape of the building. The puddled adobe area was an enigma. Measuring 64 cm in length by at least 48 cm in width, it was only 7 cm high and had a circular depression in its center. The function of the adobe remains unclear, especially because much of the feature lies outside the excavated area. An iron canteen or bowl, Feature 424, was found impressed into the surface and likely dates to the presidio occupation.

The four pits found cutting through the surface and three other pits found nearby were probably dug to collect dirt to make adobe bricks, or for material to repair and plaster adobe walls (Figures 4.84-4.85). The pits were subsequently filled with soil with a large number of artifacts and food materials dating to the Spanish and Mexican periods. These are among the handful of presidio pits excavated in Tucson.

Although all these pits were probably dug to obtain dirt to make adobe bricks or mud plaster, they were too small to produce the substantial amounts of material that would have been necessary to build the wall and tower. Other borrow pits are likely present in nearby unexcavated areas. Historic accounts suggest dirt was mined just outside the perimeter of the fort, creating a "moat-like" depression that filled with water during the monsoon season. Excavations within the Pima County Courthouse courtyard found that the area on the exterior of the wall dipped down, suggesting the stories are true.

American Territorial Period Features

Once the asphalt was stripped away from the parking spaces on Lot 1 of Block 181, a large number of American Territorial period features were found (Figure 4.86). The areas excavated were mostly located in the backyard areas of the two houses, the



Figure 4.80. Feature 374, the northern foundation of the tower, looking to the southwest, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.81. Feature 386, a cobble column support base within the southern foundation of the tower, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.82. Features 404 and 495, an adobe column base and an interior room wall within the northern foundation of the tower, Tucson Presidio, AZ BB:13:13 (ASM).

apartment building, and the stables that stood on the lot. The features uncovered were created as a result of activities that occurred outside these buildings.

Borrow Pits

The largest features were a trio of borrow pits that were dug to for dirt from which to make adobe bricks. Borrow pits have been found in several other excavations in downtown Tucson. Builders likely sometimes found it convenient to make adobe bricks on site using the closest available material. Afterward, the large holes left behind were used for trash disposal (Ciolek-Torrello and Swanson 1997:149).

The borrow pit found at the southwestern corner of the lot, Feature 376, is the oldest of the three (Figure 4.87). This pit was at least 3.15 m long by 3.05 m wide. The fill of the pit extended beyond the excavation units, and its overall dimensions remain unknown. In the excavated portion, it was 1.08 m deep. The pit was filled with layers of soil and ash. Screening of the dirt in the excavated portion resulted in the recovery of 9,279 artifacts. Datable artifacts indicated the filling of the pit began in the late 1870s, and probably continued into the 1890s.

A second borrow pit was found in the center of the lot. The eastern and northern portions of the pit were found in separate excavation areas and assigned different feature numbers. Feature 359 was the eastern portion and was quite irregular, cutting into earlier American Territorial period ground surfaces and the underlying caliche hardpan layer. In another excavation area, the northern portion of the pit was uncovered and was assigned Feature 437 before it was determined that this was the same borrow pit. The overall borrow pit was at least 96 m long north-south, and at least 5 m wide. The actual length and width of the pit are not currently known. The pit was at least 84 cm deep, with the pit continuing to slope downward into an unexcavated area. The pit was filled with domestic trash in the 1880s to early 1900s. A total of 5,717 artifacts was found in the two excavated areas.

Feature 385, the third borrow pit, was found at the northwestern corner of the property and was sampled by excavation of a 2-m-wide trench along a 4.83-m-long segment of the pit, which was found to be 46 cm deep. Portions of the pit to the west and north have been destroyed by modern grading activities. The southern edge of the pit lies in an unexcavated area, while the eastern margin was located and was quite irregular. Unlike the other two borrow pits, this pit appears to have been slowly filled and contained artifacts that had been broken into small pieces by trampling. The soil in the pit consisted of



Figure 4.83. Feature 400, a small fragment of the eastern presidio wall, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.84. Feature 409, a presidio borrow pit, Tucson Presidio, AZ BB:13:13 (ASM).

layers of brown silty loam, decomposed adobe bricks, and red silty sand. The pit appears to have been filled in the early 1900s. A total of 2,864 artifacts was found in the excavated portion of the pit.

Borrow pits are a common feature found during archaeological projects within the historic Tucson townsite. Previous excavations on Block 180, immediately to the east, located three large and five small borrow pits. The largest was 23.0 m in diameter and was at least 1.2 m deep. Another was 22.0 m in diameter and was about 1.0 m deep. A third oval-shaped pit was 18.0 m by 14.0 m, and was roughly 50 cm deep (Ciolek-Torrello and Swanson 1997). Other borrow pits have been found on Blocks 136, 138, 139, 172, and at the León farmstead (Thiel 2002, Thiel 2003, Thiel 2005; Thiel and Desruisseaux 1993).

These pits, along with photographic evidence that bricks were manufactured in the downtown area, indicate many adobe structures were constructed from bricks made on location.

American Territorial period adobe bricks came in a variety of sizes, but were typically smaller than Spanish and Mexican period bricks. American Territorial period adobe bricks found on the block to the east measured 20 inches by 10 inches by 4 inches in size (roughly 50.8 cm by 25.4 cm by 10.2 cm)—about the average size for adobe bricks for this time period (Ciolek-Torrello and Swanson 1997). An average brick contained a maximum of 13,110 cm³ of soil. In reality, the bricks would have contained a certain amount of organic material, such as straw, reducing the amount of soil used. The excavated portion of Feature 376 would have yielded about 10 million cm³ of dirt, which would have made at least 781 bricks. Feature 359/437 would have yielded over 44 million cm³ of dirt, which would have made at least 3,377 bricks. Finally, Feature 385 would have yielded a minimum of 4.5 million cm³ of dirt, which would have made about 338 bricks.

Approximately 4,500 bricks could have been made from the dirt from the three borrow pits. This is a minimum number of bricks, as the actual size of the pits could not be determined because they extended into unexcavated areas of the lot. Other borrow pits are probably present in unexplored portions of the lot.

The house depicted on the 1883 Sanborn map had two rooms. One measured 6.4 m by 4.4 m, and the other measured 6.1 m by 3.7 m. The structure had over 41 linear meters of wall. Bricks would probably have been placed with the short side facing outward, with a maximum of 162 3.1-cm-wide bricks required for each adobe brick course. The actual number of bricks would have been somewhat less, however, because there would have been door and probably window openings. The height of the house is unknown. Other houses of this time period range from 3–4 m tall. For a 4-m-tall house, a maximum of 29 courses of bricks would have been needed if each course consisted of a 10-cm-thick brick and a 2.5-cm-thick mortar layer. About 4,700 bricks would have been necessary to construct the house, a number fairly close to the estimate for the excavated portions of the three pits.

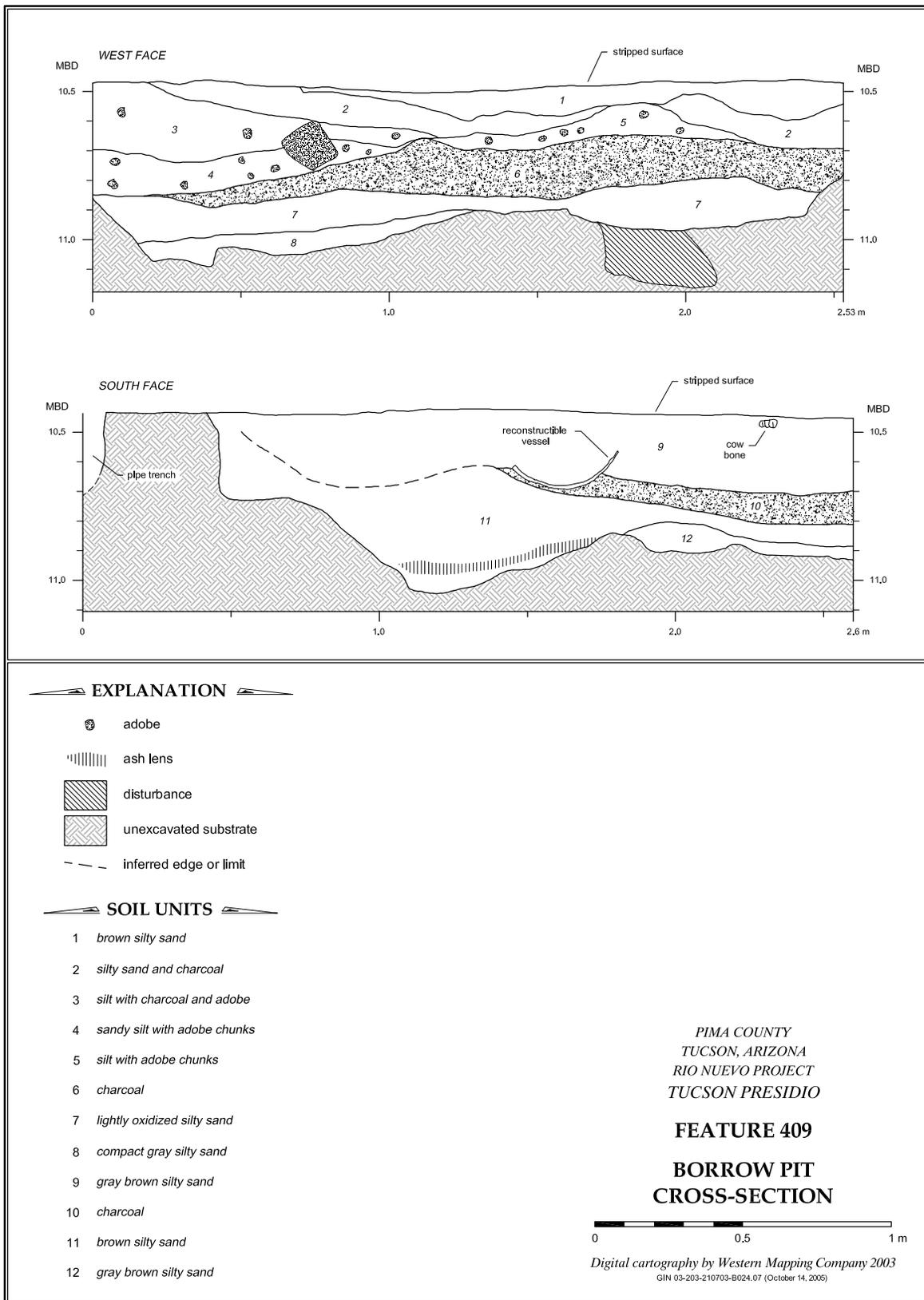


Figure 4.85. Profile of Feature 409, a presidio-occupation borrow pit, Tucson Presidio, AZ BB:13:13 (ASM).

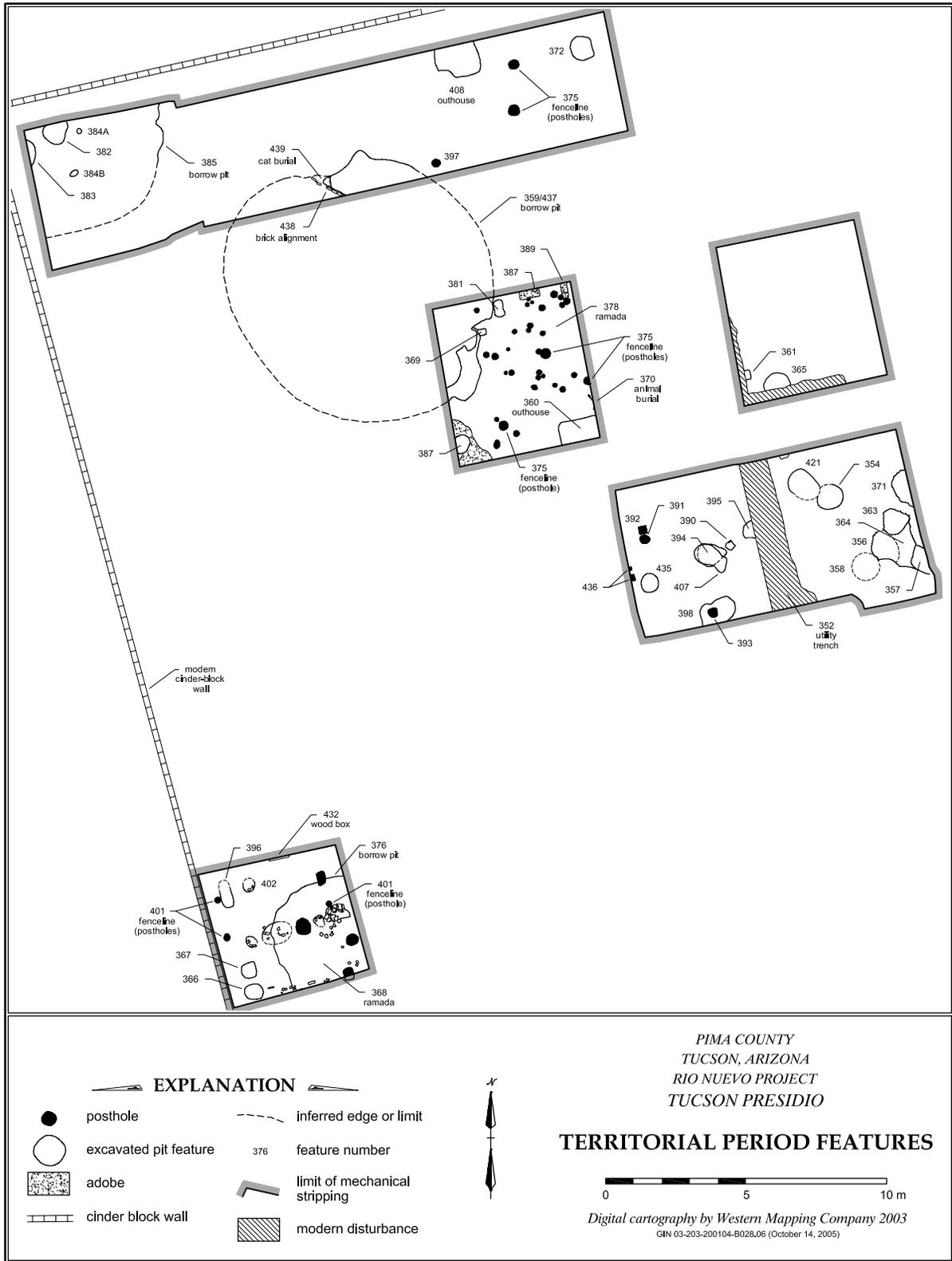


Figure 4.86. American Territorial period features found beneath the corner parking lot, Tucson Presidio, AZ BB:13:13 (ASM).

house for only a few years and then excavated a new hole and moved the superstructure. Afterward, the old hole was used for trash disposal and quickly filled in. As a result, outhouse pits serve almost as time capsules, frequently containing sets of artifacts that can be linked with specific households and families.

This was not the case for the excavated portion of Lot 1 of Block 181, where two outhouse pits were found. Both contained trash discarded by boarding-house residents, who remain mostly anonymous.

Feature 360 was found in the center of the lot and was only partially excavated (Figure 4.88). The hole was 1.56 m long and at least 86 cm wide in plan view, extending beyond the walls of the unit into the unexcavated parking area. The upper 2.03 m of fill inside the pit was excavated, and probing revealed that the outhouse extended down at least another 76 cm below this point.

When excavation began, the upper portion of the pit was found to have been dug by bottle hunters in the early 1950s. Unfortunately, bottle hunters often target outhouse or well pits because they were used for trash disposal after they were no longer used as an outdoor bathroom. This sort of looting damages or destroys the archaeological value of the outhouse contents, because bottle hunters remove artifacts and disturb the various soil layers. In this case, the looters only excavated the upper portion of the pit, which was subsequently refilled with fine gravel. Beneath the gravel was a layer of redeposited fill that was dumped back in after the upper portion had been looted. Below this were undisturbed layers of dark brown sandy loam and ash. This feature probably started out as a well and was later used as an outhouse. After excavation was completed, the fill inside the pit subsided about 7 m, suggesting the original function was as a well.

Artifacts were common once the disturbed material was removed. A total of 3,736 artifacts was found. Datable items suggested the outhouse was filled in the 1900s to late 1910s.

The second outhouse was found along the northern side of the lot and was probably located just inside a fence that would have screened the wooden structure from view along Washington Street. Feature 408 first appeared as a dark irregular stain, contrasting in color from the surrounding soil (Figure 4.89). Subsequent excavation revealed that the stain was an outhouse pit 1.38 m long and at least 94 cm wide. It extended into the unexcavated area to the north. The upper 2.02 m of fill was excavated, and probing suggested it extended at least 76 cm below this point. The upper fill was mostly light brown silty loam with pockets of ash and charcoal. The lower fill was a mottled green, tan, and dark brown loam with pockets of fecal material and ash. A total of 4,409

artifacts was found in the excavated fill. The remaining portion of this outhouse was extended during fieldwork conducted in 2005-2006.

The two outhouses were probably filled in after the large boardinghouse that fronted Church Avenue installed indoor bathrooms in the late 1910s to early 1920s. Recent excavations in Tucson have located some 36 outhouses, ranging in date from the 1880s to the 1950s. Most predate 1920, except a few built by poor Mexican families who lived in the Barrio Libre (Thiel and Desruisseaux 1993). The excavated privy pits vary dramatically in shape and size, averaging about 2 m in depth. While some examples have been very shallow, only about 30 cm deep, an example from Block 80 was discovered to be almost 5.5 m deep (Mabry et al. 1994), and several outhouses on Block 139 were over 6 m deep. Some of the deeper pits may have started out as wells that were converted into outhouses after the water table dropped or indoor running water was installed.

Most of the excavated outhouses have been found to have several distinct layers. The base of the pits typically contained decomposed human waste and a small number of artifacts—often items that fell into the pits during use—coins, watches, and other pocket contents. A thick layer of trash is usually above this layer representing items discarded by nearby households. Sometimes household clean-out events will be represented, with numerous whole artifacts dropped into the pit. As an example, Feature 18 on Block 80 contained several complete ceramic and glass vessels, including expensive glassware, presumably thrown out when a household moved out and new residents discarded unwanted items. Finally, a layer of fill dirt is often found capping the outhouse, dropped in place to level the ground and to prevent the area from being a hazard. As the contents of the outhouse settle, more dirt may be dumped in.

Outhouses fell out of favor once indoor plumbing was installed. This process began in the early 1890s, and appears to have accelerated in the 1910s. Having indoor plumbing became standard in new construction by the late 1910s, and outdoor bathrooms were common only in poorer neighborhoods.

Other Features

Scattered across the excavated portion of Lot 1 were a number of other American Territorial period features. The excavation of a large block in the center of the parking lot was mostly conducted in stratigraphic levels, peeling back layer after layer of dirt that had built up in the area. Eventually, a very hard ground surface, designated Feature 378, was discovered, probably dating to the 1850s to 1860s, based

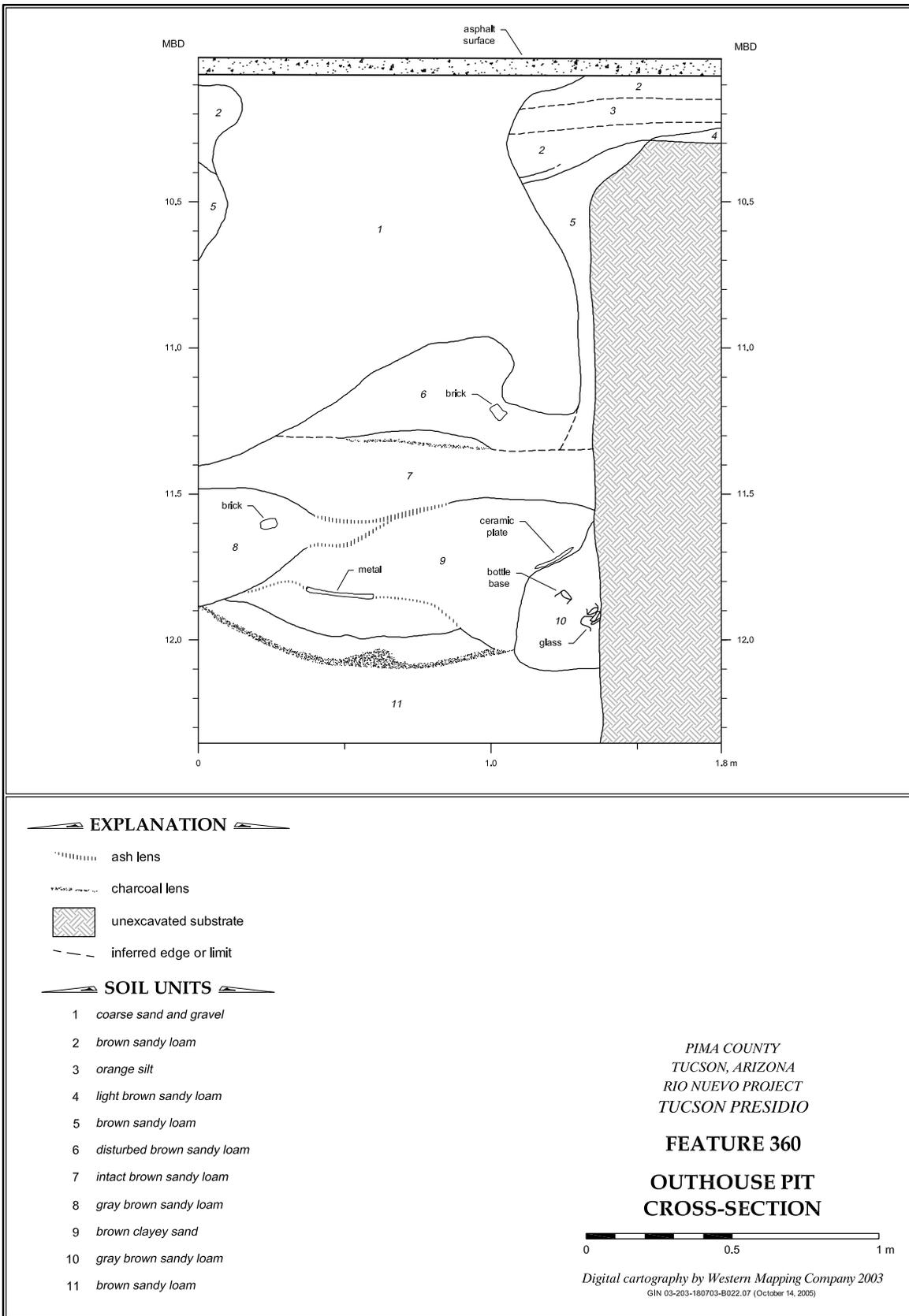


Figure 4.88. Profile of Feature 360, an American Territorial period outhouse, Tucson Presidio, AZ BB:13:13 (ASM).

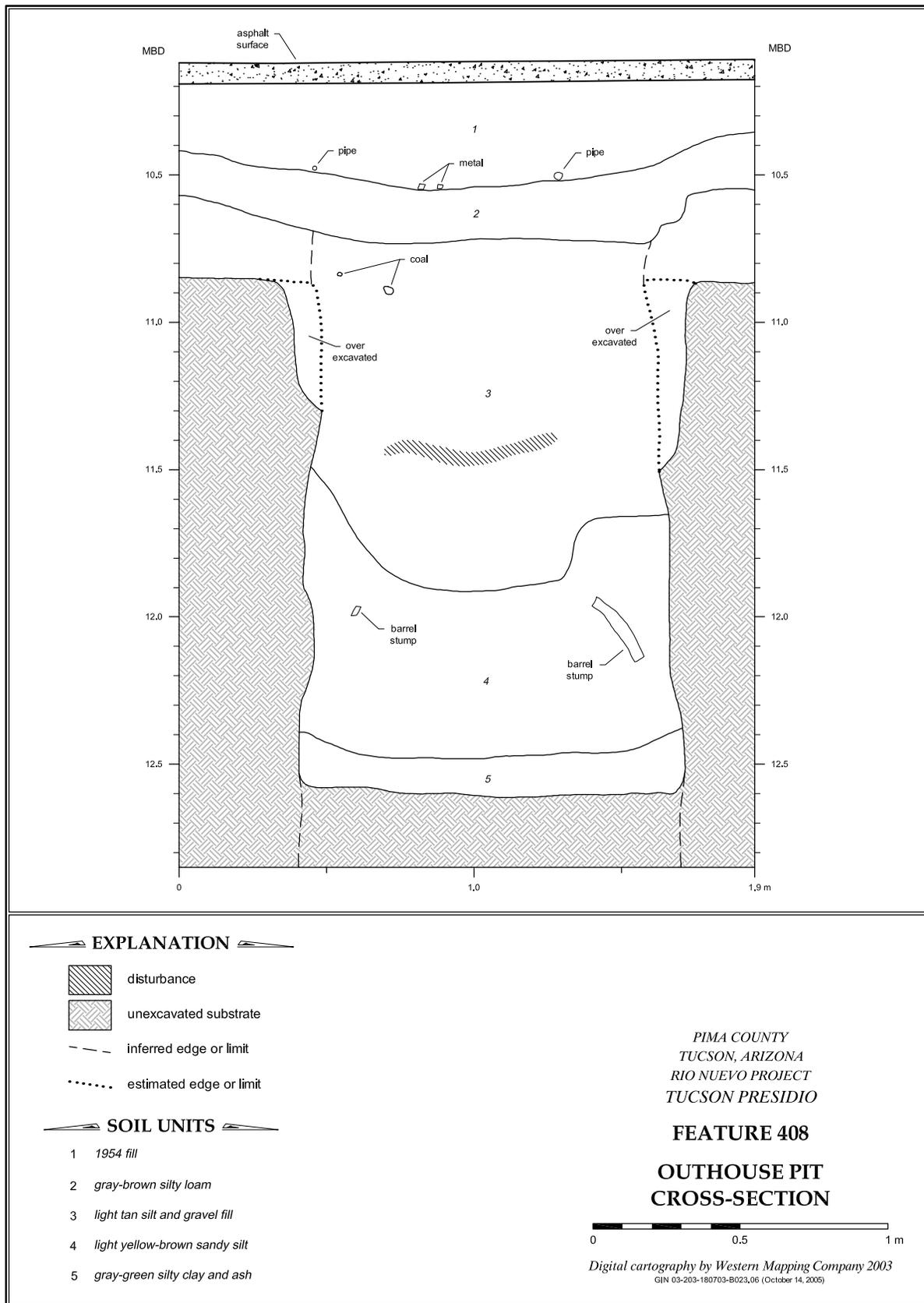


Figure 4.89. Profile of Feature 408, an American Territorial period outhouse, Tucson Presidio, AZ BB:13:13 (ASM).

on the types of transfer-print ceramics found in the soil on top of the surface (Figures 4.90-4.91). This surface extended across the entire exposed area, about 5.6 m by 5.0 m, except where it had been cut by later features. Thirty postholes cut through the surface and appeared to represent one or more ramada structures. These simple structures had a framework of wooden posts and were probably covered on the outside with thatching made from grass or other materials. Many of the posts of the ramada had been replaced as they deteriorated, with new posts positioned next to the old ones. A fragmentary adobe wall, Feature 389, was found in the north-eastern corner of the excavation Unit and appeared to also rest on the surface. It probably represents a portion of another early American Territorial period structure, perhaps a building depicted on the 1862 Fergusson map of Tucson (Figure 4.92).

Later American Territorial period features included a cluster of planting pits in the center of the lot. This area was directly behind the boardinghouse, and the pits probably represent places where trees or bushes were planted. They contained relatively few artifacts, a result of the pits being immediately refilled soon after they were dug.

Other post-1880 features included a small portion of a brick walkway, a dog burial, a cat burial, a large trench in which utilities (gas, water, and sewer) had been placed, postholes from a shed at the southwestern corner of the lot, and postholes from a fenceline found running through the center of the lot. Dozens of other American Territorial features likely remain to be found in the unexcavated portions of the site.

DETAILED HISTORIC ERA FEATURE DESCRIPTIONS

Detailed descriptions of the Historic era features discussed above are presented below.

Feature 351

This adobe wall was discovered during mechanical stripping. The wall had been previously excavated in 1954, by Alan Olson, who recorded it as the north-eastern corner of the presidio. This subsequent excavation revealed that this portion of wall was, in fact, part of the eastern wall of the *torreón*, or tower, that stood at the northeastern corner of the presidio.

Excavation exposed 17.61 m of this wall that measured about 98 cm in width along its length. The basal course of adobe bricks for the wall had been laid directly on the ground, and no evidence for a foundation trench or stone foundation was discovered. Puddled adobe had been placed on top of the basal

course of adobe bricks before another course of bricks would have been laid on top. The bricks of the wall varied dramatically in size. The remaining base of the wall stood at a height of roughly 30 cm. No evidence was found that the wall had been plastered or stuccoed.

When originally completed, the eastern wall of the tower was about 17.81 m long and between 0.98 m and 1.15 m wide. The tower wall was constructed sometime in the early 1780s, and historical accounts suggest at least portions of the wall were still standing until they were dismantled in the 1850s.

Feature 352

This utility trench was discovered during mechanical stripping of the area. The trench was excavated sometime between 1910 and 1940, to provide water, sewer, and gas service. Pipes for these three utilities still remained in the trench, although they were out of service. The excavated portion of the trench measured approximately 5.0 m in length and 3.4 m in width. The trench disturbed portions of the Hohokam pit structure, Feature 350, excavated by Olson, and the southern *torreón* wall, Feature 377.

Feature 353

This feature appeared as a ring of adobe some 1.28 m in diameter. The center hole measured about 60 cm in diameter, and appeared to be filled with cultural fill that resembled the matrix surrounding the ring. The adobe that composed the ring measured between 35 cm to 43 cm along its circumference and was roughly 10 cm in depth. The western portion of this feature was disturbed, although no pit or other feature could be identified as the source of the disturbance. This adobe ring did overlie the northwestern portion of Feature 354, a trash-filled pit that dated to the 1900s. No artifacts were observed in Feature 353, and its function was unknown.

Feature 354

This small pit was discovered during mechanical stripping, just below the asphalt surface. It appeared as a pit filled with sand and gravels in the silty loam matrix. When excavated, the pit was roughly circular, with a basin-shaped profile. The northwestern portion of the pit was capped by an adobe ring of unknown function, Feature 353.

The pit measured roughly 1 m long, 96 cm wide, and 26 cm deep. Artifacts recovered from the pit included Native American sherds, metal, unworked

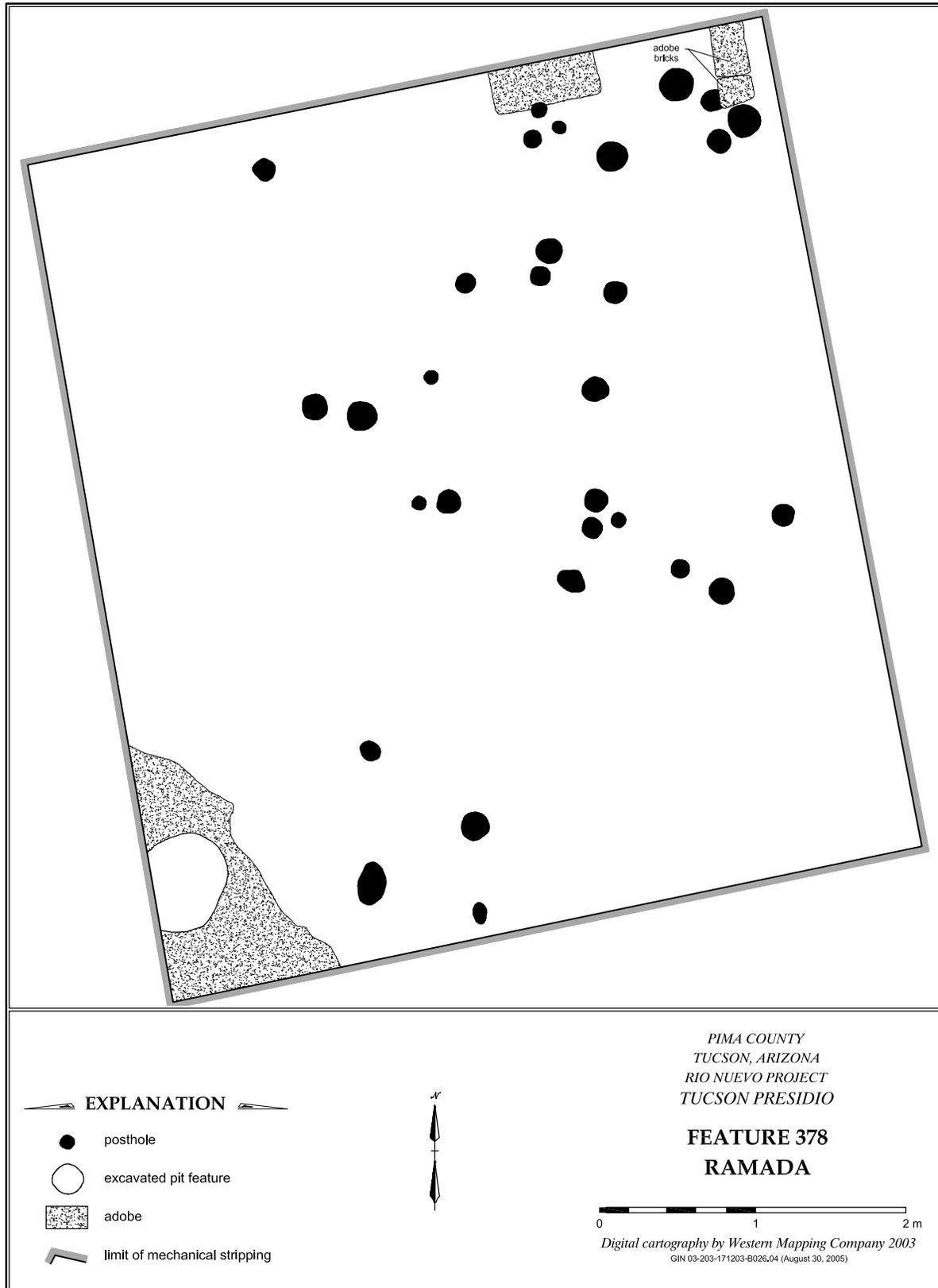


Figure 4.90. Feature 378, a set of American Territorial period postholes for a probable ramada structure, Tucson Presidio, AZ BB:13:13 (ASM).



Figure 4.91. Photograph of the Feature 378 postholes and other features, Tucson Presidio, AZ BB:13:13 (ASM).

animal bone, flaked stone, glass, historic ceramics, buttons, some worked animal bone, and a charred fruit pit. This feature probably dated to the early 1900s.

Feature 356

This large oblong pit was discovered during mechanical stripping under the lot's asphalt surface. It had vertical sidewalls and measured 2.05 m in length, 1.06 m in width, and 46 cm in depth. The pit intruded on the fill of Features 363 and 364, two earlier pits. The southeastern edge of this feature was itself disturbed by an intrusive pit, Feature 357.

Fill of the pit was grayish-brown sandy silt with abundant amounts of charcoal and ash. Both the percentage of sand in the matrix and the concentration of charcoal decreased with depth. Artifacts recovered from the fill included Native American sherds, historic ceramics, glass, flaked stone, metal, a few buttons, and some fragments of red brick. One brown glass alcohol bottle was embossed on the base with the letters "R & Co." Toulouse (1971:438) dates use of this marking to between 1879 and 1888. A few brick-like chunks of adobe were also discovered in the fill at about mid-depth. This pit was thought to date to the late 1800s.

Feature 357

This irregular pit was discovered during excavation of Feature 356, a large historic pit upon whose eastern edge it intrudes. Only a portion of the irregular pit was excavated, as it extended out of the stripping unit to the east. The excavated portion of the pit

measured 1.08 m in length, 68 cm in width, and 55 cm in depth.

Two distinct strata were visible. The upper 35 cm of fill was gray sandy silt with moderate amounts of charcoal and ash. Artifacts recovered from this upper fill included Native American sherds, metal, unworked animal bone, flaked stone, and some glass. The lower 20 cm of fill was of similar composition, but was yellowish-brown in color. The concentration of charcoal and ash decreased considerably, and numerous chunks of adobe were present. Artifacts recovered from this fill included Native American sherds, historic ceramics, metal, flaked stone, unworked animal bone, and some glass. Medium-sized cobbles and fragments of red brick were present

throughout both layers of fill. This pit was thought to date to the late 1800s.

Feature 358

This small pit became visible during mechanical stripping just under the asphalt surface. It was circular, with a basin-shaped profile, and measured 1 m in length, 97 cm in width, and 37 cm in depth. Fill of the pit was grayish-brown loam of loose compaction. Artifact density was high throughout the fill, although especially in the northern half of the pit. Artifacts recovered from the pit included Native American sherds, historic ceramics, unworked animal bone, glass, metal, numerous nails, some eggshell, a glass bead, a shell button, and a fragment of chalkboard slate. Charcoal and charcoal flecking were present throughout the fill. Rodent and root turbation were evident in the margins of the pit, especially in the southern half. This pit probably dated to the early 1900s.

Feature 359

The southeastern corner of this large, irregularly shaped borrow pit was discovered during mechanical stripping. The pit extended out of the stripping unit to the north and west. The excavated portion measured 4.0 m in length, 2.5 m in width, and about 84 cm in depth. Another edge of this borrow pit was discovered in a stripping unit to the north, suggesting this borrow pit may have measured more than 10 m in diameter. This northern portion of the feature was excavated as Feature 437.

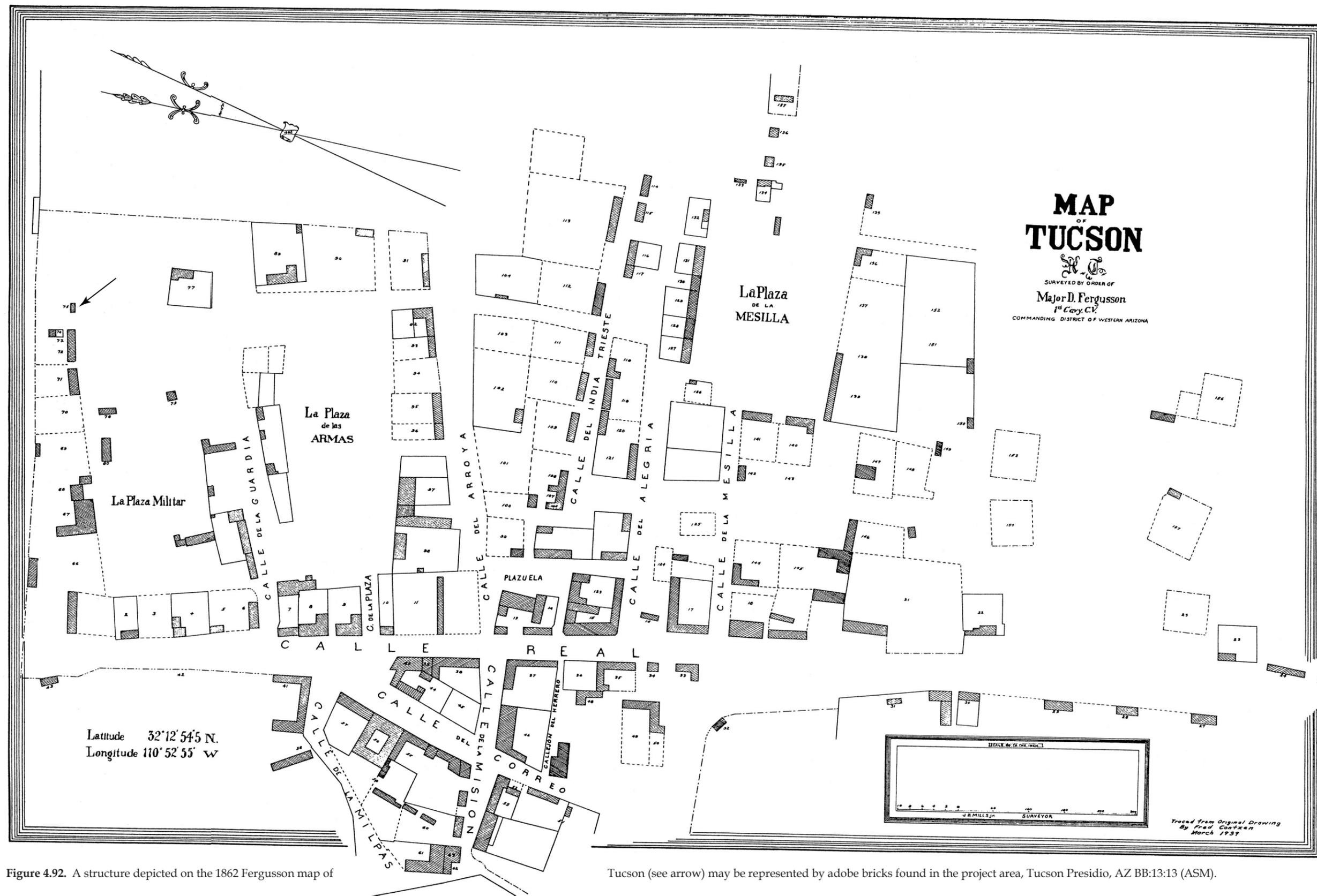


Figure 4.92. A structure depicted on the 1862 Fergusson map of

Tucson (see arrow) may be represented by adobe bricks found in the project area, Tucson Presidio, AZ BB:13:13 (ASM).

Fill of the pit was in three distinct strata. The borrow pit was capped by a thin layer of coarse pinkish sand with no artifacts. The next stratum averaged about 30 cm in depth, and was composed of a gray sandy loam with large concentrations of charcoal and ash. Several separate dumping episodes were visible in this stratum. This layer of ashy trash contained most of the artifacts recovered from the borrow pit.

Artifacts recovered from this stratum included very high concentrations of Native American sherds, historic ceramics, glass, and metal. Many domestic items were also discovered, including toy wheels, eyeglasses, ceramic doll parts, buttons, two horse-shoes, a door lock, pieces of a hurricane lamp, fragments of school slate, pencil leads, two Chinese coins, worked bone and shell, a pipe stem, and whole infant food bottles.

The lower 54 cm of fill in the borrow pit was composed of degraded adobe blocks and adobe melt. This fill was thought to represent a dump of construction materials, prior to the use of the pit as a dump for the domestic trash. These construction materials contained much lower concentrations of artifacts than the ashy layer above. Artifacts recovered from this stratum included some rusty metal, flaked stone, some unworked animal bone, glass, and a few Hohokam sherds. A small pocket of stones of the type used in building foundations was located within the adobe.

Feature 369, a small, square historic posthole, intruded on the very eastern edge of this feature. Many datable artifacts were recovered from the fill of the borrow pit. Several aqua glass bottles were found embossed with "MELLIN'S INFANT'S FOOD/DOLIBER-GOODALE CO BOSTON/LARGE SIZE." Fike (1987:57) dates these bottles to circa 1888. An aqua glass medicine bottle reading "Trask's Magnetic Ointment" dated from between 1846 and 1915 (Wilson 1981:48). Also found was a brown glass beer bottle, embossed on its base with the letters "R & Co." Use of this marking dates between 1879 and 1888 (Toulouse 1971:439). A whiteware saucer from Alfred Meakin Pottery dated to between 1897 and 1930 (Godden 1971:425). This borrow pit was thought to date to the late 1890s or early 1900s. An additional portion of this pit was excavated in 2005-2006.

Feature 360

This privy pit or well was discovered during mechanical stripping under the asphalt surface of the lot. The pit was rectangular in shape and measured 1.56 m in length and 86 cm in width. A small portion of the privy extended out of the stripping unit to the south and was left unexcavated. The pit had straight

sidewalls and was excavated to a depth of approximately 2.3 m. The remaining fill could not be excavated for safety reasons, but a 1-m-long probe pushed into the fill did not hit bottom. This privy pit intruded into the fill and through the base of an underlying presidio-occupation borrow pit, Feature 373.

The upper 1.3 m of fill of the privy pit was found to have been bottlehunted sometime prior to construction of the parking lot in 1955. This was evidenced by a stratum of clean white sand and gravel that had been redeposited into the pit. This fill was removed without screening down to the intact fill of the privy pit. The remaining 1 m of excavated fill was brown sandy loam with large lenses of charcoal and ash. Artifact density was very high throughout the fill. Artifacts recovered from the fill consisted of metal, burned animal bone, a piece of ground stone, some glass, buttons, battery cores, some newspaper, Native American sherds, and historic ceramics. Several whole or reconstructable glass bottles and a partially reconstructable ceramic chamber pot were also recovered from the fill. The unexcavated fill below this stratum appeared to also be brown sandy loam. After excavation concluded, the fill inside the feature subsided approximately 7 m.

Several datable artifacts, including two bottles and two whiteware saucers, were also found. One aqua glass bottle bore the "AB" mark of the Adolphus Busch Glass Manufacturing Company of Belleville, Illinois, on its side. Toulouse (1974:24) dates the use of this bottle mark to 1904-1907. The second bottle, a brown glass alcohol bottle, was embossed on its base with the letters "R & Co." Use of this marking dates between 1879 and 1888 (Toulouse 1971:438). The whiteware saucers were from two separate sources, the first bearing a maker's mark reading "HALL CHINA" and the second reading "K. T. & K. CO. SEMI VITREOUS PORCELAIN." The first mark dates to between 1903 and 1911 (Gates and Ormerod 1982:56), and the second dates to between 1890 and 1905 (Gates and Ormerod 1982:125). Both pieces were from companies based in East Liverpool, Ohio (Gates and Ormerod 1982).

This privy was thought to date to the early 1900s, and was probably used by occupants of a nearby boardinghouse.

Feature 361

This ash-filled hearth was discovered during mechanical stripping. The hearth appeared oblong in plan view, had a basin-shaped profile, and measured 49 cm in length, 22 cm in width, and 11 cm in depth. Fill of the pit was almost pure gray ash, mixed with small amounts of silty loam. The fill contained

several small chunks of oxidized daub and abundant amounts of charcoal and charcoal flecking. Artifacts recovered from the fill consisted of a few pieces of unworked cow bone and one piece of historic ceramic. Pit base showed some slight oxidization and blackening.

Disturbance to the feature was moderate. Two trenches intruded on portions of the feature: one a gas line trench and the other a test trench excavated by Alan Olson in 1954. A small rodent disturbance also intersects the southwestern edge of the hearth.

The historic ceramic recovered from the fill suggested the hearth probably dated to either the Mexican or American Territorial period.

Feature 363

This small circular pit was discovered during excavation of a larger pit, Feature 356. Feature 363 was intruded on by Feature 356. The upper 40 cm of fill was removed along with the fill of the larger pit. It was not until the fill of this smaller feature became more distinctive that it was recognized as a separate feature. Feature 363 was circular in plan, had straight walls with a rounded bottom, and measured about 1 m in diameter. It had an overall depth of 57 cm, including the portion removed with Feature 356.

Feature 363 appeared to cut into the southeastern corner of the *torreón* wall conjunction of Features 351 and 377. The profiles of several adobe bricks were visible in the profile of the northern side.

This pit was located in a cluster of other pits—Features 356, 357, 358, and 364. The lower 17 cm of fill was tannish-brown sandy silt with few artifacts. Artifacts recovered included Native American sherds, unworked animal bone, metal, and construction debris (red brick and cement). Feature 363 probably dates to the late 1800s.

Feature 364

This small, oval-shaped pit was discovered during excavation of Feature 356, a larger pit. Feature 356 intruded on Feature 364, destroying the eastern half. The remaining portion of Feature 364 measured 1.25 m in length, 65 cm in width, and 46 cm in depth. Portions of the southern, Feature 377, and eastern, Feature 351, walls of the *torreón* were visible in the margins of this pit.

Fill of the pit was grayish-brown sandy silt with some charcoal chunks and flecking. Artifacts recovered from the fill included Native American sherds, a few pieces of flaked stone, historic ceramics, metal, glass, and some unworked animal bone. A few pieces

of concrete and fragmentary red bricks were also discovered. Feature 364 was thought to date to the late 1800s.

Feature 365

This small pit was discovered during excavation around a Hohokam pit structure, Feature 350. The pit appeared circular in plan view and had a basin-shaped profile. It measured 95 cm in length, 60 cm in width, and 18 cm in depth. The pit was slightly truncated on its southern end by a utility trench, leaving about two-thirds of the pit intact.

Fill of this feature was brown sandy loam with chunks of burned daub, charcoal, and some ash. Artifacts recovered from the fill included Native American sherds, unworked animal bone, glass, historic ceramics, and metal. Similarities were noticed between the fill of this feature and the redeposited fill of Feature 350, the Hohokam pit structure originally excavated by Olson. The mixing of both prehistoric and historic materials in the fill raised the possibility that this pit had also been previously excavated. No documentation exists to confirm this possibility.

Feature 366

This small pit was discovered during the excavation a 2-m by 2-m control unit. It was an ovate pit with vertical sidewalls that measured 64 cm in length, 51 cm in width, and 40 cm in depth. Fill was grayish-brown sandy silt with some small chunks of charcoal. Artifacts recovered from the fill included Native American sherds, animal bone, pieces of flaked stone, some glass, historic ceramics, and metal.

The pit was thought to date to the early 1900s. The function of the pit was unclear.

Feature 367

This posthole was discovered during mechanical stripping. It contained an intact but poorly preserved wooden timber that measured 29 cm long and 2 cm wide. The hole itself was 56 cm long, 48 cm wide, and 48 cm deep, much larger than what was needed to hold the wooden post. The hole was likely originally dug for another use, but was then later reused to hold the post. Several other postholes were located in this area, although the function they served was unknown.

Fill was brown silty sand that was very loosely compacted. The artifact density of the fill was moderate, and increased slightly with depth. Artifacts

recovered from the posthole included Native American sherds, unworked animal bone, some glass, historic ceramics, rusty metal, and a piece of a school slate. Many rusted nails were present at the base of the wooden post. This posthole was thought to date to the 1900s.

Feature 368

Feature 368 consisted of a series of 12 brick-lined postholes thought to represent supports for a small outbuilding. The postholes varied greatly in size and depth. Measurements ranged from: 7-80 cm long, 7-32 cm wide, and 23-98 cm deep. Only three of the postholes—Features 368.07, 368.08, and 368.12—were completely excavated, although six others—Features 368.01-368.06—were visible in profile. Two postholes, Features 368.10 and 368.11, remained completely unexcavated.

Artifacts recovered from the three excavated postholes included Native American sherds, historic ceramics, metal, some unworked animal bone, and pieces of glass. Four of the postholes, Features 368.08-368.12, contained in situ wooden post fragments. Features 368.07 and 368.08 intruded into the fill of Feature 376, a large borrow pit.

All the postholes had at least one brick lining the sides, although one or two shared bricks. The postholes were thought to be supports for an outbuilding or roofed area. This feature probably dated to the early 1900s.

Feature 369

This posthole was discovered during excavation of a historic borrow pit, Feature 359. It was intrusive to the fill of the earlier borrow pit and extended through the original base of the pit. The posthole was roughly square and measured 26 cm in length and width and 30 cm in depth. Fill was loose brown sand, and the artifact density of this fill was lower than that of the fill of the borrow pit. Artifacts recovered from the posthole included Native American sherds, unworked animal bone, a few historic ceramics, some glass, and rusty metal. The function of this posthole was unknown. Feature 369 was thought to date to sometime between 1900 and 1955.

Feature 370

This modern dog burial was discovered in the eastern profile of a mechanical stripping unit. No pit was visible, but the area containing visible bone

measured 50 cm in length and 2 cm in depth. A portion of the dog burial extended into a hand-excavated control unit. A few leg bones were recovered and collected. The main concentration of the burial extended into an unstripped area and remained unexcavated.

Feature 371

This small pit was discovered during hand-stripping of the eastern wall of the *torreón*. This roughly circular pit cut through the adobe bricks that formed the remaining base of the wall. Roughly two-thirds of the pit lay outside the stripping unit, and therefore, remained unexcavated. Walls of the pit were vertical where visible. The complete measurements of the pit were estimated to be 1.49 m long, 1.38 m wide, and 75 cm deep.

The fill consisted of light brown sandy silt with some ash and charcoal. The upper fill of the pit originated above the intact bricks of the *torreón* wall, although this fill had probably been disturbed by the construction of the lot's asphalt surface. The highest concentration of artifacts was found in the upper 30 cm of fill. Artifacts recovered from the upper fill included Native American sherds, historic ceramics, some animal bone, glass, metal, some flaked stone, an obsidian Sobaipuri projectile point, and some fragments of early plastic.

The artifact density dropped considerably in the remainder of the fill. The lower fill was slightly darker sandy silt with only a few small flecks of charcoal. This lower fill contained a few Native American sherds, rusty nails, and fragments of animal bone. This pit likely dated to the early 1900s.

Feature 372

This small pit was discovered during mechanical stripping. It was roughly circular in shape, and measured 83 cm in length, 75 cm in width, and 12 cm in depth. The walls of the pit sloped sharply and ended in a fairly flat base. Fill of the pit was a dark gray-brown sandy loam with large quantities of ash and pulverized charcoal.

Artifact density of the fill was very high, and all the artifacts showed signs of having been burned. Artifacts consisted of Native American sherds, historic ceramics, some shell, fragments of animal bone, abundant quantities of metal, a metate fragment, a button, and a few pieces of vitrified glass. The trash fill appeared to have been redeposited in this pit after it had burned, as the pit showed no signs of having been oxidized.

One datable green glass bottle was recovered from the fill. It bore the letters "E B & Co" on its base, used by Edgar F. Breffit & Co. of Yorks, England, between 1832 and 1913 (Toulouse 1971:79). This pit was thought to date to the early 1900s.

Feature 373

This large, irregularly shaped borrow pit was encountered during excavation of an American Territorial period privy pit, Feature 360. The privy cut through the fill and base of the underlying borrow pit. The borrow pit was approximately 3.5 m long, 2.2 m wide, and 62 cm deep. It was one large pit at the top, with three separate areas of greater depth. The overlying privy likely disturbed another of these deeper areas. The upper fill of the borrow pit was also slightly intruded on by Feature 375.04, a posthole from a historic fenceline.

Fill of the borrow pit was gray-brown sandy loam with abundant amounts of ash and charcoal, as well as a few chunks of fired adobe. Although the fill was similar in color and composition throughout, several different layers of trash deposition and a small lens of water-lain soil were visible in profile. Artifacts were abundant throughout the fill. They consisted of Native American sherds, presidio-occupation historic ceramics, flaked stone, worked shell, a flaked stone projectile point, some animal bone, a few musket balls, and a gunflint.

This feature appeared to originate at a presidio-occupation ground surface, Feature 418, and probably dated to that period—the 1820s.

Feature 374

This adobe wall was discovered during mechanical stripping under the asphalt surface of the lot. The wall was the northern wall of the *torreón*. The exposed section of wall measured 11.43 m in length and 1.25 m in width. It was intruded on by a modern posthole, Feature 375.02, and a modern utility trench.

The wall was constructed of adobe bricks laid directly on the presidio ground surface, with no constructed foundation or foundation trench. Puddled adobe found atop the basal course of bricks suggested the wall was built of alternating layers of adobe bricks and puddled adobe. The remaining wall stood an average of 27 cm in height.

When originally constructed, the northern tower wall was about 17.25 m long and 0.98-1.15 m wide. The tower wall was constructed sometime in the early 1780s, and historical accounts suggest at least por-

tions of the wall were still standing until they were dismantled in the 1850s.

Feature 375

This was a series of five postholes discovered across the site. They were given a single feature number despite their range due to similarities in appearance and fill. All originated just below the asphalt surface of the lot at the 1950s ground surface. They ranged in size from 26 cm to 37 cm in length, from 20 cm to 33 cm in width, and from 30 cm to 60 cm in depth. All contained loosely compacted coarse orange sand. No artifacts were recovered from any of the postholes. The postholes were thought to represent a fence or utility line that dated to the mid-1900s.

Feature 376

This was a large, irregularly shaped borrow pit discovered during mechanical stripping beneath the asphalt surface. Three posts—Features 368.04, 368.05, and 368.08—from a possible structure, Feature 368, intruded on the top layers of pit fill. The excavated portion of Feature 376 measured 3.15 m in length, 3.05 m in width, and 1.07 m in depth. The pit continued out of the stripping unit to the east and south. During excavation, the sloping edges of the pit were defined on the northern and eastern sides. The fill was grayish-brown sandy loam with ash lenses and moderate amounts of charcoal. A few distinct dumping episodes were visible as the stratigraphy of the pit, including a large lens of almost pure charcoal.

Artifacts were very abundant throughout the fill. Materials recovered included Native American sherds, various historic ceramic vessels and dolls, flaked stone, several pieces of ground stone, shell, glass, metal, leather, jewelry, a coin, pencil leads, buttons, and both worked and unworked animal bone. The artifacts near the bottom of the pit appeared burned, especially the sherds and animal bone. No oxidation was visible on the pit margins. This suggested the fill had been burned elsewhere before being deposited into this pit.

Datable artifacts recovered from the fill included two whiteware plates. One bore the impressed maker's mark "STONE CHINA / J. T. CLOSE & CO. / STOKE UPON TRENT," used by Close & Co. between 1855 and 1864 (Godden 1991:153). The second plate also had an impressed maker's mark that read, "TRADE MARK T. & R. BOOTE ROYAL PATENT IRONSTONE / T. & R. BOOTE IRONSTONE." This mark was used by T. & R. Boote Ltd., between 1842 and 1890 (Godden 1991:84). One brown glass bottle

found in the fill was also datable. The base of the bottle was embossed with "M. G. Co.," used by the Millgrove Glass Company, of Millgrove, Indiana, between 1898 and 1911 (Toulouse 1971:359). These artifacts suggested the borrow pit dated to the late 1800s. An additional portion of this borrow pit was excavated in 2005-2006 as Feature 624.

Feature 377

This adobe wall was revealed during mechanical stripping and was found to be the southern wall of the *torreón*. It consisted of a single course of adobe bricks laid directly on the ground surface. No evidence of a foundation or foundation trench was discovered. The wall was composed of irregular bricks of varying sizes. Bricks were mostly subrectangular, and averaged roughly 25 cm on a side. The puddled adobe found intact on the other two walls of the *torreón*, Features 351 and 374, was not present on this portion.

The wall was heavily disturbed by several overlying features and by construction of the parking lot. The intact portion measured roughly 6.45 m in length, 1.15 m in width, and about 10 cm in height. Two pits, Features 394 and 407, cut the intersection of this wall with the adobe wall of the presidio, Feature 400. The intersection of this wall with the eastern wall of the *torreón* was also cut by two pits, Features 363 and 364. Feature 352, a utility trench, also cut a portion of the wall. Based on the locations of these other two walls, the southern wall of the *torreón* was estimated to have been nearly 7.9 m in length when first constructed. Abutment/bonding details of the wall connections were destroyed by these overlying features.

When originally constructed, the southern tower wall was some 7.59 m long and 1.10-1.25 m wide. The tower wall was constructed sometime in the early 1780s, and historical accounts suggest at least portions of the wall were still standing until they were dismantled in the 1850s.

Feature 378

This extramural surface was discovered during hand-excavation in several adjacent control units. All the units were excavated to expose this extremely compacted surface. A series of postholes was visible in the surface and thought to be a wattle-and-daub or ramada structure associated with the use of the surface. Both the surface and the postholes share the same feature number. The postholes covered an area that measured 3.6 m in length and 1.9 m in width.

The compact surface was present around the postholes except where overlying intrusive features cut through it. Two adjacent adobe bricks, Feature 389, appeared to be sitting on the surface in the extreme northeastern corner of the unit.

Thirty postholes that appeared to originate at this surface were revealed. They were numbered Features 378.01-378.11, A-E, and G-T. The postholes ranged in size from: 9-23 cm in length, 8-23 cm in width, and 6-61 cm in depth. Artifacts recovered from the postholes included Native American sherds, historic ceramics, flaked stone, glass, animal bone, metal, and a porcelain button. Several of the postholes were located in clusters, suggesting that some of the posts may have represented remodeling or repair of the structure.

No artifacts were recovered from the ground surface. This surface capped lower features that originated at the presidio ground surface, Feature 418. This possible structure and associated surface were thought to date to the 1850s or 1860s. An additional section of this surface was excavated in 2005-2006.

Feature 381

This small pit was discovered during hand-excavation of a control unit. It was elliptical in shape and had vertical walls. The northern edge of the pit appeared to have been disturbed by a rodent burrow, although measurements could only be estimated at 60 cm in length, 35 cm in depth, and 36 cm in depth. Fill was a brown sandy loam with some sand and small gravels. Artifacts recovered from the fill included Native American sherds, some animal bone, historic ceramics, glass, and a few pieces of metal. The pit originated above, and intruded through, a surface from presidio times, Feature 378. Feature 381 probably dated to the early 1900s.

Feature 382

This small pit was discovered during excavation of a 2-m by 2-m control unit. The pit extended out of the control unit to the north, and only a portion was excavated. That portion was 97 cm long, 26 cm wide, and 28 cm deep. The pit appeared circular in shape, based on the visible area and the profile revealed in the unit wall.

The fill was a light brown silty loam with some light charcoal flecking. Light caliche flecking, fragments of red brick, and a few medium-sized rocks were also observed. Artifacts recovered from the fill included Native American sherds, historic ceramics, metal, glass, unworked animal bone, and some

plastic. The pit ended atop a 3- to 4-cm-thick lens of charcoal-rich silty loam, but did not intrude through it. This pit was thought to date to the 1910s.

Feature 383

This small pit was discovered during hand-excavation of a control unit. Only a portion of the pit, 91 cm long and 71 cm wide, was visible in the unit. The pit extended out of the unit to the north, but appeared oblong in shape. Fill of the pit was light brown sandy loam with some light charcoal flecking. The pit may have actually started a bit higher, but was disturbed by construction of the 1955 asphalt surface. Artifacts recovered from the remaining 20 cm of fill included Native American sherds, historic ceramics, unworked animal bone, flaked stone, some glass, metal, and a piece of plastic. Feature 383 probably dated to the early to mid-1900s.

Feature 384

Two postholes were revealed during hand-excavation of a control unit. They appeared to originate at the same surface and were recorded together. The fill of both postholes was brown silty loam with some light charcoal flecking. Posthole A measured 18 cm in length, 16 cm in width, and 22 cm in depth. It contained some glass, a few rusty nails, one piece of fragmentary animal bone, and an ammunition cartridge. Posthole B was 30 cm long, 18 cm wide, and 24 cm deep. It contained one rusty nail and fragments of a deteriorated wooden post. None of the artifacts were collected from either posthole. These postholes were thought to date to the 1920s.

Feature 385

This portion of a very large borrow pit was found during mechanical stripping. The excavated portion of the pit measured 4.83 m in length, 2.00 m in width, and 46 cm in depth. Only the eastern edge of the pit was revealed, and the pit appeared to have once continued to the north, west, and south. On the northern and western sides, however, stood the retaining walls for the parking lot. These walls cut well below the base of the borrow pit, and suggested that whatever existed beyond these walls had been destroyed. The pit may still be intact to the south, but this area was left unexcavated.

Several distinct strata were discovered in the fill. The pit was capped by a very thin, <1-cm-thick, layer of compact dark brown silty loam with adobe melt

and numerous clay brick fragments. Under this thin cap was a 39-cm-thick layer of loose brown silty loam with some light charcoal flecking. Adobe and clay brick fragments were also present in this stratum, but not as much adobe melt was present. In the lower 5 cm of this layer, a new stratum of red silty sand began in the western third of the pit. The sand appeared to continue to the west into an unexcavated portion of the feature. The lowest 6 cm of fill gradually became light brown clayey silt that underlay both the strata above.

Artifacts were present in all four strata of the pit but were most numerous in the brown sandy loam. Material types were consistent across all strata, and only the frequency of artifacts differed. Artifacts recovered from the fill included Native American sherds, historic ceramics, pieces of flaked stone, some ground stone, glass, leather, metal, buttons, clay marbles, ceramic doll parts, battery cores, and some pieces of plastic. This borrow pit was thought to date to the early 1900s.

Feature 386

This rock column was discovered during hand-excavation just north of the southern *torreón* wall, Feature 377. It was a roughly circular course of 10 cobbles, 31 cm long, 26 cm wide, and 10 cm high. The individual cobbles varied from 4-12 cm in diameter. Some of the cobbles may have been removed during excavation of the surrounding fill.

This feature had no fill of its own but instead, was within a matrix of dark brown sandy silt. It did not appear to be a roasting feature, as none of the cobbles were fire cracked, and no signs of oxidization were present. This feature was thought to represent the base of a support post for the inner walkway of the *torreón*. An area of puddled adobe, Feature 404, found along the northern wall of the *torreón* was thought to serve the same purpose. No artifacts were recovered from the rock column. Feature 386 probably dated to the presidio occupation.

Feature 387

Feature 387 was an area of puddled adobe sitting on a compacted dirt surface, Feature 378, thought to date to the 1850s-1860s. The area measured 64 cm in length, 48 cm in width, and 7 cm in height. A circular depression was in the center of the puddled adobe. The fill of the depression was laminated sand and clay with no artifacts. The purpose of this feature was unknown. The puddled adobe was thought to date to the late 1800s.

Feature 389

This feature consisted of two adobe bricks laid directly on a hard ground surface, Feature 378, thought to date to the 1850s-1860s. The bricks were in the extreme northeastern corner of the stripping unit and may continue to the north or east. The bricks measured 25 cm in width and 12 cm in depth. The limited exposure of the bricks made their function difficult to determine. Several postholes that originated at the same ground surface lay directly to the south. It is unknown if the bricks and the postholes were related. The adobe bricks probably dated to the mid- to late 1800s.

Feature 390

This partially reconstructable *olla* was found during hand-excavation of a control unit. When first discovered, the vessel seemed to be in a pit, as the soil matrix surrounding the vessel was primarily ash. Upon excavation, however, no pit could be identified. The vessel and the ash appeared to have been part of a trash lens discarded on the surface that was then buried. This ash and trash may have originated from Feature 394, a possible hearth just to the northeast; this did not seem likely, however. Part of this trash lens appeared to have been cut by the fill of the hearth. The vessel probably dated to the late 1800s.

Feature 391

This posthole was discovered during hand-excavation of a control unit. It was slightly ovate in shape, and measured 32 cm in length, 27 cm in width, and 29 cm in depth. The sides of the posthole were vertical. The fill was dark brown silty sand; artifacts recovered from the fill included Native American sherds, historic ceramics, some unworked animal bone, glass, and pieces of metal.

Another posthole, Feature 392, was found directly adjacent. It was not known how or if the two were related. Both of these postholes cut into the fill of an older presidio borrow pit, Feature 409. The posthole was thought to date to the early 1900s.

Feature 392

Feature 392 was found during hand-excavation of a control unit. It was located directly adjacent to Feature 391, another posthole. It was not known if the two were related. Both of these postholes cut into the fill of an older presidio borrow pit, Feature 409.

This posthole was roughly square in shape, and measured 26 cm in length, 25 cm in width, and 25 cm in depth. Walls of the posthole were vertical. It contained a fill of dark brown silty sand. Artifacts recovered from the fill included unworked animal bone, pieces of glass, and some metal. At the base of the posthole, a circular area 15 cm in diameter was discovered. This was thought to represent the base of the post the posthole once held. Feature 392 was thought to have dated to the early 1900s.

Feature 393

This posthole was discovered during hand-excavation of a small pit, Feature 398. It was found to be intrusive to the fill of the pit. The posthole measured 30 cm in length, 28 cm in width, 22 cm in depth. Fill was grayish-brown clayey silt that did not contain any artifacts. A small bit of decaying wood was present in the upper 5 cm of fill, but was not collected. This posthole was thought to have dated to the late 1800s or early 1900s.

Feature 394

This possible hearth was discovered during excavation of a reconstructable *olla*, Feature 390. The hearth was a roughly circular pit, with a basin-shaped profile. It measured 90 cm in length, 70 cm in width, and 28 cm in depth. The hearth was constructed into the fill of Feature 407, an earlier pit. The fill was composed almost completely of a greenish-gray ash with abundant amounts of charcoal. Artifacts recovered from the fill included Native American sherds, historic ceramics, pieces of flaked stone, some shell, unworked animal bone, metal, and pieces of glass. The animal bone discovered in the fill had burned intensely. Oxidization of the margins of the pit suggested one or more episodes of burning, and that the burning of the fill had occurred in situ.

This hearth may have been the source for the lens of ash and trash observed during excavation of the *olla*, Feature 390. This scenario did not seem likely however, as the fill of the hearth appeared to have cut the ash deposit. This possible hearth was thought to date to the late 1800s or early 1900s.

Feature 395

This small pit was discovered during excavation of a utility trench, Feature 352. The utility trench appeared to have removed most of the fill and the eastern side of the pit. The pit was estimated to have

measured 60 cm in length, 38 cm in width, and 40 cm in depth. It would have been ovate in shape, and the remaining walls sloped sharply toward the rounded base. The fill of the pit was brown sandy loam. Artifacts recovered from the fill included Native American sherds, historic ceramics, and a few pieces of unworked animal bone. One large river cobble and some fragmentary red bricks were also discovered, but were not collected. Feature 395 was thought to have dated to the late 1800s or early 1900s.

Feature 396

Feature 396 was discovered during hand-excavation of a control unit. Only a portion of the pit was excavated, however, as it extended north out of the control unit. The excavated portion measured 61 cm in length, 44 cm in width, and 80 cm in depth. The pit appeared to become deeper to the north where it was visible only in profile.

Fill of the pit was brown silty loam with abundant amounts of charcoal. The concentration of charcoal increased with depth, while the amount of artifacts decreased. Artifacts recovered from the fill included Native American sherds, historic ceramics, unworked animal bone, pieces of glass, and some metal. This pit was thought to date to the early 1900s.

Feature 397

This is a posthole or small pit that was revealed during hand-excavation of a control unit. It was circular in plan view, and measured 25 cm in diameter and 37 cm in depth. The fill was reddish-brown sandy silt with many small gravels. The color of the fill suggested it might have been construction debris. Artifacts recovered from the fill consisted of Native American sherds, pieces of flaked stone, and some very degraded metal.

This posthole cuts through an adobe wall, Feature 399, that abuts the northern wall of the *torreón*, Feature 374. Two other postholes, Feature 375.01 and 375.02, thought to be from utility poles, were found nearby. This posthole could be related to the other two, although the smaller diameter made this seem unlikely.

This posthole or small pit was thought to date to the early 1900s.

Feature 398

This small pit was discovered during excavation of a control unit. It intruded a portion of Feature 400,

an adobe wall thought to be the eastern wall of the presidio. The pit was 1.27 m long, 90 cm wide, and 69 cm deep. The fill was moderately compacted sandy loam. Artifacts recovered from the fill included Native American sherds, historic ceramics, shell, unworked animal bone, some glass, and pieces of metal. The function of the pit was unknown. This pit was thought to date to the late 1800s or the early 1900s.

Feature 399

This section of adobe wall was discovered during excavation around the northern wall of the *torreón*, Feature 374. It measured 1.09 m in length, 1.04 m in width, and 13 cm in height. When excavated, it was composed of a single course of adobe bricks of varying sizes. The upper courses of the wall were thought to have been torn down. A small posthole, Feature 397, from the early 1900s intruded on the remaining course of bricks.

This wall abutted the northern wall of the *torreón*, Feature 374. Feature 404, an adobe column base thought to be a support for the tower walkway, lay just to the east. The original purpose of the wall was unknown, but it may have functioned as an internal wall of the *torreón*. It was not clear how far to the south the wall continued. This wall was thought to date to presidio times.

Feature 400

This adobe wall was discovered during hand-excavation of a control unit and was found to be the eastern wall of the presidio. It was composed of a single course of adobe bricks of varying size. Two pits, Features 398 and Feature 407, destroyed both the northern and southern ends of the exposed wall, as well as the junction of this wall with the southern wall of the *torreón*, Feature 377. The destruction of this junction made it impossible to determine any construction details about the intersection of the two walls. Only five adobe bricks from the wall remained in situ. The wall section measured 1.5 m in length, 57 cm in width, and 12 cm in height.

The wall was composed of adobe bricks laid directly on the ground surface, and no evidence of a foundation or foundation trench was discovered. This wall did not have a course of puddled adobe above the bricks, as did other adobe walls discovered at the site. The puddled adobe had likely been disturbed during construction of the asphalt surface of the lot. No artifacts were collected when the wall was exposed.

When originally constructed, the eastern presidio wall was approximately 181 m long and 56 cm wide. The presidio wall was constructed sometime in the early 1780s. The last standing segment of the eastern wall was torn down in 1918 (Thiel et al. 1995).

Feature 401

This set of four postholes was exposed during excavation of a hand-stripping unit. The postholes were thought to have been a single fenceline or similar feature. Fill of the postholes was loosely compacted brown silty sand. They ranged in size from 15-20 cm long, 12-18 cm wide, and 17-26 cm deep. No artifacts were recovered from any of the postholes. The postholes were thought to date to the early 1900s.

Feature 402

Feature 402 was discovered during hand-excavation of a control unit. The pit appeared circular in plan and basin shaped in profile, but only about half could be excavated because it extended out of the control unit to the north. The excavated portion of the pit measured 45 cm in length, 30 cm in width, and 22 cm in depth. The fill was brown silty loam with abundant amounts of charcoal and ash. The margins of the pit were not oxidized. Artifacts recovered from the fill included Native American sherds, unworked animal bone, glass, and metal. The function of the pit was unknown. This pit probably dates to the late 1800s or early 1900s.

Feature 403

This small section of adobe wall was discovered during hand-excavation around the northern wall of the *torreón*, Feature 374. It was originally excavated by Olson and recorded as a puddled adobe wall. Only a small section of the wall was re-excavated. The re-exposed portion measured 1.02 m in length and 49 cm in height, but only 14 cm in width. It extended into the unit profile to the south and east.

The wall makes an unclear contact with the northern wall of the *torreón*, Feature 374. The contact between the two adobe walls is blurred by erosion, and it made defining their relationship difficult. The small wall is definitely younger, or at least contemporaneous with the northern *torreón* wall. The small wall may have actually cut the wall of the *torreón*. This small section of wall dated to the presidio occupation or later. Its function was unclear.

Feature 404

This small circular adobe feature was discovered during excavation around the northern *torreón* wall, Feature 374. It was thought to be the remnants of an adobe column or column footing. The adobe was roughly circular in shape, and measured 45 cm in diameter and 18 cm in depth. It was unclear if the feature was constructed with puddled adobe or an adobe brick. The adobe was thought to be the remnant of a support for the walkway of the *torreón*. Both the northern *torreón* wall, Feature 374, and another smaller adobe wall, Feature 403, lay nearby. This adobe column was thought to date to presidio times.

Feature 407

This large, irregularly shaped pit was exposed during excavation of Feature 394, a possible hearth. The overlying hearth cut into the upper fill of this feature. The pit measured 1.25 m in length, 69 cm in width, and 17 cm in depth. It was intrusive to the junction of the eastern presidio wall and the southern *torreón* wall, and it completely destroyed the intersection of the two.

The fill of the pit was dark brown sandy loam with abundant amounts of charcoal and a small ash lens. The margins of the pit were not oxidized. Artifacts recovered from the fill included Native American sherds, historic ceramics, pieces of flaked stone, unworked animal bone, pieces of glass, some metal, a piece of leather, and a button. The function of this pit was unknown. This feature was thought to date to the late 1800s or early 1900s.

Feature 408

This privy pit was discovered during mechanical stripping. It was rectangular in shape, 1.38 m long and at least 94 cm wide. The pit extended into the northern profile of the excavation unit, and this portion of it remained unexcavated. Excavation stopped at a depth of about 2 m for safety reasons. A probe pushed into the remaining fill went an additional 80 cm. The privy intruded through Feature 442, a small pit that lay just to the south.

The upper 1.52 m of fill consisted of light brown sandy loam mottled with both dark brown and white ash silt. Pockets of charcoal and ash were abundant throughout. Artifacts recovered from the fill included Native American sherds, historic ceramics, pieces of flaked stone, shell, unworked animal bone, glass, mattress springs, and pieces of metal. Several fired clay bricks, adobe brick fragments, and intact bottles

were also discovered. At the base of this fill, a metal basin sink was found lying upside down atop the lower fill.

The lower 48 cm of fill was greenish-brown soil with a high level of decomposed human excrement, mixed with lenses of whitish lime. Artifacts recovered were similar to those from the stratum above, but also included large concentrations of whole bottles and intact metal cans. Charcoal and ash pockets remained abundant throughout this fill. Excavation ceased at 2 m per safety regulations. This privy was thought to date to the 1910s. The rest of the feature was later mechanically excavated during the 2005-2006 fieldwork.

Feature 409

This large borrow pit was found during mechanical stripping. It was highly irregular in shape, and measured 4.40 m in length, 3.25 m in width, and 74 cm in depth. The fill of the borrow pit was cut slightly on its southern end by a small pit, Feature 435. Features 391 and 392, two postholes, also intruded on the upper fill of the borrow pit. The fill was brown sandy loam with abundant charcoal and ash. Several distinct dumping episodes were visible in the fill.

An almost 1-cm-thick band of charcoal was present at approximately 20 cm below the top of the fill across most of the borrow pit. It appeared to be from a single dump of material that, judging from the oxidization of the soil beneath, was still burning when it was thrown in the pit. Small delicate fibers were visible in the charcoal, and suggested the burned material was plant fiber from roofing material or woven matting.

Artifact density was fairly high throughout the fill. Artifacts recovered from the fill included Native American sherds, historic ceramics, shell, some unworked animal bone, a few rusty nails, pieces of glass, some flaked stone, and fragments of ground stone. The nature of the artifacts recovered from the fill of Feature 409 suggested that the pit dated to presidio times.

Feature 410

This posthole was revealed during hand-excavation of a control unit. It appeared as a small, roughly circular posthole in the southern end of a small ovate depression. The posthole measured 43 cm in length and 28 cm in width. The surrounding depression was about 24 cm in depth, and the posthole measured 39 cm in depth from the base of the depression. The

posthole was lined with approximately 20 small rocks along the southern side.

The fill of the posthole was brown sandy loam with some charcoal and caliche inclusions. Artifacts recovered from the fill included a Native American sherd, a few fragments of unworked animal bone, and one piece of flaked stone. This posthole probably dated to presidio times.

Feature 414

This small pit was found during hand-excavation of a control unit. It was originally thought to be a disturbance, and the fill was not screened. After excavation, the pit appeared to be intrusive to a larger disturbed area. It measured 58 cm in length, 45 cm in width, and 32 cm in depth. The fill was brown sandy loam with some small charcoal and caliche inclusions. No artifacts were recovered from the fill of the feature. This pit was thought to date to the late 1800s.

Feature 418

This extramural surface was exposed during hand-excavation in several adjacent control units. All the units were excavated down to expose this extremely compacted surface. The exposed extent of the surface was 5.63 m long and 5.02 m wide, and it covered the entire stripping unit except where disturbed by intrusive and associated features.

Four pits, Features 373, 420, 422, and 423, and five postholes, Features 410, 425, 428, 431, and 433, originated at this surface. A metal object, Feature 424, possibly a canteen, was also found embedded in this surface. This metal object was the only artifact collected directly from the surface.

The artifacts from the features originating at this surface all appeared to date to presidio times, suggesting the surface itself also dated to that time. An additional portion of this surface was excavated in 2005-2006.

Feature 420

This large pit was discovered during the clearing of a presidio ground surface, Feature 418. It was roughly circular in shape and measured 1.18 m in length, 1.12 m in width, and 36 cm in depth. This pit appeared to originate at the presidio ground surface and may have functioned as a small borrow pit. The southern edge of Feature 420 intruded on the northern edge of Feature 423, another small pit.

The fill of the pit was brown sandy loam with some charcoal flecking and a few pieces of adobe. The fill became lighter with depth, due to ash lenses being present just above the base of the pit. The margins of the pit were not oxidized and were cut into the sterile calcic layer. Artifacts recovered from the fill included Native American sherds, historic ceramics, pieces of flaked stone, a possible ceramic figurine fragment, a button, unworked animal bone, some glass, and pieces of metal. This pit probably dated to presidio times.

Feature 421

This small pit was discovered during excavation of a hand-stripping unit. Only a portion of the pit was excavated, as it continued out of the stripping unit to the south. The overall dimensions of the pit were estimated to be approximately 1.2 m in length, 90 cm in width, and 29 cm in depth. The fill was yellowish-brown silty loam with caliche nodules and small amounts of charcoal.

Artifacts recovered from the fill included Native American sherds, historic ceramics, metal, glass, pieces of flaked stone, and some animal bone. A large rodent burrow was apparent at the base of the pit. This pit was thought to date to the American Territorial period; its function was unknown.

Feature 422

This small, irregularly shaped borrow pit was discovered during hand-clearing of a presidio-occupation surface, Feature 418. It was 86 cm long, 70 cm wide, and 26 cm deep. This pit appeared to originate at the presidio ground surface.

The fill of the pit was brown sandy silt with abundant amounts of ash and charcoal. Ash and charcoal density, as well as artifact density, decreased toward the base of the pit. Artifacts recovered from the fill included Native American sherds, historic ceramics, flaked stone, unworked animal bone, and fragments of ground stone. This pit likely dated to presidio times.

Feature 423

This small pit was discovered during excavation of Feature 420, a large pit intrusive to the northern edge of this feature. It appeared to originate at the presidio surface, Feature 418, and measured 65 cm in length, 61 cm in width, and 70 cm in depth. The fill of the pit was sandy brown loam. Artifacts recovered from the fill included Native American sherds,

historic ceramics, pieces of flaked stone, and some unworked animal bone. The pit is cut into the sterile calcic layer. Feature 423 probably dated to presidio times.

Feature 424

This metal artifact was found in the natural layer of sediment lying just above the presidio-occupation ground surface, Feature 418. It was circular in shape and appeared to be made of iron. About half the object was intact and measured 22 cm in diameter and 5 cm in depth. The artifact was thought to be a metal bowl or canteen. A circle of iron was lying near its center and may have been an opening or a lid for the object. The object had crimped edges and may have been "tinned." This artifact was thought to date to the American Territorial period.

Feature 425

This possible posthole was discovered during hand-clearing of a presidio ground surface, Feature 418. It was found in a depression in the ground surface formed by bioturbation and appeared square in shape with vertical sides. The posthole was 16 cm long, 14 cm wide, and 20 cm deep. The fill was brown sandy loam of loose compaction. Artifacts recovered from the fill included Native American sherds, unworked animal bone, and pieces of metal. Feature 425 probably dated to presidio times.

Feature 427

This possible small pit was discovered during hand-clearing of a presidio-occupation ground surface, Feature 418. It measured 32 cm in length, 30 cm in width, and 8 cm in depth. The fill was grayish-brown silty sand. Only two pieces of fire-cracked rock were present in the fill, and no artifacts were found or collected. The base of the pit was very irregular and appeared to have been disturbed by bioturbation. Due to the lack of artifacts and the irregularity of the pit base, it was unknown if this feature was actually a pit or if it was a large rodent disturbance.

Feature 428

This small rectangular groove was revealed during hand-clearing of a presidio-occupation ground surface, Feature 418. It measured 59 cm in length, 8 cm in width, and 16 cm in depth. A small area of

puddled adobe lay just to the east. The function of the rectangular groove was unknown, although it may have served to hold a post or a board. The fill of the groove was tan sand with some small gravel inclusions. Only two Native American sherds were recovered from the fill. This groove appeared to originate at the presidio-occupation ground surface and likely dated to that time.

Feature 429

This small round posthole was exposed during hand-clearing of a presidio-occupation ground surface, Feature 418. It measured 16 cm in diameter and 25 cm in depth. The fill of the posthole was grayish-brown sandy silt. Artifacts recovered from the fill included Native American sherds, pieces of flaked stone, and unworked animal bone. This posthole was thought to date to presidio times.

Feature 431

Posthole Feature 431 was found during the hand-clearing of a Presidio-era ground surface, Feature 418. It was slightly ovate, with vertical walls, and it measured 17 cm in diameter and 25 cm in depth. Fill of the posthole was a brown sandy loam. Four Native American sherds were recovered from the fill. This posthole was thought to date to Presidio times.

Feature 432

This wood-lined pit was discovered during hand-excavation of a control unit. It became visible as a thin piece of wood some 97 cm long and 20 cm high. A small amount of grayish-brown silty sand fill was visible between the wood and the unit profile. This fill was excavated separately, and Native American sherds, some flaked stone, unworked animal bone, glass, historic ceramics, and some metal were recovered. Only a small part of this feature was excavated, but the remainder was plainly visible in the profile of the stripping unit. The function of the feature was unknown. This wood-lined pit probably dated to the late 1800s.

Feature 433

This posthole was found during hand-clearing of a presidio-occupation surface, Feature 418. It was slightly ovate in shape with vertical walls, and measured 16 cm in length, 15 cm in width, and 26 cm in depth. Fill of the posthole was brown sandy loam

with some light charcoal flecking. No artifacts were discovered in the fill. This posthole likely dated to presidio times.

Feature 435

This small pit was revealed during excavation of a borrow pit, Feature 409, into which it intruded. The pit was round, basin shaped in profile, and measured 60 cm in length, 59 cm in width, and 19 cm in depth. It was first noted as a number of fire-cracked rocks and a lens of white ash in a brown silty sand matrix. Some of the artifacts from this pit were removed with the fill of Feature 409, the borrow pit. Artifacts recovered from the fill included some fire-cracked rock, unworked animal bone, three pieces of historic ceramics, and two pieces of metal. The pit margins did not appear oxidized, and the fill was probably deposited here after it had been burned elsewhere. This pit likely dated to the early 1900s.

Feature 436

This set of three wooden posts was discovered during mechanical stripping. They were partially exposed in profile during excavation of a borrow pit, Feature 409. Four-inch by four-inch wooden posts were visible in situ, extending down from the 1950s ground surface, just under the asphalt of the lot. The posts reached a depth of 47 cm below the asphalt. No artifacts were found or collected. These posts likely dated to the 1940s-1950s.

Feature 437

This portion of a large borrow pit was revealed during hand-stripping around the western *torreón* wall, Feature 443. Feature 437 was originally excavated as a separate feature, although during excavation, it was found to be the northern edge of a borrow pit already excavated in another mechanical stripping unit, Feature 359. The stratigraphy and artifact contents of this edge of the borrow pit were identical to those of the eastern edge, Feature 359. Therefore, based on these two edges, the borrow pit was estimated to be more than 10 m in diameter. Refer to the description of Feature 359 for more detailed information.

Feature 437 was intruded on by a historic gardening feature, Feature 438. The borrow pit intruded on the western wall of the *torreón*, Feature 443, and a small adobe wall, Feature 399, that abutted the northern wall of the *torreón*. This borrow pit was thought to date to the late 1890s or early 1900s.

Feature 438

This line of fired bricks was exposed during hand-clearing around the western wall of the *torreón*, Feature 443. The bricks were laid on their long ends over the fill of Feature 437, a large borrow pit. The line measured 1.35 m in length, 6 cm in width, and 7 cm in depth. The bricks were thought to be the edge of a garden or walkway. They extended under the unexcavated asphalt to the southeast. No artifacts were collected from around the bricks. This brick feature was thought to date to the mid-1900s.

Feature 439

The skeleton of a cat was discovered in the fill of Feature 437, a large borrow pit just below a line of fired clay bricks, Feature 438. The cat appeared to have been interred in the fill of the borrow pit, because no discrete burial pit was visible. Some of the skeleton was removed with the fill of the borrow pit, Feature 437, and collected as a separate feature. The remaining skeletal elements visible in the profile were left in situ. This cat burial probably dated to the late 1800s or early 1900s.

Feature 441

This large, irregularly shaped borrow pit was found during hand-excavation of a control unit. Only a portion of this pit was excavated, however, because it continued outside the unit to the south and west. The excavated portion measured 1.8 m in length, 1.3 m in width, and 77 cm in depth. Two distinct strata are visible in the fill of the pit. The upper fill consisted of a brown sandy loam with moderate amounts of charcoal flecking. The lower fill was mottled gray and orange sandy clay with only light charcoal flecking.

Artifacts recovered from the 47 cm of sandy loam included Native American sherds, historic ceramics, some shell, a few ground stone fragments, flaked stone, and pieces of unworked animal bone. The lower 30 cm of sandy clay fill contained some unworked animal bone, Native American sherds, and historic ceramics. The artifact density was much lower in the lower fill than in the upper fill. This borrow pit was thought to date to the 1820s.

Feature 442

This small pit was discovered during the excavation of a privy pit, Feature 408. It appeared as a dark stain of gray-brown silt loam that was intruded on

by Feature 408, the privy pit. The stain measured 48 cm in length and 34 cm in width, but the privy appeared to have removed a large portion of the northern end of this feature. The small pit was not excavated, and no artifacts were discovered or collected. The function of this pit was unknown. It was not clear to what time period Feature 442 belonged.

Feature 443

This adobe wall was exposed during mechanical stripping around the northern wall of the *torreón*, Feature 374. The wall was a portion of the western wall of the *torreón*. Only about 80 cm of the length of the wall was discovered, from its corner with the northern *torreón* wall, Feature 374, to where it was truncated by a large borrow pit, Feature 437, to the south.

The wall was 1.05 m thick and about 15 cm high. Construction was similar to the other walls of the *torreón*, with a course of adobe bricks laid directly on the ground surface and a course of puddled adobe above them. The western wall was bonded to the northern wall at the corner. This wall dated to presidio times.

PREHISTORIC FEATURES

Beneath the presidio features were the remnants of a prehistoric site (Figure 4.93). The 1954 University of Arizona excavations had previously located a Hohokam pithouse on the site (Olson 1985). Other work throughout the downtown area has resulted in the exposure of pithouses, pits, and human remains dating to the Snaketown phase of the Hohokam Pioneer through the Sedentary periods, roughly from A.D. 700 to 1150 (Thiel et al. 1995). The 2002-2003 fieldwork at the Tucson Presidio area revealed that occupation of the downtown extends back into the Early Agricultural period, probably beginning between 400 B.C. and A.D. 50. Excavations uncovered four pithouses, a borrow pit, and four other prehistoric features beneath the parking lot.

Feature 350

Description

This pit structure was originally excavated by students supervised by Alan Olson in 1954. During the current project, a 5.70-m by 5.05-m unit was opened to expose the pit structure and a portion of the eastern *torreón* wall that had also been previously recorded

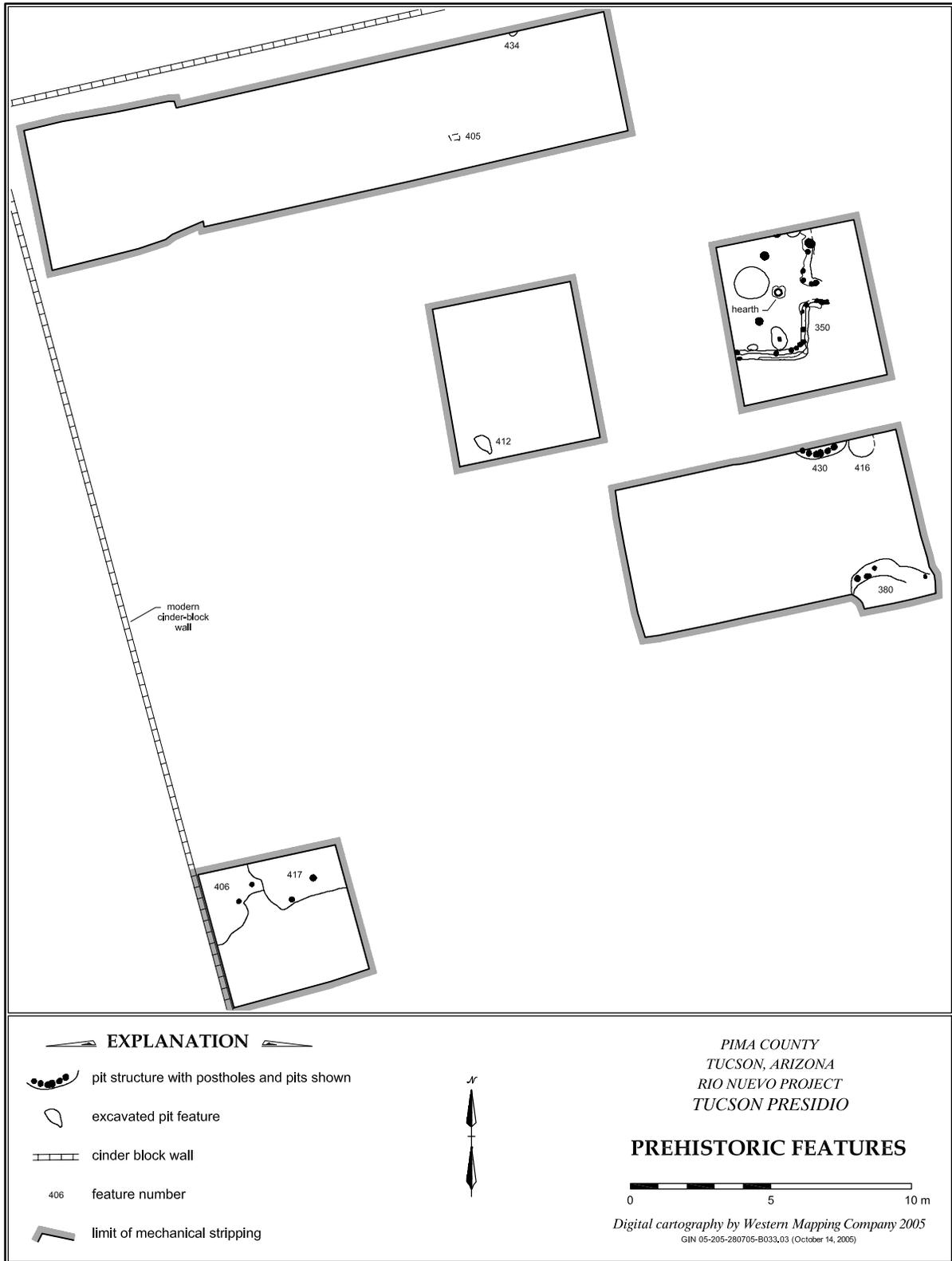


Figure 4.93. Prehistoric features located in the corner parking lot, Tucson Presidio, AZ BB:13:13 (ASM).

(Figure 4.94). The unit did not expose the western and northern walls of the structure. The eastern *torreón* wall, Feature 351, covered, but did not intrude on, the entrance of the pit structure. The structure was rerecorded and portions of intramural pit fill left intact in 1954 were excavated.

The pit structure was rectangular in shape, and measured 4.8 m in length, 2.7 m in width, and 24 cm in depth. Four intramural pits, 19 postholes, 3 floor grooves, and a hearth were discovered in the floor. An entry was identified in the eastern wall of the structure. As this structure had already been excavated in 1954, no artifacts remained on the floor. Inspection of the walls of the structure indicated it had been remodeled, and both the original and later structures had burned.

Internal Features

Nineteen postholes were exposed in the floor. Two of the postholes, Features 350.06 and 350.07, were larger than the others and centrally located within the pit structure. Feature 350.06 was 26 cm long, 25 cm wide, and 60 cm deep, while Feature 350.07 was 29 cm in diameter and 58 cm deep.

Thirteen of the smaller postholes, Features C through N and V, were arranged around the interior perimeter of the puddled adobe wall from the remodeled house. They varied in size from 8-31 cm in length, 7-26 cm in width, and 9-42 cm in depth.

Three of the other smaller postholes, Postholes P, Q, and R, were arranged within the entryway of the house. They ranged in size from 11-19 cm in length, 9-17 cm in width, and 12-27 cm in depth.

Posthole W was located in the floor groove, Feature U, along the southern wall of the structure. It measured 12 cm in length, 9 cm in width, and 40 cm in depth.

Three floor grooves were also discovered along the interior of the puddled adobe walls. One was located within the entryway, Feature S, and measured 45 cm in length, 10 cm in width, and 12 cm in depth. Floor groove T ran along the interior of the eastern wall, and measured 1.8 m in length and 12 cm in width. Floor groove U ran along the southern wall, and measured 2.45 m in length and 18 cm in width. Neither Feature T nor Feature U was excavated in an attempt to preserve the puddled adobe walls of the structure. At least one posthole, Feature W, was located in a floor groove, and more likely remained undiscovered.

An entryway was discovered in the eastern wall of the structure. It was a ramped entrance with at least one floor groove for support posts on the southern side. A disturbance north of the entryway removed any evidence of a second groove on that side. The entryway was visibly 70 cm long, although the end ran under the wall of the *torreón*, Feature 351. It measured 88 cm in width. A patch of poured adobe 40 cm long and 20 cm wide was discovered on the southern side of the entryway. This adobe was thought to represent a repair or remodeling of the entryway, perhaps made when the structure was remodeled.

Feature 350.01 was a hearth that measured 24 cm long, 22 cm wide, and 13 cm deep. It was originally excavated in 1954. The margins of the hearth were oxidized, and it had a plaster collar and apron.

Feature 350.02 was a large pit that measured 1.18 m in length, 1.10 m in width, and 11 cm in depth. Only the southern half the pit was originally excavated in 1954, while the fill of the northern half was left in situ. The in situ fill of the pit was brown sandy loam with a few small charcoal flecks and pieces of oxidized daub. Artifacts recovered included sherds and unworked animal bone. A single historic ceramic was also discovered.

Feature 350.03 was a small pit originally excavated in 1954. It measured 85 cm in length, 60 cm in width, and 26 cm in depth. A pickle jar “time capsule” was left in this pit by George Chambers before it was backfilled in on 29 December 1954. The jar contained an *Arizona Daily Star* from 26 December 1954, a letter from George Chambers, and three U.S. coins from 1954.



Figure 4.94. Feature 350, a Hohokam pithouse originally exposed in 1954, lies adjacent to the eastern wall of the northeastern tower, Feature 351, Tucson Presidio, AZ BB:13:13 (ASM).

During the original excavation in 1954, Features 350.02 and 350.03 were identified as separate presidio or American Territorial period features intrusive to the pit structure (Olson 1985). The lack of overlying stratigraphy and the small amount of intact fill in Feature 350.02 made it impossible to either support or refute this assessment.

Feature 350.04 was a small intramural pit, 49 cm long, 20 cm wide, and 21 cm deep. The fill of this pit appeared to be redeposited backfill, and contained historic artifacts such as glass and metal. The pit was not, however, on the map made of the structure in 1954. The reason for this discrepancy was unknown.

Feature 350.05 was a small intramural pit, 42 cm long, 26 cm wide, and 29 cm deep. This pit was neither excavated nor mapped during the original excavation. The fill was brown sandy loam with pieces of charcoal, daub, and caliche flecking. This pit was constructed into the fill of the original structure, and bottomed out on plaster thought to originate from the walls of the original structure. Artifacts recovered from the fill consisted of pottery sherds and pieces of flaked stone. Artifacts in this feature may have originated from the fill of the original structure.

Internal Strata and Artifact Contents

Approximately 24 cm of fill was removed between the stripped surface and the floor of the structure. Much of this fill was redeposited from the original excavations and was only grab sampled. It contained a mix of historic and prehistoric artifacts. The only in situ fill removed from the structure during this project was from the postholes, floor grooves, Feature 350.05, and from the northern half of Feature 350.02.

Construction and Remodeling Evidence

When the structure was reopened, two sets of walls were visible in the structure. The outer wall was from the original structure and measured 16 cm above the floor. The interior of this wall was covered with some 2 cm of adobe plaster over the sterile substrate into which the structure was cut. The presence of plaster on the walls suggested the original structure had been a true pithouse, with the walls of the pit serving as the walls of the structure.

The second set of walls from the remodeled structure consisted of puddled adobe roughly 8 cm wide. All the perimeter postholes and floor grooves discovered probably belonged to the remodeled structure. They represented wall support posts for the superstructure. The two interior postholes, Features 350.06 and 350.07, probably represented roof support

posts for the superstructure. It was not clear if they were present before the structure was remodeled, but they were almost certainly in use after the remodeling took place.

The floor of the structure was prepared and plastered with adobe. This floor was associated with remodeling of the structure, and showed discontinuous areas of heavy oxidization. The original floor may have still been intact below this later floor, but it was not visible in any subfeatures of the structure.

Stratigraphic Relationships

The original pit structure was constructed into the sterile calcic layer. Features 380 and Feature 430, two other pit structures to the south, also originated at this level. A small pit, Feature 365, was found south of the structure. After natural processes had buried the filled foundation pit, the eastern *torreón* wall, Feature 351, was constructed over a portion of the entryway. Feature 352, a utility trench, was excavated through the western portion of the structure during historic times.

Abandonment and Postabandonment

A summary of the 1954 excavation findings (Olson 1985) stated that the pit structure had been cleaned out prior to abandonment. Oxidization of the floor plaster indicated the structure had burned after it was abandoned. The foundation pit was filled and then buried by alluvial and colluvial deposits. The Tucson Presidio and later American Territorial period buildings were constructed over the structure, prior to construction of the parking lot in 1955.

Feature 380

This prehistoric borrow pit was found during excavation of two historic pits, Features 356 and 357, that intruded on the fill of the pit. Only this portion of the pit was excavated because it extended out of the stripping area to the southeast. In 2005-2006, another portion of the feature was excavated. During the 2002-2003 excavation, it was identified as a pit structure; however, this turned out to be incorrect.

The excavated portion of the pit was 2.95 m in length, 1.00 m in width, and 85 cm in depth. Approximately 85 cm of fill was removed between the stripped surface and the floor of the pit. The upper 48 cm of fill consisted of dark brown sandy loam with high concentrations of daub. The chunks of daub varied considerably in size, from 1 cm to 23 cm in diameter. A small amount of daub was oxidized. High concentrations of ash, charcoal, and fire-cracked

rock were also present. Artifacts recovered from this fill included prehistoric sherds, pieces of flaked stone, six ground stone fragments, and a possible ceramic figurine fragment.

The concentration of daub, charcoal, ash, and fire-cracked rock all decreased considerably in the lower 37 cm of fill. The fill was grayish-brown sandy loam present only in the deepest portion of the pit. Artifacts recovered from the fill included a few prehistoric sherds and pieces of flaked stone. No artifacts were discovered on the floor of the pit.

Feature 405

This small roasting pit was revealed during excavation around the northern *torreón* wall, Feature 374. It was intruded on by both the wall and by an adobe column base, Feature 404. All that remained of the roasting pit were a few rocks in a matrix of grayish-brown silty sand. The base of the pit was oxidized. No artifacts were collected from this pit. This roasting pit was thought to date to either the Prehistoric era or the Protohistoric period.

Feature 406

Description

This small portion of a possible pit structure was discovered during excavation of a large American Territorial period borrow pit, Feature 376. Not enough of the structure remained to determine its shape. The excavated portion measured 2.1 m in length, 1.9 m in width, and 59 cm in depth. Two possible postholes were exposed in the floor, near the southeastern edge of the structure. This was the only edge that could be defined. The structure extended out of the excavation unit to the west, was disturbed to the north, and was cut by another possible pit structure, Feature 417, to the east. No entry was identifiable, and orientation of the pit structure could not be determined. One small flake was recovered from the floor. The structure did not appear to have burned.

Internal Features

Two postholes were discovered just inside the southeastern edge of the structure. They ranged from 12-13 cm in diameter and 6-26 cm in depth. No artifacts were recovered from either posthole.

Internal Strata and Artifact Contents

Approximately 59 cm of fill was removed between the excavated surface and the floor of the pit

structure. The upper 39 cm of fill was grayish-brown sandy silt with small chunks of charcoal and pieces of unburned daub. Artifacts recovered from this fill included a few sherds, some unworked animal bone, and pieces of flaked stone.

The lower 20 cm of fill was yellowish-brown silty clay that was very compact. Unburned daub and caliche were present in abundance. Very few artifacts were recovered from this lower fill. These included pieces of flaked stone and unworked animal bone. One small flake was recovered from the floor of the structure.

Construction and Remodeling Evidence

The one edge of this pit structure that could be identified measured roughly 59 cm above the floor. The walls were obviously impacted by disturbance and intrusive features. Neither the walls nor the floor appeared plastered or prepared in any way. The postholes and unburned daub recovered from the fill suggested a wattle-and-daub superstructure. There was no evidence for any remodeling of the structure.

Stratigraphic Relationships

This structure was constructed into the calcic substrate of the area. It was intruded on by another possible pit structure, Feature 417, sometime after its abandonment. After the collapse of the superstructure, the filled foundation pit was buried by natural processes. The area was later used as a trash dump during both historic and modern times.

Abandonment and Postabandonment

The small area of this structure that was discovered intact made details of its abandonment difficult to ascertain. It was unclear if the structure was cleaned out prior to abandonment, but it appeared the structure did not burn. The stratum of roof and wall fall suggested the superstructure was at least partially intact prior to its collapse.

Feature 412

This small pit was discovered during excavation around an area of puddled adobe, Feature 387. Only the eastern half of was exposed, but the pit appeared to be slightly ovate in shape with vertical sidewalls. The puddled adobe feature overlay the western half of the pit and was not removed. The excavated portion measured 78 cm in length, 44 cm in width, and 21 cm in depth. Fill of the pit was brown clayey loam. Artifacts recovered from the fill

consisted of a few sherds, one fragment of animal bone, and one small piece of flaked stone. This pit was thought to be prehistoric, probably dating to Hohokam times.

Feature 416

This small pit was discovered during hand-excavation of a control unit. It appeared to be roughly circular with slightly beelling sidewalls. Only a portion of pit Feature 416 was excavated, because it extended out of the stripping unit to the north and under the eastern wall of the *torreón*, Feature 351, to the east. The excavated portion measured 76 cm in length, 71 cm in width, and 78 cm in depth. The fill was a light brown silty loam with small chunks of charcoal and caliche included within. Artifacts recovered from the fill included Native American sherds, some ground stone, and pieces of flaked stone. The margins of the pit were oxidized, especially in the southern portion. Pit Feature 416 was thought to be prehistoric.

Feature 417

Description

This portion of a possible pit structure was exposed during excavation of a historic borrow pit, Feature 376. Only the southwestern corner was excavated, and the structure continued out of the excavation unit to the north and east. The excavated portion measured 3.00 m in length, 1.85 m in width, and 42 cm in diameter. It intruded on Feature 406, another pit structure discovered to the west. Two possible postholes and two internal pits were discovered in the floor. The shape of the pit structure could not be determined, and no entry was identified. No artifacts were recovered from the floor, and the structure did not appear to have burned.

Internal Features

Two possible postholes were discovered just inside the southern edge of the house. One measured 14 cm in diameter and 25 cm in depth, and the other 18 cm in diameter and 16 cm in depth. No artifacts were recovered from either posthole.

Feature 417.01 was an oblong pit with a rounded bottom. It measured 43 cm in length, 35 cm in width, and 23 cm in depth. The fill was gray-brown silty loam with no artifacts.

Feature 417.02 was an irregularly shaped pit with a rounded bottom. It was 52 cm long, 43 cm wide, and 31 cm in diameter. The fill was yellow-brown

sandy silt with a small amount of charcoal flecking. Artifacts recovered from the fill included sherds and pieces of flaked stone.

Internal Strata and Artifact Contents

Roughly 42 cm of fill was removed between the top of the feature fill and the floor of the structure. The top 19 cm of fill from Feature 417 was grayish-brown silty sand with small chunks of charcoal. Artifacts recovered from this upper fill included sherds, some ground stone, pieces of flaked stone, some shell, a worked sherd, and a fragment of a ground stone palette.

The lower 23 cm of fill was moderately compacted light brown silty loam with large amounts of caliche and unburned daub. The concentration of caliche and daub increased with depth. The charcoal flecking present in the upper level continued but decreased in concentration with depth. Artifacts recovered from the lower fill included sherds, unworked animal bone, pieces of flaked stone, and some ground stone. No artifacts were recovered from the floor.

Construction and Remodeling Evidence

When discovered, the walls of Feature 417 were some 27 cm above the floor of the structure. The walls were probably impacted by construction of the historic borrow pit, Feature 376, that overlay this structure. Neither the walls nor the floor of the pit structure appeared to have been prepared or plastered in any way. The two postholes and the unburned daub discovered in the fill suggested that a superstructure of wattle and daub once existed. Unfortunately, the shape of the structure and its orientation could not be determined.

Stratigraphic Relationships

This structure was constructed into the calcic substrate sometime after a pit structure to the west, Feature 406, had been abandoned. In historic times, a borrow pit, Feature 376, intruded into the upper fill of the structure.

Abandonment and Postabandonment

This structure may have been cleaned out before it was abandoned. The unoxidized daub present in the fill suggested the superstructure did not burn, and it may have been at least partially intact when the structure collapsed. After the collapse, natural processes filled and covered the foundation pit. The filled structure was later intruded on by construction of Feature 376, the borrow pit.

Feature 430

Description

This small portion of a pit structure was discovered during hand-excavation just south of a large Hohokam pit structure, Feature 350 (Figure 4.95). Only this small section of the pit structure was excavated, as it extended out of the larger stripping unit to the north. The excavated portion measured 2.2 m in length and 45 cm in width.

The curvature of this area made it appear that the pit structure was round or ovate. Six postholes were found just within the structure's circumference. No entry was identifiable, and the orientation of the pit structure could not be determined. No artifacts were revealed on the floor, and the structure did not appear to have burned.

Internal Features

Six postholes were exposed in the floor of the pit structure. They ranged in size from 13-22 cm in length, 11-19 cm in width, and 14-18 cm in depth. All were arranged around the interior perimeter of the structure. One of the postholes, Feature 430.01, contained a piece of flaked stone.

Internal Strata and Artifact Contents

About 9 cm of fill was removed and screened between the visible top of the structure and the floor. After excavation, the profile of the unexcavated portion showed that the walls of the structure actually began at a height of approximately 33 cm. This structure was constructed into the silt fill of the area, and its walls were indistinguishable from the silt fill of the structure. The walls only became visible where they cut the sterile calcic substrate. Only artifacts from the lower 9 cm of fill were collected as originating from the structure.

Fill consisted of flood silt with some light charcoal flecking and one small piece of unburned daub. Very few artifacts were present in the fill. Artifacts recovered from the fill included two Hohokam sherds and three pieces of flaked stone.

Construction and Remodeling Evidence

The profile showed the walls of the structure to be approximately 33 cm above the floor. It is unknown how the walls were impacted by either historic or



Figure 4.95. Feature 430, a partially excavated Early Agricultural period pithouse, Tucson Presidio, AZ BB:13:13 (ASM).

modern construction at the site. Neither the walls nor the floor of the structure appeared to have been plastered or prepared in any way. Except the six postholes and one small piece of daub, no evidence of a superstructure was found.

Stratigraphic Relationships

This pit structure was found at about the same level as two other Hohokam pit structures at the site, Features 350 and 380. One prehistoric pit, Feature 416, intruded slightly on the fill of this structure, indicating the pit was constructed sometime after the structure had at least partially filled with flood silt.

Abandonment and Postabandonment

With only a small portion of the structure exposed, it was difficult to determine much about the abandonment of this structure. Natural processes filled the foundation pit of the structure with flood silt. This pit structure was subsequently excavated in 2005-2006; based on its architectural style and associated artifact types, this feature dates to the Early Agricultural period.

Feature 434

This was a roasting pit or hearth identified during hand-stripping in a control unit. The feature consisted of five small pieces of fire-cracked rock in a matrix of grayish-brown silty sand. The feature was left unexcavated, and no artifacts were discovered or collected.

REFERENCES CITED

- Bayman, James M., Michael K. Faught, and J. Homer Thiel
1995 Feature Descriptions. In *Beneath the Streets: Prehistoric, Spanish and American Period Archaeology in Downtown Tucson*, by J. H. Thiel, M. K. Faught, and J. M. Bayman, pp. 97-146. Technical Report No. 94-11. Center for Desert Archaeology, Tucson.
- Ciolek-Torrello, Richard S., and Mark Swanson (editors)
1997 *Pit House, Presidio, and Privy: 1,400 Years of Archaeology and History on Block 180, City of Tucson, Arizona*. Technical Series No. 63. Statistical Research, Inc., Tucson.
- Fike, Richard E.
1987 *The Bottle Book, A Comprehensive Guide to Historic, Embossed Medicine Bottles*. Gibbs M. Smith, Salt Lake City.
- Fortier, Edward M.
1980 Archaeological Excavations at the Stevens House, Tucson, Pima County, Arizona. Manuscript ASM RG6 Folder 394, Arizona State Museum, University of Arizona, Tucson.
- Gates, William C., Jr., and Dana Ormerod
1982 The East Liverpool Pottery District: Identification of Manufacturers and Marks. *Historical Archaeology* 16(1-2).
- Godden, Geoffrey A.
1991 *Encyclopaedia of British Pottery and Porcelain Marks*. Barrie & Jenkins, London.
- Lyons, Bettina
1981 A History of the Hiram Stevens House and the Hiram Stevens Family and U. S. Marshal Milton B. Duffield. Ms. on file, Tucson Museum of Art and Historic Block, Tucson.
- Mabry, Jonathan B., James E. Ayres, and Regina L. Chapin-Pyritz
1994 *Tucson at the Turn of the Century: The Archaeology of Block 83*. Technical Report No. 92-10. Center for Desert Archaeology, Tucson.
- Olson, Alan P.
1985 Archaeology at the Presidio of Tucson. *The Kiva* 50:251-270.
- Thiel, J. Homer
2002 *Exploring the Barrio Libre: Investigations at Block 136, Tucson, Arizona*. Technical Report No. 2001-08. Desert Archaeology, Inc., Tucson.
- 2003 *Archaeological Investigations of the Osborn and Hazzard Family Homes, Block 172, Tucson, Arizona*. Technical Report No. 2002-04. Desert Archaeology, Inc., Tucson.
- 2005 *Down by the River: Archaeological and Historical Studies of the León Family Farmstead*. Anthropological Papers No. 38. Center for Desert Archaeology, Tucson.
- Thiel, J. Homer, and Danielle Desruisseaux
1993 *Archaeological Test Excavations for the Water Plant No. 1 Expansion, Historic Block 138, City of Tucson*. Technical Report No. 93-12. Center for Desert Archaeology, Tucson.
- Thiel, J. Homer, Michael K. Faught, and James M. Bayman
1995 *Beneath the Streets: Prehistoric, Spanish, and American Period Archaeology in Downtown Tucson*. Technical Report No. 94-11. Center for Desert Archaeology, Tucson.
- Toulouse, Julian H.
1971 *Bottle Makers and Their Marks*. Thomas Nelson, Inc., New York.
- Wilson, Rex L.
1981 *Bottles on the Western Frontier*. University of Arizona Press and Southwest Parks and Monuments Association, Tucson.

