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Principal Investigators

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ABSTRACT

This report details an archaeological study of Mission San José y San Miguel de Aguayo conducted during the spring and summer of 1993. The study was undertaken by the Center for Archaeological Research of The University of Texas at San Antonio, in accordance with a contract between the National Park Service (owner) and Cox/Croslin and Associates (sponsor). The principal research objective focused on determining the extent of impact the planned visitors' center construction and improvements would have on the mission's Spanish colonial features.

Backhoe trenching, shovel testing, and unit excavations were used in the areas to be impacted by the visitors' center. Additionally, shovel testing was conducted on a 50-ft grid within the mission compound to obtain information for future correction of drainage problems. Analyses of ceramics, faunal remains, stratigraphy, and artifact distribution allow inferences concerning diet, temporal contexts, and recognition of intact Colonial deposits. Recommendations are made concerning present and future construction.

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PREFACE

Pursuant to a contract between the National Park Service (owner) and Cox/Croslin and Associates (sponsor), the Center for Archaeological Research (CAR) of The University of Texas at San Antonio (UTSA) undertook a cultural resource study of Mission San José y San Miguel de Aguayo during spring and summer 1993. The study was initiated to determine the extent of impact the construction and improvements of the Visitors' Center Project would have on the mission's Spanish colonial features. Four areas were targeted for investigation: Areas A, B, C, and D (Figure 1).

Mission San José y San Miguel de Aguayo is a designated State Archaeological Landmark and a National Historic Site, and is listed on the National Register of Historic Places. It is one of four local missions under the auspices of the National Park Service (NPS), San Antonio Missions National Historical Park (SAMNHP) and bears the state archaeological site trinomial number 41BX3.

The field work was accomplished in 16 work days by a crew of eight and the services of numerous volunteers. Serving as principal and co-principal investigators were Jack D. Eaton and Anne A. Fox, respectively. Robert J. Hard served as principal investigator during the final analysis and write-up stages. The field director of the project was José E. Zapata. The complement of CAR staff consisted of I. Wayne Cox, Kevin J. Gross, Barbara A. Meissner, Guillermo "Willie" Méndez, Arturo René Muñoz, Robert R. "Bobby" Rector, Cynthia "Cindy" Tennis, and Mary Vaughan.

At the request of the Texas Historical Commission, additional testing was performed in Area A by CAR in April 1994. The results of this testing are included as Appendix A.

The preparation of this report was a team effort, but individuals played key roles in writing particular sections. Fox wrote the Summary of Previous Investigations, Background Research for Area D, and Conclusions; Fox and Cox wrote the Historical Background section; Zapata had primary responsibility for Chapter 2; Tennis wrote the Ceramics and Glass sections; Meissner primarily wrote the Other Historic Artifacts, Faunal Analysis, and Lithics sections; and Gross took responsibility for the Artifact Context chapter. Hard directed the overall effort during the data analysis and write-up stages.

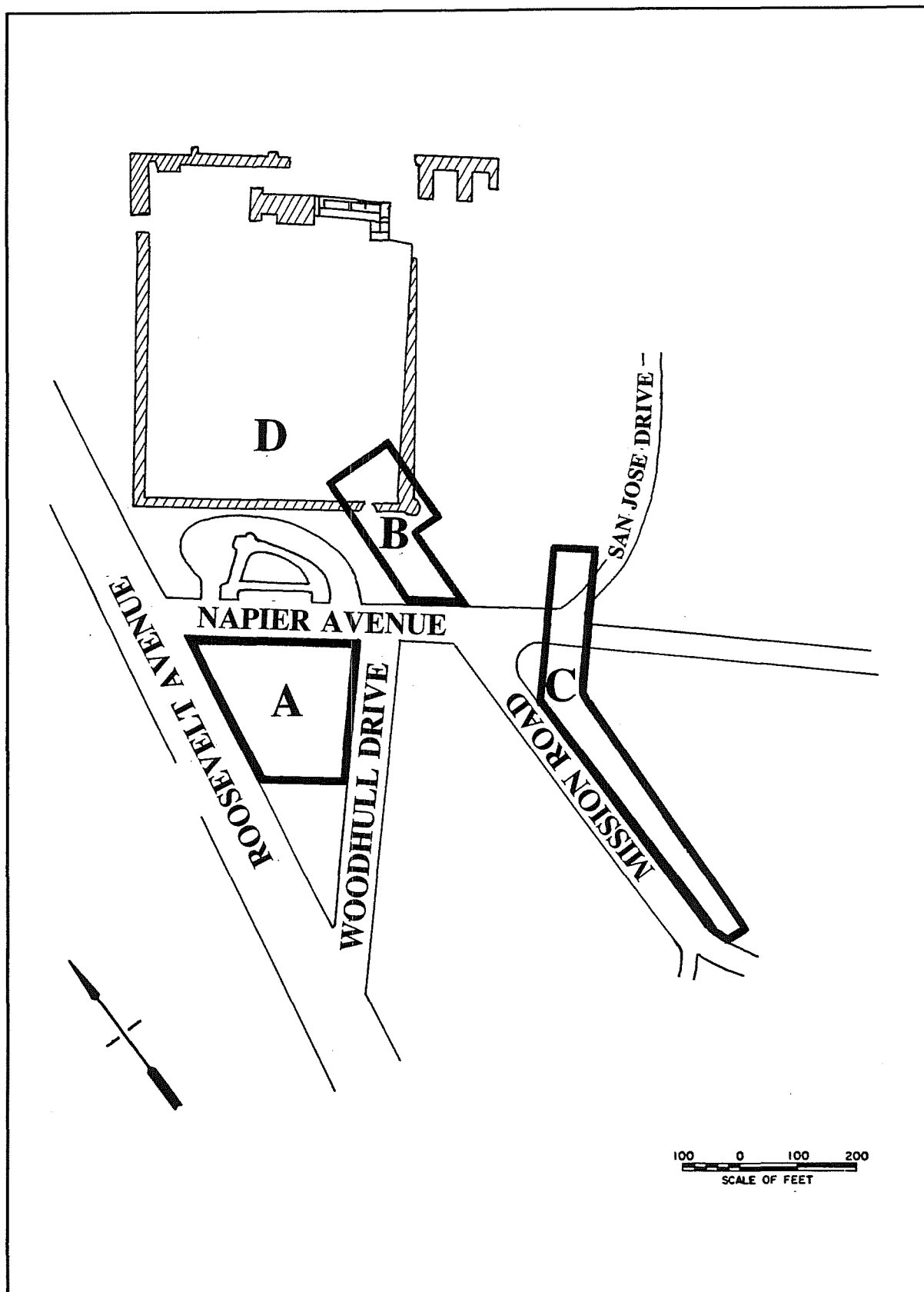


Figure 1. Comprehensive plan view of target areas.

CHAPTER 1: SITE SETTING AND BACKGROUND

Since its founding in 1720 on the east bank of the San Antonio River, Mission San José y San Miguel de Aguayo has occupied several sites, finally settling at its present location in the mid-1720s (Ivey et al. 1990:Appendix III). For the current project, extensive documentary research was conducted to complement the field data. This chapter presents the physical setting and history of the mission, traces the land use for the southeast corner of the mission property in the area of the excavations, and reviews the previous

archaeological work at the mission. At the request of the National Park Service (NPS), detailed research specific to the history of Area D (the mission compound) was conducted and the results are included in this chapter.

The mission proper is situated at the approximate center of a long, narrow escarpment, between the first- and second-level terraces, on the west bank of the San Antonio River (Figure 2). The river is about five-eighths of a mile east of the

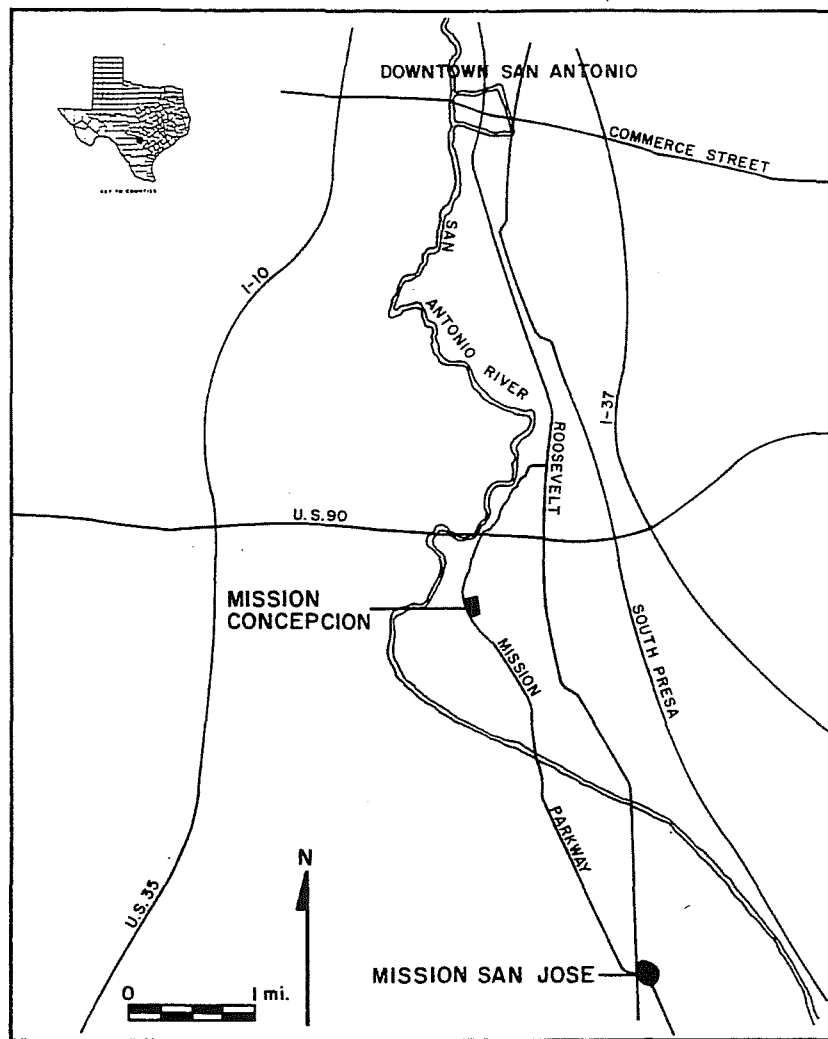


Figure 2. Location map: Mission San José y San Miguel de Aguayo.

compound. Study areas B, C, and D are located within this narrow escarpment and are comprised of Patrick soils (Taylor et al. 1962). The soil layer immediately below the surface, about 10 inches thick, is a light brown clay loam. The layer below this, approximately 20 inches thick, is also a clay loam but of a more granular texture, moderately porous, and containing a high concentration of calcareous deposits. Below this is about four inches of compressed caliche, followed by several feet of loose gravel. The Patrick soils in this area, more sloped and shallow than other series of this soil type, cannot store large amounts of water and are prone to erosion (Taylor et al. 1962).

Study Area A, located immediately south of the mission proper, contains Venus clay loam with one to three percent slopes. This soil type surrounds the Patrick series in the mission area, its widest expanse being due east and west of the compound. The surface layer of this soil series, made up of clay loam, is about 14 inches thick. The layer beneath this, about 20 inches thick, is similar but contains less clay. Below this are several feet of loam and/or gravel (Taylor et al. 1962).

HISTORICAL BACKGROUND

A GENERAL HISTORY OF MISSION SAN JOSÉ

The native people of this area who were most affected by the mission period were hunters and gatherers, culturally and linguistically diverse bands whose mobility was seasonally dictated. They occupied a wide expanse, from the Edwards escarpment to the coastal plains, then south into the present-day Mexican states of Tamaulipas, Nuevo Leon, and Coahuila. Recent research has allowed the separation of these people into numerous bands (Campbell and Campbell 1985). Most Coahuiltecan bands resisted entering mission life until the last quarter of the seventeenth century, when European encroachment, warfare, and disease began to

take their tolls. The combination of protection from their enemies and Spanish colonial enticements eventually persuaded many of these groups to enter missions. Many individuals died and others refused to stay.

In the last decade of the seventeenth century, the colonization of northeast Texas was initiated with the establishment of Mission San Francisco de Los Tejas. Expeditions to east Texas crossed near the headwaters of the San Antonio River, so the attention of the Spanish soon turned to this location as an ideal spot for a halfway station on the way to the east Texas settlements. This resulted in the establishment of Mission San Antonio de Valero and the Presidio and Villa de Bexar in 1718 near San Pedro Springs (Habig 1968a:42).

When the French forced a retreat from the east Texas area the next year, the Franciscans withdrew as far as the Villa de Bexar. A member of this group was Fr. Antonio Margil de Jesus of the College of Zacatecas, who shortly requested permission to found a second mission near the San Antonio River settlement for several Coahuiltecan bands who preferred not to associate with the Indians at Mission Valero (Habig 1968a:84). In February 1720, Mission San José y San Miguel de Aguayo was established on the east bank of the San Antonio River (Almaraz 1989:3), about 3.5 miles south of Mission Valero. By the following spring 227 Indians resided there (Habig 1968a:86).

At some time between 1724 and 1727, Mission San José was moved to its present location on the west side of the river; historians disagree as to whether there was an intermediate site occupied for a short time. In 1749 the mission consisted of a granary, a friary, stone Indian houses, and a stone church. Between 1765 and 1782, this church was torn down and a new stone church was constructed. The mission Indian population had risen to 350 by 1768. Fr. Lopez reported in 1789 that the mission was enclosed by a wall with four bastions and six gates. However, the Indian population was declining and, by 1791,

only 106 Indians remained in residence (Habig 1968a:103).

Secularization began in 1794 when the properties were divided among the 93 remaining Indians. Local townspeople had already begun to take up residence in and around the mission. The mission gradually deteriorated from this time, with many of the buildings falling into ruin. Some of the Indian houses, in various stages of collapse, remained along the walls. In 1824 total secularization brought the mission church under the control of the local priest in the town (Habig 1968a:110).

A STUDY OF THE LAND USE FOR THE SOUTH SIDE OF MISSION SAN JOSÉ

With the final secularization of the mission in 1824, the valuable irrigated lands were distributed to the Indians of the mission and other individuals from the Villa de San Fernando. At the same time, several rooms of the monastery along the north and east walls were sold to Juan de Veramendi, Francisco Ruiz, and Felipe Casillas (Leutenegger and Casso 1990:128–132). Shortly thereafter, additional rooms were awarded or sold to Veramendi, Ruiz, Antonio Huizar, and Juan Escalera (Spanish Archives [SA], Office of the County Clerk, Bexar County Archives, Bexar County Courthouse, San Antonio, Volume 3:634, 635, 651). The record of transfer of the *suertes*, or irrigated lands, has been well documented through the years and can be easily traced; however, land transfers of the buildings and land around the plaza of the mission are sadly missing or unrecorded.

Documentation of the ownership of many of the lots first appears in the form of affidavits entered into the records at the turn of the twentieth century (Almaraz 1989:20) to support individuals' claims of "peaceful, quiet, and undisturbed possession" for periods of time ranging back 20–25 years (cf. Bexar County Deed records [BCDR], Office of the County

Clerk, Deed Records Office, Bexar County Courthouse, San Antonio, 322:456). Therefore, constructing a clear chain of ownership prior to ca. 1875 is extremely difficult. This is easily understood in light of the fact that large irrigated tracts of land have always had value through cultivation and rights of inheritance. However, the small homestead tracts clustered about the old mission, now functioning as the parish church, had little value until the area began to grow and develop and to be subdivided into commercial and residential property.

Another problem arises with the land to the west of the acequia. This property, not watered by the ditch which served only the lands to the east of the acequia toward the river, was granted to William Patrick Delmour by the Republic of Texas as pasture land. At about the same time, the right to a "league and labor" (approximately 4,600 acres) to the west and south of the mission was granted to Manuel Leal, who in turn sold his right of title to Delmour (BCDR F2:53–55). The field notes of the survey of the tract trace the boundaries from a point near the west bank of the San Antonio River, near the intersection of Ashley and Mission roads, to the west approximately 2.8 miles to Pleasanton Road for the southwest corner, then north 1.86 miles for the northwest corner. From that point the survey progresses eastward 1.5 miles, along Pyron Road to the "southeast corner of Survey 29," near Roosevelt Drive, "thence down the ditch of the Mission San Jose" to a corner of the lands of the Veramendi estate, and back to the point of beginning (County Survey Book [CSB], Office of the County Clerk, Bexar County Archives, Bexar County Courthouse, San Antonio, June 20, 1838). If this survey is reconstructed using the presently recognized path of the acequia, the entire grounds of the mission would be included within the Leal grant; however, this property belonged to the church, so could not have been legally granted to Delmour.

This confusion is cleared up by a later survey, conducted in September 1881, of 52.7 acres of land from the original tract purchased by Lazzeler (District Court Records [DCR], Office

of the District Clerk, Bexar County Courthouse, San Antonio, Volume K:103). This plat (Figure 3) reconstructs the bounds of the Delmour survey to a western course of the acequia, labeled "old ditch," to the west of the plaza. The ditch appears to have joined the path of the later acequia near the "water gate" shown on the Veramendi land to the north of the Pyron homestead. Also shown is the "old" San José Road, as well as the "new" road clearly identified as established in 1864. When the eastern diversion of the acequia occurred is not recorded; however, the most logical time was in the 1790s when the gristmill was constructed to the north of the mission. Since the Delmour survey was made in 1838, the ditch must still have been in operation at that time, or at least remained a prominent landmark.

As the lands of the mission were distributed, a portion east of the mission and a plot north of the mission near the dam of the acequia were granted to José Antonio Huizar. He had originally requested a house and lands at Mission Concepción, but in July 1815 he revised his request because of "the troubles of the frontier and then following the insurrection of this province," to a grant at "San José de Aguayo for a building in front of the church and a suerte" (SA 3:107,108). He was granted the granary of the mission as a house and two plots of land, one of 350 varas (972 ft) on the acequia extending 555 varas (1541.6 ft) to the river, and the second "in the shape of a bend" adjacent to the land of Antonio Garcia (SA 3:109).

Upon the death of Antonio Huizar in 1834, his estate passed to his wife, Teodora Guerrero y Huizar. She died in October 1851 and the estate was acquired by her heirs, among whom was Zefarino (or Sefarino) Huizar (Probate Records [PR], Office of the District Clerk, Bexar County Probate Records, Bexar County Courthouse, San Antonio, No. 320). Sefarino, with the concurrence of his son Juan and his other children, conveyed a portion of his estate to his daughter, Dolores Huizar y Lopez, in 1885 (BCDR 45:346). Upon her death in 1901, the property passed to her heirs, among whom were

Jose and Trinidad Guerrero, she having previously married Rosaleo Guerrero in 1853 (BCDR 200:304; Marriage Records [MR], Office of the District Clerk, Vital Statistics, Bexar County Courthouse, San Antonio, No. 821). It is quite probable that her family was already occupying the lots along the south wall of the mission during this period of time, for affidavits in the deed records attest to the fact that Jose's son, Santana Guerrero, was "in peaceful possession" and had established his homestead there by at least 1884 (BCDR 322:456, 333:21). Santana Guerrero married Catherina Flores, a young lady of 17, in May 1874 (MR, No. 4567). Two other children, Felipe and Antonia, also lived around the mission. Felipe established a home at the southwest corner of the plaza, and Antonia and her husband, Alejo Perez, were witnesses at Felipe's wedding to Victoriana Garcia in March 1866 (MR, No. 2588).

The Perez family settled on the eastern portion of the south wall and established their homestead as early as 1900. Alejo and his wife deeded the eastern half of their homestead to their daughter, Manuela G. de Gonzalez, and her husband Joaquin, who passed the eastern portion to their daughter María Gonzalez y Sanchez (BCDR 1233:304, 305). These homesteads were constructed along the position of the old walls of the mission facing on the road which now skirted the interior. By 1929 the road was named Donna [sic] Maria Boulevard and the homes were occupied by Catherina, now widowed, and her sons Felipe, José (Joe), and Eduardo. The Sanchez property was now owned by Christobal Sanchez (Appler 1929) (Figure 4).

The people who first acquired the homestead tracts apparently moved into the ruins of the mission's Indian quarters, either repairing the existing structures or using the remaining rubble to construct new houses. As the succeeding generations took over the properties, small frame houses were built on these lots, nearly always on the line of the original mission buildings. An aerial photograph of the mission taken around 1932 (Figure 5) shows how houses continued to

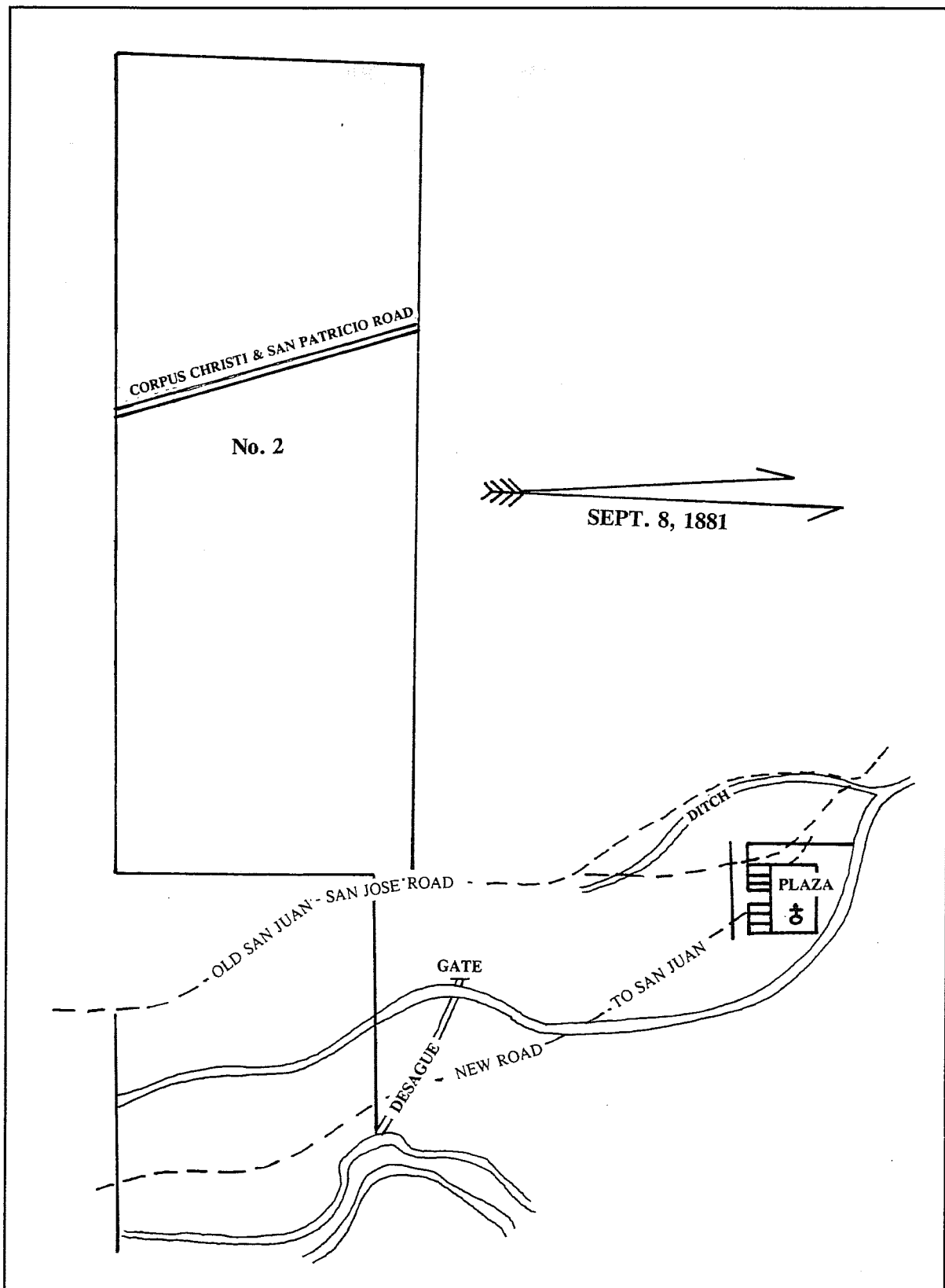


Figure 3. *Lazzeler tract map*. Adapted from a survey by M. W. Merrich on September 8, 1881. DCR K:103.

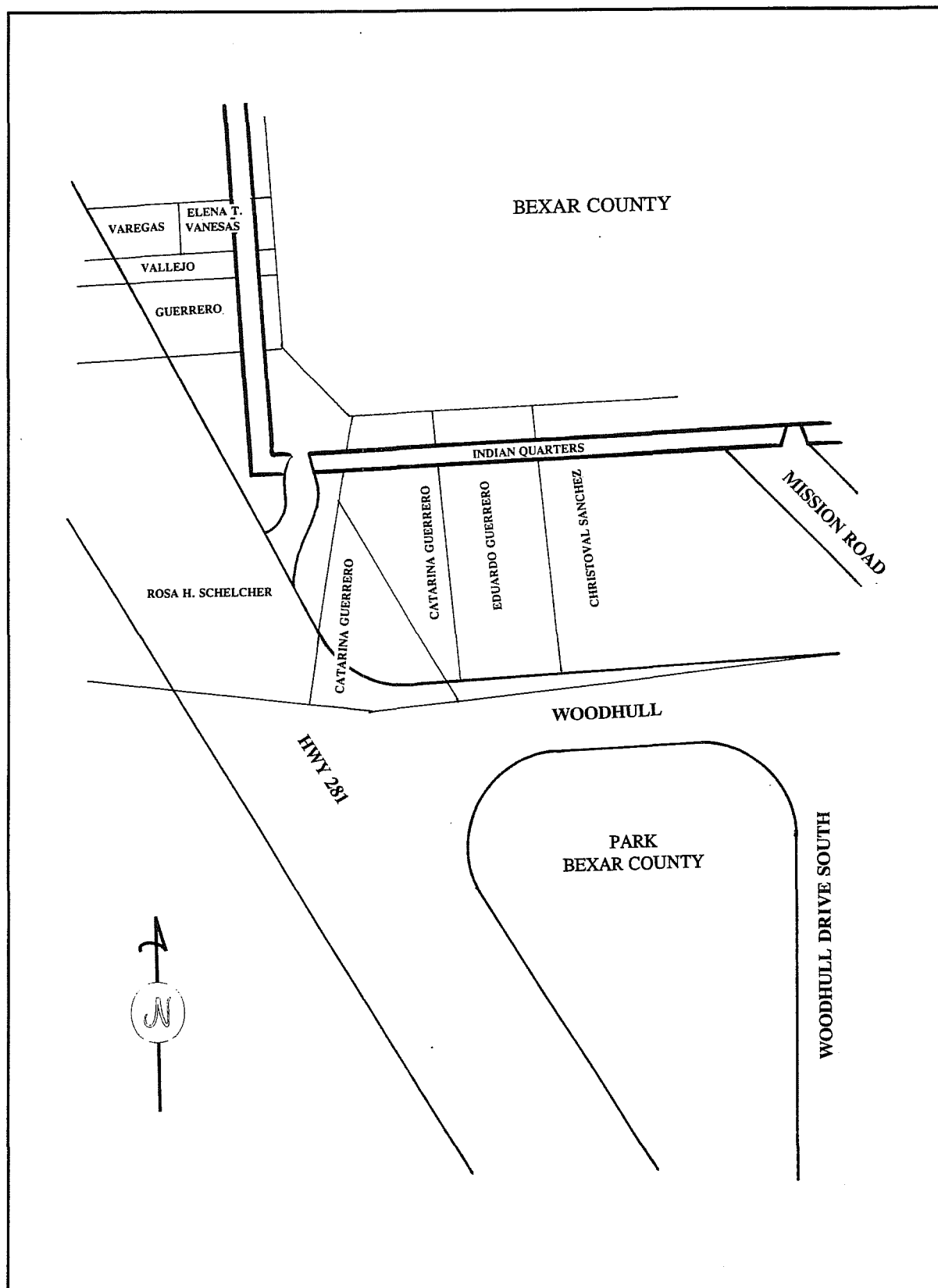


Figure 4. *South wall properties*. Adapted from *San Jose Mission Grounds*, a 1941 map produced by the Bexar County Public Works Department.

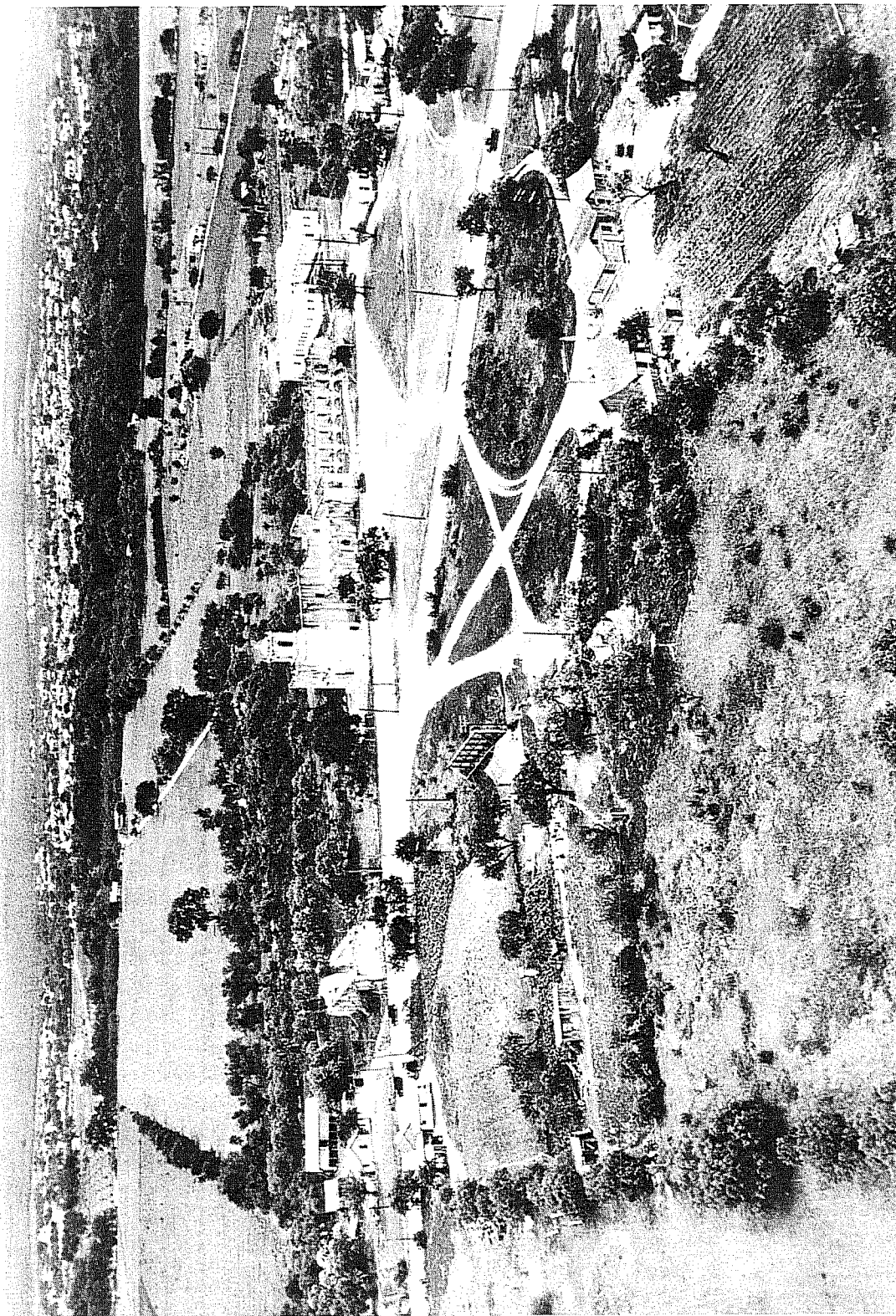


Figure 5. Aerial photograph of Mission San José, 1932, prior to reconstruction.

line the walls and to be oriented facing the interior plaza, even into the present century, emphasizing the feeling of a small community centered on the parish church.

The lots along the east wall to the path of the acequia, along with agricultural lands to the east, were granted to José María Escalera by the Mexican Government on December 31, 1824 (BCDR C1:202, 222, 226). The property then passed to his son, also José María, and upon the latter's death was divided among his seven children. To his youngest, Miguel, he granted "the house and lot in which I now reside, situated at the Mission San José, said lot having a front of about 42 varas [116.6 ft] on the east side of the . . . Plaza, running east between parallel lines to the old ditch of the Mission . . ." (PR, File No. 6022). The will was dated October 18, 1902 and filed August 11, 1911, probably within a few days of his death. His daughter, Josefa Escalera de Perez, sold her portion of the property (Lot C) to Henry Thiede, who in turn conveyed it to Pablo Mireles in June 1926 (BCDR 371:159; 1037:325). A second daughter, Angelita Escalera de Huizar, conveyed her inheritance (Lot D) to Gregorio Vallejo after the death of her husband in January 1933 (BCDR 1387:520) (Figure 6). The Sanchez property to the east of the road through the mission was purchased by Eduardo and Sonia Chavez, and in turn conveyed by them to Elias Ayala in June 1932 (BCDR 1309:522) (see Figure 5). Upon Ayala's death, the property passed to his widow, Angela, who continued to reside on the property until it was acquired by the state.

A 1905 USGS map indicates structures along the south and east sides of the plaza. An aerial photograph taken ca. 15 years later (Figure 7) reveals that the structures were still there. When the property was transferred to the county to establish the park, a great shuffling of property lines took place to eliminate the county road that passed through the mission grounds and to construct Woodhull Road. The Catholic church had acquired the bulk of the property that had been the Delmour survey as early as 1873 and placed it under the control of the Sisters of

Charity of the Incarnate Word in 1878 (BCDR W2:612, 11:44). To establish the right-of-way for the new road, the church and the landowners around the plaza transferred portions among themselves to realign the properties. The portion to the south was divided between the Sisters of Charity and Joe and Eduardo Guerrero, with the Sisters receiving the property to the west of the road and the Guerrero brothers gaining the property to the east. In 1934 property records indicate that the Sanchez property contained a filling station, three houses, and a dance hall (BCDR 1427:525). To the east of the old road through the mission, Angela Ayala received damages for the removal of her home (BCDR 1467:380).

When reconstruction of the south and east walls was begun in 1933 by the Civil Works Administration (CWA) under the direction of architect Harvey P. Smith, Sr., the structures standing in the way were moved elsewhere or destroyed. A row of small 1920s and 1930s frame bungalow-type one-story houses facing onto San José Drive remained (Figures 8 and 9). They continued to be occupied until they were gradually torn down in the 1970s and 1980s.

By 1941 title to the entire site had been acquired by the state of Texas by various means, including purchase from land owners and transfers of title from the county and the San Antonio Conservation Society. San José was designated a National Historic Site and a Texas State Historical Site during a formal dedication on May 8, 1941 (Habig 1968b:185–186). At another impressive ceremony on February 20, 1983, Mission San José and three other San Antonio missions were combined to become the San Antonio Missions National Historical Park under the jurisdiction of the NPS (Cruz 1983). Chains of title record who owned the various land parcels but archaeological investigations reflect how the land was modified by its occupants.

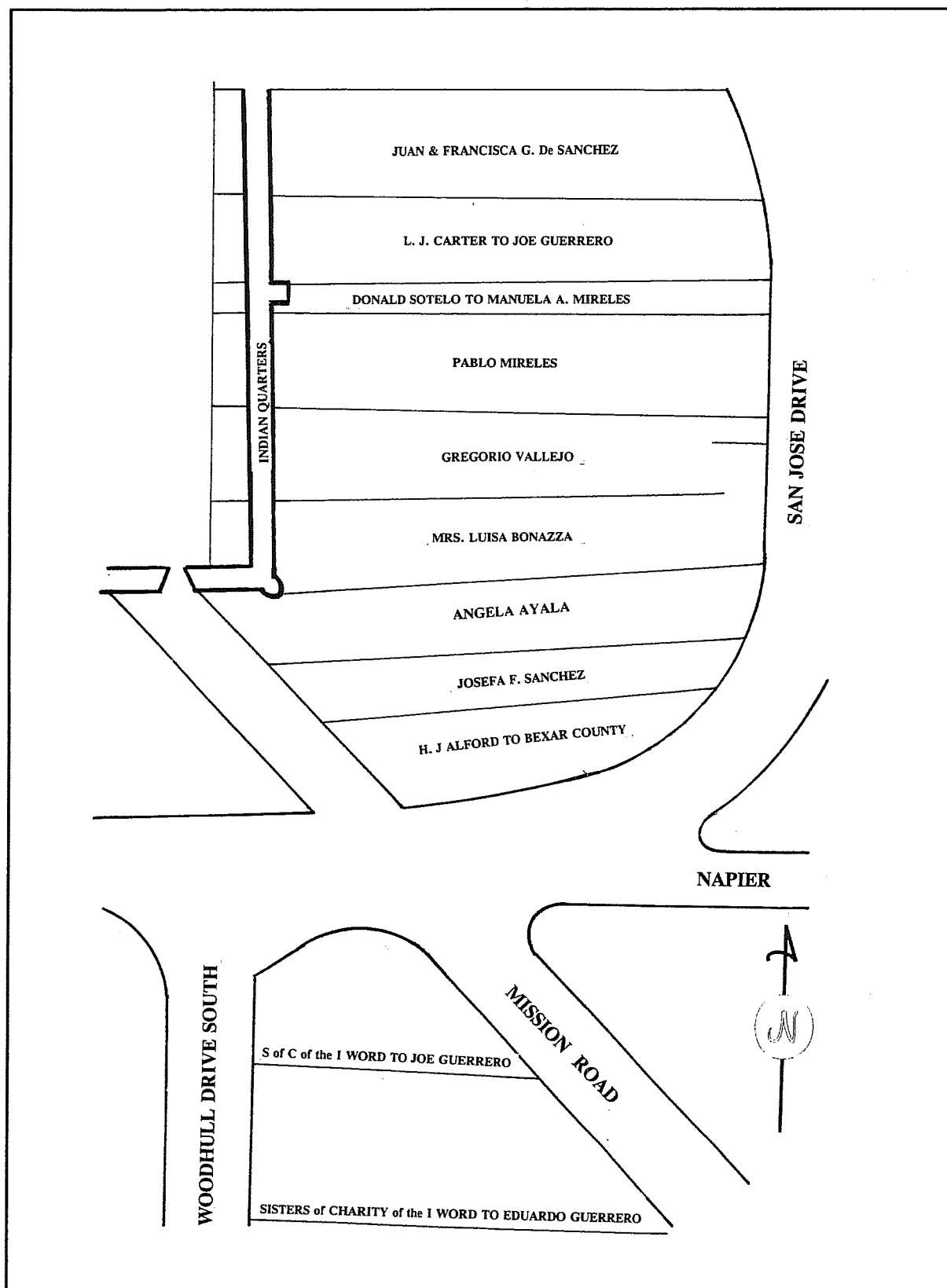


Figure 6. *East wall properties*. Adapted from *San Jose Mission Grounds*, a 1941 map on file at the Bexar County Public Works Department, San Antonio, Texas.

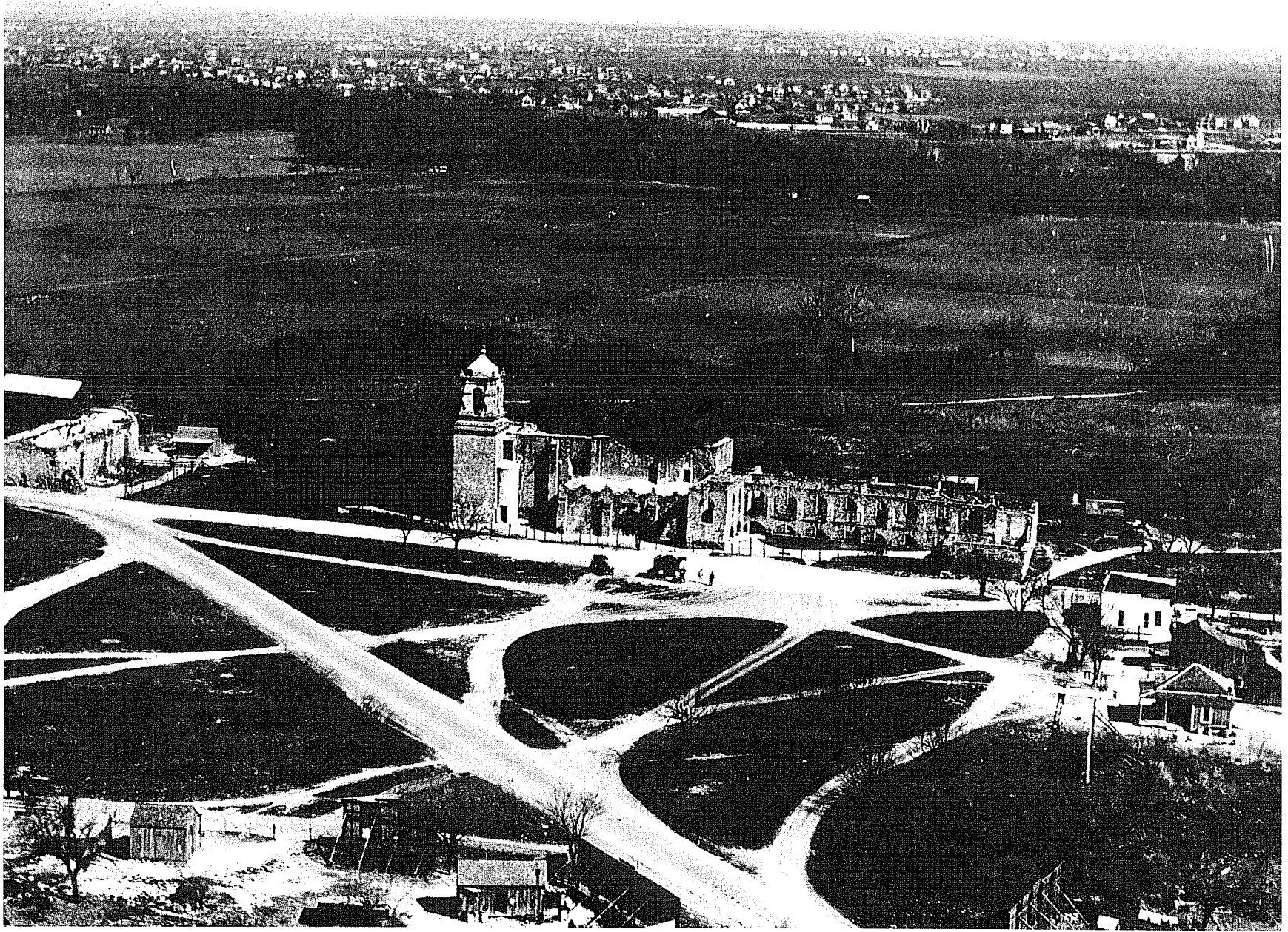


Figure 7. *Aerial photograph of Mission San José, ca. 1920, prior to reconstruction.* View to the north. The granary stands in the upper left. Frame houses are built on the south and east compound wall alignments. Mission Road runs diagonally across the courtyard. Photograph from the collection of the San Antonio Missions National Historical Park, San Antonio.

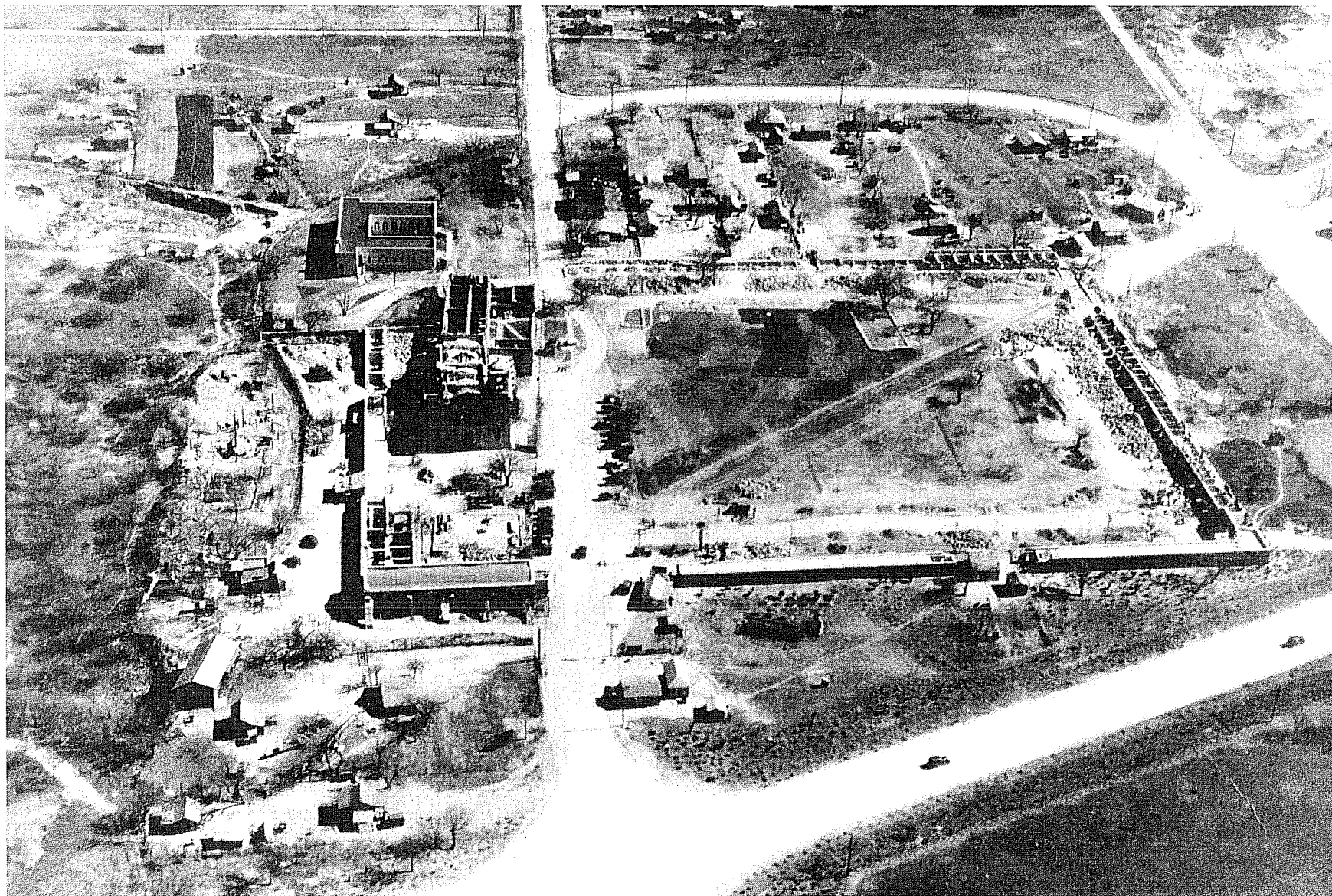


Figure 8. *Aerial photograph of Mission San José, ca. 1935, during reconstruction.* Note location of Mission Road, running diagonally across compound. Photograph from the collection of the San Antonio Missions National Historical Park, San Antonio.

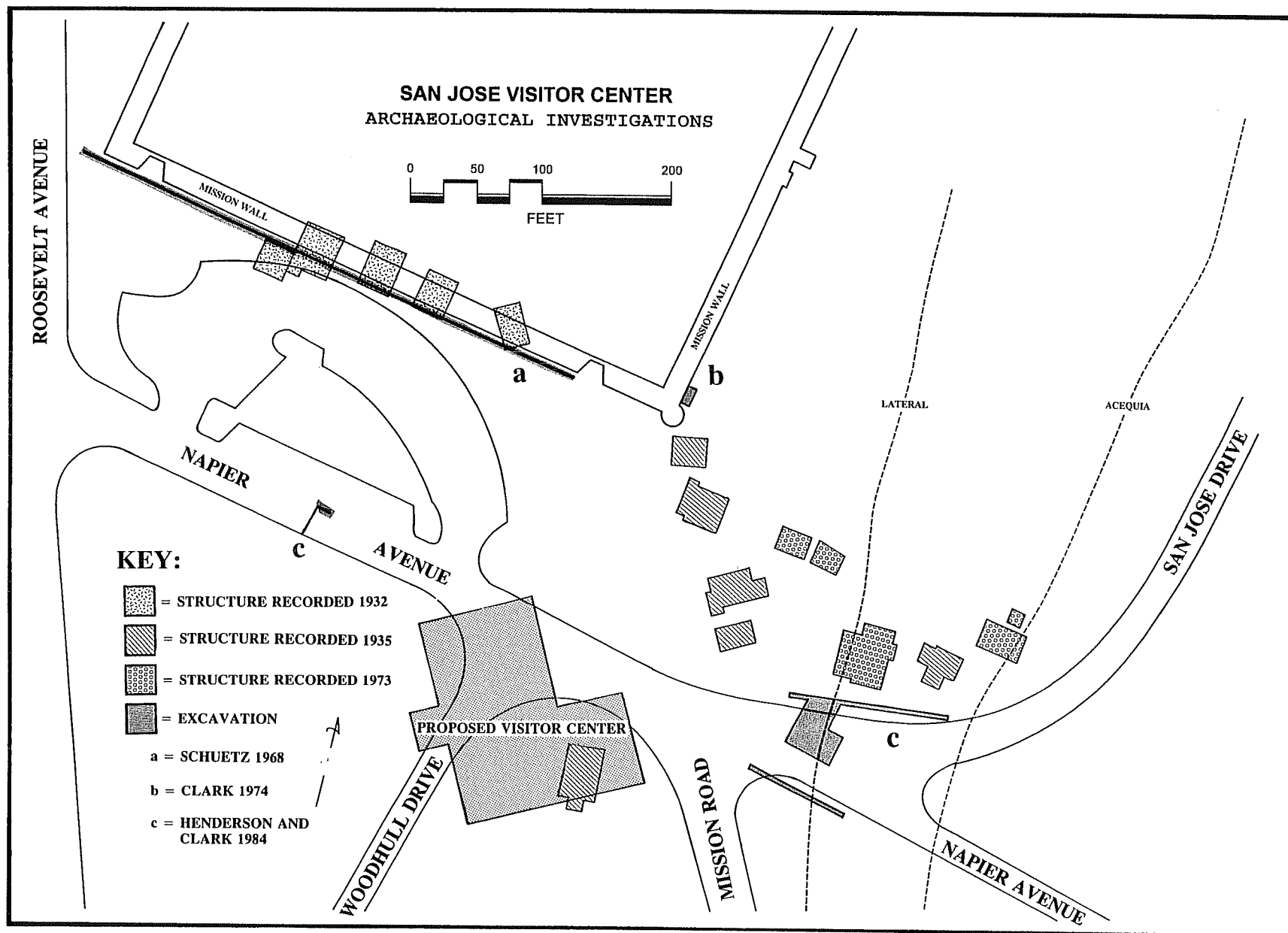


Figure 9. Plan of structures and previous excavations in the southern portion of the project area.

SUMMARY OF PREVIOUS INVESTIGATIONS

The following investigations constitute the previous archaeological work conducted within the area of this project. Figure 10 gives locations of these investigations as well as shovel test locations for the current study.

Schuetz Excavations

In 1968 Mardith K. Schuetz of the Witte Museum conducted monitoring and artifact recovery during the excavation of trenches throughout the park for installation of a sprinkler system (Schuetz 1970). The project was contracted by the Texas Historical Survey Committee (now the Texas Historical Commission [THC]). The purpose was "to map any ruins which might be exposed, to watch the trenches for other features and concentrations of artifacts, and to collect samples" (Schuetz 1970:2). No soil profiles were recorded during this project, therefore no observation was made of the depth of the Colonial occupation below the surface. Schuetz noted nineteenth-century artifacts concentrated on either side of the gate at the southwest corner of the south wall. The trenches were dug to an average depth of 12 inches.

Implications

A list of artifacts recovered from each branch of the sprinkler trenches was recorded. Sprinkler Trench B ran parallel to and approximately eight feet south of the south wall of the mission. In all, 130 Colonial sherds were recovered during excavation of this trench (Schuetz 1970:5) which indicates that, at least in some areas within 10 ft of the south wall, the Colonial level started less than 12 inches below the surface.

Daniel Fox Excavations

A report by Daniel Fox (1970) details the results of three salvage operations carried out in 1969 and 1970. The first of these was a monitoring

operation done in December 1969 during the installation of sewer lines. The area impacted was located along the outer north wall of the compound. The trench was about two feet wide and, in some places, eight feet deep. A plan view and two profiles of the excavations are included in the report.

The second operation consisted of combined testing and monitoring along the route of an electric utility line trench parallel to the north wall of the church and convento. The trench was hand-excavated to a depth of one to two feet and was about one foot wide. In addition, three 2-x-2-m test units were excavated in strategic locations along the area to be disturbed. A plan view of the affected area and profiles and floor plans of the three test units are included.

The third operation was undertaken in August 1970, in advance of the relocation of a large persimmon tree. A 2.5-x-3-m test unit was placed in the area to be affected, just north of the church. A plan view and profiles of the test unit are included. Unrelated to this investigation, a 30-cm-wide by 40-cm-deep trench was excavated for the installation of a drain pipe in the vicinity of the concession stand and the church. The work was monitored and Spanish colonial artifacts were recovered. No plans or profiles are included in the publication.

Implications

The author concludes that the mission grounds hold several feet of stratified deposits containing artifacts and cultural features which span the mission's history.

John Clark Excavations

In 1974, John Clark of the THC directed archaeological investigations at Mission San José in connection with a study of "the effects of climatic conditions on the major structures" (Clark 1978). Units were excavated primarily near or directly next to the walls of standing mission structures.

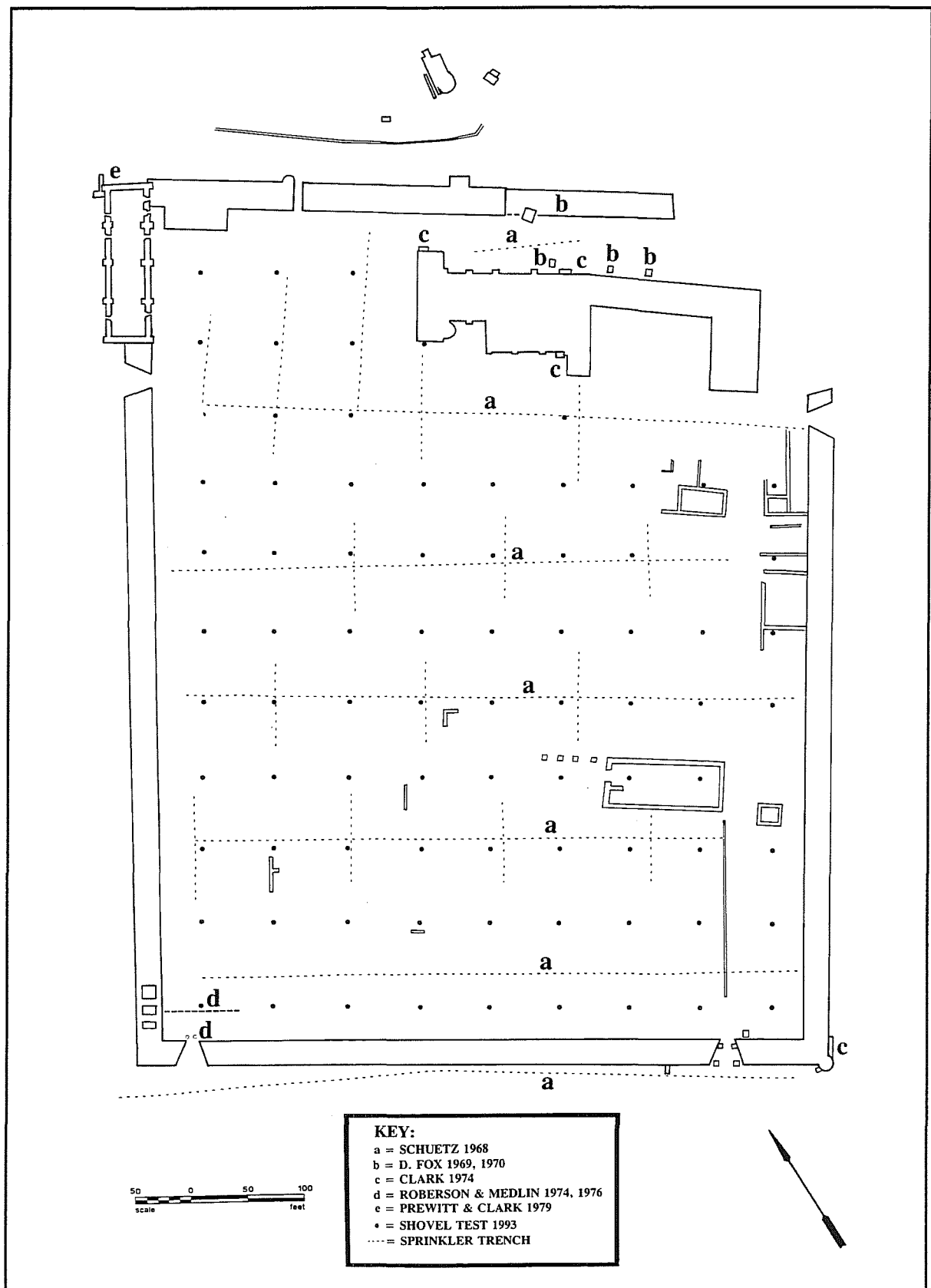


Figure 10. *Locations of previous archaeological excavations.*

Implications

One of the units excavated by Clark was located at the junction of the east wall and the defensive tower. Profiles drawn of this unit do not clearly show the elevation of the Colonial occupation level in respect to the surface, but it can be estimated to be 40 cm (15.6 inches) below. The unusual depth of the mission occupation level can probably be explained by activities related to the restoration of the mission. Today the ground slopes upward against the outside the east wall along its entire length.

Roberson and Medlin Excavations

Wayne Roberson and Thomas Medlin (1976) detail the results of two separate investigations at the mission carried out for the Texas Parks and Wildlife Department in 1974 and 1976. The first of these was linked to the construction of a new office and sanitary facilities within the restored southwest corner of the mission. The second was undertaken to prepare for the construction of a new visitors' entrance at the southeast corner.

Salvage operations inside three rooms of the restored Indian quarters allowed the recovery of structural information and artifacts. Soil removal was limited to clearance for grade beams and utility lines. Four test units, 18 inches deep, were also excavated. The construction of sanitary facilities required that a 90-ft by 32-inch trench be cut across the compound toward the east.

Installation of a new gate required the excavation of two postholes. Minimal excavation was required, as the old posts were removed and the same footing was reused.

Implications

The report describes the various soils encountered and lists the artifacts recovered. The author suggests that the west and east walls of the Indian quarters were reconstructed on original footings, and that the interior crosswalls may not correspond to the Colonial construction.

Clark and Prewitt Excavations

A study by John Clark and Elton Prewitt (1979) was initiated in response to the proposed installation of a French drain along the granary's west wall. The drain was proposed in an effort to correct an extensive moisture retention problem. The specifications called for the excavation of a four-foot wide apron, 1.5 ft deep and 77 ft long. The drain and related disturbance included a dispersion field to extend away from the granary's northwest corner.

Five test pits were placed along the proposed route of the drain and an additional unit was located some 37 ft away, at the outer edge of the dispersion field. The report notes over 1,800 faunal remains, 1,300 artifacts, and seven features. The heaviest concentration of cultural material occurred toward the south end of the granary.

Implications

Since this project was conducted outside the compound, there are no direct implications. However, this study revealed that areas directly related to historic structures at this mission are likely to contain rich deposits of artifacts and relatively undisturbed features.

Henderson and Clark Excavations

In 1984 when improvements were made to Park Road 39 (Napier Avenue), archaeologists from the Texas State Department of Highways and Public Transportation (SDHPT) conducted investigations in the roadbed as features were uncovered during grading (Henderson and Clark 1984). South of the approximate center of the south mission wall, a series of postholes was uncovered and recorded. These features were thought to be one corner of a Colonial structure, possibly a corral, made up of posts approximately one meter (39 inches) or more apart, set into a trench containing charcoal and ash. Disturbance of the surrounding soil by road construction prevented recording the level from which the postholes had been dug. However, the

presence of a chert tool and the tip of a forged nail suggested this structure was built in Colonial times (Henderson and Clark 1984:Figure 19).

During this same road construction project, a segment of an irrigation ditch was uncovered southeast of the southeast corner of the mission. At the time this feature was thought to be the mission's acequia, which passed through this general area. Sherds of Goliad ware, which date it to the eighteenth-century occupation of the mission, were included in the fill of the ditch. A human burial was found partially intruding into the wall of the acequia. The presence of an iron buckle at its waist probably dates it to sometime after the mission period, possibly the mid-nineteenth century or later. Again, the disturbance of the site by construction of the roadbed removed any possibility of determining the original depth of these features.

Implications

The area where the postholes were located, postulated as a Colonial corral, lies 120 ft outside the footprint of the proposed visitors' center (Cox/Croslin and Associates 1992). This area was tested as part of the current project (Appendix A) and no further features were identified. However, when Napier Avenue is removed, it will again be exposed. Removal of the roadbed in this area should be monitored and any further trenches or postholes revealed should be carefully recorded before the area is filled and landscaped. Also, all pipelines dug through this area should be monitored.

Hafernik and Fox Excavations

A study by David Hafernik and Anne Fox involved test-trenching a narrow stretch along the east side of Roosevelt Avenue, immediately west of the compound wall, in 1984. Testing of this area was necessitated by the proposed sewer line for the San Antonio Wastewater Improvements Project (Hafernik and Fox 1984).

The test trench was recorded in five sections, each about 2.5 ft wide and 3 ft deep. In all, 37.5 ft³ were excavated. The project area map notes the ca. 1940 property lines and owners. A stone-lined well was located within the test trench and was presumed to be of post-Colonial origin. No other features were evident.

Implications

Since this trench was outside the compound, it held no particular implications for this study. Nearly all the artifacts found were nineteenth and twentieth century in date, which confirms Fox's contention that there would have been no Spanish colonial features outside the compound wall in this particular area.

Fox and Cox Excavations

In 1991 CAR conducted archival research and backhoe testing to positively locate and identify the mission acequia in relation to the east wall of the mission (Fox and Cox 1991). Archival research resulted in a composite map locating the acequia. Backhoe testing was used to relocate the acequia lateral uncovered by the 1984 SDHPT investigations and to trace it northward across the field east of the mission. The first indication of the lateral was found about 15 inches below the surface.

Implications

Since the location of the acequia will be marked in the landscape plan, care should be taken not to damage this area during construction of the adjacent parking area. In addition, the parking surface should be sufficiently elevated so as not to disturb the acequia lateral (Fox and Cox 1991:Figure 3).

HISTORY OF THE MISSION COMPOUND (AREA D)

Because of the significance of Area D (the mission compound), detailed research of this area was conducted in preparation for archaeological testing. Eighteenth-century descriptions of the mission were searched for mention of the layout of the mission compound and the possible presence of structures (and their related activity areas) which may have been present during the mission period. In addition, previous archaeological excavation reports were studied for clues about stratification and artifact distribution in the compound.

In their architectural history (1990), Ivey et al. deal primarily with standing structures such as the church, convento, and granary. However, their speculations about the layout of the compound before 1760 were taken into account during our analysis of the results of testing. Ivey (1982:26) also suggests the possibility that foundations for a mirror image of the present convento to the south of the present one may exist. The south wall of these foundations may extend as far south as the south edge of Pyron Road. Subsequent limited testing by Ivey in the general area, however, did not confirm this (Ivey 1982:27). Nevertheless, the possibility should be kept in mind during any future work.

For the nineteenth-century period after secularization, we consulted numerous accounts of visitors to San José to trace the gradual decline of the buildings and the activities of later inhabitants. Useful descriptions of the early twentieth-century compound derived from José Zapata's oral history interview with Jesusa ("Susie") Bustillos Chavez, a descendant of the Huizar family who owned and lived in and around the granary from the early 1800s until it was restored in 1933 (Zapata 1994).

Numerous historic photographs of the mission during its decline and restoration were also perused for indications of structures or activities within the compound. In addition, the Minutes of the Bexar County Commissioners [MCC] were

searched to trace the history of road construction through the mission plaza in the late-nineteenth century. The results of these various research efforts are summarized here.

THE COMPOUND IN THE MISSION PERIOD

According to various accounts of official visitors to San José during the mission period (Habig 1986b:90-95), the following features were located somewhere within the mission compound:

- textile shop reported by Fr. Ciprian in 1749
- rows or squares of Indian houses reported by visitors in 1755 and 1758
- flowing water and bathing pools reported by Gov. Barrios in 1758
- a cemetery reported by Gov. Barrios in 1758
- a carpenter shop, a smithy, and a sugar mill reported by Gov. Barrios in 1758
- soldiers' quarters reported by Gov. Barrios in 1758
- textile and tailor shops reported by Fr. Solis in 1768
- lime and brick kilns and an artesian well reported by Fr. Solis in 1768

Of these, the carpenter shop was built against the east side of the granary at the north end and the weaving shop was built into the perimeter wall directly east of the convento (Ivey et al. 1990:112). The blacksmith shop has not as yet been positively located, but probably was on the wall line south of the main west gate, opposite the church (Ivey et al. 1990:133). The soldiers' quarters were somewhere at the north end of the quadrangle, since they were described as facing the church (Habig 1978:132).

In 1740 Fr. Ciprian described the Indian quarters as "houses of stone made with such artistry that the mission is a veritable fort" (Habig 1978: 97-98). According to Fr. Mariano, in 1755 (Habig 1978:115) the Indian village consisted of 84 houses arranged in street-like form. Yet in 1758 Gov. Barrios (Habig 1978:131-132)

described 84 stone houses with flat roofs arranged in four quadrangles, a somewhat different picture. In contrast to these descriptions, in 1768 Fr. Solís (Habig 1978:144) said the mission was "a perfect square of stone and lime" with the Indian houses built against the perimeter wall.

Historians and archaeologists have struggled to envision the arrangement of Indian houses described by Gov. Barrios without much success. We do have descriptions of Indian housing during the early years at Missions Valero (Schuetz 1966:11) and San Juan (Schuetz 1968:39) as being rows of houses with a street or an acequia between. The same arrangement was found during archaeological investigations by Jack Eaton (Adams 1976:Figure 2) at Mission San Bernardo in Guerrero, Coahuila, Mexico, which was also built in the early eighteenth century. Apparently the impetus of intensified hostile Indian raiding in the San Antonio area by 1768 (de la Teja 1995:100) caused all the local missions to adopt a more defensive posture at that time, for mission inventories from that time on indicate the missions were surrounded by defensive walls.

Once the mission became an enclosed square, the necessity for gates is apparent. The various visitors' descriptions are confusing on this subject. In 1768, there were four gates, one in each wall (Habig 1978:144); in 1778 there was an additional one opposite the church; in 1786 two additional smaller gates had appeared; but by the 1823 property appraisal only one gate is mentioned (Ivey et al. 1990:137). Ivey and his colleagues speculate (Ivey et al. 1990:142) that there had probably been a gate somewhere in the middle of the south wall, judging from the 1823 descriptions of the remaining houses and walls. Nowhere is any suggestion of a gate at the southeast corner such as the one built by Harvey Smith during the reconstruction of the mission walls.

AFTER SECULARIZATION

Various descriptions by visitors to the mission record the gradual collapse of the Indian quarters. At secularization, these numbered 54 apartments, some of which were described by Manuel Muniz in 1794 as being in dilapidated condition (Clark 1974:13). Ivey et al. (1990:142) state that a few stone Indian houses were still standing in 1832. Kendall (1844:50), Roemer (1935:7), and Woods (1982[1846]) agreed that people continued to live within the ruins in the 1840s. This was confirmed by Corner in 1890 who reported "numerous Mexican families still made it their residence . . . in huts erected upon the ruins of the ramparts of the Mission Square" (Corner 1890:18).

There has been considerable discussion about the actual dates of the construction of Pyron and Mission roads through the compound. Originally, in mission times, the gates would have been used for entering and leaving the mission, but probably few if any formal roadways were cut across the compound. According to the records, county roads were not constructed until the 1880s. In 1886 what is now Pyron Road was officially opened east to west across the plaza just south of the church. It took one year to construct this road, which extended across the San Antonio River as far as San Juan Road (present South Presa) (MCC, Book D: February 20, 1886). In 1888 Mission Road was constructed diagonally across the compound from the west gate by the granary to the southeast corner. This extended Mission Road through the mission and south to Ashley Road near Berg's Mill (MCC, Book E: November 21, 1888).

THE EARLY TWENTIETH CENTURY

Harvey P. Smith, Sr., observed in 1918 that families still exist in huts built on the ruins, and that in a few years what little was left of the wall foundations would probably disappear (Clark 1978:13). As revealed in her interview, Mrs. Chavez lived just north of the granary from her

birth in 1907 until her father moved their house to property on Bustillos Drive, northeast of the mission, in 1912. Since her relatives continued to live at the mission, she visited there regularly throughout the first half of the twentieth century.

Mrs. Chavez remembers a small, white, frame schoolhouse built on cedar posts, which was located about 100 ft east of the west wall and 50 ft north of the south wall, in the southwest quadrant of the plaza. She also recalls that in 1928, or possibly earlier, a refreshment stand that sold soda water stood just south of Pyron Road, approximately opposite the west end of the convento. Early twentieth-century photographs of the church and convento show this small frame structure, as well as numerous frame buildings clustered south of the east gate where Pyron Road exits the mission.

SUMMARY

If we accept the probability that the Colonial weaving, carpentry, soldiers' quarters, and blacksmith operations were located along the walls at the north end of the missions (at least at the height of the mission's development) and that the cemetery was located between the present church and the granary, the following possible mission-period structures are left to account for in our analysis.

The exact location, orientation, and plan of the early Indian houses remain elusive. The details of the street-like rows and layout of four squares mentioned in cryptic inventories will require archaeological investigations to realize. Perhaps some of the fragmentary foundations along the east wall restored by architect Harvey P. Smith are related to the Barrios plan. Barrios's flowing water and bathing pools are not likely to show up in the type of testing done in this project. An artesian well, probably the one centered in the convento courtyard, may have been the source of this water at that time.

The sugar mill would have consisted of a stone and mortar rectangular structure with a chimney at one end where the juice from cane grown in the mission fields was boiled down to make sugar bars. The grinding or pressing operation would have been a horse-powered press, the remains of which would only be a large posthole surrounded by a well-worn track in the ground. None of the restored foundations appear to relate to this structure; more extensive excavation would be required to confirm its location.

Judging from the lime kilns found at other Spanish missions and the ones outside the north wall next to the mill, these would all have been outside the mission, probably built into a river bank or the side of a hill. If the brick kiln was located inside the compound, one would expect that trenching done in previous excavation projects would have found deposits of broken bricks and/or areas of scorched earth where this process took place. Here again, outside the walls seems a more likely location.

Probably the only indications of Mrs. Chavez's schoolhouse would be fragments of slate and slate pencils, and perhaps an increase in the number of child-related artifacts such as marbles. Postholes for the building itself could only be found by extensive horizontal excavations. The same would probably hold true for the refreshment stand south of the church. An increase of bottle caps and broken glass might be found in that vicinity.

CHAPTER 2: RESEARCH GOALS AND FIELDWORK

RESEARCH GOALS

The NPS, in anticipation of the construction of a new visitors' center at Mission San José, requested that archaeological research be undertaken with three goals: 1) to determine the potential impact the proposed visitors' center would have on any buried archaeological materials; 2) to provide preliminary information regarding any subsurface archaeological features or artifact concentrations to aid in planning future projects inside the compound; and 3) to determine the depth and extent of fill above the original mission ground surface within the compound walls.

To address these general goals, the Mission San José grounds were subdivided into four distinct areas, lettered A to D (Figure 1). The NPS's scope-of-work specified the particular problems to be addressed within each area.

Area A is located within a triangular tract formed by Roosevelt Road, Napier Avenue, and Woodhull Drive (Figure 1). The investigations of this area were designed to accomplish three goals. The first involved investigating a possible feature (*jacal* or corral) which was suggested by the discovery of a wall trench and possible postholes during an earlier excavation (Henderson and Clark 1984). The other goals focused on the areas to be impacted by the planned visitors' center building and the proposed rerouting of Napier Avenue.

Area B is situated within the immediate vicinity of the southeast gate (Figure 1) where two issues needed to be addressed. The first involved recording soil profiles and disturbances in the area of the southeast gate, adjoining walls, and the bastion. The second goal was to locate and document the old mission road or trace.

Area C is a linear strip which lies east of the mission compound in the proposed location of new parking facilities and continues to the south along Mission Road (Figure 1). Area C follows the southerly route of a projected acequia; the goal of the archaeological work was to determine if any portion of the acequia remained.

Area D is the entire courtyard formed by the surrounding mission compound walls and buildings. To determine the nature of the deposits and provide preliminary information on the location of features and artifact concentrations, 83 shovel tests were excavated within the mission compound. These data will assist managers in planning future projects in this area.

At the request of the NPS, the work in Area C was completed first, followed by the work in Areas B, A, then D. The Area D work represented the largest part of the fieldwork. Additional work was conducted in Area A in April 1994, the results of which are presented in Appendix A.

FIELDWORK

The excavations consisted of a combination of backhoe trenches, shovel test pits, and square test units. The backhoe trenches were 20–40 ft long, by 4 ft wide, by 3 ft deep. Soils were monitored for cultural material, artifacts were collected, soil samples were taken, and profiles were drawn. The shovel tests were 18 inches in diameter and were excavated to sterile deposits. A combination of natural and arbitrary levels was utilized. Arbitrary 12-inch levels were used unless thinner natural levels could be identified based on changes in soil color or texture. Soil samples were collected from every shovel test, except in Area A, where representative samples were taken. All levels of all shovel tests were recorded and described.

The test units were either 3 x 3 ft or 4 x 4 ft. The unit datum was set at the highest corner of each test unit. Arbitrary 5- or 10-inch levels were used. The matrix was screened through ¼-inch wire mesh. Plan views and profiles of these units were drawn, with specific attention to wall footings, construction, and restoration fill. All elevations were tied to benchmark number AP18, located at 584.43 ft above mean sea level (Cox/Croslin and Associates 1992).

AREA A

This area is located within a triangular tract formed by Roosevelt Road, Napier Avenue, and Woodhull Drive (Figure 1). Investigation of this area was threefold. Our first concern involved relocating a feature documented by Henderson and Clark (1984). This feature consisted of a linear wall trench estimated to have been about 22 inches deep and filled with ashy soil. The trench ran approximately 28 ft east-west, then turned and ran about 42 ft to the south. The SDHPT investigations were limited to the street, therefore it was not possible to determine whether this trench continued for any distance to the south beyond the curb. Within this trench were found three postholes and two, or possibly three, postmolds. The feature was tentatively

identified by SDHPT archaeologists as a corral constructed during Colonial times.

A series of four backhoe trenches was excavated parallel to and south of Napier Avenue (Figure 11). These trenches were planned so as to extend beyond the limits of the 1984 study which documented the aforementioned feature.

Trench A-1. Trench A-1 was located 12 ft south of Napier Avenue and measured 55 ft long and 35 inches in depth. This trench was carefully excavated with a backhoe in 3–4 inch increments, monitored by crew members. The soil was uniform and sterile, except for a small lens of yellow sand at ca. 28–30 inches. No traces of ash-filled wall trench or postholes were found.

Trench A-2. Trench A-2 was positioned 18 ft south of Napier Avenue and was 23 ft in length and 30 inches in depth. A layer of yellow sand meandered across the profile of this trench between 4 and 12 inches, but otherwise little stratification was found and the soil was sterile. At 30 inches an irregular disturbance, averaging 15 inches across, contained sandy soil and fragments of a plastic bread wrapper, as well as a 5-inch diameter deposit of rotted wood that may have been the remains of a post. No sign of a posthole was found in careful examination of both profiles of the trench. This disturbance did not line up with the SDHPT feature (Figure 9).

Trench A-3. Trench A-3 was positioned 30 ft south of Napier Avenue and was 45 ft long by 42 inches deep, and **Trench A-4** was positioned 40 ft south of Napier Avenue and was 45 ft long and 37 inches deep. No visible disturbances or stratification were found in the sterile soil of either of these trenches.

The second concern focused on the area to be impacted by the planned visitors' center building. This is located to the far northeast section of Area A. Six shovel tests (STs),

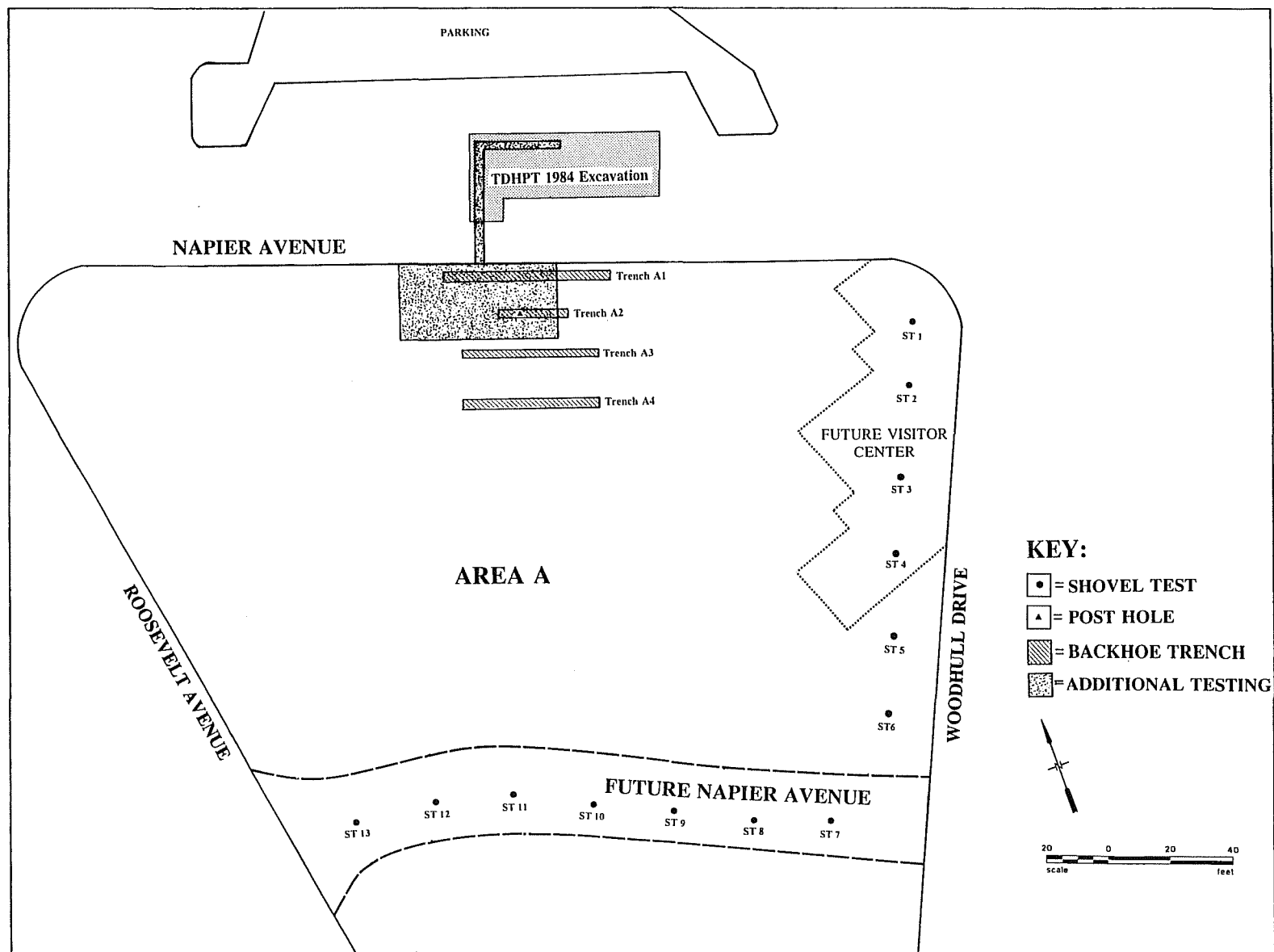


Figure 11. Plan view of Area A.

18 inches in diameter, were placed at 15-ft intervals and excavated to culturally sterile soil. These were designated ST-1, ST-2, ST-3, ST-4, ST-5, and ST-6. In this area, 4-9 inches of topsoil capped a deposit of grayish sandy loam which became totally sterile at 18-22 inches. Occasional plastic fragments, glass sherds, bottle caps, wire nails, wire, roofing asphalt, and rubber bits were present in the upper levels. These were confined primarily to the first 10-12 inches and appeared to be in no particular concentration.

The final consideration was the area to be impacted by the proposed rerouting of Napier Avenue, which comprises the southernmost sector of Area A. The center line of new Napier Avenue was staked out and seven shovel tests, 18 inches in diameter, were placed at 25-ft intervals and excavated to culturally sterile soil. These were designated ST-7, ST-8, ST-9, ST-10, ST-11, ST-12, and ST-13. The mean depth of the sterile level was 17 inches from surface. Shovel testing in this area yielded a few twentieth-century artifacts, in no particular concentration, within the first 10-15 inches. No structures and/or features of any age were encountered.

AREA B

Area B encompasses the southeast gate (Figures 1 and 12) and is the proposed location of the main entrance and walkway for the interpretive center. The archaeological work in this area had two distinct goals. The first was to excavate and document the old mission road or trace. The road alignment was projected from the southeast gate to the existing Mission Road. Two backhoe trenches were placed to intersect any remaining evidence of the road (Figure 12).

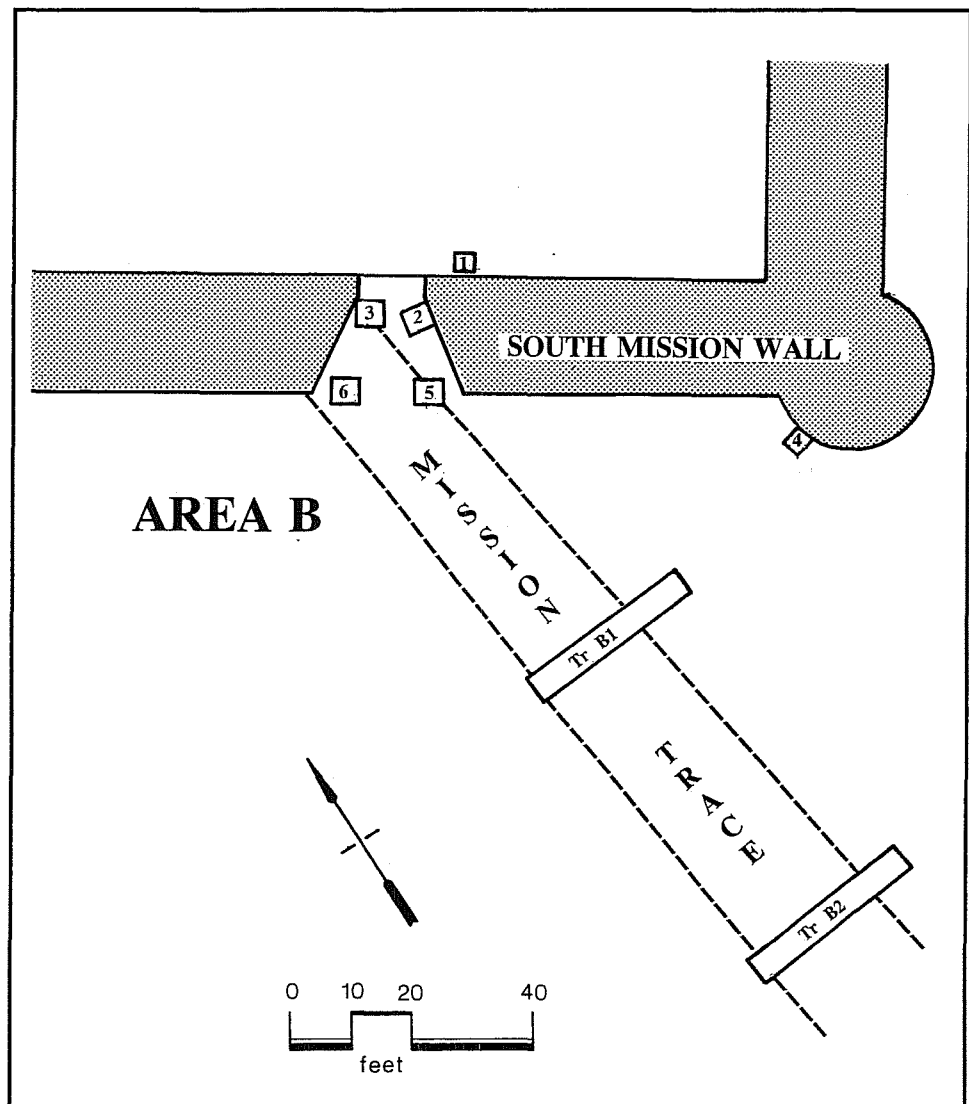


Figure 12. Plan view of Area B showing excavation units.

Trenches B-1 and B-2. Trench B-1 was located 47 ft from the mission gate and measured 30 ft long and 30 inches deep. Trench B-2 was located 53 ft south of Trench B-1 and measured 29 ft long and 30 inches deep. Soil samples were taken from four strata in Trench B-1. Both test trenches were profiled and stratigraphies recorded (Figure 13).

The cross section of Mission Road through this area shows up in the trench profiles. The asphalt surface has been removed (see Unit B-5, Level 3, for mention of asphalt fragments), leaving only the road base. The latter consists of two slightly differentiated layers of caliche gravels.

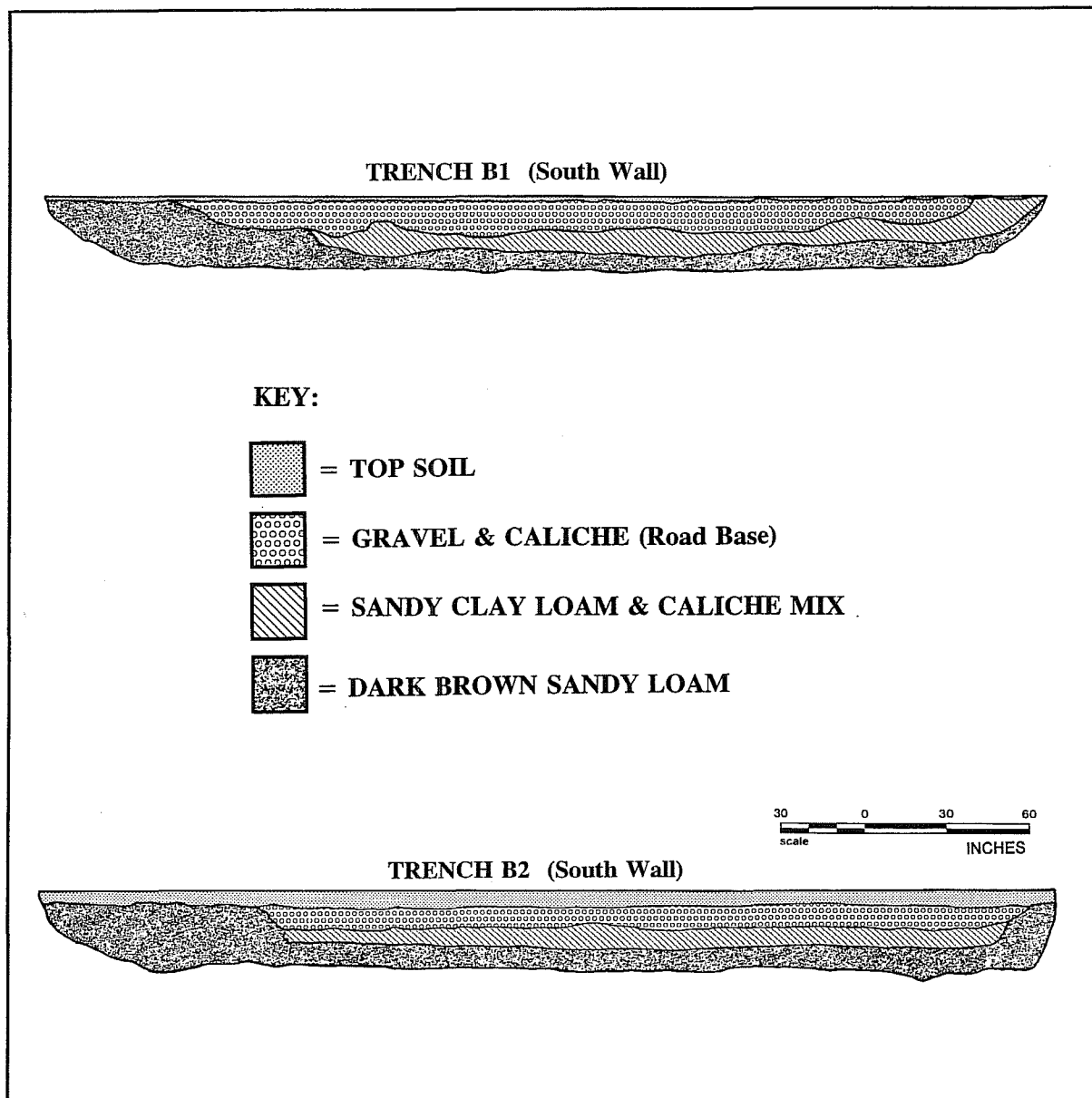


Figure 13. *South wall profile of Trenches B-1 and B-2.* Note the road base of Mission Road dating to the late-nineteenth and early twentieth centuries.

The second concern involved assessing deposits along the area of the southeast gate, adjoining walls, and the bastion. Six hand-excavated, 3-x-3-ft or 4-x-4-ft units (B-1 to B-6) were excavated to sterile soil (Figure 12).

Unit B-1 (3 x 3 ft) was placed inside and east of the southeast gate. The size of the unit was restricted by the space between the wall and the existing brick sidewalk. The datum was set at the southeast corner (highest point) and the surface sloped downward (to the north) about 3.5 inches.

B-1/Level 1 (0–10 inches): The predominant soil in this level was a dark brown loam (0–8 inches). A half-inch PVC water line was encountered about 6.5 inches from surface. The water line ran east to west, and was 6 inches south of the northwest corner and 12 inches south of the northeast corner. The 0–8 inch surface layer was sterile. A gray, clayey soil was exposed at 8 inches and continued for 5.5 inches into the next level. A negligible number of post-Colonial artifacts (fragments of animal bone and one whiteware sherd) was located within the last 2 inches of this level. These artifacts were isolated in the southeast quadrant of the unit.

B-1/Level 2 (10–15 inches): The gray, clayey soil continued into this level. Large chunks of charcoal began to surface at about 13 inches, followed by a noticeable soil change and a hearth at 13.5 inches. The hearth (Feature 2), located west of center, was roughly 16 inches in diameter (Figure 14) and held flat stones, a solid ash layer, and bone fragments. The outline of a posthole was located on the western edge of the unit (Figure 14), about 13.5 inches from surface. The posthole (Feature 1) was approximately 7 inches in diameter and was imbedded with decomposed wood. Encircling the hearth and posthole was a compacted and gravelly matrix, which extended to 17 inches below datum. The posthole extended to the bottom of this level. Assorted Colonial artifacts including 1 sherd of Oriental porcelain, 1 sherd of majolica, 1 sherd of lead-glazed ware, 7 sherds of Goliad ware, and 26 bone fragments were recovered from

within the gravelly matrix surrounding the hearth and post hole (see Area B- Features discussion).

B-1/Level 3 (15–20 inches): The hearth and gravelly matrix were no longer evident at 17 inches, where a dark humus soil appeared. The posthole was still evident at 20 inches and charcoal dotted the entire floor. A high concentration of Colonial artifacts was recovered, including 33 sherds of Goliad ware, 219 bone fragments, and a chert scraper.

B-1/Level 4 (20–25 inches): Dark humus soil continued into this level. Colonial artifacts continued to a depth of about 23.5 inches, and the unit was sterile from 23.5 to 25 inches. Among the recovered artifacts were 428 bone fragments, 55 Goliad ware sherds, Colonial-period glass, 2 chert scrapers, and a glass trade bead. Excavation of this unit ceased at 25 inches. The unit was photographed and profiled, with particular attention to the south wall profile.

Unit B-2 (4 x 4 ft) was placed outside the southeast gate and along the outer east wall. The datum was set at the southeast corner (highest point), and the surface sloped down to the west 5 inches. The stratigraphy was very uneven and also sloped to the west.

B-2/Level 1 (0–10 inches): The surface soil, about 4.5 inches thick, was gray brown in color. The topsoil was succeeded by a layer of yellow sand, which was about 2 inches thick and less pronounced toward the east wall. Underneath the sand was a 3.5-inch layer of dark brown clay with a scatter of rocks. This level produced an assortment of artifacts including 386 glass fragments, a soft drink can, 16 bone fragments, wire nails, and fragments of ceramic tile and plaster.

B-2/Level 2 (10–20 inches): This level was comprised of a displaced dark brown fill. The fill continued to about 15 inches below datum. Collapsed wall and/or construction debris in a dark clay matrix was encountered about 15 inches below datum. As in the previous level, there was no temporal order to the variety of

Features 1 & 2

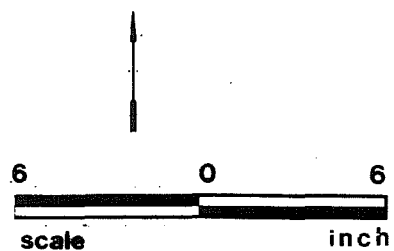
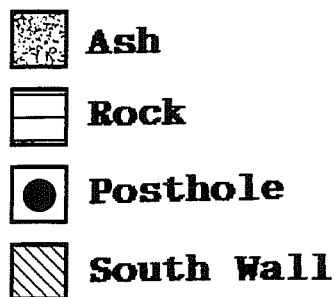
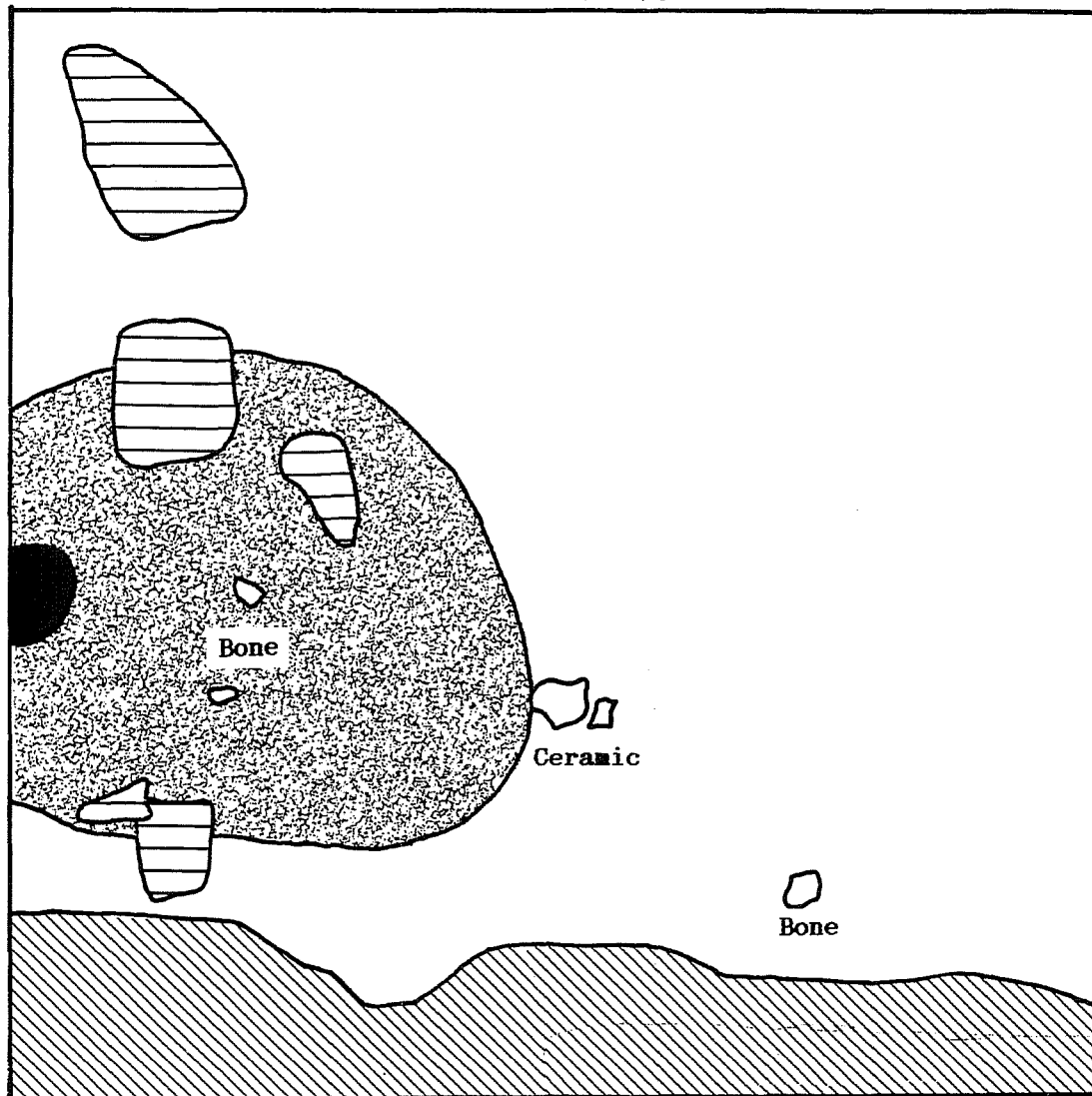


Figure 14. Plan map of Unit B-1/Level 2. Note locations of post hole (Feature 1) and hearth (Feature 2).

artifacts unearthed, which included 2 sherds of whiteware, 39 glass fragments, unidentifiable rusted metal fragments, and wire nails.

B-2/Level 3 (20–25 inches): Wall collapse and/or construction debris decreased about 22.5 inches below datum. At this point a charcoal and ash lens, about one-half inch thick, was encountered. This lens overlaid a dark alluvial soil at about 23 inches below datum. Three sherds of Goliad ware, 1 of majolica, 7 bone fragments, and fragments of mussel shell were recovered from the last 2 inches of this level which appeared to be Colonial. A rodent burrow contained nineteenth and twentieth-century glass fragments.

B-2/Level 4 (25–30 inches): The dark alluvial soil continued to 30 inches. With the exception of some milk glass and brown glass recovered from within a rodent disturbance, this level was sterile. Excavation of this unit ceased at 30 inches. The unit was photographed and profiled, with particular attention to the east wall profile (Figure 15).

Unit B-3 (4 x 4 ft) Unit B-3 was placed outside the southeast gate and parallel to the outer west wall to examine the stratigraphy in this area. The datum was set at the northwest corner and the surface sloped downward to the east about 5 inches. The stratigraphy was uneven and sloped to the east in the upper level.

B-3/Level 1 (0–10 inches): The surface soil (1–2 inches) was light brown. A 3-inch thick layer of yellow sand, which thinned out to the east, lay underneath the surface soil. This was followed by rubble and backfill about 4 inches below datum at the west end. A hard-packed roadbed gravel—the base for the county road—was encountered about 9 inches below datum at the east end. This was about 3 inches thick and thinned out about 16 inches away from the east wall. A 3-inch diameter cast-iron pipe was located against the east wall of the unit at 8.5 inches from surface. This apparent water line runs diagonally in a southeasterly direction, perhaps parallel to the edge of Mission Road

where it ran through the mission. Very few artifacts were extracted from this level, mainly wire nails and glass.

B-3/Level 2 (10–20 inches): No well-defined soil changes were detected in this level. Wall rubble and/or construction fill continued at the west half of the unit. The eastern half of the unit was comprised of sandstone and limestone rubble. Although not well defined in the profiles, a dark brown clay-loam matrix was detectable about 17 inches below datum. Rubble was still present within the matrix, as were various artifacts of mixed dates, including 57 sherds of Goliad ware, 1 lead-glazed sherd, 2 sherds of whiteware, 28 assorted glass fragments, 5 wire nails, 9 chert fragments, and 4 fragments of worked chert.

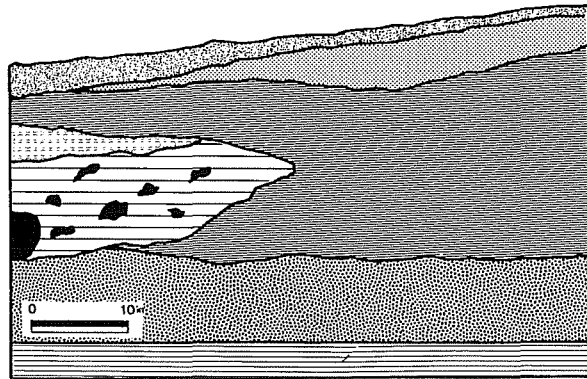
B-3/Level 3 (20–25 inches): The dark brown clay loam continued into this level, and a heavy concentration of Colonial artifacts was extracted from the west half of the unit. The artifacts included 16 Goliad ware sherds, 1 glass fragment, 1 chert fragment, and 55 bone fragments.

B-3/Level 4 (25–27 inches): The dark brown clay loam continued into this level, and was sterile from 25.5 to 27 inches. The first half of this unit yielded 3 sherds of Goliad ware and 32 bone fragments. Excavation of this unit ceased at 27 inches. The unit was photographed and profiled, with particular attention to the south wall profile (Figure 15).

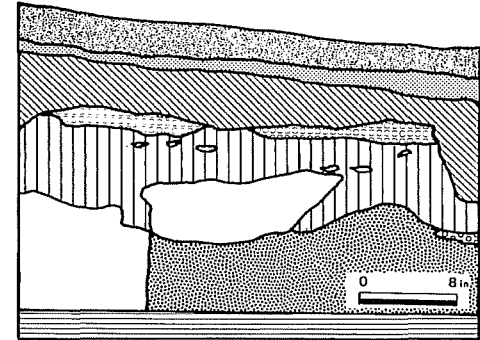
Unit B-4 (4 x 4 ft) was placed along the outer west side of the southeast corner bastion to the east of the gate (Figure 12). This unit was excavated to study the construction of the wall and footing and the stratigraphy in this area. The datum was set at the southeast corner, and the surface sloped downward to the west about one inch.

B-4/Level 1 (0–10 inches): The topsoil (0–3.5 inches) was brown and loamy, below it was a caliche and gravel layer (3.5–6.5 inches). The soil changed to a dark sandy loam about 6.5 inches below the surface and continued to about

AREA B UNIT PROFILES














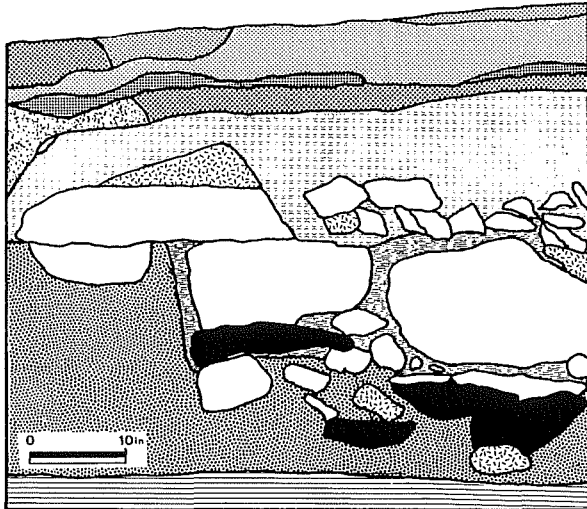
UNIT B-3 (South Wall)



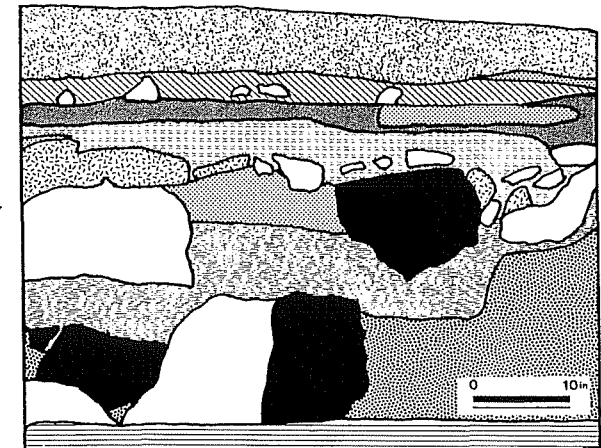
UNIT B-2 (South Wall)

KEY:

-  = TOP SOIL
-  = CONSTRUCTION FILL
-  = SANDSTONE / RUBBLE
-  = CALICHE
-  = LIGHT TAN SAND
-  = YELLOW SAND
-  = MEDIUM TAN SAND
-  = RED SAND
-  = BROWN SAND
-  = GRAY SAND
-  = BROWN SANDY CLAY
-  = BROWN MOTTLED CLAY
-  = BROWN CLAY
-  = DARK BROWN MOTTLED CLAY
-  = MOTTLED TAN CLAY
-  = MORTAR
-  = LIMESTONE
-  = SANDSTONE
-  = UNEXCAVATED



UNIT B-6 (West Wall)



UNIT B-5 (East Wall)

Figure 15. Profiles of Area B units.

9 inches. A large assortment of twentieth-century artifacts was recovered from within the last 3.5 inches of this level. The collection included 6 sherds of undecorated whiteware, 1 of yellowware, 1 of plain-colored ware, 741 glass fragments, 53 bottle caps and can tops, 2 recent pennies, a glass marble, a wire nail, and 14 bone fragments. Around 9 inches, the soil changed to a thin layer of light yellow sand with limestone fragments.

B-4/Level 2 (10–15 inches): The soil changed to a dark clay with a light-colored caliche mix, and continued for the next 5 inches. The concentration of limestone fragments increased, as did the size of the fragments, with the heaviest concentration within the southwest quadrant of the unit. A small pocket of charcoal was encountered about 13 inches below datum, in the northeast quadrant of the unit. Colonial artifacts began about 13 inches from the surface and included 8 sherds of Goliad ware, 1 lead-glazed sherd, 1 sherd of porcelain, and 43 bone fragments.

B-4/Level 3 (15–20 inches): A light-colored clay loam was located at about 15 inches. Much charcoal was encountered within this matrix, as were 4 Goliad ware sherds, 93 bone fragments, and 1 piece of worked chert. This concentration of bone and Colonial-period artifacts continued into subsequent levels.

B-4/Level 4 (20–25 inches): The light-colored clay loam, containing inclusions of charcoal and brick fragments, continued to about 24 inches in the east half of the unit. The west end of the unit was comprised of a medium-brown alluvial soil, which began about 20 inches from the surface. The heaviest concentration of artifacts came from the east end of the unit. Numerous ceramic sherds, including 26 sherds of Goliad ware, 1 lead-glazed sherd, 1 sherd of porcelain, and 1 majolica sherd, were extracted. Three chert flakes and 287 bone fragments were also recovered.

B-4/Level 5 (25–30 inches): Beginning at about 24 inches in the previous level, the stratigraphy

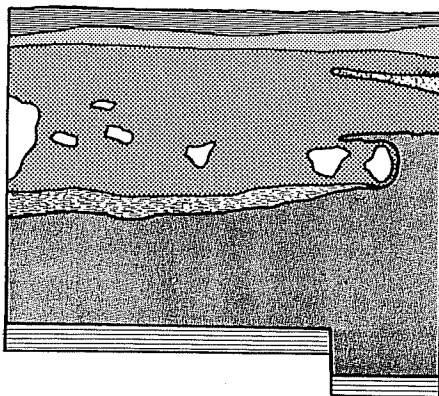
was comprised of a continuous medium-brown alluvial soil. The concentration of artifacts thinned out between 25 and 28 inches, but picked up again between 28 and 30 inches. Pieces of limestone were encountered at the center of and about 4 inches away from the east wall, about 29 inches from the surface. Colonial artifacts recovered include 190 bone fragments, 23 sherds of Goliad ware, and 1 lead-glazed sherd. One clear glass fragment and a portion of a glass marble were found in an area of probable rodent disturbance.

B-4/Level 6 (30–35 inches): The concentration of Colonial-period artifacts continued to a depth of 34 inches. Numerous charcoal fragments, 25 Goliad ware sherds, and 113 bone fragments were recovered in this level. Since the number of artifacts dwindled off, the western three-quarters of the unit were not excavated beyond 35 inches.

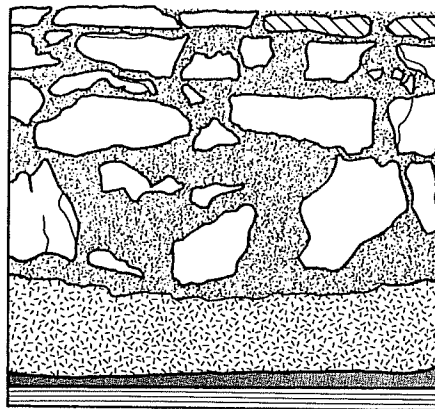
B-4/Level 7 (35–40 inches): This level was excavated to locate the limits of the wall construction and footing. Excavation was limited to the eastern one-quarter of the unit (a 1-x-4-ft area). The bottom of the wall footing was exposed about 39 inches from surface. Only 7 Goliad ware sherds, 17 bone fragments, and 2 pieces of chert were extracted. Mortar samples were taken from the wall at 7 inches, 15 inches, and 33 inches for comparative purposes. The unit was photographed and profiled, with particular attention to the north, east, and south walls (Figure 16).

In examining the bastion wall foundation (Figures 12 and 16), it was apparent that the stonework was uniform from the ground level to the bottom of the foundation, and that the stones were set in the same mortar as in the upper reconstructed walls. The foundation sat on a layer of sandy caliche-type base; however, the Spanish did not build foundations in this manner, so it appears that the entire structure was built during the CWA reconstruction. This bears out the statement by Ivey et al. (1990:138) that the architect, Smith, did not have a historical basis for adding this bastion. In 1974 John Clark

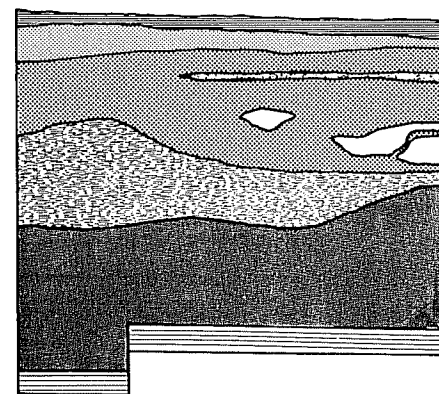
NORTH WALL PROFILE











BASTION WALL PROFILE






SOUTH WALL PROFILE



-  = TOP SOIL
-  = CALICHE (white)
-  = CALICHE (yellow)
-  = EARLY MORTAR

-  = LIMESTONE
-  = SANDSTONE
-  = DARK HUMUS SOIL
-  = LATE MORTAR (ca. 1936)

-  = UNEXCAVATED
-  = GRAY CLAY / WHITE CALICHE
-  = BLACK CLAY / WHITE CALICHE

10 5 0 10
scale INCHES

Figure 16. Profiles of Unit B-4.

also found no footings as basis for this structure during his testing on the opposite side of this bastion (Clark 1978:63).

Units B-5 and B-6 were located in line with the south wall opening which leads into the southeast gate (Figure 17). These units were excavated to determine the authenticity of the southeast gate restoration.

Unit B-5 (4 x 4 ft) was located 2 ft east of the south wall opening. The datum was set at the northeast corner, and the surface sloped downward to the west about 6 inches.

B-5/Level 1 (0-10 inches): The top of Level 1 (0-6 inches) was gray and granular. This was followed by a one-inch thick, overlapping lens of caliche and yellow sand. A light-brown, friable soil appeared at 7 inches and extended to 10 inches. An assortment of twentieth-century

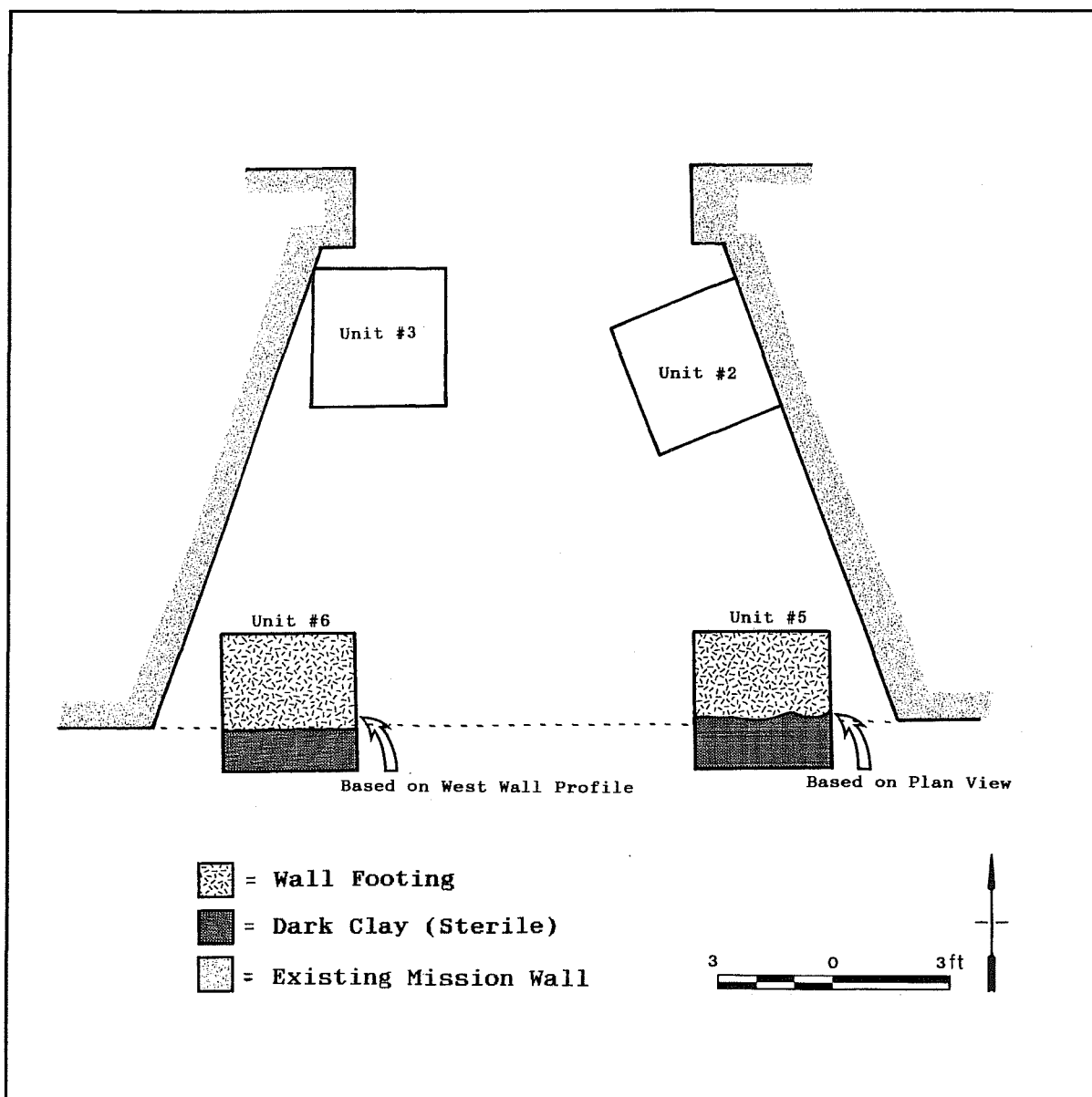


Figure 17. Plan view of southeast gate entrance. Units 5 and 6 are shown excavated to 28 inches below the surface

artifacts was recovered, including 2 crown caps, 6 wire nails, 118 fragments of bottle glass, and 1 sherd each of undecorated whiteware and stoneware.

B-5/Level 2 (10–15 inches): This level was comprised of a hard-packed caliche fill with an inclusion of large rocks and sandy mortar. The floor of this level, at 15 inches, exhibited a mixture of large rocks, caliche, gravel, sandy mortar, and a gray brown soil. This mixture was likely an indication of wall fall. Artifacts recovered from this level included 88 pieces of bottle glass, 2 crown caps, 2 wire nails, and 3 brick fragments.

B-5/Level 3 (15–20 inches): The density of rock fill picked up considerably at this level. This fill was comprised of limestone rocks with traces of sandy mortar in a light gray soil matrix. Numerous fragments of asphalt were present. The artifacts recovered from this level were of early to late-twentieth-century origin. These included D'Hanis brick, 5 pieces of bottle glass, and the base of a porcelain cup. The conglomeration encountered at this level was suggestive of wall fall and road base gravel.

B-5/Level 4 (20–25 inches): The fill continued for another 4 inches, at which time it began to thin out and the soil darkened. Few artifacts were recovered from this level; most of those associated with the mission period (3 Goliad sherds and 23 bone fragments) were located between 24 and 25 inches.

B-5/Level 5 (25–30 inches): The rock rubble continued to about 30 inches. The floor of this level was uneven at about 28 inches, and was sharply defined by an east/west demarcation. The northern two-thirds was comprised of small- to medium-sized cobbles of sandstone and limestone embedded in a soft lime mortar—apparently a wall footing. The southern one-third of the unit was comprised of a dark clay. Artifacts recovered from this level included 8 Goliad ware sherds, 1 sherd of majolica, 73 bone fragments, and a mussel shell ornament.

B-5/Level 6 (30–35 inches): The bottom of the rock concentration was found to be 34.5–35 inches from the surface. It sat on a dark clay layer similar to that located in the southern one-third of the unit. The dark clay matrix was sterile, and only a few pieces of Colonial ceramics and bone were recovered. Excavation in this unit ceased at 35 inches. The unit was photographed and profiled, with particular attention to the east wall (Figure 15).

Unit B-6 (4 x 4 ft) was located 2 ft west of the south wall opening. The datum was set at the northwest corner and the surface sloped downward to the east about 6 inches.

B-6/Level 1 (0–10 inches): The first four inches of Level 1 were gray and granular. This layer was followed by a one-inch thick lens of yellow sand. A light brown, friable soil with a heavy inclusion of rocks appeared around 5 inches and extended to 10 inches. An assortment of late-twentieth-century artifacts was recovered, including fragments of plastic, a metal washer, 281 fragments of bottle glass, and a sherd of undecorated whiteware.

B-6/Level 2 (10–15 inches): This level was a chaotic mix of light- to dark-colored soils, sand, caliche, and limestone rocks. The floor at this level exhibited a large mass of possible wall fall: limestone rocks with traces of mortar. Artifacts recovered from this level were limited to 68 fragments of glass, pieces of unidentifiable metal and wire, and a wire nail.

B-6/Level 3 (15–20 inches): The density of rock fill picked up considerably at this level. The fill was comprised of limestone rocks with traces of mortar in a light gray soil matrix (15–17 inches), then in a light brown soil (17–20 inches). Numerous fragments of asphalt paving from the late-nineteenth- and early twentieth-century Mission Road were present. The amount of rock and sandy fill was very pronounced in the northern half of the unit. The southern half of the unit had fewer rocks and the soil was a dark brown. The artifacts recovered from this level were a mix of nineteenth- and twentieth-century

origin. These included one unglazed ceramic sherd, 6 glass fragments, and wire nails.

B-6/Level 4 (20–25 inches): The rocky fill continued throughout this level, but began to thin out at about 25 inches. The artifacts recovered included a large Goliad ware sherd, 2 fragments of glass, unidentifiable metal pieces, and 17 bone fragments.

B-6/Level 5 (25–38 inches): The rock rubble continued to about 28 inches, at which point a sharply defined east/west demarcation appeared (Figure 17). The northern two-thirds was comprised of small- to medium-sized cobbles of sandstone and limestone embedded in mortar, the continuation of the foundation in B-5. The southern one-third of the unit was comprised of a dark clay. The rubble ceased between 37.5 and 38 inches from the surface. Below it was a dark clay, similar to that located in the southern one-third of the unit. The dark clay matrix was sterile, and a few Colonial artifacts were recovered between 25 and 28 inches. Excavation in this unit ceased at 38 inches. The unit was photographed and profiled, with particular attention to the west wall (Figure 15).

Area B – Features

Excavations and shovel tests in Area B at Mission San José revealed five subsurface anomalies classified as features (Table 1). Each feature was described, illustrated, and photographed, and soil samples were taken prior to back filling.

Features 1 and 2

Unit B-1 was excavated inside the compound along the southeast wall. A posthole (Feature 1) was identified in the western portion of the unit, extending from 9 to 24.5 inches. The posthole cannot be positively associated with the Colonial period, and may be related to the reconstruction of the mission. At a depth of 10 inches below the surface, a stone-lined hearth (Feature 2) was uncovered. This feature was composed of 6 flat stones in a circular shape, 16 inches in diameter, accompanied by a 1-inch layer of ash overlying a 3-inch layer of charcoal and several animal bones (Figure 14). Goliad ware, Colonial-period glass, scrapers, and a glass trade bead associated with the hearth indicate it was of Colonial origin.

Table 1. Area B Features

Feature	Unit(s)	Depth in inches	Description
1	B-1	9–24.5	posthole, indeterminable age
2	B-1	10–15	hearth, Colonial
3	B-5, B-6	14–35	limestone and sandstone rubble, probably original mission wall
Road	Tr B-1, B-2	2–20	road base of Mission Road
Bastion	B-4	0–30	bastion wall foundation

Feature 3

Units B-5 and B-6 were excavated simultaneously at the east and west outside corners of the southeast gate (Figure 12). These units both revealed layers of limestone, sandstone, and mortar rubble running east/west in a line even with the present-day compound walls. The layers were encountered in both units at a depth of 14–16 inches below the surface and continued to a depth of 35 inches. Although badly disturbed, these layers are believed to represent a continuation of the original wall across the reconstructed gateway. The implications of this feature in this particular location are important to the interpretation of Units B-2 and B-3, since it suggests that these units were inside the perimeter wall (Figure 17)—and perhaps within one of the Indian rooms built into wall—at some time in the mission's history.

Road

The profile of the late-nineteenth and early twentieth century road bed to Mission Road was exposed in Trenches B-1 and B-2.

Bastion

Excavations in Unit B-4 indicated that the bastion is a product of the reconstruction, and probably did not exist in the Colonial period.

AREA C

This area, the proposed location of new parking facilities, was located east of the mission compound and extended to the south along Mission Road (Figure 18). Investigation of this area was intended to determine whether any portions of the acequia were extant. Archival records, historic maps, and aerial photographs yielded evidence of the acequia route, as well as a post-mission-period quarrying operation in this area. The latter circumstance would suggest that the acequia had been seriously impacted.

Six trenches were oriented east/west and across the calculated path of the acequia. The intent was to cut across the acequia route and, where it was extant, reveal its profile. Trenches C-1, C-2, and C-3 were positioned north of Napier Avenue and west of San José Drive. They progressed in a south to north pattern beginning with C-1, which was 32.5 ft long and about 36 inches deep. C-1 was located about 15 ft northwest of San José Drive. C-2 was 20 ft long and about 36 inches deep. It was located 76 ft north of C-1, with its eastern edge being 68 ft west of San José Drive. Trench C-3 was 24 ft long and about 36 inches deep. C-3 was located 30 ft north of C-2, with its eastern edge being 73 ft west of San José Drive.

Trenches C-4, C-5, and C-6 were positioned south of Napier Avenue and east of Mission Road. These trenches progressed in a north to south pattern beginning with C-4, which was 30 ft long and about 36 inches deep. C-4 was located about 17.5 ft south of Napier Avenue and 60 ft east of Mission Road. C-5 was 19 ft long and about 36 inches deep, and was located 212 ft south of C-4 and 10 ft east of Mission Road. Trench C-6 was 21 ft long and about 36 inches deep. C-6 was located about 437 ft south of C-5 and 10 ft east of Mission Road.

Excavations in all six trenches uncovered modern landfill material, beginning immediately below the surface layers and continuing to a depth below the probable bottom of the acequia. Given the extent of post-mission-period intrusions (backfill associated with the termination of gravel pit activities, as well as that associated with nearby house site activities, road construction, and utilities construction), this was not surprising. A representative sample was taken of modern cultural material from the fill. Trenches C-3, C-4, and C-5 were profiled.

The only trench which revealed a trace of the acequia was C-3, located at the northernmost edge of Area C. The north wall of this trench displayed a fairly prominent lens which is presumed to be the west slope of the acequia.

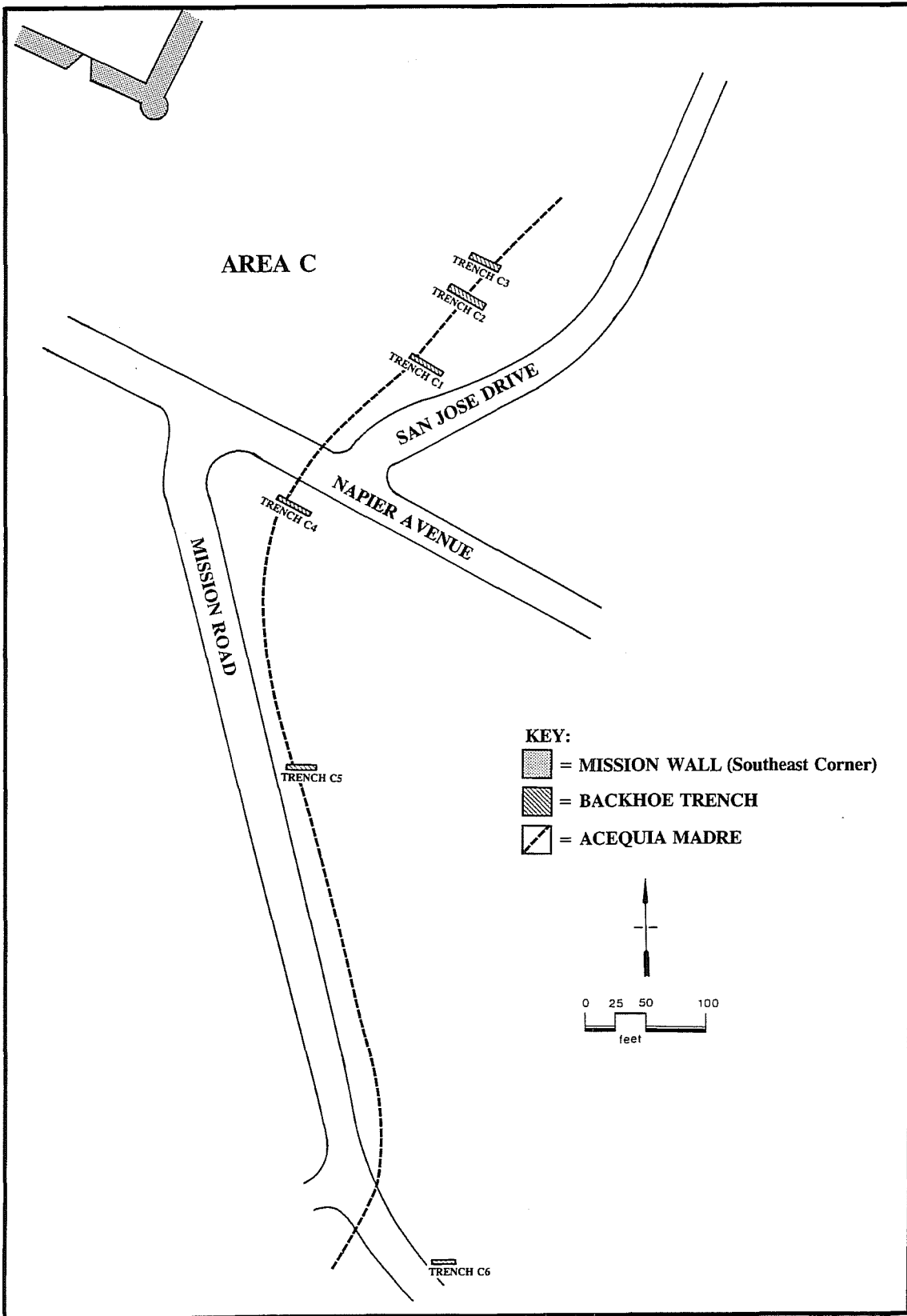


Figure 18. Plan view of Area C.

Dark humus fill appears 0–18 inches from surface at the west end of the trench, and 0–24 inches at the east end. The subsurface layer is about 8 inches thick at the west end of the trench (18–26 inches), and about 20 inches thick at the east end (24–44 inches). The subsurface soil is a light brown, trash-laden fill. The substratum is comprised of caliche, which appears about 26 inches from surface at the west end, and at 44 inches from surface at the east end. The lens levels off and thins out, from west to east, to the point of obscurity at the naturally occurring caliche base.

AREA D

This area lies within the confines of the mission walls and is about 450 ft square (Figures 1 and 19). A smaller area (100 x 150 ft), located at the far northwest corner of the compound between the church and granary (Figure 19), was also studied. As detailed in Chapter 1, extensive archival research concerning Area D was conducted prior to fieldwork.

To initiate this part of the study, Area D was gridded at 50-ft intervals onto a plan view. Nine columns (designated A through I) and 11 rows (designated 1 through 11) were arranged on the plan view (Figure 19). Working off this plan, the datum was placed at I-1, at the southeast corner of the compound, exactly 20 ft west of the east wall and 30 ft north of the south wall. A surveyor's transit was then used to project the grid and pin-flag the proposed shovel tests. Elevations of 86 of the 88 proposed shovel tests were determined and recorded; 83 shovel tests were then executed.

The investigation commenced at the far northwest portion of the grid—located between the granary and church—with seven STs (A-10, B-10, C-10, D-10, A-11, B-11, and C-11). Due to the high probability that Spanish colonial burials exist within this area, these STs were judiciously excavated to a mean depth of 18 inches. All artifacts recovered in this sector

appear to be of late-nineteenth- to twentieth-century origin. Thus the area of the compound within Rows 11 and 10, at least to a depth of 18 inches, is apparently clear of Colonial features.

Having completed the far northwest quad, an alternating north to south/south to north, zig-zag pattern was executed. This pattern began with ST A-9, was pursued due east, then concluded with ST I-1.

Due to the asphalt road encountered in Row 9, this row is addressed separately. ST A-9 was not pursued further than 12 inches, where a solid layer of asphalt/black top was unearthed. B-9 was pursued to 26 inches, which entailed breaking through the asphalt and caliche layers, producing Colonial artifacts between 20 and 26 inches. C-9 was taken to 24 inches which also entailed breaking through asphalt and caliche. Artifacts recovered from C-9 appear to be post-mission period. A seemingly continuous, dark, sandy loam layer was encountered beneath the caliche gravel, at 19 inches and 20 inches for STs B-9 and C-9, respectively. D-9 and E-9 were skipped, but F-9 was attempted. A solid layer of asphalt/blacktop was hit about 12 inches from surface within F-9, and excavation ceased. As previously noted, Row 9 is located in line with an extant road. The asphalt road, labeled Feature 4, appears to extend from 12–18 inches from the surface. Based on a review of historical maps and aerial photographs, Row 9 apparently lies along the northern edge of “old” Pyron Road, the width of which was about 20 ft. This area appears to be free of Colonial episodes from the surface to approximately 20 inches below the surface.

Having sufficiently recorded our findings on four of the eight proposed STs in Row 9, further investigation of this row was terminated (G-9, H-9, and I-9 were skipped). We concluded that additional testing of this row would prove unproductive.

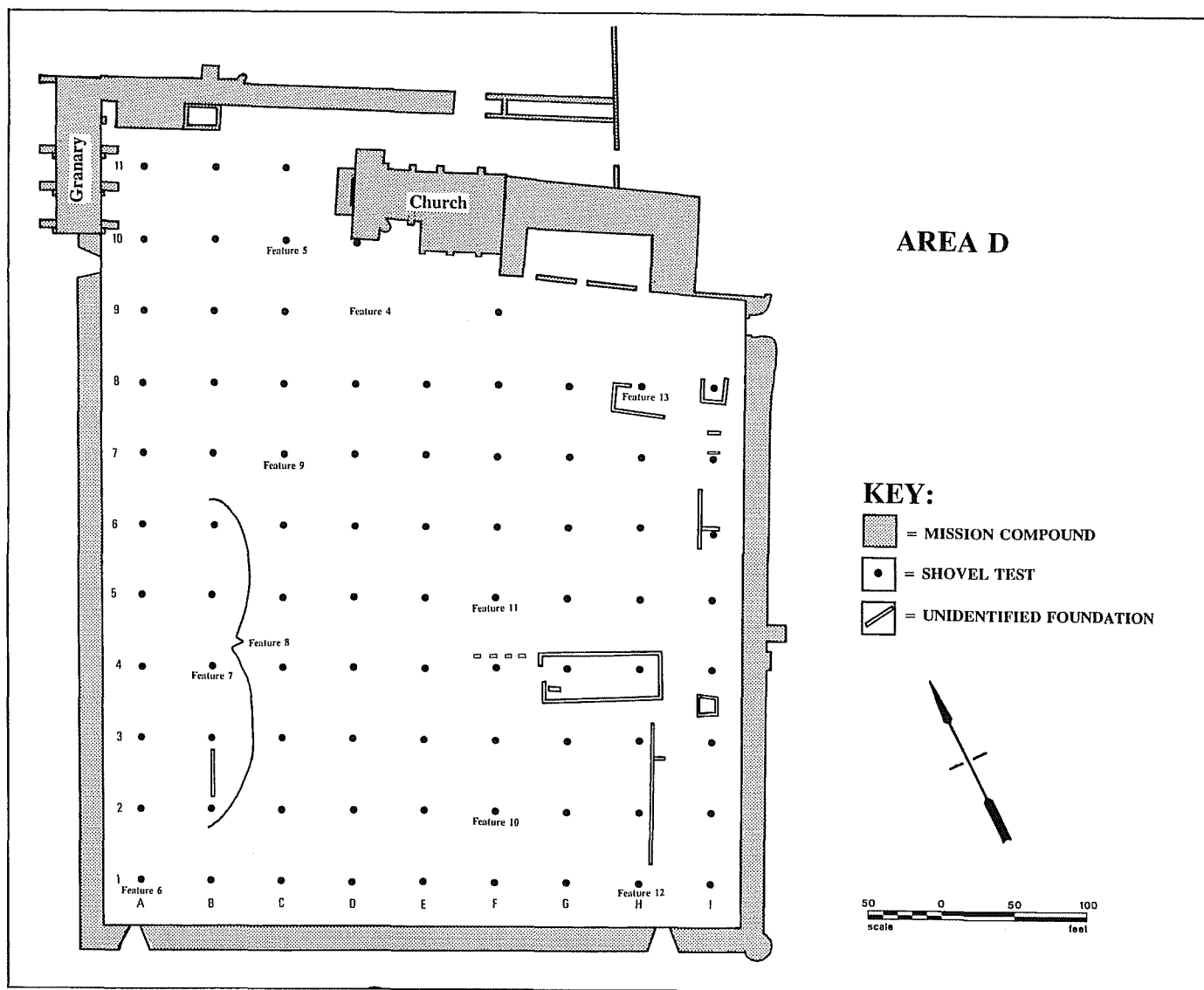


Figure 19. Plan view of Area D showing shovel test locations.

The remaining 72 shovel tests (A1 to I8) were excavated to sterile soil which ranged between 20 and 30 inches. The exception was ST C-4 which was terminated at 15 inches due to a dense intrusion of tree roots. Colonial period artifacts were present in all but 11 of these shovel tests (A-1, A-8, B-5, C-6, E-8, F-3, F-5, F-8, G-6, G-8, and I-7). These artifact depths ranged between 3 and 30 inches below the surface. However, the majority of the levels which contained Colonial artifacts also contained late-nineteenth- and twentieth-century artifacts, indicating substantial mixing of the deposits. Chapter 4 presents a detailed analysis of the artifact distributions and identifies 22 shovel tests which contain evidence of intact Colonial deposits. The shovel tests also located several features.

Area D – Features

Shovel tests in Area D at Mission San José revealed 10 subsurface anomalies classified as features in this report (Table 2 and Figure 19). Each feature was described, illustrated, and photographed, and soil samples were taken prior to back filling.

Features 4–13 were identified in shovel tests within Area D. They include portions of an old road surface, eight limestone and sandstone wall or foundation remnants, a possible lime or mortar floor, and a possible midden or trash pit. Observation of these features was limited to only what was visible from the top of the shovel test, as no additional exploratory excavations were done in this area.

Table 2. Area D Features

Feature	Unit(s)	Depth in inches	Description
4	A-9, B-9, C-9, F-9	6–20 9–19	asphalt and gravel roadbed
5	C-10	14	possible rock wall or foundation
6	A-1	16	possible rock wall or foundation
7	B-4	16–28+	large limestone rocks
8	B-2–B-6	10–28+	charcoal and artifact midden
9	C-7	15	sandy loam and mortar—possible floor
10	F-2	16–26+	large limestone rocks
11	F-5	22	possible rock wall or foundation
12	H-1	10–14	limestone and sandstone layer
13	H-8	7–27	limestone wall w/ mortar footing

Road (Feature 4)

STs A-9, B-9, C-9, and F-9 each contained a layer of asphalt and caliche gravel road fill beginning at depths varying from 6–12 inches below the surface. Two tests, B-9 and C-9, which were excavated to depths of 27 inches and 24 inches respectively, revealed a thickness of 10–14 inches for these deposits. This layer appears to represent a roadbed, possibly the remains of Pyron Road that crossed the northern end of the compound after 1886.

Structural Features (Features 5, 6, 7, 10, 11, 12, and 13)

Seven STs, C-10, A-1, B-4, F-2, F-5, H-1, and H-8, contained large pieces of limestone and sandstone which can be placed in three groupings: solid barriers, defined walls or foundations, and an undefined rock layer. In tests C-10, A-1, and F-5, the rock layers (Features 5, 6, and 11) formed solid barriers in the test holes and were left undisturbed.

In three other tests (B-4, F-2, and H-8), the rock features occupied only a portion of the test holes, allowing excavation along the side of the feature. Feature 7, in test pit B-4, and Feature 10, in test pit F-2, both consisted of several large limestones in the east side of the test pits beginning at 16 inches below the surface and continuing past 26 inches. Feature 13, in test H8, was a definable edge of a limestone wall with traces of mortar, beginning at a depth of 7 inches and continuing to a depth of 21 inches. A 6-inch mortar footing extended below the base of the stones. This feature appears to be a continuation of a foundation visible above the ground in the northern portion of the compound. While Feature 13 is the only one of the rock features directly associated with a known foundation, it is possible that all of these features represent Colonial foundations.

Feature 12, in test Unit H-1, consisted of a 4-inch thick layer of unmortared sandstone and limestone extending between 10 and 14 inches below the surface. This feature does not appear to represent a wall or foundation.

Midden (Feature 8)

The area along the B transect encompassing STs B-2–B-6 has been designated Feature 8. This designation is based on the high concentration of artifacts, heavy charcoal and ash deposits, and foundations, both above and below the surface, extending along this line. Artifact concentrations generally begin about 10 inches below the surface and continue to a depth of 24–28 inches.

Floor Feature (Feature 9)

At a depth of 15 inches below the surface in ST C-7, a layer of sandy loam mixed with mortar and small pebbles (Feature 9) was encountered. Although no foundation was associated with this feature, the texture of the level combined with the high number of Colonial-period artifacts recovered here suggests a structure floor.

Other Possible Features

In addition to the features described above, several shovel tests in Area D deserve comment because of their mortar content and occasional charcoal content (Table 3). This composition may indicate the presence of additional nearby structures or activity areas.

Table 3. Area D Shovel Tests with Construction Debris

Unit	Depth in inches	Description
A-10	7-17	soil heavily mixed with sandy plaster
C-5	12-21	soil heavily mixed with rock and mortar
D-4	15-24	large amount of mortar present
D-5	12-24	soil heavily mixed w/ mortar and charcoal
E-2	14-22	soil heavily mixed w/ mortar and charcoal
E-3	15-20	mix of charcoal, mortar, and chert
E-6	18-22	sandy soil mixed with mortar

CHAPTER 3: ARTIFACT ANALYSIS

CERAMICS

Analysis of ceramic sherds from shovel tests in Area D was performed to identify undisturbed Spanish colonial occupation levels within the compound. With this goal in mind, the ceramics were divided into two broad categories: unrefined and refined wares. For the purposes of this analysis, unrefined ware is defined as late-eighteenth and early nineteenth century, local, low-fired, unglazed sherds as well as tin- and lead-glazed sherds from the interior of Mexico. Refined wares are defined as high-fired ceramics imported from Europe or manufactured in the United States from the mid-nineteenth century to the present.

METHODOLOGY

Based on paste color, surface treatment, and decoration, subcategories were defined within the two broad headings. Sherds from all shovel tests were sorted by broad category then further sorted into the appropriate subcategory as defined below. It must be noted, however, that the fragmented nature of all sherds made detailed analysis difficult. No illustrations of ceramics are included in this report because the fragmented condition of the sherds would render illustrations useless.

The investigations from Mission San José yielded 1,769 ceramic sherds. Area D, inside the compound, yielded 79.5 percent ($n=1,407$) of this total; 19.4 percent ($n=343$) was recovered from the Area B excavation units at the southeast mission gate. The trenches and shovel tests in Areas A and C, away from the mission wall, yielded only 8 and 11 ceramic sherds respectively, or 1.1 percent of the total ceramic sample. Details on the recovered ceramics types and proveniences are given in Appendix B (Table B1). The remainder of this analysis concentrates on the ceramics found in Area D, the interior of the mission compound.

UNREFINED WARES

Unrefined wares, characterized by coarsely tempered brown, tan, or red paste, make up 73.5 percent ($n=1,034$) of the 1,407 sherds collected from Area D. These ceramics have been associated with Colonial period occupations at Spanish missions and presidios throughout Texas and west to California (Fox et al. 1976; Gerald 1968; Gilmore 1974; Ivey and Fox 1981, 1982). While both unglazed and glazed varieties are present, unglazed sherds are the dominant type collected (Table 4).

UNGLAZED: GOLIAD AND VALERO

Unglazed wares have been attributed to the Native American potters at all San Antonio missions (Dial 1992; Fox 1993; Ivey and Fox 1982; Meskill 1992; Scurlock and Fox 1977). Three varieties of unglazed pottery can be recognized in the San José collection based on differences in temper as well as manufacturing and firing techniques as described by Fox (Ivey and Fox 1981).

Goliad. The sherds classified in this analysis as Goliad ware have a coarse-grained, tan to reddish-brown paste with easily visible bone temper. Sherd exteriors are rough and uneven, often showing evidence of fire clouding, while sherd interiors have distinctive dark organic streaks, reflecting local hand-manufacturing and open-air firing techniques. Fox et al. (1976:67) suggest that Goliad ware is a direct continuation of the local Late Prehistoric ceramic tradition known as Leon Plain in central and south Texas.

Table 4. Area D Ceramic Type Frequencies

Category	Subcategory	Count	% of Total
Unrefined			
	Unglazed	909	64.6
	Glazed	125	8.9
Total		1,034	73.5
Refined			
	Whiteware	333	23.7
	Porcelain	25	1.8
	Stoneware	13	.9
	Other	2	.1
Total		373	26.5
GRAND TOTAL		1,407	100%

Goliad ware was the pottery type most frequently recovered at Mission San José (n=891), accounting for 86.2 percent of the unrefined ceramics collected and 63.3 percent of the total ceramic collection. Analysis of the 16 Goliad rim sherds shows 62.5 percent (n=10) jars and 37.5 percent (n=6) bowls (Table 5), but the sherds were too small to determine vessel diameter.

Valero. Fox (1982; Ivey and Fox 1981) defines Valero ware as wheel-made pottery with smooth, pinkish-tan paste with fine sand and occasional bone tempering. The absence of an organic streak in the interior paste suggests a higher firing temperature. Associated finds suggest a date between 1730 and 1760 for this ware (Ivey and Fox 1982:33). Valero makes up only 1.3 percent (n=18) of the ceramic collection from Mission San José; however, 5 of these are rim sherds, representing 1 bowl and 4 jars (Table 5).

It is not presently known where this ware was being made.

Red Burnished. This sample contains one sherd of Red Burnished ware, a finely tempered, red paste ware with a well-polished red slip exterior. Gerald (1968:54) dates the use of Red Burnished ceramics from 1750–1830.

GLAZED WARES: LEAD- AND TIN-GLAZED

Lead-glazed wares were imported to the northern frontier missions from the interior of Mexico (Meskill 1992:23). They can be divided into two sub-types based on wall thickness and decoration. The thick-walled, wheel-made variety—5.4 percent (n=76) of our collection—is usually considered utility ware. Sherds have a

Table 5. Unrefined Rim Sherds

Category	Subcategory	Type	Bowls	Jars
Unrefined				
	Unglazed			
		Goliad	6	10
		Valero	1	4
	Lead-glazed	Utility	2	2
		Black Luster	1	
	Tin-glaze	Majolica	1	
Total			11	16

sandy orange paste, an unevenly applied yellow or green interior glaze, and an occasional green or brown band around the rim and center of the base (Ivey and Fox 1981:34). Bowls and ollas are the most commonly recovered vessel forms; rim sherds from this collection represent 2 bowls and 2 jars

The thin-walled variety, called Galera, was primarily used for chocolate and bean pots. Sherds have a finer paste containing little or no sand. Vessels are mold-made, joined with thick shoulder seams. Decorations include dark brown and cream bands or dots, and floral designs with an occasional green accent. Only 9 pieces (0.6 percent) of the Galera variety of lead-glaze are included in this sample. Ivey and Fox (1981) identify lead-glazed wares as post-1750 indicators in this area.

One green, lead-glazed olive jar sherd and two black-glazed sherds were also recovered. The olive jar variety is described as heavy walled, often having a white slipped interior and green glazed exterior. It is more commonly found in Spanish colonial sites in Florida and was used for shipping olive oil and other commodities (Goggin 1968:228). Black glazed wares, or Black Luster,

have been recovered from other mission sites and are thought to have been manufactured in the Puebla area of Mexico (Schuetz 1969:52).

Tin-glazed ceramics (majolicas) are characterized by their decorated, white opaque glaze covering a paste that ranges in color from cream, to pink, to dark red. Mexican majolicas were exported to the northern Spanish frontier throughout the Spanish colonial period and continued to be popular until the early nineteenth century when European whitewares replaced them (Fox 1988; Gerald 1968; Goggin 1968; Tunnell 1966). Majolicas represent 2.7 percent (n=38) of the ceramics recovered from within the compound. Although 18 of the majolica sherds were undecorated, the remaining specimens can be broken down into three types based on decoration: Puebla Blue-on-white, San Elizario Polychrome, and Aranama Polychrome.

Ten sherds of Puebla Blue-on-white are present in this collection. This type, described by Goggin (1968:190-194) as having varying shades of dark and light blue combined on a white background, was popular from 1675-1830 (Lister and Lister 1983 as cited by Deagan 1987:84). Gerald (1968:45-52) defines San Elizario Polychrome

as having light to dark, blue-green to blue floral designs on white with brownish black emphasis lines on top of or beside the blue. Most commonly found on soup plates, this decoration was popular from 1750–1800. Eight sherds of this type were recovered. Two sherds of Aranama majolica were also found at Mission San José. This variety, characterized by narrow or broad orange rim bands bordered by black-brown lines with green and yellow floral and geometric designs, is dated between 1750–1800 (Deagan 1987:87).

REFINED WARES

Refined wares make up 26.5 percent (n=373) of the ceramic sherds recovered from Area D at Mission San José. This ware is composed of highly fired, refined clays with vitreous glazes and various styles of decoration. Refined wares, associated with post-Spanish colonial occupation in south Texas, are divided here into three subcategories: whiteware, stoneware, and porcelain (Table 6).

Table 6. Refined Ware Frequencies

Category	Subcategory	Type	Count	% of Total
Refined				
	Whiteware			
		Undecorated	204	14.5
		Handpainted	50	3.6
		Sponge	18	1.3
		Transfer	26	1.8
		Decal	5	.4
		Banded Slip	24	1.7
		Edgeware	4	.3
		Luster	2	.1
	Total		333	23.7
	Porcelain		25	1.8
	Stoneware		13	.9
Other		2	.1	
GRAND TOTAL			373	26.5%

WHITEWARE

Whitewares, named for their white paste and clear glaze, evolved through various stages in England. From the early cream-colored wares of the 1760s and the blue-tinted pearlwares of the 1780s, British potters developed whiteware in the 1830s and ironstone in the 1840s; the latter types are still produced today (Miller 1991, 1993). These sherds make up 88.5 percent ($n=333$) of the refined wares and 23.7 percent of the total ceramics collected inside the compound at Mission San José. Plain, undecorated sherds ($n=204$) comprise 54.7 percent of the refined wares. Of the undecorated whiteware recovered, 89 percent were small body sherds, and could actually be from decorated vessels. The 21 undecorated rim sherds present were from 8 bowls, 5 cups, and 8 plates or saucers.

Seven types of decorated whiteware ($n=129$) were present, representing 34.6 percent of the refined ware and 9.2 percent of the total sample (Table 6). Unfortunately, the fragmented condition of these sherds limited pattern identification, and the absence of identifiable maker's marks makes only broad temporal statements possible. The most frequently recovered decorated type, handpainted ($n=50$), was imported through the middle of the nineteenth century (Meskill 1992). Decorations are bands and floral motifs in blue, green, maroon, red, and purple with vessel forms in this collection limited to bowls and plates.

Cut-sponge and spatter-decorated ceramics, represented in this collection by 18 red, blue, and green sherds, were popular English export items in the first half of the nineteenth century (Robacker and Robacker 1978). The 14 sherds of the brown, green, and yellow decorated varieties of banded slip in this collection were also popular during this period, while only the simple blue banded types ($n=10$) remained popular after 1840 (Miller 1991). The two fragment of pink luster recovered are probably also from the mid-1800s (Godden 1975:215).

The four pieces of edgeware represent a time span of almost 100 years. These range from the cockled feathered design, ca. 1795–1825, to the cockled geometric design, ca. 1820–1845, to the non-cockled brush design, ca. 1870–1890 (Moir 1985).

Transfer-printed wares enjoyed two periods of popularity in the United States: 1750–1850 and 1875–1900 (Miller 1991:9). Periods of popularity based on print colors have been identified (Gilmore 1986; Noël Hume 1970). Those present within our collection are as follows:

1750–1780: black ($n=3$)
1780–1800: blue ($n=9$)
1830–1840: red ($n=3$)
 brown ($n=1$)
 lavender ($n=5$)
1840–1850: flow blue ($n=3$)
after 1850: polychrome ($n=2$)

The one brown sherd, a cup fragment with orange and black band-and-line decoration, is similar to those described by Miller (1991:7) as very late-1800s hotelware. Five sherds with faded floral decal decorations are probably from the early 1900s (Lehner 1980:13).

PORCELAIN

Porcelain, a smooth, translucent ceramic, is produced by firing a mixture of fine-grained clay and kaolin at high temperatures. Twenty-five sherds of porcelain, 1.8 percent of the total collection, were recovered from Mission San José: 7 decorated and 18 undecorated. Decorated porcelain has been recovered from Spanish colonial sites (Deagan 1987), but this early Oriental porcelain consistently bears blue underglaze designs. The decorated porcelain in the San José sample, however, has red overglaze designs and uneven red or gilt bands around the rim, more reminiscent of late-nineteenth- and early twentieth-century wares.

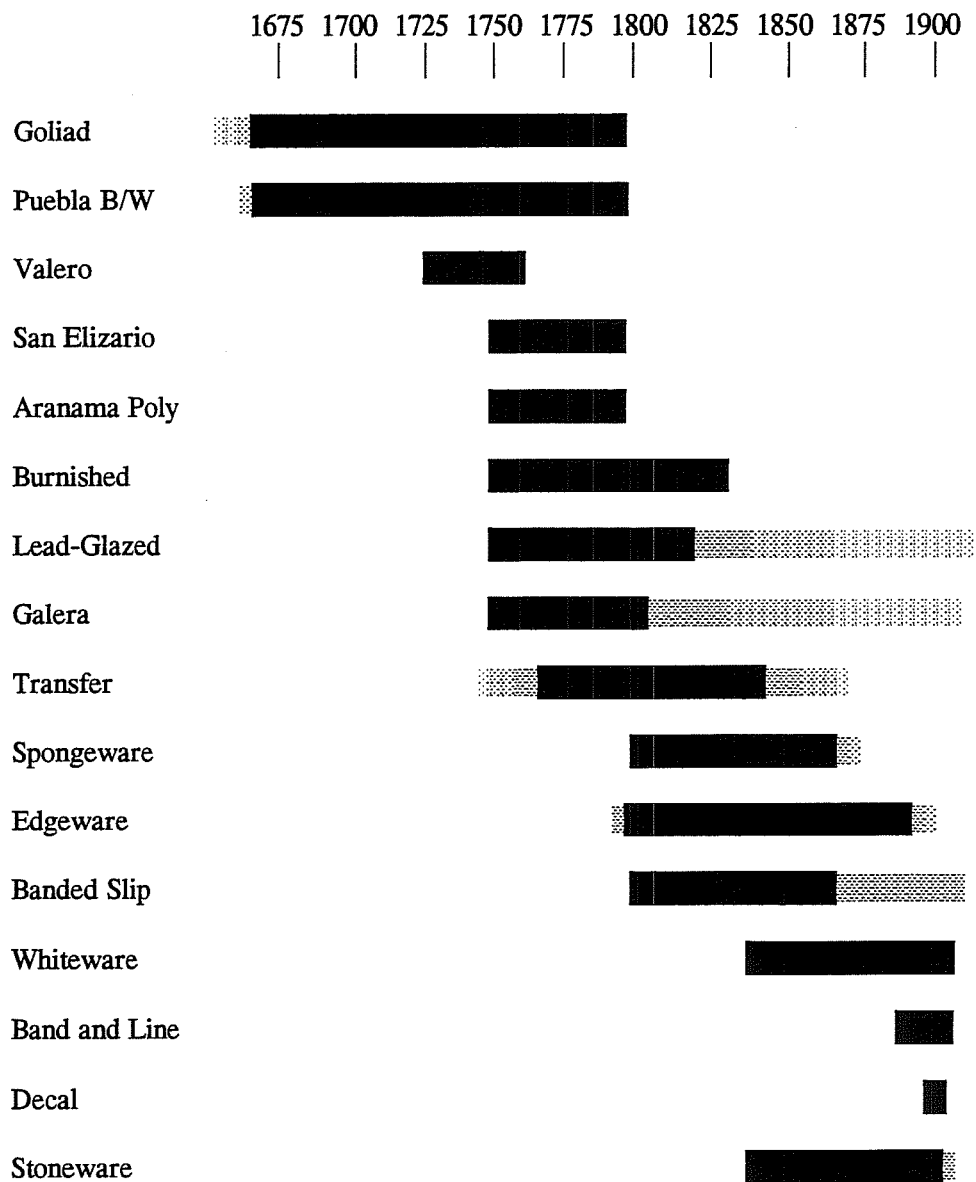
STONEWARE

Stoneware arrived in the south Texas area with the European settlers. The first local stoneware pottery kiln opened around 1849 (Greer and Black 1971). Used for utilitarian and storage needs, this impermeable ceramic is made from local clays and is often glazed on both the inside and the outside. The 13 stoneware sherds in this collection are a combination of pre-1860 salt glazed (n=2), post-1870 Albany slip interior/salt glazed exterior (n=6), post-1895 Leon slip (n=2), and post-1915 Bristol-glazed interior/Bristol-glazed exterior (n=3) (Greer 1981).

DISCUSSION

The ceramic seriation presented in Table 7 has been developed, for the most part, from archaeological information obtained at other San Antonio and south Texas Spanish missions. In a few cases, dates from Spanish missions in the southwest and in Florida have been used, but these have been adjusted to reflect the later founding of the missions in this area. Based on this data, the Spanish colonial period in the south Texas area, 1718–1824, can be identified by the following ceramic combinations: Goliad ware, Valero ware, Mexican majolica, lead-glaze, and Galera ware. New Spain was officially opened to English trade in 1798 (Hussey 1963:329). This post-Colonial time span, 1800–1850, can be recognized by European-influenced decorated ceramics: transfer printed, spongeware, edge decorated, and banded slip. A final time division can be seen after 1850 with associated ceramics being whiteware, decal, stoneware, and band-and-line. This chronology of ceramic types has been used in conjunction with other artifacts to identify and isolate discrete Spanish colonial deposits within the compound at Mission San José.

Table 7. Chronology of South Texas Historic Ceramics
(intensity of shading is indicative of popularity)



GLASS

Glass was exported from Spain to the New World throughout the Spanish colonial period. While some elaborate Venetian type pieces are known from Caribbean sites, most New World glass took on more utilitarian form of bottles, vials, flasks, and tumblers. Early Spanish colonial glass was typically green or yellowish-green with irregular shapes, thin walls, and numerous bubbles (Deagan 1987). From 1542 until the beginning of the eighteenth century, clear, green, and blue glass was being made in Puebla, Mexico, and exported throughout the Spanish New World (Lister and Lister 1987:348). European clear and colored glass was being exported to the colonies through Seville by 1720 (Deagan 1987).

Deagan (1987) and Willis (1980) have found glass to be commonly present at sixteenth- and seventeenth-century Spanish sites in Florida and the Caribbean. While colored glass of red, blue, and amber is present in both of these areas, green and clear glass are the most frequently found. This appears to also hold true at Spanish missions in Texas. Pale green, dark green, blue-green, lavender, and clear glass fragments were recovered from the San Lorenzo de la Santa Cruz (Tunnell and Newcomb 1969) and the San Xavier missions (Gilmore 1969), dating from 1762–1771 and 1746–1755, respectively.

Most of the San Antonio missions were continuously occupied into the nineteenth century, making definite identification of Spanish colonial period glass difficult at these sites. Manufacturing techniques and glass colors did not undergo easily recognizable change until the mid-1800s when molds were introduced and again in 1903 when the automatic bottle-making machine was developed (Baughner-Perlin 1982). Both of these manufacturing techniques leave visible seams in the glass containers which can be used for identifying late-nineteenth- and early twentieth-century bottles.

The small size of the glass fragments in this collection, however, makes all but those temporal identifications based on association with other artifacts impractical. Therefore, based on colors of Spanish colonial glass recovered at other mission sites (Gilmore 1969; Tunnell and Newcomb 1969), green, clear, and amber glass fragments found in deposits containing only Spanish colonial ceramics are classified as Colonial glass in this report.

Appendix B (Table B2) lists all glass recovered during this project. Of the 3,421 total fragments, only 32 pieces have been classified as Colonial. These were recovered from eight shovel tests along the E, F, and G transects in the center of the compound (Area D) and from one excavation unit (B-1) along the inside of the south wall. Additionally, two fragments, both from upper levels, can be identified by their maker's marks as post-1900 glass. One piece from inside the compound was manufactured by Illinois Glass between 1916 and 1929, the other, from an excavation unit in Area B at the southeast gate, was manufactured sometime after 1940 by Owens-Illinois Glass (Toulouse 1971).

LITHIC ARTIFACTS

Previous archaeological work at San Antonio missions has revealed that a stone tool technology, related to but different from the technology of the Late Prehistoric period, continued for some time during the Colonial period. We have almost no records of how stone tools were manufactured and used (Campbell and Campbell 1985:20), nor do we have a clear idea how long the inhabitants of the missions continued to use this lithic technology. There is always the possibility that, at least for a while, the Spanish adopted part of the lithic technology of the Indians. Letters from Governor Antonio Martínez to his superiors during the early 1800s repeatedly begged for more iron, claiming that all available iron in the settlement had already been melted down for use in repairing cannon and small arms (Hatcher 1935:69, 141, 142, 146, 237). If iron was at such a premium, then many small tools, such as knives and scrapers of various kinds, might have been made of chert (A. Fox 1977:16).

Analyses of stone tools at Spanish mission sites have labored under numerous difficulties. In the first place, the missions have been sites of intensive human activity ever since Colonial days; this activity has frequently resulted in disturbance of Colonial-period deposits (Uecker 1992:68). Most investigators at mission sites have concentrated on European-style artifacts (Fox 1979:2). Finally, extensive comparative studies between missions are usually beyond the scope of any single project.

LITHICS FROM THE VISITORS' CENTER PROJECT

Lithic artifacts were recovered from Areas B (excavation units near the south wall of the mission) and D (shovel tests within the mission compound). Of the 126 lithic artifacts, 32 (25.4 percent) were either shaped tools or utilized flakes.

All but one artifact, a quartzite flake, were made of chert. Cobbles of chert are immediately available in the river bed near the mission, but a much larger supply is readily available a few miles north, on the ridges of the Balcones Escarpment (Uecker 1992:72).

LITHIC TOOLS

Tool is here defined as a piece of stone exhibiting evidence of direct use in some behavior. The tool need not have been deliberately shaped for the job; for instance, flakes without retouch are considered tools if there is clear edge damage or other signs of use.

The most common diagnostic tool found at mission sites is the Guerrero arrow point. Occasionally Late Prehistoric arrow points such as Perdiz points are found in missions and, more rarely, older point styles are seen. The older styles are considered either to have been picked up as curiosities by mission Indians, or to reflect older prehistoric sites disturbed by the building and occupation of the missions (D. Fox 1977:34).

Lithic tools recovered during the Visitors' Center Project are described in Table 8. In general, they can be divided into six types which are listed below. No attempt to define tool function is made. Generalized terms such as "scraper," "spokeshave," and "graver" are used as descriptive terms only. While it is very likely that function follows form, there is little basis for certainty about the exact use to which these tools were put during the Colonial period (Campbell and Campbell 1985:20). An exception to this is the Guerrero projectile point, which is almost certainly an arrow point.

Guerrero arrow points: Three complete points and three point fragments (Figure 20:a-f) which display many Guerrero-like characteristics were recovered during the project. The Guerrero point is a small, triangular to lanceolate point, with a

Table 8. Lithic Tools

Area/ Unit- Level	Tool Type	Length (mm)	Width (mm)	Thick (mm)	Weight (g)	Notes
B/B1-2	Retouched flake	39.0	32.6	9.1	11.25	Very fine unifacial retouch along 2 edges.
B/B1-4	Retouched flake	39.5	32.3	5.8	9.99	Unifacial retouch on 1 edge
B/B2-3	Medial projectile point fragment	21.0	13.2	3.3	1.07	Figure 20e; size, shape, and workmanship are similar to Guerrero
B/B3-2	Utilized Flake	22.8	19.1	5.2	2.30	Use-wear on two edges
B/B3-2	Retouched flake	24.5	16.0	4.1	1.65	Unifacial retouch, possible graver
B/B3-2	Utilized flake	37.6	26.8	6.3	7.50	Use-wear along 1 edge, possible very fine retouch.
B/B3-2	Retouched flake	15.0	14.8	5.1	1.15	Bifacial retouch
B/B3-2	Small core	57.5	48.3	28.2	70.48	Small amount of cortex
B/B3-2	Multi- purpose biface	25.0	18.5	5.0	2.96	Figure 20g; graver/ scraper, bifacial work around the entire edge.
B/B3-2	Distal projectile point fragment	18.2	13.4	3.1	0.82	Size, shape, and workmanship appear similar to Guerrero
B/B3-3	Retouched flake	23.5	23.1	4.8	3.16	Very fine retouch along 2 edges
B/B4-3	Utilized flake	40.8	27.1	9.5	11.31	Figure 20k; use-wear along one edge
B/B4-4	Retouched flake	26.6	20.5	5.8	3.30	Unifacial retouch along concave surface, spoke- shave

Table 8. cont.

Area/ Unit- Level	Tool Type	Length (mm)	Width (mm)	Thick (mm)	Weight (g)	Notes
D/A-1	Retouched flake	19.9	10.4	3.3	0.63	Uniface fragment
D/A4-1	Retouched flake	12.6	14.0	2.5	0.63	Figure 20i; tiny unifacially worked "thumb-nail" scraper.
D/A7-1	Retouched flake	27.1	26.8	7.4	7.92	Both unifacially and bifacially worked scraper
D/A8-3	Retouched flake	16.0	11.5	3.5	0.64	Pinkish chert, unifacial, fragment
D/A11-1	Gunflint	21.2	20.9	0.8	4.82	Figure 20i; small (pistol?), made of local chert
D/B2-2	Guerrero point	26.5	17.9	3.2	1.48	Figure 20a; more triangular than others. Tip broken.
D/B2-1	Utilized blade	19.7	6.7	3.1	0.46	Tiny blade with use-wear on one edge
D/B4-1	Utilized flake	51.3	32.8	8.9	14.69	Use-wear on one edge
D/C4-1	Retouched flake	41.0	21.8	5.3	5.44	Uniface, spoke- shave/graver, made on secondary flake.
D/C5-3	Guerrero point	22.9	10.9	3.6	1.03	Figure 20b; complete
D/D6-2	Distal projectile point fragment	22.9	10.0	2.8	0.64	Figure 20d; size, shape, and workmanship are similar to Guerrero
D/E4-2	Retouched flake	31.8	24.4	4.1	4.33	Bifacial retouch along one edge
D/E7-2	Retouched flake	38.0	38.2	14.9	16.72	Unifacial spoke-shave

Table 8. cont.

Area/ Unit- Level	Tool Type	Length (mm)	Width (mm)	Thick (mm)	Weight (g)	Notes
D/F7-3	Retouched Flake	21.5	14.6	5.6	1.84	Small unifacial retouch on notch, use-wear on two edges
D/G2-3	Distal Projectile Point Fragment	16.8	9.5	3.1	0.45	Size, shape, and workmanship appear similar to Guerrero
D/I1-2	Guerrero Point	18.8	13.3	2.8	0.95	Figure 20c; very fine work. Tip is broken.
D/I2-2	Biface	26.3	14.8	4.4	2.60	Figure 20h; unique rectangular shape with squared edges.
D/I5-4	Retouched Flake	20.4	14.0	2.4	0.94	Unifacially retouched on 2 edges
D/I5-3	Utilized Flake	20.7	23.5	6.6	2.92	Figure 20j ;use-wear on 2 edges

concave base. They are usually well made and often have fine parallel flaking (Turner and Hester 1993:216). The Guerrero arrow point is so commonly associated with missions that it is often called a "mission point."

Bifaces: Only two bifaces not obviously a fragment of a projectile point were recovered. One (Figure 20:g) appears to have been a multi-purpose tool. It is roughly rectangular and bifacially worked, with bifacial retouch along all edges. A groove near one end has been made, forming both a spokeshave and a graver-tip. Other edges could have been used for cutting and/or scraping.

The other biface (Figure 20:h) is something of an enigma. It forms an almost perfect rectangle with well-squared edges, is bifacially retouched along all sides, and has a hint of a concavity along one short side. The possible use of the tool

is unknown; although any of its edges could have been used for cutting or scraping and any of its corners for graving, there is little sign of use-wear.

Retouched Flakes: This is a generalized category for flakes which have been modified along one or more edges, presumably to make a tool for scraping hides or similar work. These scrapers are usually unifacially retouched to form a blunter, less easily broken edge. A few scrapers have bifacial retouch. Sixteen retouched flakes were found in this collection, one of which is a tiny "thumbnail" scraper (Figure 20:i).

Utilized Flakes: Five flakes in this collection (Figure 20:j,k) show some use-wear along one or more edges, but show no sign of deliberate modification. Edge damage is considered to reflect use-wear, but not deliberate retouch, if there is consistent damage along one edge but no

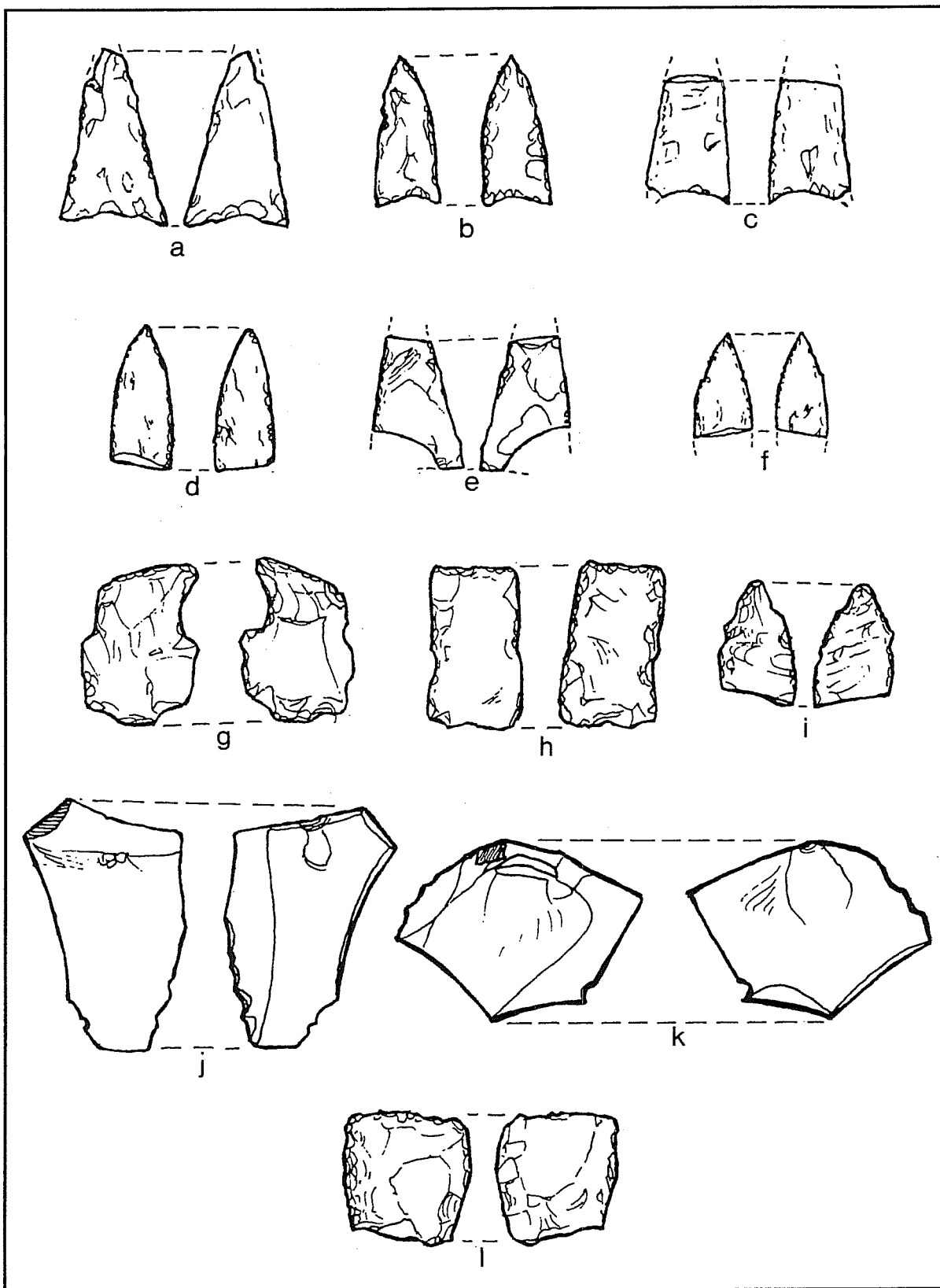


Figure 20. *Lithic tools from Mission San José. a-f: Guerrero; g: multi-purpose biface; h: biface; i: thumbnail scraper; j, k: utilized flakes; l: gunflint. All shown actual size.*

patterned removal of flakes. Utilized flakes can be considered expedient tools, picked up and used without modification for a short duration, probably only once.

Utilized Blades: A single blade (i.e. a flake twice or more long as thick) with considerable use-wear along one edge was found.

Gunflints: A single gunflint (Figure 20:1), apparently handmade from local chert, was recovered during the project. This is a small flint, possibly intended for a pistol rather than a musket. The use of percussion instead of a spark to ignite gunpowder began in the early nineteenth century (Tunis 1972:110). This gunflint, therefore, probably dates to the Colonial period.

Common to all the shaped tools and retouched flakes, except the gunflint, in this collection is a distinctive fine flaking. The parallel flaking on the Guerrero points is extremely fine, while the unifacial retouch seen on most of the scrapers is sometimes so fine as to be almost microscopic. It is tempting to speculate that a fine-pointed metal tool was used for pressure flaking on these tools. There is no way to prove that this is the case, however, and the idea remains merely speculation.

Only one core, a small one, was recovered during the project (see Table 8). The general shape of the core and the curve of the remaining cortex suggests that the original cobble was only about 8–10 cm long and somewhat smaller in width.

LITHIC DEBITAGE

Debitage is defined here as “byproducts of chipped stone artifact production” (Sullivan and Rozen 1985:755); in other words, chipped stone left over after cores and tools have been made. Analysis of debitage is usually aimed at understanding lithic reduction techniques and for defining activity areas among and within sites. However, the field of debitage analysis is still in an early stage of development, with few, if any,

widely accepted techniques. In addition, this collection of debitage (n=94) is too small to be useful for many kinds of debitage analysis. Thus analysis of this collection was limited to three variables, all intended to indicate the “reduction stage” during which each piece was removed from its parent core. Reduction stage, for the purpose of this report, is a very generalized concept in which a cobble or large core of stone is chipped until the desired form (or the desired number of flakes) has been achieved. This process can be considered to have early (cortex removal and initial shaping), middle (further shaping), and late (final edge work) stages. The first variable measured for this report was “Flake Type,” a measure of the amount of cortex remaining on a flake. This is one of the most commonly used variables in lithic analysis, but the comparative value is limited by the fact that the definitions of “primary,” “secondary,” and “tertiary” flakes vary a great deal from one study to the next (Sullivan and Rozen 1985:757). For this study, primary flakes have 100 percent of the dorsal surface covered with cortex; secondary flakes have some cortex remaining on the dorsal surface; and tertiary flakes have no cortex. Percentages of these three flake types for the two areas where lithics were recovered are listed in Table 9.

Uecker (1992:66, Table 7) provides a comparison of ratios of primary, secondary, and tertiary flakes in several prehistoric and Spanish colonial sites. This comparison indicates a difference between the two types of sites. Most of the five prehistoric sites cited have approximately the following percentages of primary, secondary, and tertiary debitage: 5 percent, 20 percent, and 75 percent; thus tertiary flakes dominate the assemblage. In contrast, mission sites have 4 percent, 50 percent, and 46 percent primary, secondary, and tertiary flakes, so that the proportions of secondary and tertiary flakes are approximately equal. The debitage from the collection under study here falls into the latter group, as expected for a Spanish colonial site.

Table 9. Percentages of Primary, Secondary, and Tertiary Debitage

	Primary		Secondary		Tertiary	
	#	%	#	%	#	%
Area B	1	6.67	6	40.00	8	53.33
Area D	6	7.59	32	40.51	41	51.90
Overall	7	7.45	38	40.43	49	52.13

The second variable measured in this collection is "Size Category." Eachdebitage piece was assigned a size category according to the smallest of a series of circles within which the piece would fit entirely. The circles were sized as follows.

- Category 1 = <.5 cm diameter
- Category 2 = .5-1.5 cm diameter
- Category 3 = 1.5-2.5 cm diameter
- Category 4 = 2.5-3.5 cm diameter
- Category 5 = 3.5-4.5 cm diameter
- Category 6 = 4.5-5.5 cm diameter
- Category 7 = 5.5-6.5 cm diameter
- Category 8 = 6.5-7.5 cm diameter
- Category 9 = 7.5-8.5 cm diameter

No Size Category 1 flakes were recovered; this is hardly surprising since flakes that small would have gone through the ¼-inch (.64 cm) screens used during the project. Generally speaking, one expects flake size to decrease as lithic reduction progresses.

The third variable measured in this collection was "Dorsal Flake Scar Count." For each flake for which it was possible to identify the dorsal surface, the number of planes which represented scars from the previous removal of flakes was counted. In general, scar count can be an indication of the lithic reduction stage (Mauldin and Amick 1989:73). However, it is not a linear relationship, as two processes are involved. As lithic reduction, especially biface production, progresses, the average number of dorsal flake scars increases. However, at the same time, the

average size of the flake is decreasing, leaving less room for dorsal scars on the back of each flake (Mauldin and Amick 1989:73).

Amount of cortex, size, and dorsal scar count are each only weak indicators of the lithic reduction stage at which an individual flake was removed. Secondary flakes are usually considered to be the results of early stages of reduction, while tertiary flakes result from late stages of reduction. However, secondary flakes may actually be removed quite late in the process, especially if the source of lithic material is a fairly small cobble. Likewise, tertiary flakes can be produced even very early in the lithic reduction process (Alan Bettis, personal communication 1991). Although flake size generally tends to get smaller later in lithic reduction, size cannot be an absolute measure of reduction stage, as so much depends on the size and quality of the original stone. In the same way, dorsal scar count, while a general indicator of reduction stage, is not enough to place individual flakes into a reduction stage sequence.

If the entire collection ofdebitage is taken together, however, and all three variables are considered, some indication of lithic reduction stages represented by the entire collection is discernable. Figure 21 shows the three variables in relation to a presumed lithic reduction process. At first glance, these figures seem to tell a contradictory story. Flake type and size category indicate that most flakes are from a later reduction stage, while scar count indicates an early stage of lithic reduction. However, if

the overall small size of the material is taken into consideration, the relation of the dorsal scar count to size—in which there are fewer scars on smaller flakes—becomes important. The fact that there are nearly as many primary and secondary flakes as there are tertiary flakes suggests an early to middle reduction stage.

The high percentage of secondary flakes seen consistently in mission sites (Uecker 1992:66), as well as the small flake size and low dorsal scar count of this collection, can be expected when the raw material is small, as the ratio of surface area to volume decreases as the size increases. The concentration of flakes in two small size categories is another indication of the

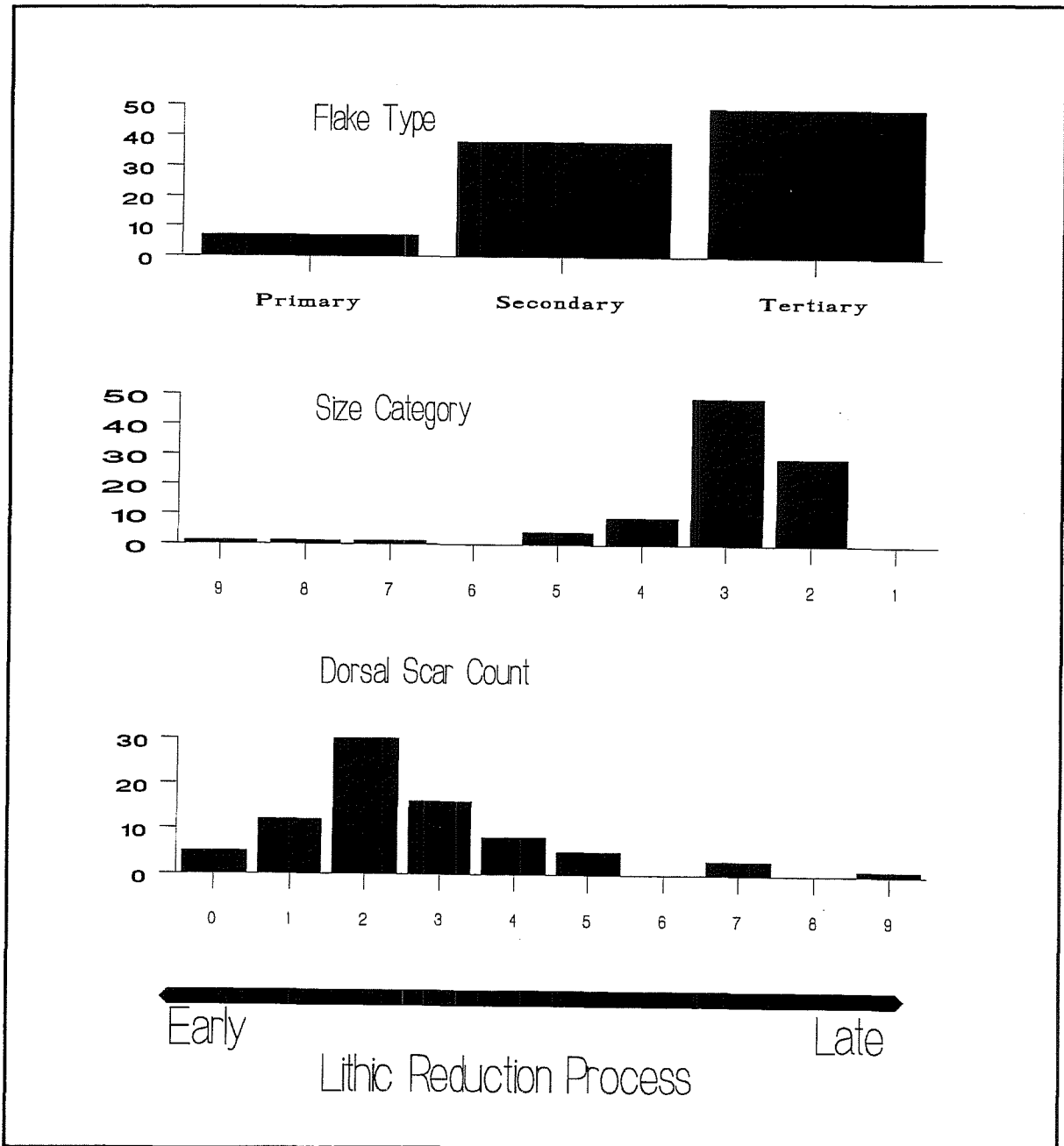


Figure 21. Flake type, flake size, and scar count in relation to a presumed lithic reduction process.

small size of the raw material. Even primary flakes are quite small in this collection (see Appendix B, Table B3).

These data are consistent with the hypothesis that most of the stone tools made at San José were simple flakes, knocked off small cores and either utilized without retouch or somewhat retouched. Extensive biface production, which would tend to increase both the tertiary flake count and the dorsal scar count, appears to be absent.

DISCUSSION AND CONCLUSIONS

A brief review of descriptions of lithics from other projects at missions in San Antonio reveals a consistent pattern of lithic technology (Fox 1979; Greer 1967; Labadie 1983; Meskill 1992; Schuetz 1969; Uecker 1992). The collections from the missions of San Antonio can be described as consisting largely of lightly (and usually unifacially) retouched flakes, displaying very fine flaking on one or more edges; frequent use of the naturally sharp edges of blades and flakes; and very few bifaces, with the exception of Guerrero projectile points which usually display fine workmanship and the same tiny flaking as the retouched flakes. The lithics from the Visitors' Center Project are consistent with this pattern.

Analysis of the tools themselves, as well as the debitage, indicates that most of the tools were made on flakes, using a fine pressure-flaking technique not seen in Late Prehistoric period lithics. Evidence suggests the raw materials used were small chert cobbles, probably from the nearby San Antonio River. Although large amounts of readily available chert are found only a few miles from Mission San José, its inhabitants seemed to have preferred the small chert cobbles available in the river. This pattern has been noted at Rancho de las Cabras, where lithic resources are less abundant (Taylor and Fox 1985:36), but, at first glance, is less understandable at San José. Two factors may be contributing to this pattern. The first is the serious impairment to mobility caused by the

constant depredations of Apache, Comanche, and other Indian groups. The mission itself was a fortress able to withstand such attacks, but once outside, the mission Indians and their Spanish teachers were highly vulnerable (Habig 1968a:90).

The second factor which may have contributed to the preference for the use of small, local cobbles is the trend noted by Parry and Kelly (1987). They propose a general North American pattern in which the shift from a nomadic life-style to sedentism is accompanied by a shift in lithic technology from the use of formal, largely bifacial tools, associated with the prehistoric hunter-gatherer adaptation, to a heavy reliance on expedient tools, especially retouched and utilized flakes (Parry and Kelly 1987:297). They believe this is a reflection of the changing needs of people entering a sedentary life, in which stone can be stockpiled, and there is no longer the need to spend time making lightweight, multi-purpose, complicated bifacial tools when a flake used once and discarded can do the job (Parry and Kelly 1987:298-299). The hypothesis that the lithic collection from this project reflects the use of simple flakes knocked off the small cores which are readily available nearby, and used with minimal or no retouch, follows the trend proposed by Parry and Kelly.

OTHER HISTORIC ARTIFACTS

Archaeologists recovered 798 historic artifacts other than ceramics and glass during the Visitors' Center Project. In this section, items of particular interest are discussed individually, with provenience given in parenthesis. Tables with detailed provenience of all artifacts are presented in Appendix B (Tables B4–B7).

AREA A

Eleven artifacts in this category were recovered from Area A shovel tests. Seven of the 11 were construction- and/or utility-related, the other four are described here.

1. (ST-3): A milk glass marble, 1.47 cm in diameter. This is a modern, machine-made marble with no signs of pontil marks. It can date to any time after 1926 (Randall 1971:105).
2. (ST-4): A fragment of a white metal toy car, representing the hood and headlights of a car of 1930s vintage (see Schroeder 1971:238–239 for similar toys). This toy could pre-date World War II, but may be more recent.
3. (ST-5): A fragment of a medium-sized carbon rod with square ends. Carbon rods were part of the old electric arc lights used for street lighting in San Antonio after 1882 (City Public Service 1976:2).
4. (ST-9): A clear glass marble with three-color swirls, 1.53 cm in diameter. It is a modern, machine-made marble, dating after 1926.

AREA B

From the Area B excavations, 205 other historic artifacts were recovered. Of these, 71.71 percent (n=147) are from utilities, construction, barn, and workshop activities; 9.76 percent (n=20) are personal items; and 8.87 percent (n=18) are household items. Toys and writing materials represent only 1.46 percent (n=3) of the total.

The following notes describe artifacts of particular interest.

1. (B-1/Level 4): A medium-sized glass bead, measuring .5 cm in diameter and .45 cm in length. It is a handmade tube bead, formed in two layers, with the inner layer black and the outer layer an opaque, reddish-brown color. It is a variety of trade bead referred to as a "Cornaline d'Aleppo" (Harris and Harris 1967:147). It is a Type IVa1 in the trade bead classification system developed by Kidd and Kidd (1970). It is definitely a Colonial-period artifact.
2. (B-2/Level 1): A dark brown, hard (vulcanized) rubber button with flattened dome face and self shank. It has the remains of gold metallic paint on the surface, especially on the bottom. Hard rubber was first used to make buttons shortly after the process of vulcanization was patented by Goodyear in 1844 (Hughes and Lester 1991:48). This button probably dates to after 1870, when the patent rights for hard rubber expired (Hughes and Lester 1991:48), as there is no patent mark on the back. Hard rubber buttons are still made today, but are not common, having been replaced by plastic for most uses by the end of World War I (Pool 1987:288).
3. (B-2/Level 2): A .22 caliber, rim-fire cartridge, with the letter H impressed on the base. First developed in 1857, the .22 short cartridge has changed very little in all the time since and indeed is probably the single most common cartridge ever made (Logan 1959:63). This cartridge was made by the Winchester Repeating Arms Co. sometime before 1932, when this company was purchased by Western Cartridge Co. (Logan 1959:188, 201). The cartridge has been fired.
4. (B-3/Level 1): A small, translucent, aqua, plastic bead, .33 cm in diameter and .38 cm long. The plastic is very soft and badly scored.

The plastic appears to be modern, giving the bead a probable post-World War II date.

5. (B-3/ Level 1): An aqua sequin, 1.0 cm in diameter. It is made of hard transparent plastic painted with a metallic aqua paint. It is probably of post-World War II origin.

6. (B-3/ Level 1): Two fragments of a piece of porcelain electrical equipment. The larger piece is marked "660 W.," "250 V.," and "USA."

7. (B-4/ Level 1): A glass marble, transparent brown in color, 1.4 cm in diameter. It is an example of the early machine-made marbles, dating from 1901 to 1926 (Randall 1971:105).

8. (B-4/ Level 1): Lincoln pennies, dated 1971 and 1985.

9. (B-4/ Level 1): A rim-fire .22 caliber short bullet casing with the letter H impressed on the base. The casing was made by the Winchester Repeating Arms Co. and dates to sometime before 1932, when the company was purchased by Western Cartridge Co. (Logan 1959:188, 201). The cartridge has been fired.

10. (B-5/ Level 1): A fragment of a glass marble. It has two colors, white and an orange-red, both of which are opaque. There is too little of the marble left to be sure, but it is probably machine-made and therefore dates after 1901 (Randall 1971:105).

11. (B-5/ Level 2): Two parts of a "Coin Pack" condom container (Figure 22:a). These disks of heavy aluminum foil are about 4.1 cm and 3.8 cm in diameter, respectively. Embossed on the top is "Sold for the Prevention of Disease Only" in a circle around the rim. Inside this circle is "To Open/Simply Twist/COIN PACK." On the bottom piece most of the lettering is no longer legible, and only the word "Latex" is clear. These condoms were sold individually in drug stores and gas stations. They are careful to proclaim that they are "for the prevention of disease only" because their use as a birth control device was illegal in Texas until recent decades.

12. (B-5/ Level 5): A fragment of a piece of handmade decorative mother-of-pearl (Figure 22:b). It is rectangular, measuring 1.01 x 1.23 cm. Two holes are carved at the edge of one of the long sides, the piece apparently broke along this edge. The remains of the outer shell of the freshwater mollusc used to make this piece can be seen on the back, and are very similar to all the other fragments of mother-of-pearl found during this project. Virtually identical artifacts were found during excavations at Alamo Plaza (Fox et al. 1976:Figure 24). This is a Colonial-period artifact.

AREA C

Only six historic artifacts were found during the backhoe trenching in Area C (Table B6). The single item of interest was a red plastic whistle in the shape of a bird. The whistle, found in Trench 4, is a modern, post-World War II toy.

AREA D

A total of 576 historic artifacts was recovered from the shovels tests in Area D. Of these, 65.28 percent (n=376) are from utilities, construction, barn, and workshop activities; 9.20 percent (n=53) are from household activities; 13.19 percent (n=76) are personal items; and 2.95 percent (n=17) are toys and writing materials. The following notes describe artifacts of particular interest.

1. (ST A-4/Level 1): Sixteen small fragments of a shoe insole, a few of which have oval stitch holes and a ridge along the underside. These holes and the ridge indicate the shoes were manufactured using a technique first patented by the Goodyear Company in 1875 and, to a limited extent, still in use today (Anderson 1969:61-62). The modern cemented sole first became practical in 1926 (Anderson 1969:62). Though this insole could have been made any time after 1875, it seems likely to have been made before World War II, as the cemented shoe has become standard for most light shoes since then.

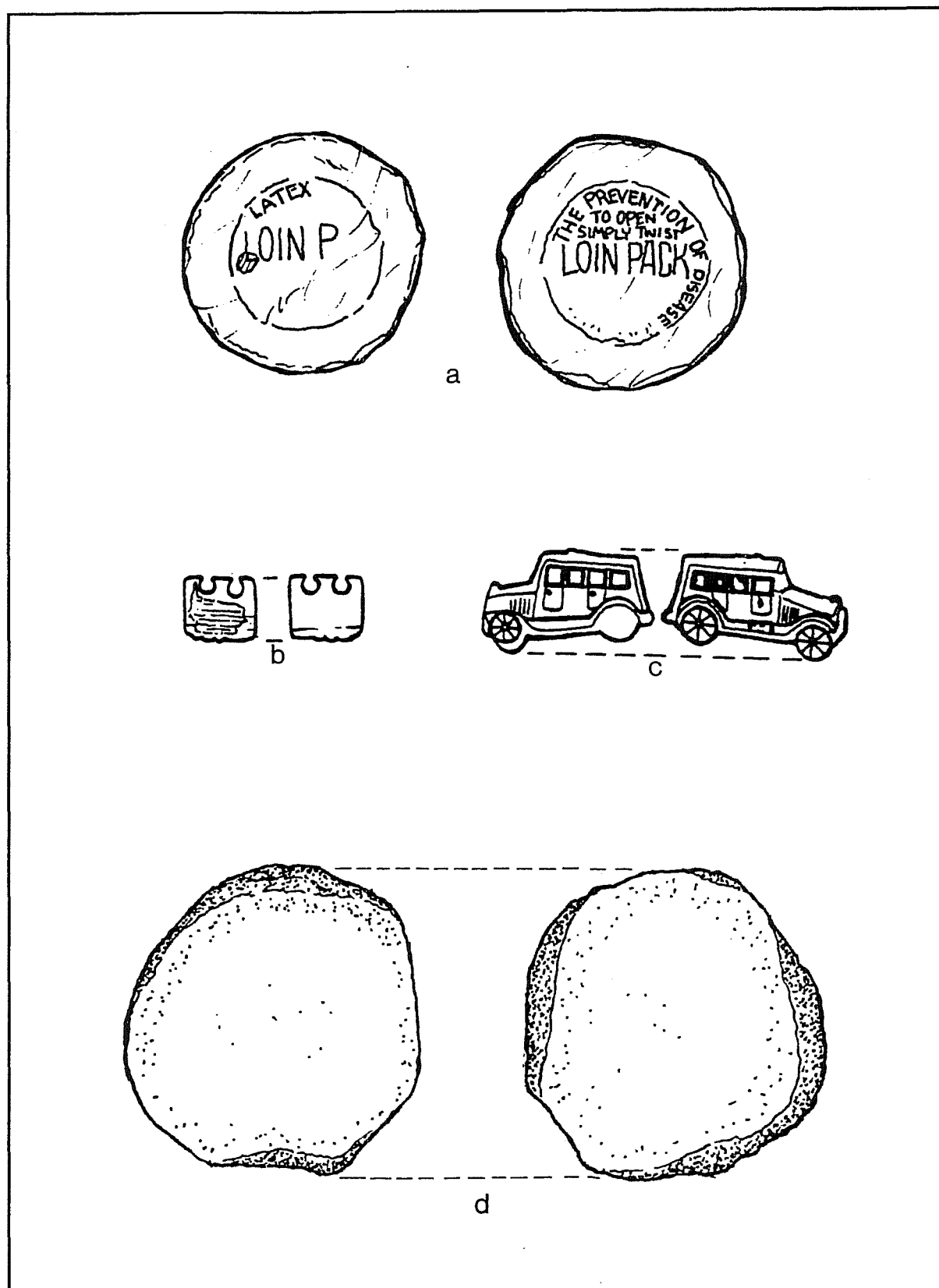


Figure 22. *Historic artifacts from Mission San José.* a: "Coin Pack" condom container; b: decorative piece of mother-of-pearl; c: Cracker Jack prize (car); d: limestone disk. All shown actual size.

2. (ST A-11/Level 1): A copper-alloy crucifix, measuring 3.31 cm in length with arms 1.91 cm wide (Figure 23). A hole in a circle is located at the top of the cross so the crucifix could be hung from a chain. Remains of gilding—a thin wash of gold sealed to another metal, usually brass—are present. Gilding was invented around 1790 in Birmingham, England (Epstein and Safro 1991:40). Both sides of the crucifix are embossed around the edges with hatch-marks. On one side is the crucified Jesus, with a halo and a banner with the letters INRI above his head. In the center of the other side is an image of the Virgin Mary wearing a crown, holding baby Jesus, and standing on a pedestal with a Maltese cross on it. On each arm is a star with a round circle “wheatsheaf” pattern. This is

a cheaply made medal: the embossing is crude and the metal is very thin. It cannot be dated with any certainty, but could easily be Colonial in age. A very similar, if not identical, crucifix was recovered during excavations at Mission San Lorenzo de la Cruz in Real County. Mission San Lorenzo dates between 1762 and 1771 (Tunnell and Newcomb 1969).

3. (ST B-6/Level 2): A very interesting fragment of a tan-colored button. At first glance it appears to be bone, but examination under the microscope reveals that it is not bone or vegetable ivory, but is apparently made of casein, one of the earliest man-made plastics. Casein, which is made from skim milk, was developed in the mid-nineteenth century. It was

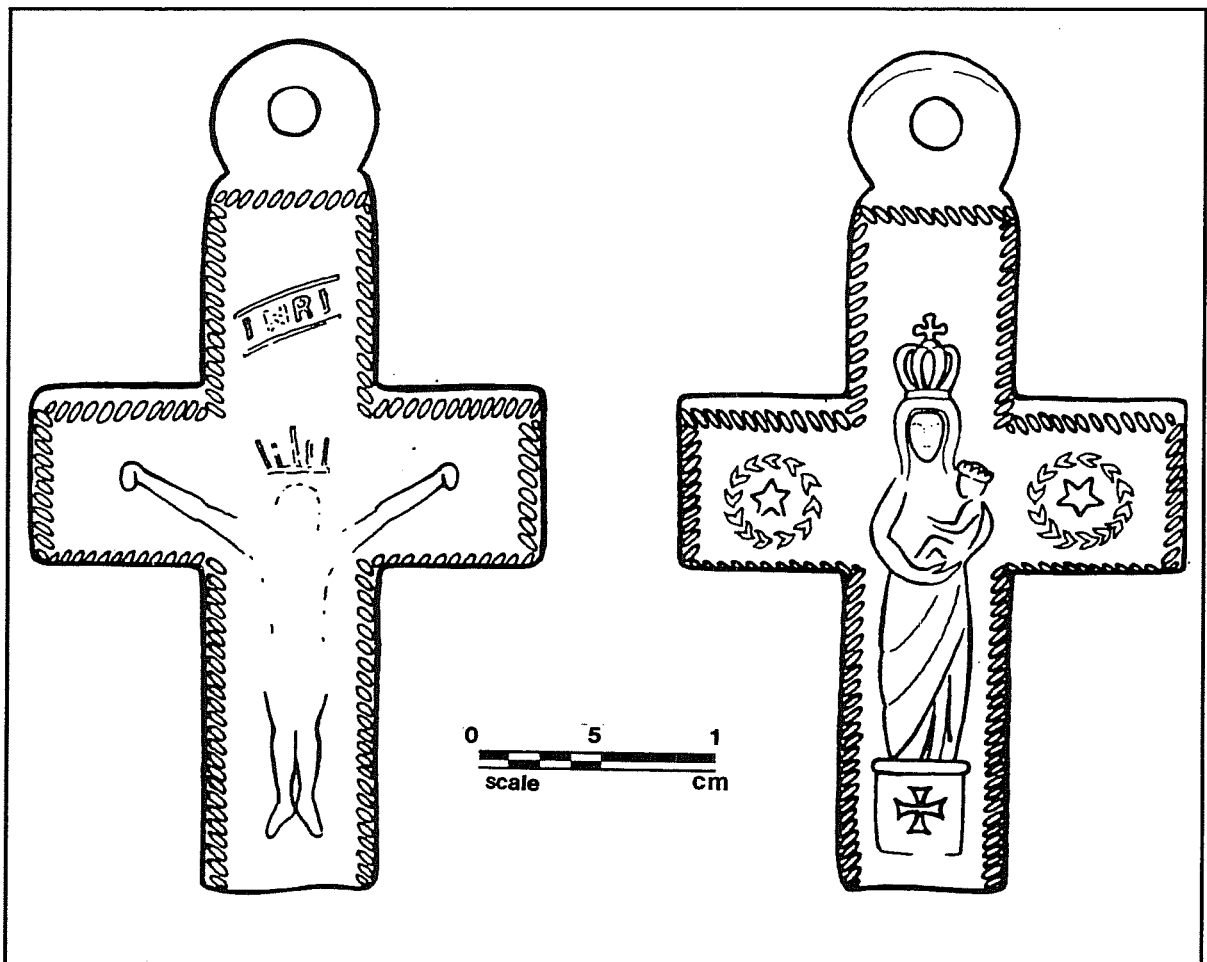


Figure 23. Copper-alloy crucifix from Area D. Overall length: 3.31 cm.

used as a substitute for bone and ivory in making buttons and other items (Harpur 1982:66). This button has a single hole in the center, another indication of pre-twentieth-century use (Noël Hume 1970:91). Casein was largely replaced by celluloid and other early plastics by World War I (Harpur 1982:67).

4. (ST B-8/ Level 2): A piece of grape or canister shot, an iron ball approximately 2.58 cm in diameter. Grape and canister shot were antipersonnel ammunition for use with cannons. For canister shot, dozens of these iron or bronze balls were placed in a thin-walled tin can, which was loaded into a cannon. When fired, the tin can fragmented and scattered with the shot (Tunis 1972:96). For grape shot—a somewhat later idea—50 or 60 balls were stacked on a wooden pedestal, held together with a cotton bag. The bag burned away during firing which allowed greater distance and more velocity for the scattering shot (Tunis 1972:107). These weapons were no longer used after the Civil War, when breech-loaded cartridges became standard for both small arms and artillery (Tunis 1972: 122).

5. (ST C-4/Level 1): A large serving spoon, with about half the bowl broken off, measuring about 25 cm long. It is made from a thin sheet of ferrous metal and may have had an enamel surface. There is a hole in the handle for hanging.

6. (ST C-7/Level 2): A small toy car, a prize from a Cracker Jack box (Figure 22:c), made sometime in the 1920s. An identical (except for the paint color) car is shown in Jaramillo (1989:25). The car, molded of lead, is 2.82 cm long and 1.39 cm tall. It is fairly flat (only about .5 cm at the thickest) and the top exhibits marks where a once-present loop has broken off. One rear wheel is missing. A small amount of bright blue metallic paint remains, mostly in the interior.

7. (ST E-2/Level 1): A small (.48 cm diameter) sequin, made of aluminum and painted with red metallic paint. The age is not determined.

8. (ST F-1/Level 1): Sixteen fragments of an enamelware (i.e. sheet or cast iron over which a layer of enamel has been sealed) utensil of unknown type. Enamelware was used for many things, including pots and pans, cleaning utensils, buckets, bathroom utensils, and even soap dishes (Franklin 1992:26, 187, 202–203).

9. (ST F-1/Level 1): A metal button with a flat face, 1.63 cm in diameter, with a self shank. It is made of a copper alloy and gilding remains are present. The button was cast in a single piece, then the hole in the shank drilled. It is a “Type 31” by South’s typology, which he developed from buttons dating from the eighteenth and nineteenth centuries (South 1964). Buttons like this have been found in contexts dating between 1837 and 1865 (Noël Hume 1970:90).

10. (ST G-6/Level 2): A clay marble, a type called a “commie” (i.e. common), usually either a very cheaply made commercial marble or a homemade variety. This marble is probably homemade, as it is badly out of round. The clay contains several large white crystals. A layer of white paint over the clay has almost completely worn off. Homemade marbles like this are fairly common as “it was quite easy for children to roll clay into small balls and bake them in a fire or in the household stove” (Randall and Webb 1988:15). Commercial production of clay marbles ceased in the 1930s, as machine-made glass marbles had become so much cheaper (Randall and Webb 1988:15). However, it is at least possible that a homemade marble could be made at any time.

11. (ST G-8/Level 1): A fender from a cast-iron toy car. The wheel axle is still present, but the wheel itself is gone. The entire car would probably have been between 10 and 15 cm long. Cast iron toys were still being made well into the 1930s (see Schroeder 1971:249). Yellow paint remnants are located on the fender.

12. (ST H-3/Level 1): A small, thin metal button, with back-rolled rim, catseye well, and two holes. It is 1.43 cm in diameter. Buttons like

this were commonly used for underwear and for pant flies in the last part of the nineteenth and early twentieth centuries (see Sears, Roebuck 1969:940).

13. (ST H-5/Level 2): A padlock, 5.46 cm tall and 3.91 cm wide. The case is brass and the shackle is cast iron. A letter R is embossed on both sides of the case. The keyhole is in the bottom. Dating is difficult, as padlocks have not changed significantly since before the turn of the century. The 1897 Sears, Roebuck catalog (Israel 1968:87) offered several varieties of padlocks very similar to this item, but padlocks much like it are sold today as well.

14. (ST I-1/Level 1): A comb fragment, 5.38 cm long, with all the teeth missing. The comb is made of dark brown composition material, a mixture of wood cellulose and an adhesive, in this case a type of lacquer. This material can be pressed into molds and allowed to harden. It was in common use for many items—such as combs, tool handles, and buttons—now made of plastic. The replacement of composition material with plastics began at an early stage of the development of the latter, especially after bakelite was invented in 1909 (Harpur 1982:30). By World War I composition material was seldom used (Harpur 1982:66).

15. (ST I-2/Level 1): A disk, approximately 5.25 cm in diameter and 1.61 cm thick, hand-carved out of limestone (Figure 22:d). Disks like this in various sizes, some of limestone and some made from pottery sherds, are a fairly common find in the missions of San Antonio (see also Meskill 1992:Figure 11). They are referred to as “cuatros” in Schuetz (1970), under the assumption that they are game pieces of some sort; however, it is not known how these disks were actually used.

GENERAL

One of the more interesting artifact types is mother-of-pearl. These are pieces of mollusc shell which are too fragmentary to identify with

certainty, but which are probably freshwater mussel shell (James O. Jones, personal communication 1994). They have an intensely iridescent interior. Though freshwater mussel is not uncommon in prehistoric or historic sites, an unexpectedly high count of these fragments occurs in the two areas where extensive screening took place. In fact, in Area B mother-of-pearl fragments were 5.39 percent ($n=11$) of the “Other Historic Artifacts” total, while in Area D, mother-of-pearl fragments were 8.65 percent ($n=50$) of the total. The mussel shell may represent an occasional snack of bivalves from the river, but the quantity is insufficient to suggest any importance in the diet. The one worked mother-of-pearl ornament (see Note 12, Area B), which also appears to be from the same species of mussel, suggests the use to which much mother-of-pearl might have been put.

Artifacts which are or could be Colonial era are found in deep contexts in Area B. These include the glass bead (Unit B-1/Level 4) and the decorative piece made of mother-of-pearl (Unit B-5/Level 5). Artifacts which could be of Colonial age in Area D, including the crucifix (ST A-11/Level 1), the handmade clay marble (ST G-6/Level 2), the grape shot (ST B-8/Level 2), and the limestone disk (ST I-21/Level 1), are all from the upper two levels of the shovel tests in which they were found. As expected, given the history of Mission San José, the artifacts described in this section range in age from the Colonial period to the most recent years. Each is a reflection of the technology and the cultural life of its times.

CHAPTER 4: SPATIAL ANALYSIS

IDENTIFICATION OF COLONIAL DEPOSITS

For this study, the Colonial period extends from the 1720s until 1824, the time between construction and complete secularization of Mission San José. The process of secularization had begun in 1794, but the material culture of the mission's residents went mostly unchanged for the next three decades. Later time-diagnostic artifacts, most notably undecorated and decorated whitewares, were introduced to San Antonio in the 1820s. Unfortunately, most levels contained both Colonial and post-Colonial artifacts, indicating there is not well-defined stratification. However, unmixed Colonial strata in the shovel tests and test units were identified throughout the compound (Appendix C). Most of the unmixed Colonial strata were identified by the presence of Goliad ware and the absence of later artifacts. Other artifacts which were not treated as diagnostic but are thought to belong to the Colonial period include chipped stone, bone, and some of the bottle glass. Additional archaeological work, including larger units, could confirm or invalidate our identifications.

The shovel test pits were excavated following natural levels in an attempt to identify historical surfaces. Where soil changes could not be identified, arbitrary 12-inch levels of were utilized to maximize vertical control. No shovel test pit contained only intact Spanish colonial levels. A majority of the tests, in fact, had mixed deposits in the upper levels in which Colonial artifacts were found in direct association with mid- to late-nineteenth-century artifacts. The purely Colonial deposits, therefore, were typically first encountered between 12 and 15 inches beneath the surface. Figures 24 and 25 provides schematic representations of the Colonial levels in Area D, indicating stratification exists in parts of the compound.

Unmixed Spanish colonial period levels were identified in 21 of the 83 shovel tests excavated

in Area D (Figure 25). The test units which contained an intact, identifiable Colonial level are described below. For convenience, they have been described by north to south transects, beginning with A and ending with I. Short descriptions of the Colonial levels identified in the hand-excavated units in Area B are also included.

TRANSECT A

ST A-3 was 30 ft east of the western wall. Its surface elevation was 583.74 ft above mean sea level (amsl). Evidence of heavy subsurface disturbance was present. The first 17 inches consisted primarily of compacted pale brown sand, caliche, and soft limestone fill. The test was in an area used extensively as an informal pedestrian trail since the ca. 1937 reconstruction (Clark 1978:3). The Colonial level, a dark grayish-brown (10YR 4/2) sandy loam, extended from 17–24 inches and contained two sherds of Goliad ware and 16 bone fragments.

TRANSECT B

ST B-2 was located about 20 ft south of a partial, unreconstructed foundation. The surface elevation for the test was 583.50 ft amsl. The first 16 inches contained heavy mixed deposits of Colonial and mid-nineteenth-century artifacts. The entire unit contained a large number (n=233) of animal bone fragments. Mixing between the surface and 10 inches was evidenced by a utilized chert blade found in association with undecorated whiteware fragments and a cut nail. Combined deposits were again observed as a Guerrero point and one sherd of San Elizario Polychrome majolica (ca. 1750–1800) were recovered in association with nineteenth-century clear glass and milk glass fragments between 13 and 16 inches. The disturbance appeared to end about 22 inches beneath the surface. The very dark grayish-brown (10YR 3/2), sandy-clay

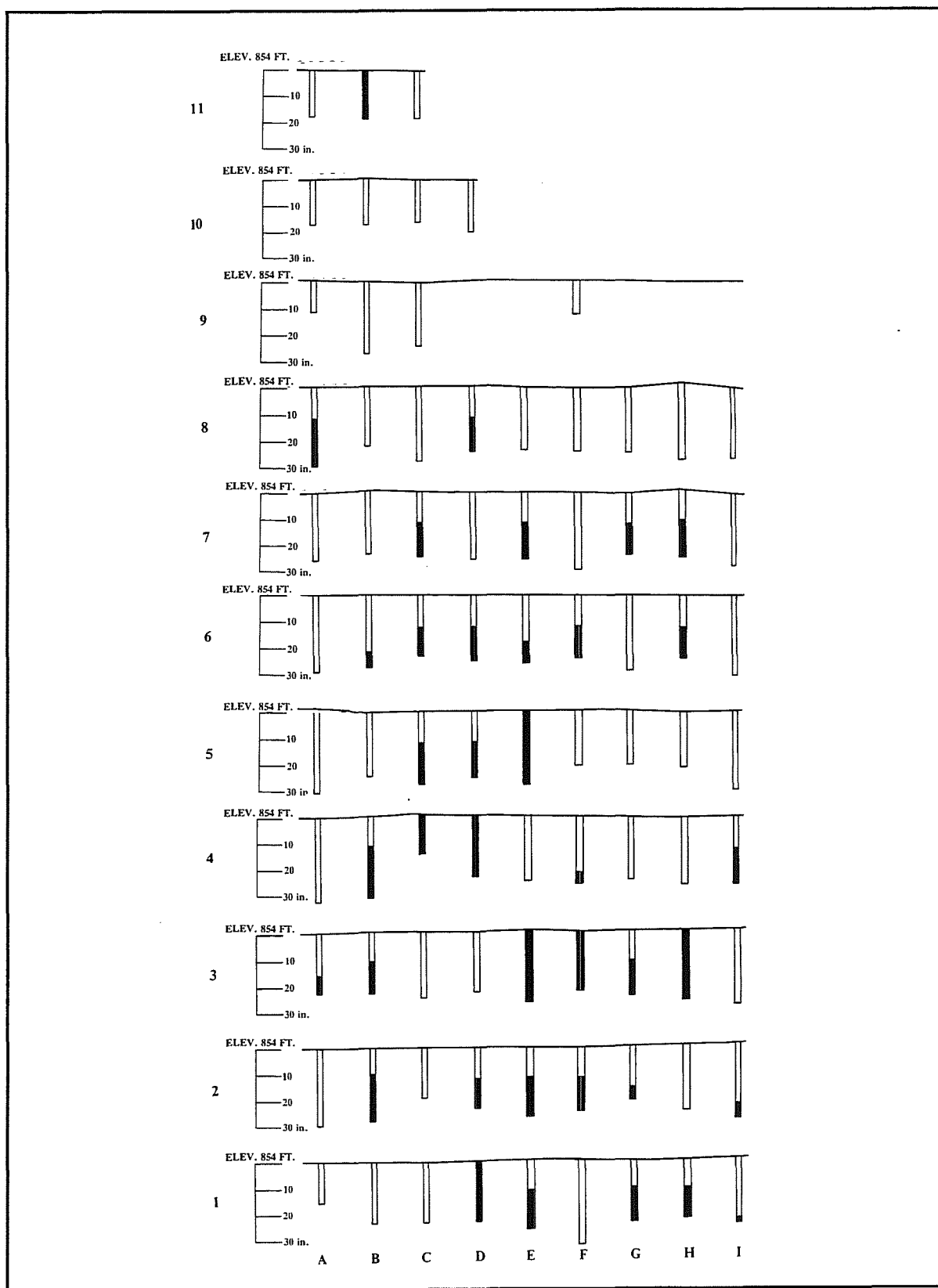


Figure 24. *Schematic representation of unmixed Colonial levels. Darkened areas indicate depths of unmixed Colonial levels.*

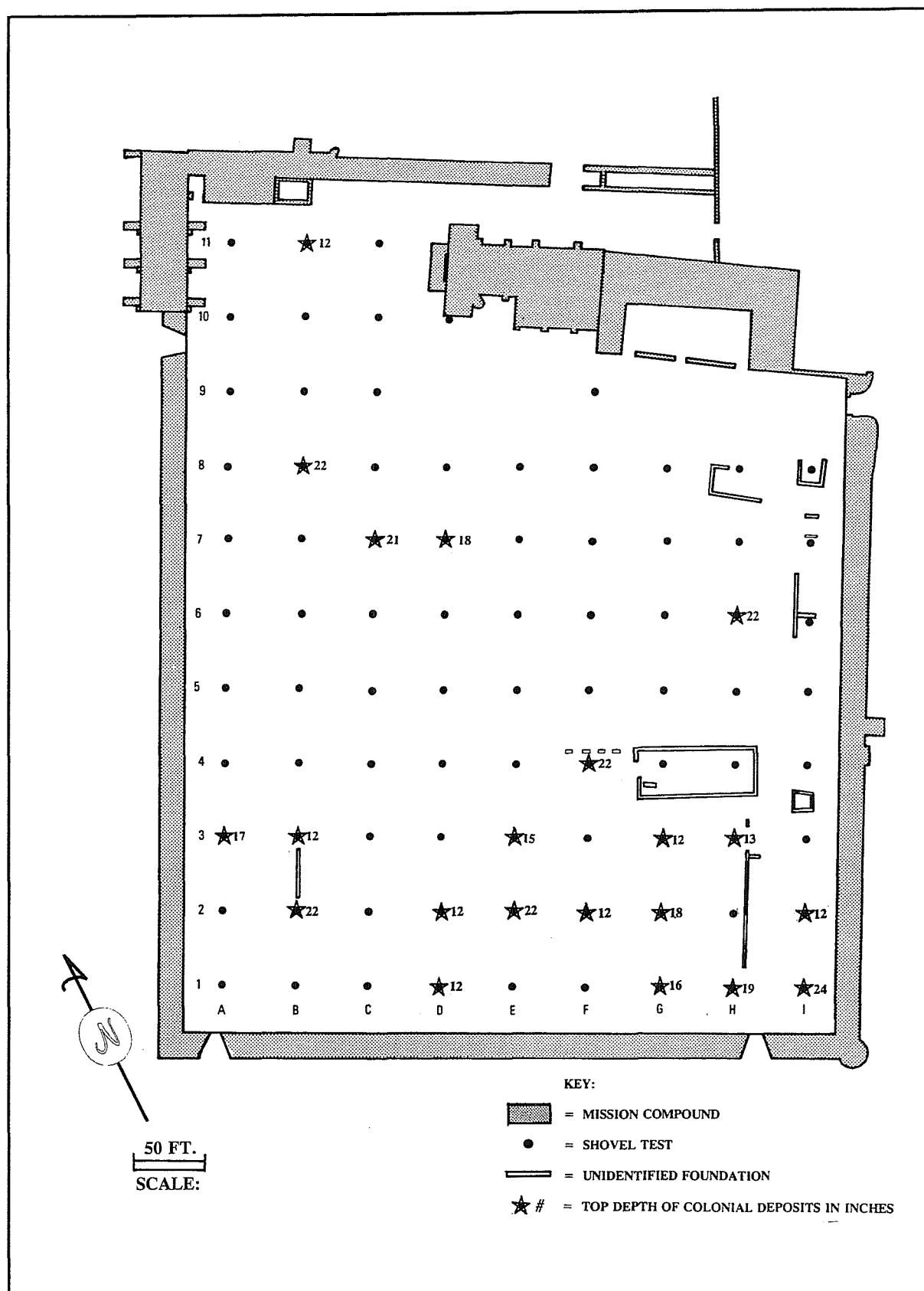


Figure 25. Plan map showing locations of unmixed Colonial levels.

loam Colonial level began about 22 inches and continued to 28 inches beneath the surface. Seven sherds of Goliad ware and five animal bones were recovered from the level.

ST B-3 was five feet north of the aforementioned partial foundation. The recorded surface elevation was 583.63 ft amsl. The entire test was comprised of a homogeneous brown (10YR 4/3), sandy-clay loam. A large variety of temporally discontinuous ceramics was recovered from the upper 12 inches of the unit, including 16 sherds of Goliad ware; one sherd of Puebla Blue-on-white majolica (1670–1800); four unidentified sherds of majolica; four pieces of handpainted ware; one sherd of cockled, geometric, edge-decorated ware (1820–1845); six fragments of undecorated whitewares; and two porcelain sherds. A glass bead, 57 animal bone fragments, and 17 sherds of bottle glass were also recovered from the 0–12 inch level. An unmixed deposit extending from 12–24 inches and containing four Goliad ware sherds and 27 animal bone fragments was designated Colonial.

The surface elevation of ST B-6 was 583.87 ft amsl. A grayish-brown (10YR 5/2), sandy-clay loam extended from 10–28 inches and contained mixed Colonial and post-Colonial deposits and a large number ($n=237$) of bone fragments. An ashy, light brownish-gray (10YR 6/2), sandy loam with caliche lens was identified between 24 and 28 inches in only the northwest portion of the test unit. Only one sherd of Goliad ware and an animal bone fragment were recovered between 22 and 28 inches, but because of the artifacts and the ashy lens, the level is believed to be Colonial.

ST B-11 was about 45 ft south of the north wall, in one of the lowest areas in Area D with a surface elevation of 581.63 ft amsl. The test unit was comprised of a homogeneous, very dark grayish-brown (10YR 3/2), sandy-clay loam with a small amount of caliche from 8–18 inches. The Colonial stratum, as evidenced by a sherd of Goliad ware and 30 pieces of animal bone, extended from 12–18 inches.

TRANSECT C

ST C-5 had a surface elevation of 583.88 ft amsl. The mixed deposits and heavy caliche recorded from 10–21 inches may have resulted from the installation of a nearby sprinkler system (as documented by Clark 1978:3). A complete Guerrero point and one fragment of animal bone were recovered at 25 inches beneath the surface in a dark grayish-brown (10YR 3/2), sandy-clay loam that extended from 21–28 inches.

TRANSECT D

A surface elevation of 583.53 ft amsl was recorded for ST D-1. A very dark grayish-brown (10YR 4/2), sandy-clay loam with small caliche inclusions was found throughout the unit. Seventeen sherds of Goliad ware and 72 animal bone fragments (three of which were burned) were excavated from the Colonial level that extended from 12–24 inches beneath the surface.

ST D-2 had a surface elevation of 583.43 ft amsl. The entire unit was comprised of a dark grayish-brown (10YR 3/2) clay loam. Nine Goliad ware sherds and 153 animal bone fragments indicated that a Colonial stratum was present at 12–24 inches beneath the surface.

ST D-6 had a surface elevation of 583.68 ft amsl. A loosely compacted sand, caliche, limestone gravel, and asphalt fill-zone which was recorded from 12–18 inches could have been related to Mission Road which ran southeast-northwest across the mission. The fill-disturbance may also have been related to a large footpath which bisected the mission southwest to northeast (Clark 1978:3). Eight fragments of Goliad ware and 40 animal bone fragments were recovered in the dark grayish-brown (10YR 3/2), clay loam Colonial level that extended 18–24 inches beneath the surface. The distal end of a projectile point was also recovered at a depth of 22 inches.

TRANSECT E

ST E-2 had a surface elevation of 583.54 ft amsl. Four Goliad ware sherds, 13 animal bone fragments, and a mortar sample were collected from the very dark grayish-brown (10YR 3/2), sandy loam Colonial stratum which extended from 22–26 inches beneath the surface.

ST E-3 had a surface elevation of 583.89 ft amsl. A dark grayish-brown (10YR 4/2), sandy-clay loam from 15–28 inches beneath the surface was identified as Colonial. The level contained 10 sherds of Goliad ware, 2 sherds of clear glass, 1 sherd of green glass, and 28 animal bone fragments.

TRANSECT F

The surface elevation of ST F-2 was 583.14 ft amsl. A dark brown (10YR 3/3), sandy-clay loam from 12–23 inches was identified as a Colonial level. Six sherds of Goliad ware, 1 sherd of Valero ware (1730–1760), 1 sherd of amber glass, 2 sherds of clear glass, and 84 animal bone fragments (including three teeth) were recovered from this level. Caliche inclusions and mortar were also observed.

ST F-4 was 12 ft south of a group of four partial foundations and 28 ft west of a large rectangular foundation (Figure 19). The test's surface elevation was 583.46 ft amsl. The very dark grayish-brown (10YR 3/2), sandy-clay loam Colonial level was identified between 22 and 27 inches. Two fragments of Goliad ware, 1 sherd of San Elizario Polychrome majolica (ca. 1750–1800), 5 sherds of bottle glass, 18.8 grams of unidentifiable metal, and 8 animal bone fragments were excavated from the level.

TRANSECT G

ST G-1 was about 20 ft north of the south wall and about 10 ft north of the existing brick walkway. The test had a surface elevation of 583.07 ft amsl. A very dark grayish-brown

(10YR 3/2), clay loam extended from the surface to 24 inches. A small layer of mortar was observed between 14 and 16 inches. The Colonial level was identified—by 2 Goliad ware sherds and 13 animal bone fragments—between 16 and 24 inches.

The surface elevation at ST G-2 was 583.14 ft amsl. ST G-2 was excavated in an area that would have been about the midpoint of Mission Road (Clark 1978:3). The caliche in the unit decreased in frequency with depth between 10 and 18 inches and may have been related to the road. The dark grayish-brown (10YR 4/2), sandy-clay loam Colonial level extended from 18–22 inches and contained 3 sherds of Goliad ware, 1 brown glass fragment, 88 fragments of animal bone, and the distal portion of a projectile point.

ST G-3 was 26 ft south of the previously mentioned rectangular foundation. The surface elevation for the test was 583.36 ft amsl. The entire unit was comprised of a very dark grayish-brown (10YR 3/2), clay loam. The first arbitrary level, from 0–12 inches, contained both Colonial and post-Colonial artifacts. A Colonial level, between 12 and 26 inches, was identified by 12 sherds of Goliad ware, 2 bottle glass sherds, and 76 animal bone fragments (including 23 teeth).

TRANSECT H

ST H-1 was approximately 20 ft north of the south wall and about 10 ft north of the existing brick walkway. The surface elevation was 583.03 ft amsl. This test was also located in an area that would have been about the middle of Mission Road. The sand, caliche, unmodified chert cobbles, and sandstone and limestone chunk fill from 4–19 inches deep may have been introduced by the road. Two sherds of Goliad ware and 44 animal bone fragments were excavated from the dark gray (10YR 3/1), sandy-clay loam Colonial level that extended from 19–24 inches beneath the surface.

ST H-3 had a surface elevation of 582.95 ft amsl. A grayish-brown (10YR 5/2) sandy-clay loam level that extended from 13 to 24 inches beneath the surface was identified as a Colonial stratum. Two sherds of Goliad ware and 5 animal bone fragments were recovered from this level.

ST H-6 had a surface elevation of 582.83 ft amsl. The entire unit contained a very dark grayish-brown (10YR 3/2), clay loam except for a layer of soft limestone pebbles and caliche that was recorded from 7–12 inches. The Colonial level, from 22–24 inches, contained 1 sherd of unidentified majolica, 1 sherd of Goliad ware, and 5 animal bone fragments.

TRANSECT I

ST I-1 was 20 ft west of the eastern wall and 8 ft north of the existing walkway. The surface elevation of the test was 583.57 ft amsl. Mixed Colonial and post-Colonial deposits were excavated from a brown to grayish-brown (10YR 5/2 to 10YR 5/3), sandy-clay loam with an ash layer between 6 and 15 inches. A very dark gray (10YR 3/1), sandy-clay loam extended from 15–26 inches. Unfortunately, natural layers were not discerned and the test was excavated in arbitrary, 12-inch levels. Thus, a Guerrero point found in association with undecorated whiteware sherds, bottle glass, and animal bone fragments can only be given a general vertical provenience of 12–24 inches. An intact Colonial deposit containing 11 Goliad ware sherds, 1 lead-glazed sherd, and 62 animal bone fragments was identified between 24 and 26 inches.

ST I-2 was 20 ft west of the eastern wall and about 1 ft east of the existing walkway. The surface elevation was 583.40 ft amsl. The very dark gray (10YR 3/1), clay loam Colonial level extended between 12 and 29 inches. A biface, 18 sherds of Goliad ware, 3 lead-glazed sherds, and 110 animal bone fragments were excavated from this level.

MIDDEN

The densest portion of a midden was identified between STs B-2 and B-6 in Area D, approximately 80 ft from the western wall. The midden was vertically ephemeral; typically, however, the heaviest concentrations of artifacts extended from about 10–20 inches beneath the surface, but artifacts were frequently recovered at depths between 24 and 28 inches. A total of 1,875 artifacts was recovered from the five tests in the area, including 325 sherds of ceramics, 1,231 animal bone fragments, 3 lithic tools, and 51 glass sherds. The ceramics included 214 sherds of Goliad ware and 62 sherds of other Colonial-period ceramics. Thus the ceramics, the most diagnostic artifacts, indicate that the midden may have been comprised mostly (84 percent) of Colonial artifacts. The intact Colonial deposits in STs B-2, B-3, and B-6 have been described elsewhere in this report. STs B-4 and B-5 also contained large amounts of Colonial artifacts, but the deposits there were slightly mixed with post-Colonial artifacts. The density of the artifacts (both Colonial and post-Colonial), the partial foundation on the surface (between B-2 and B-3), and the mortar and rock (B-4 and B-5) and ash and charcoal (B-6) subsurface features suggest this is an extremely sensitive area.

HAND-EXCAVATED UNITS

Intact Colonial levels were also identified in three of the hand-excavated units—B-1, B-3, and B-4—in Area B. Our excavations suggested that B-1 and B-3 would originally have been inside the mission's exterior south wall.

Unit B-1 was a 3-x-3-ft unit just north of the existing southeast gate. The Colonial stratum was identified between 20 and 25 inches. The level contained 55 sherds of Goliad ware, 1 sherd of heavily patinated aqua glass, 428 animal bone fragments, 1 trade bead, and a retouched flake. No soil samples were collected.

Unit B-3 was a 4-x-4-ft unit about 10 ft south of the existing gate. The Colonial level, from 20–27 inches, was identified by 19 sherds of Goliad ware, 88 animal bone fragments, 4 mussel shell fragments, and a retouched flake. No soil samples were collected.

Unit B-4 was also a 4-x-4-ft unit south of the gate. A very dark grayish-brown (10YR 3/2) to very dark brown (10YR 2/2), loamy clay that was observed between 15 and 35 inches was identified as Colonial. Eighty-five sherds of Goliad ware, 2 lead-glazed sherds, 2 fragments of unidentified majolica, 7 sherds of glass, 700 animal bone fragments, a fragment of shell, a mortar sample, a uniface, and a retouched flake were recovered.

DISCUSSION OF INTACT COLONIAL DEPOSITS

Intact Colonial deposits were observed in three distinct clusters in the mission, including areas near the southeast and southwest corners and in the west-central portion of the compound (Figure 25). The artifacts recovered from the Colonial levels appear to be products of domestic refuse. Occupation and activity areas may be discerned from an analysis of their distribution.

Fourteen of the 21 tests in which Colonial strata were identified were in the southern third of the mission compound. The highest proportions of unrefined Colonial wares to refined post-Colonial wares were also observed in this area. Ivey et al. (1991), summarizing Habig (1968a, 1968b), have suggested that Mission San José was unwallled until about 1758–1768. They believe that until that time, the mission was an open pueblo with houses arranged approximately where the present walls are located. Ivey et al. (1991) further suggest that prior to ca. 1768, a second row of houses was located just north of the houses along the south wall. The intact Colonial levels in the southern portion of the mission may be related to this earlier, relatively higher occupation density.

STs B-2, B-3, D-2, F-4, G-3, H-1, and H-3 were all within 20 ft of one of the many unreconstructed foundations located throughout the interior of the compound (Figures 19 and 25). Perhaps, then, the data collected from these tests suggest that these were Colonial-era structures. Further evidence is needed, however, to validate our hypothesized association between the intact Colonial levels and the foundations. Phosphate tests have been used to identify structures and activity areas at historic sites (Bethell and Máté 1989; Ehrenhard 1978; Fox 1986; Parkes 1986). Such chemical analyses, coupled with additional excavation, could aid in the interpretation of the past physical make-up of the interior compound of Mission San José.

The richness of the ceramics recovered from the shovel tests was plotted in an attempt to determine if the patterns reflected sampling biases or recognizable artifact distribution (Figure 26). Richness is the number of different types (typological variability) of the same artifact in a given archaeological unit. More specifically, Kintigh (1984) and Schiffer (1987:328) suggest that richness is related to sample size: as sample size increases, sample richness also increases. If our identification of Colonial deposits is merely a product of small samples—i.e. the absence of later artifacts—then our Colonial levels should be most common in levels where ceramic counts are the lowest and rarest where ceramic counts are higher. There exists, however, only a low degree of correlation between ceramic count and ceramic types (the Pearson's R value [variance] was calculated as 0.370442) among the excavated proveniences. This indicated the sample size is not strongly related to ceramic types; therefore, the presence or absence of Colonial levels is probably not directly related to low or high counts of ceramics.

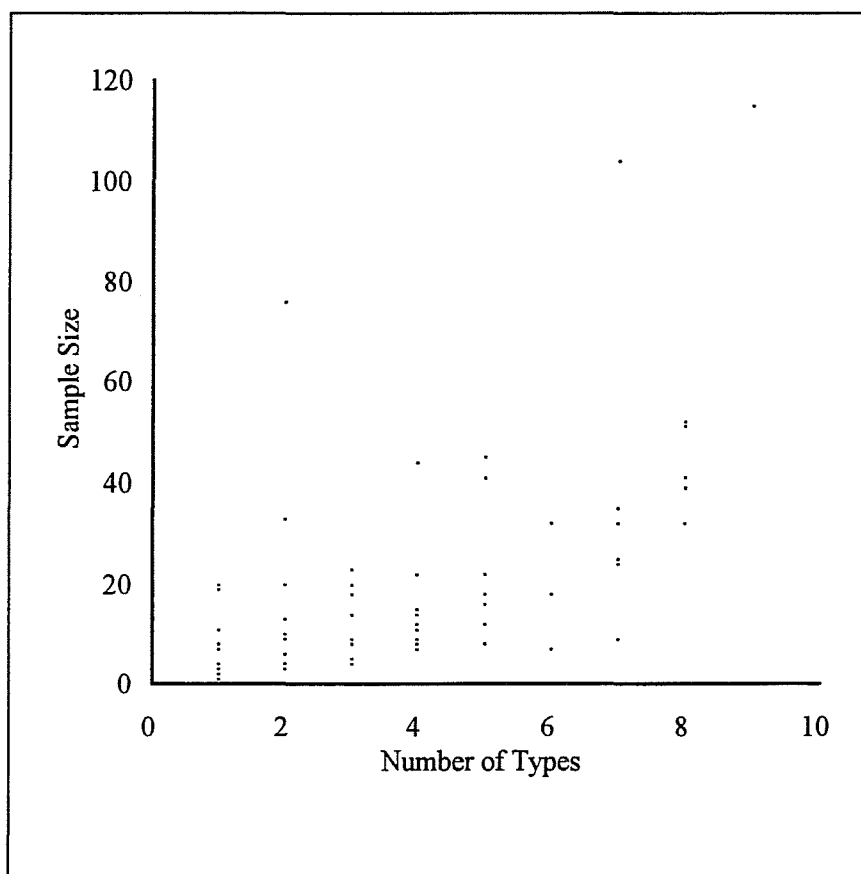


Figure 26. *Scatter plot of ceramic types and sample size.*

HORIZONTAL ARTIFACT DISTRIBUTION

A more general analysis of the distribution of temporally diagnostic artifacts was completed to better understand how occupation and activity areas at Mission San José have changed through time. Our conclusions about the depositional history of the mission should provide a framework which future archaeologists can use to examine the process of colonization and the changing cultural identity of Mission San José's former inhabitants.

As previously described, unrefined and refined earthenwares provide convenient temporal indicators (see Chapter 3) at Mission San José. The unrefined earthenwares—including Native American produced wares and Mexican lead- and tin-glazed wares—were manufactured and used throughout the Colonial period. The refined

earthenwares—undecorated and various decorated wares and porcelain—were introduced into South Texas in the early 1800s. Thus, this analysis uses ceramics as general indicators of Colonial or post-Colonial deposits. The Pearson's correlation coefficient between counts of unrefined ($n=1034$) and refined sherds ($n=373$) in 83 shovel tests was extremely weak ($r=0.135$) indicating substantial spatial discontinuity between Colonial and post-Colonial wares. Contour density maps for both categories of ceramics were completed (Figures 27 and 28) to assist in further identification of temporal/spatial patterns.

As Figure 27 demonstrates, unrefined earthenwares tended to be found in tests near the west, south, and east walls, with the highest concentration located in or near the midden. Almost all of the unrefined sherds were found in the southern half of the mission and a majority of

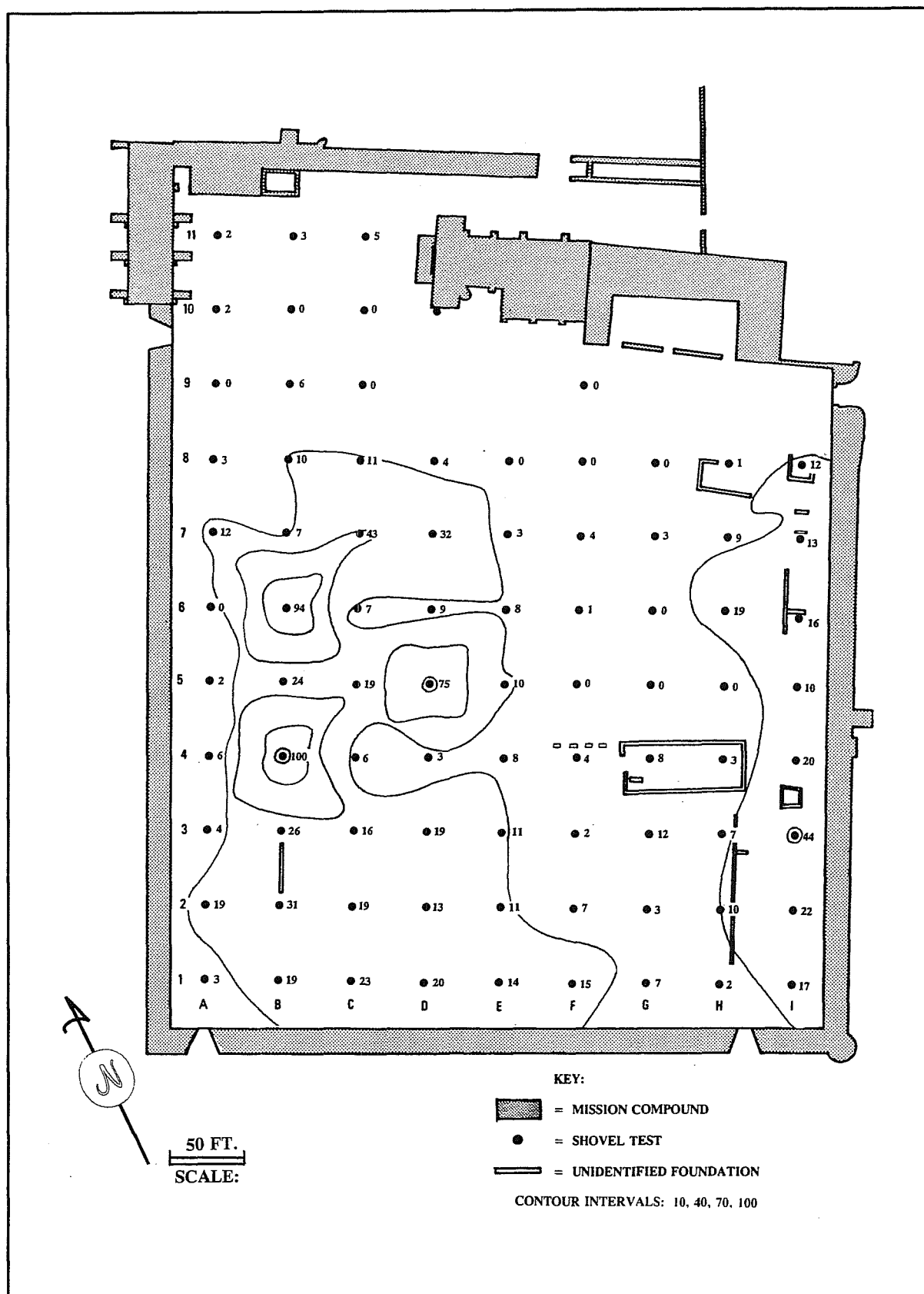


Figure 27. Contour density map of unrefined earthenwares.

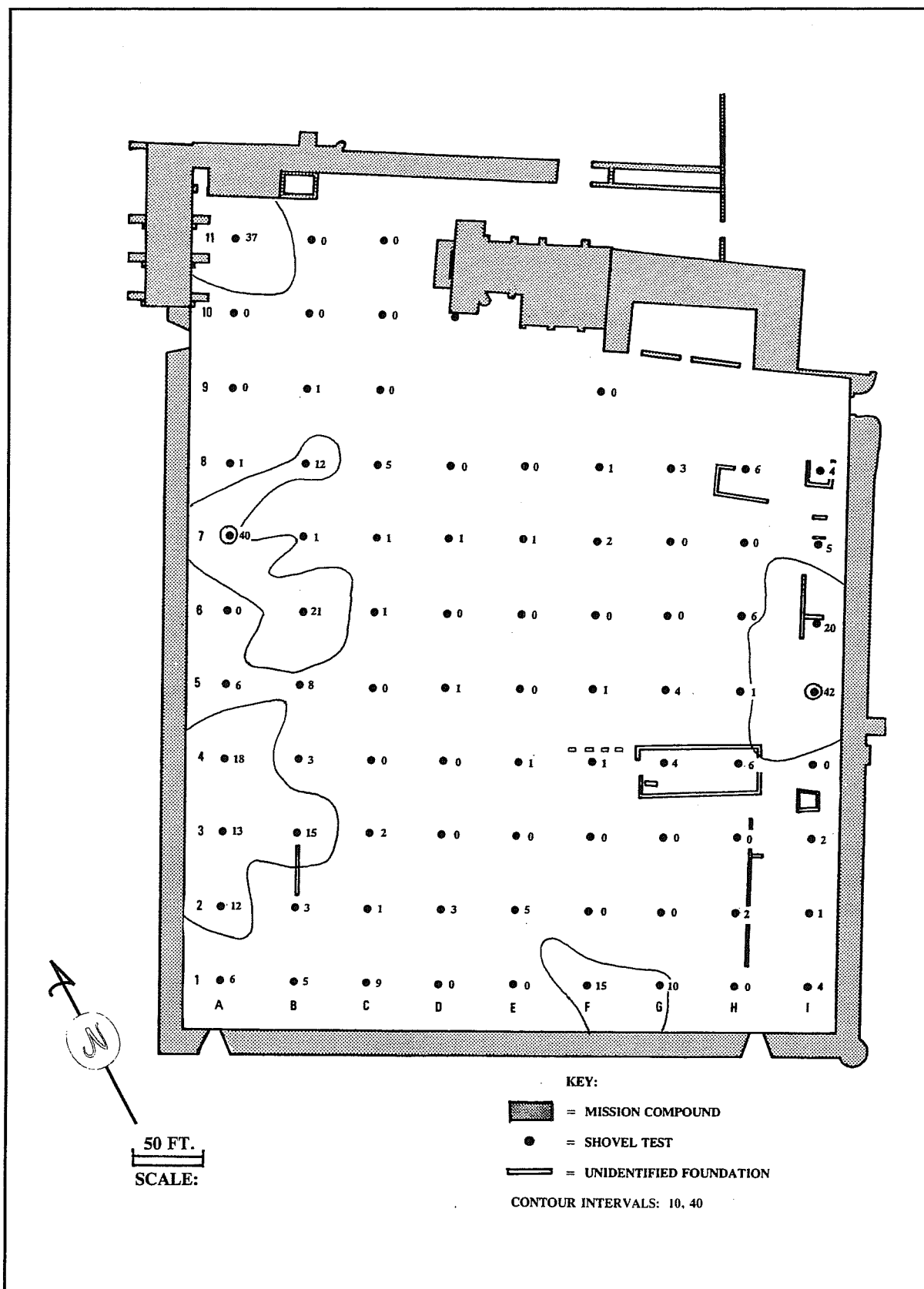


Figure 28. Contour density map of refined earthenwares.

these were recovered from western portion of Area D. Large quantities of unrefined sherds ($n=155$ or 14.99 percent of the unrefined assemblage collected from Area D) were also recovered from Transect I. The 275 unrefined earthenware sherds recovered from the midden represent 26.59 percent of the unrefined assemblage from Area D. In comparison, only 13.29 percent ($n=50$) of the refined earthenwares were collected from the midden.

A majority ($n=255$, 68.45 percent) of the 373 refined earthenwares sherds were recovered from 12 shovel tests (14.46 percent of all excavated tests). As Figure 28 indicates, five clusters of refined earthenwares were identified: two areas along the western wall (shovel tests B-8, A-7, and B-6; and shovel tests A-2, A-3, B-3, and A-4), along the southern wall (shovel tests F-1 and G-1), and along the eastern wall (shovel tests I-5 and I-6). One shovel test (A-11), in the far northwestern corner of Area D in front of the granary, also contained a large number of refined sherds ($n=37$). Ivey et al. (1991) suggest that the granary was used as a multi-family dwelling until 1931. Additionally, a caretaker of the mission, Ethel Harris, was renting reconstructed apartments along the north wall as late as 1946 (Ivey et al. 1991).

The distribution of the faunal remains was highly correlated using a Pearson's correlation coefficient ($r=0.8640$) with the distribution of the unrefined earthenwares in shovel tests (Figure 29). Figure 30 plots the bone count and unrefined earthenware count for each shovel test excavated in Area D. Conversely, only a slight correlation ($r=0.0896$) was observed for the distribution of refined earthenwares and bone (Figure 31). A comparison between the unrefined contour density map (Figure 27) and the bone map (Figure 30) indicates that the two distributions are similar. Thus, a majority of the bone recovered from Area D was probably deposited in the Colonial era. The faunal remains are discussed in detail in the next chapter.

Although Area D was continuously occupied for 200 years, habitation and activity areas changed frequently over time. In general, the various historical descriptions of San José suggest four, long construction/occupation episodes (see Chapter 1). From about 1722 until 1768 the mission was unwallled and contained a maximum of 84 adobe and stone houses arranged in either a street-like form or in quadrangles.

Archaeologists and historians are uncertain, however, of the precise location within Area D of these houses: the partial surface and subsurface foundations throughout the compound are tantalizing possibilities, but this assumption has not been confirmed. The mission was enclosed with walls from about 1768 until the mid-1800s. Numerous accounts document the Indians' quarters along the east, west, and south walls. Also, until the mission was completely secularized in 1824, a carpentry shop, a blacksmithing shop, a weaving shop, and the soldiers' quarters were all located in the northern portion of the mission. Between 1824 and 1844, the walls and many of the Indians' quarters collapsed. However, numerous families continued to occupy the remaining Indians' quarters or other structures (including the granary, the convento, and the church) or built new structures from the rubble on top of the wall foundations throughout the nineteenth century. Beginning around the turn of the twentieth century, a number of frame houses were erected on the wall/Indian quarters foundations. A 1905 USGS map recorded 13 houses existing along the old foundations. The presence of frame houses has also been confirmed by an aerial photograph of the area from the 1930s (Figure 5). The photo suggest that houses were located along the east, west, and south walls and were orientated with all of their fronts toward the now-existing Area D compound.

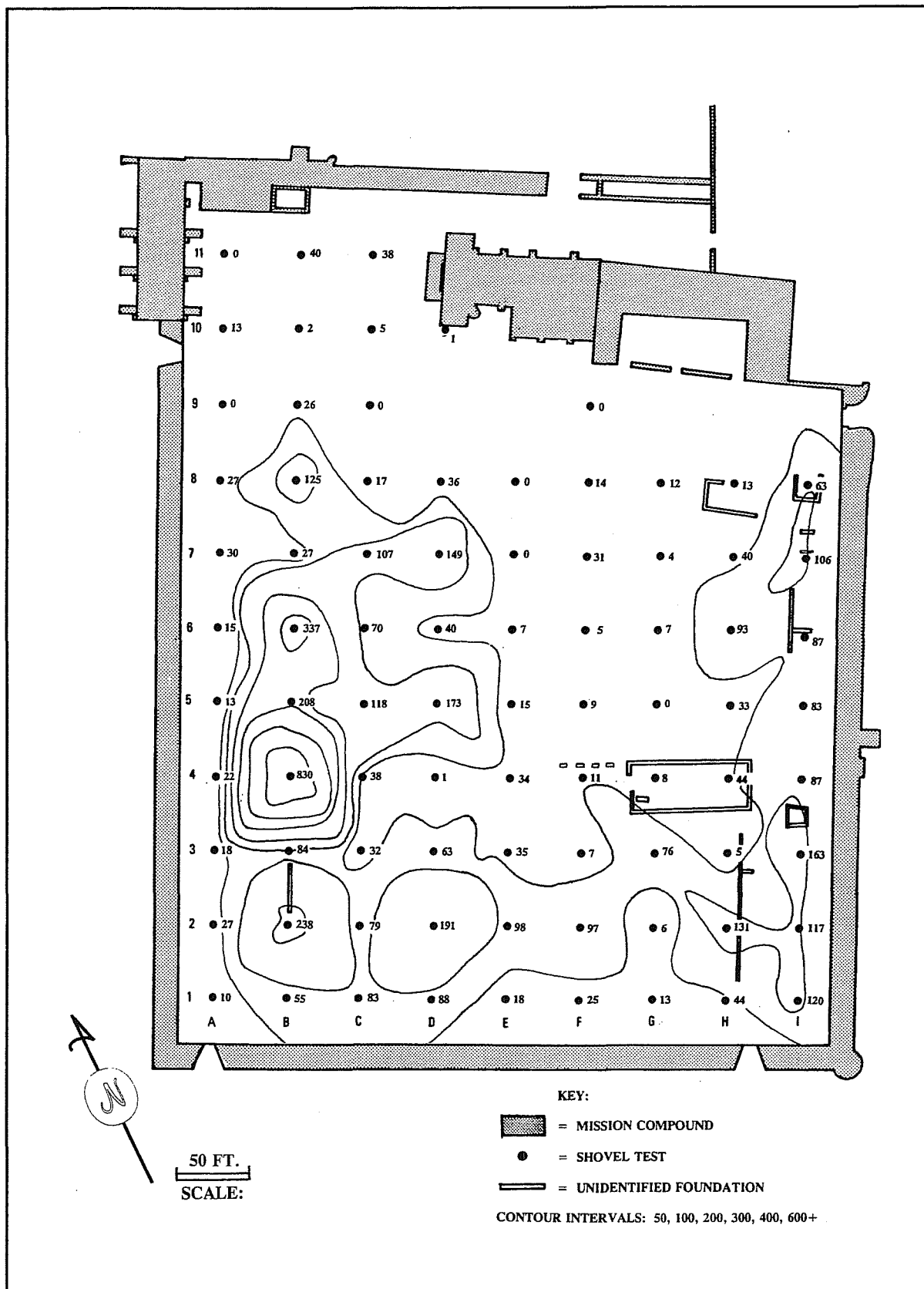


Figure 30. Scatter plot of distribution of unrefined earthenwares and bone.

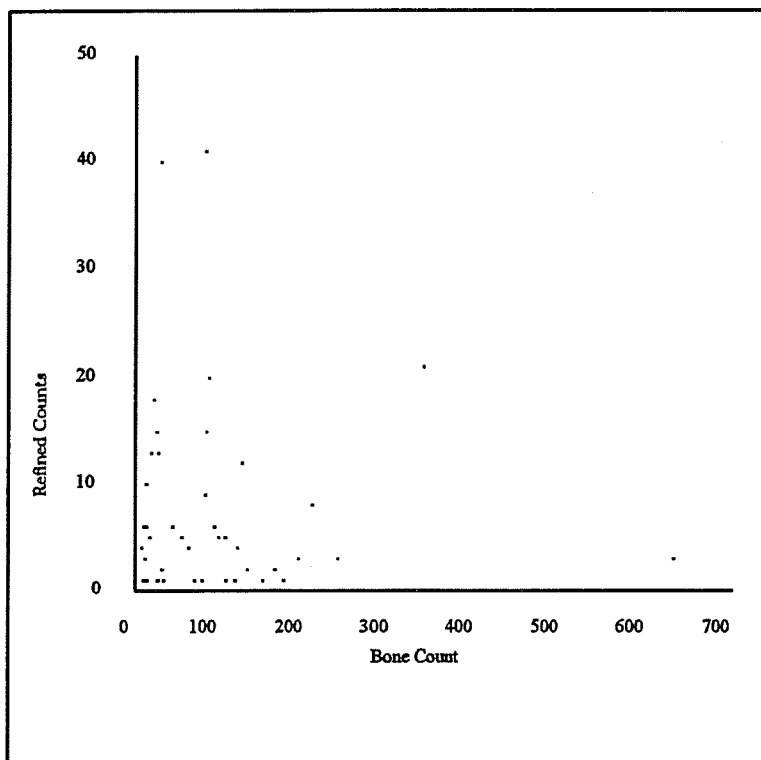
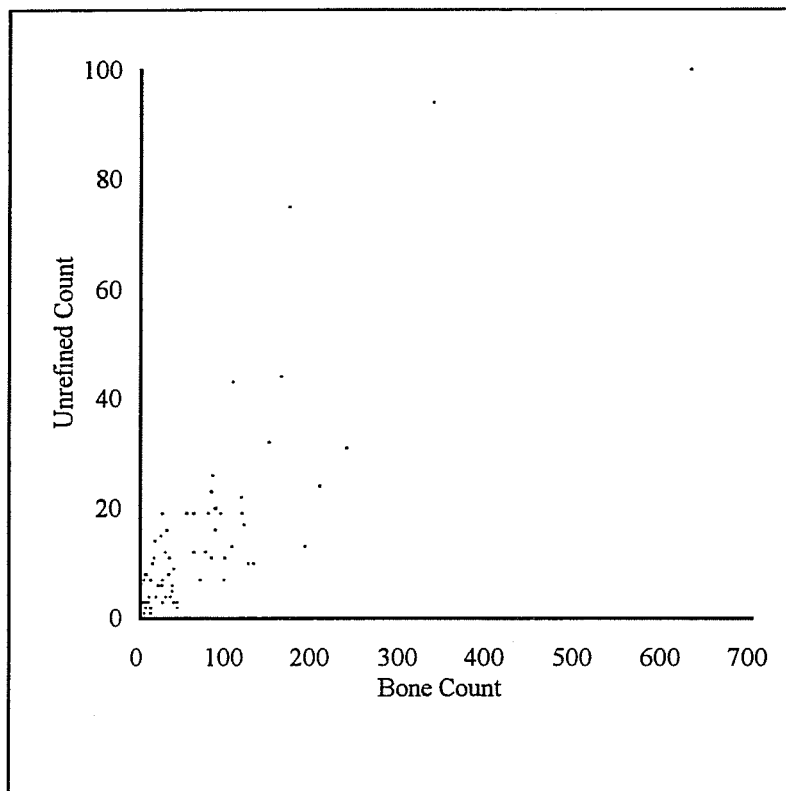


Figure 31. Scatter plot of distribution of refined earthenwares and bone.

The proportional distribution of unrefined and refined earthenwares were also calculated to assist in the identification of temporal-spatial units. Tables 10 and 11 present the distribution of unrefined and refined earthenwares for Area D as a percent of the total of 1,034 sherds of unrefined earthenwares and 373 sherds of refined earthenwares.

Evidence for Colonial occupation of the interior of Area D (i.e., before construction of the walls) may be found by comparing proportional totals for the north-south transects (A-I) and east-west rows (1-11) as well as Figures 27 and 28. Unrefined earthenwares were more evenly distributed throughout the entire interior compound than were refined earthenware sherds.

Table 10. Proportional Distribution of Unrefined Earthenware Percentages
by Shovel Tests at Mission San José, Area D

Unrefined	A	B	C	D	E	F	G	H	I	Totals
11	0.19	0.29	0.48							0.97
10	0.19	0.00	0.00	0.00						0.19
9	0.00	0.58	0.00	0.00						0.58
8	0.29	0.97	1.06	0.39	0.00	0.00	0.00	0.10	1.16	3.97
7	1.16	0.68	4.16	3.09	0.29	0.39	0.29	0.87	1.26	12.19
6	0.00	9.09	0.68	0.87	0.77	0.10	0.00	1.84	1.55	14.89
5	0.19	2.32	1.84	7.25	0.97	0.00	0.00	0.00	1.06	13.64
4	0.58	9.67	0.58	0.29	0.77	0.39	0.77	0.29	1.93	15.28
3	0.39	2.51	1.55	1.84	1.06	0.19	1.16	0.68	4.26	13.64
2	1.84	3.00	1.84	1.26	1.06	0.68	0.29	0.97	2.13	13.06
1	0.29	1.84	2.22	1.93	1.35	1.45	0.68	0.19	1.64	11.61
Totals	5.13	30.95	14.41	16.92	6.29	3.19	3.19	4.93	14.99	100.00

Table 11. Proportional Distribution of Refined Earthenware Percentages
by Shovel Tests at Mission San José, Area D

Refined	A	B	C	D	E	F	G	H	I	Totals
11	9.92	0.00	0.00							9.92
10	0.00	0.00	0.00	0.00						0.00
9	0.00	0.27	0.00	0.00						0.27
8	0.27	3.22	1.34	0.00	0.00	0.27	0.80	1.61	1.07	8.58
7	10.72	0.27	0.27	0.27	0.27	0.54	0.00	0.00	1.34	13.67
6	0.00	5.63	0.27	0.00	0.00	0.00	0.00	1.61	5.36	12.87
5	1.61	2.14	0.00	0.27	0.00	0.27	1.07	0.27	10.99	16.62
4	4.83	0.80	0.00	0.00	0.27	0.27	1.07	1.61	0.00	8.85
3	3.49	4.02	0.54	0.00	0.00	0.00	0.00	0.00	0.54	8.58
2	3.49	0.80	0.27	0.80	1.34	0.00	0.00	0.54	0.27	7.51
1	1.61	1.34	2.41	0.00	0.00	4.02	2.68	0.00	1.07	13.14
Totals	35.92	18.50	5.09	1.34	1.88	5.36	5.63	5.63	20.64	100.00

Unrefined earthenware sherds were recovered in 69 of the 83 tests (83.13 percent) whereas refined earthenware sherds were recovered in only 52 of the tests (62.65 percent). The proportion of refined earthenwares steadily decreases away from the east and west walls towards the center of the area. The unrefined earthenwares, however, do not show the same tendency. Instead, proportionally more unrefined sherds were recovered from Transects B, C, and D than in Transect A. More revealing, perhaps, comparisons of the proportions by east-west rows (1–11) suggest that the unrefined sherds were distributed evenly between Rows 1 and Row 8. In contrast, the refined sherds tended to cluster along the north and south walls. The refined sherds were also clustered in the middle rows (5–7), but careful examination reveals that a majority of the refined sherds from these rows were recovered from tests immediately adjacent to the east and west walls. Thus, knowing that post-Colonial structures were built only along the perimeter of Area D, we can clearly see that deposits were mostly adjacent to occupation areas. In fact, 75.14 percent of all the refined earthenwares were excavated from Transects A, B, and I. Only 51.02 percent of the unrefined assemblage was collected from those same tests. The more even distribution of unrefined sherds may suggest that Colonial structures were present in the interior of Area D.

The enclosure of the mission certainly affected artifact distribution. The location of the midden may indicate that the later occupants of the existing western walls were intentionally transporting their refuse away from their habitation space. Further, the relatively low artifact densities observed in Transect A shovel tests may indicate that the areas adjacent to the living quarters was simultaneously being maintained as a non-disposal area. Graham (1994), Kent (1984, 1991), and Windes (1987) have documented similar patterns in which disposal and habitation areas are separated by a maintained area. Why similar middens and intermediate maintained areas did not develop along the occupied southern and eastern walls is not yet understood.

Further analysis of the entire interior compound suggests that the total artifact density, and especially the frequency of Colonial ceramics, greatly declines in the northern portion of the mission, beginning in about Row 8 ($n=609$ total artifacts or 67.6 per test in Row 8). Although Rows 9, 10, and 11 were not completely investigated, the tests that were excavated there typically have lower total densities ($n=450$, or 40.9 per test) and also have lesser amounts of Colonial ceramics ($n=13$, or 1.1 per test).

The almost complete absence of Colonial ceramics in the northern portion of the mission may reflect differences in intrasite activity areas: most of the mission's workshops—blacksmithing, weaving, carpentry, and warehousing—and the cemetery are believed to have been located in the northern portion of the mission. Thus, we believe that total artifact frequency declines as one moves towards the manufacturing sector of the mission and, conversely, increases towards the more residential sector. Unfortunately, most previous investigations at the San Antonio missions have been limited to areas to be impacted by construction, and archaeologists and historians have therefore had little opportunity to differentiate functional areas.

There is some evidence that Colonial residents did discard refuse outside the mission walls (with the largest concentrations being near the gates), but apparently they did so in relatively small quantities. Likewise, later refuse practices may have been influenced by the deterioration of the mission walls in the mid-nineteenth century. The orientation of occupation areas and the consequent location of activity areas would no longer be confined by the walls. A photograph of the area (Figure 5) indicate that houses were built on top of the former Indian quarters, but included yard space both in front of and behind the structures. Further, all the houses in the photograph faced Area D and their outbuildings were located outside the present interior compound.

Previous excavations (Clark 1978; Schuetz 1970) outside of the mission walls suggest that later occupants were using their backyards for refuse disposal. Table 12 demonstrates that proportionally more unrefined sherds than refined sherds are recovered in Area D (78.5 percent unrefined, n=2,673), but that in units excavated outside of Area D the proportional differences between unrefined and refined lessens (39.6 percent unrefined, n=3,977).

CONCLUSIONS

Unmixed Colonial deposits were identified in 21 of the 83 shovel tests (25.30 percent) excavated in Area D. The unmixed Colonial deposits were concentrated in the southwest and southeast corners and the west-central portion of the compound and were found at a minimum of 12 inches beneath the surface. These areas have the best potential for offering significant assemblages of Colonial material and should be considered highly sensitive.

Table 12. Chart Comparing Inside/Outside Deposits Collected from CAR and Previous Excavations

Ceramic Comparison		CAR 1993 Inside		Schuetz 1970 Inside		Clark 1978 Outside		Schuetz 1970 Outside	
Category	Sub-Category	Count	% of Total	Count	% of Total	Count	% of Total	Count	% of Total
Unrefined	Unglazed	909	64.61	935	73.85	490	41.95	557	19.83
	Tin Glazed	38	2.70	93	7.35	45	3.85	288	10.25
	Lead Glazed	87	6.18	35	2.77	54	4.62	139	4.95
Subtotal		1,034	73.49	1,063	83.97	589	50.42	984	35.03
Refined	Undecorated	204	14.50	85	6.72	256	21.92	954	33.96
	Decorated	129	9.17	87	6.87	281	24.06	747	26.59
	Porcelain	25	1.78	15	1.18	19	1.63	55	1.96
	Stoneware	13	0.92	16	1.26	23	1.97	69	2.46
	Other	2	0.14	0	0.00	0	0.00	0	0.00
Subtotal		373	26.51	203	16.03	579	49.58	1,825	64.97
Total		1,407	100.0	1,266	100.0	1,168	100.0	2,809	100.0

The distribution of the unrefined and refined earthenwares was shown to be substantially discontinuous. Unrefined wares were concentrated along the west, south, and east walls and in the midden. An even, low-frequency distribution of unrefined wares was also observed in the center of the compound. Our analysis of the distribution of the unrefined wares corroborates various historical descriptions that suggested that Indian homes were located in the middle of the compound and along the present walls during the Colonial period. In contrast, refined wares were more concentrated in a few clusters: one along the eastern wall, one along the southern wall, and two along the western wall. Most of these deposits appear to correlate with post-Colonial houses which were constructed on the ruins of the walls.

Finally, the distribution of animal bone significantly correlates with the distribution of unrefined wares rather than refined wares. This correlation suggests that much of the bone from Mission San José is Colonial in age.

CHAPTER 5: FAUNAL ANALYSIS

During the testing conducted at Mission San José y San Miguel de Aguayo, a total of 7,066 bones was recovered. Analysis of these faunal remains was carried out in order to determine the species represented, with the hopes of recovering data related to the subsistence of the mission occupants. In addition, ethnohistorical references to meat utilization in the missionary records were perused.

The missionaries at San José understood very well that a good diet was their best inducement to conversion to the Catholic faith for the Indians. One report in 1740, which discusses all missions on the San Antonio River, stated that for the Indians “[the] main emphasis is placed on mere temporal convenience. Accordingly, they are more concerned about an abundant supply of food than with a fear about eternal life” (Habig 1978:56). Unfortunately, information from various missionaries concerning the actual diet of the inhabitants of San José is scanty. The most expansive is that of Fr. Ildefonso Marmolejo in October of 1755, which notes “for the weekly ration 7 beef cattle are slaughtered, 4 for those living at the mission, 1 for the shepherds, 1 for the cowboys, and 1 which is made into jerked meat for the convalescents. Chicken and mutton are also given to the sick” (Habig 1978:135). The population of Indians at San José at the time

of this report was 194 (Habig 1978:122). Even assuming that the cattle in question were small and fairly lean, and that there may have been some exaggeration of wealth, this suggests that an enormous quantity of meat was being consumed, even without including other meat sources, such as sheep, goats, pigs, and nondomesticated animals.

Inventory reports through time indicate a steady decline in cattle (*Ganado mejor*) after 1750 and a large increase in sheep and goats (*Ganado menor*) (Table 13). The missionaries claimed that the reason for the decrease in cattle was the serious and constant depredation by Apaches throughout the Colonial period. Pigs are not mentioned in inventories of San José, although they may have been counted among the *Ganado menor*. Pigs are only occasionally mentioned in accounts of the missions. One inventory which mentions pigs (12 sows and 3 boars) is from Rancho de Las Cabras, the ranch associated with Mission Espada (Ivey 1983:27).

Although cryptic, these references indicate the missionaries were supplying substantial quantities of beef as well as other livestock to the mission inhabitants. Issues related to animal use at the missions can be evaluated and elaborated upon through faunal analyses.

Table 13. Inventory of Livestock at San José, 1749-1784 (data from Habig 1978)

Year	Cattle ¹	Sheep/Goats	Reported by
1749	2,000	1,000	Ciprián
1750	1,500	1,876	Marmolejo
1758	1,000	3,276	Barrios
1767	1,500	5,000	Solís
1784	682	6,167	Salas

¹Cattle counts are estimates, as only partial round-ups were performed for these inventories (Habig 1978)

PREVIOUS MISSION SAN JOSÉ FAUNAL ANALYSES

Prior archaeological work at the San José mission complex recovered faunal remains. Salvage archaeology conducted in 1969 and 1970 during trenching for a sewer pipe resulted in 1,903 bones, of which 793 (41.67 percent) were identified to general size (cow-horse, deer-goat, rodent, etc.) (Fox 1970:50). A total of 4,738 bones was recovered during excavations conducted as part of a drainage project at the mission in 1974-1975 (Clark 1978). A faunal list of 27 identified species was given, and general comments on the importance of cow, goat, deer, and pig were made. Testing along the west wall of the mission compound in 1979 resulted in 1,748 bones. Only generalized descriptions of species and proveniences were provided (Clark and Prewitt 1979:29-30). Faunal remains recovered in 1981, during the mitigation of the acequia madre southeast of the mission compound, consisted of 60 bones, of which 49 (81.67 percent) were identifiable. Genera described included *Bos*, *Capra*, *Ovis*, and *Canis* (Henderson and Clark 1984:40-42).

VISITORS' CENTER PROJECT

The vertebrate faunal remains from the Visitors' Center Project were identified to the lowest taxon possible using CAR's comparative collection and standard texts on vertebrate anatomy (Gilbert 1990; Hillson 1986; Olsen 1964, 1968). Identifications were conservative, i.e. cow-sized bone was not assumed to be *Bos taurus* unless it could be positively identified as such. Estimated size of animal was noted for unidentifiable bone.

GENERAL OBSERVATIONS

Most of the bone was highly fragmented, apparently due to extensive trampling. Notably, ceramics and glass were also highly fragmented,

again a probable result of trampling. Schiffer (1987:126-127) notes that the degree of taphonomic changes caused by trampling depends on several variables, including the brittleness of the material, the penetrability of the soil surface, and the amount of foot traffic (both human and animal). In this case, in which refuse appears to have been scattered within an enclosed area in which occupation has been long-term and intense and in which the soil surface is clay, we can expect a great deal of breakage due to trampling. In fact, this collection is so fragmented that only 3.88 percent ($n=274$) of all bone was identifiable to the genus level.

While trampling appears to be the major cause of this fragmentation, the deliberate shattering of the long bones of meat animals, presumably to extract marrow or to prepare for tallow extraction or both, also affected the bone assemblage. Spiral or greenstick fractures, made while the bone was fresh, were seen on most of the long bone fragments from large animals. While differentiation of cultural from non-cultural causes for such fractures is problematic, the presence of many examples of impact scars, including crushing of the exterior surface and flaking on the interior surfaces is almost certainly cultural (Todd and Rapson 1988). Even some of the phalanges of cattle were broken open, with impact scars clearly present.

The collection is so fragmented that the Number of Identified Specimens (NISP) strongly over-represents small animals such as rabbits (see discussion below). In fact, approximately 75 percent of the unidentifiable bone is probably *Bos taurus*. The remainder is mostly in the medium-sized mammal range, such as goats, pigs, and deer. Seventeen different species were identified in this collection (Table 14). For each area excavated during the project, a table showing the counts of identified elements as well as total bone counts is given. Detailed provenience information are provided in Appendix B (Table B8).

Table 14. Animal Species

Common Name	Scientific Name
Domesticated Animals	
Cow	<i>Bos taurus</i>
Horse	<i>Equus caballus</i>
Pig	<i>Sus scrofa</i>
Turkey	<i>Meleagris gallopavo</i>
Goat/Sheep ¹	<i>Capra/Ovis</i>
Dog ² (Coyote? Wolf?)	<i>Canis</i> sp.
Non-domesticated Animals	
Whitetail deer	<i>Odocoileus virginianus</i>
Rabbit ³	<i>Sylvilagus</i> sp.
Jackrabbit	<i>Lepus californicus</i>
Raccoon	<i>Procyon lotor</i>
Opossum	<i>Didelphis marsupialis</i>
Fox squirrel	<i>Sciurus niger</i>
Hispid cotton rat	<i>Sigmodon hispidus</i>
Rice rat	<i>Oryzomys palustris</i>
Water snake	<i>Natrix</i> sp.
Western diamondback rattlesnake	<i>Crotalus atrox</i>
King snake	<i>Lampropeltis getulus</i>

¹ Differentiation of goats and sheep is notoriously difficult in highly fragmented collections such as this and was not attempted here.

² Canid bones recovered were probably dog (*Canis familiaris*), but coyote (*C. latrans*) and wolf (*C. lupus*) were also present in the area in mission times.

³ The ranges of the eastern cottontail (*Sylvilagus floridensis*), the desert cottontail (*S. auduboni*), and the swamp rabbit (*S. aquaticus*) overlap in the San Antonio area (Davis and Schmidly 1994:86-92). Differentiation between these three very similar species was not attempted.

Area A. In Area A (Table 15), only 84 bones and bone fragments were recovered from the shovel tests (see Figure 19 for map of shovel tests). This bone was highly fragmented, although none was burned. Only 7.14 percent (n=6) was identifiable (see Table 15). The *Sus scrofa* (domestic pig) element was a deciduous incisor with no sign of wear; it may never have erupted. If so, the animal was less than three months old at the time of death (Hillson 1986:31).

Area B. Test units in Area B were generally outside the existing south wall of the mission,

although Unit B-1 was just inside the wall (Figure 17); however our analysis suggests that during Colonial times, all but one of these units would have been inside or under the Colonial-period south wall. A total of 1,944 bones was recovered, of which 5.40 percent (n=105) was identifiable. Much of the bone from these units was probably *Bos*, although it is in too fragmentary a condition to be sure. Thirteen species are represented (see Table 16). Only 3.55 percent (n=69) of the bone was burned.

Table 15. Faunal Remains from Area A

Species	Number Identified	% of Total
<i>Bos taurus</i>	5	6.02
<i>Sus scrofa</i>	1	1.21
Total Identified	6	7.23
Unidentified	77	92.77
Total	83	100%

Table 16. Faunal Remains from Area B

Species	NISP	% Id'ed
<i>Bos taurus</i>	46	2.37
<i>Sus scrofa</i>	5	0.26
<i>Capra/Ovis</i>	14	0.72
<i>Canis</i> sp.	4	0.21
<i>Sylvilagus</i> sp.	8	0.41
<i>Lepus californicus</i>	5	0.26
<i>Procyon lotor</i>	1	0.05
<i>Sigmodon hispidus</i>	1	0.05
<i>Oryzomys palustris</i>	2	0.10
<i>Equus caballus</i>	2	0.10
<i>Crotalus atrox</i>	14	0.72
<i>Lampropeltis getulus</i>	2	0.10
<i>Natrix</i> sp.	1	0.05
Total Identified	105	5.40%
Unidentified	1,839	94.60%
Total Bone	1,944	100%

The canid femur is not a positive identification because of the fragmentary nature of the bone and unsealed distal epiphysis. The 14 western diamondback rattlesnake (*Crotalus atrox*) vertebrae are the distal two-thirds of a single articulated individual.

Area C. No faunal material was recovered from Area C.

Area D. The grid on which shovel tests for this area were conducted is shown in Figure 19. A total of 5,038 bones was recovered from these tests. Most of this bone is in extremely fragmented condition, at times no more than crumbs. The total NISP is 161, which is only 3.20 percent of the total. Fifteen species are represented (Table 17). Only 4.43 percent (n=223) of the bone is burned.

Table 17. Faunal Remains from Area D

Species	NISP	% Id'ed
<i>Bos taurus</i>	49	.97
<i>Sus scrofa</i>	34	.67
<i>Capra/Ovis</i>	14	.28
<i>Canis</i> sp.	4	.08
<i>Sylvilagus</i> sp.	11	.22
<i>Lepus californicus</i>	3	.06
<i>Odocoileus virginianus</i>	16	.32
<i>Sigmodon hispidus</i>	5	.10
<i>Oryzomys palustris</i>	1	.02
<i>Sciurus niger</i>	2	.04
<i>Equus caballus</i>	2	.04
<i>Didelphis marsupialis</i>	3	.06
<i>Meleagris gallopavo</i>	1	.02
<i>Crotalus atrox</i>	5	.10
<i>Lampropeltis getulus</i>	11	.22
Total Identified	161	3.20 %
Unidentified	4,877	96.80 %
Total Bone	5,038	100%

Chronological context. Dating the bone assemblages from Areas B and D is crucial, but difficult, as the majority of proveniences contained both Colonial and post-Colonial artifacts. However, in order to maximize the utility of the faunal data, our analysis estimates the dominate chronological origin of the faunal material. The spatial analysis in Chapter 4 demonstrates that 73 percent of the ceramics in Area D are Colonial unrefined earthenwares. In addition, there is a strong correlation between occurrence of bone and unrefined ceramics in the shovel test levels (Pearson's $r = .8640$) while there is only a slight correlation between the distribution of bone and refined ceramics ($r = .0896$). Further, the unrefined ceramics, like the bone, are more widely distributed throughout the compound, while the refined ceramics are concentrated in five distinct clusters (see Chapter 4). Therefore we can assume the majority of the bone from within the Area D compound is of Colonial period origins.

The Area B bone was not included in the spatial analysis in Chapter 4; however, it is also thought to be largely of Colonial origin. Colonial period unrefined wares make up 90.67 percent (311/343) of all of the ceramics recovered from these five test units.

ANALYSIS AND DISCUSSION

METHODOLOGICAL PROBLEMS

Serious problems are associated with using NISP alone to quantify and compare the abundance of species in a faunal collection. A large NISP of a species could reflect a large number of animals of that species, however, it could also reflect that most or all of the skeleton of a single or a few individuals of that species are represented, or it could mean that several identifiable fragments of a single bone may have been counted (Grayson 1984:20-21). In addition to this, NISP has the

potential to be heavily biased by differences between species in the effects of taphonomic processes and collection techniques, i.e., elements of some species may be more likely to be rendered unidentifiable by weathering, disturbance by scavengers or bulldozers, and/or butchering practices, thus excluding them from consideration in the NISP (Lyman 1994:47). For example, as mentioned above, many of the long bones of large animals in this collection show signs of being deliberately shattered during the processing of the carcass for use by humans; however, there is little such deliberate shattering of the long bones of, say, rabbits, and in any case, if they were being deliberately shattered, the ¼-inch screens used in this case did not pick up such small fragments.

Often, the derived value Minimum Number of Individuals (MNI), that is, the minimum number of animals of each species needed to account for the bone recovered, is used to combat the problems associated with use of NISP to measure relative abundance. This value is derived by dividing the identified specimens of a given species into left and right elements and using a count of the most abundant of these elements as the minimum number of animals of that species which are represented by the identified bone (Lyman 1994:43). However, Grayson (1984:29-49) has pointed out that MNI also has grave problems, showing that the MNI of a species in a faunal collection can be greatly altered depending on how the faunal collection is aggregated by the analyst (see Grayson 1984:34-49 for examples). That is, a large difference in MNI numbers can be produced depending on how the specimens from a site are grouped: the entire site taken as a unit, or divided by excavation unit, arbitrary level, natural level, or any other division (Grayson 1984:37). Grayson (1984:92) argued that NISP is, in fact, the best way of estimating relative abundance of species in a site, given the disadvantages of each method. Since this collection was largely recovered from 50-cm diameter shovel tests spaced 50 ft apart, and is so fragmented that only 3.88 percent could be identified to genus level,

the use of standard MNI counts would be misleading at best. MNI values would vary substantially depending on the specific way that the elements from particular areas were aggregated. Finally, MNI aggregation would substantially reduce the size of the data set; thus, MNI was not used in this analysis. This does not, however, solve the problems with NISP. The best way to illustrate the problem is to look at the 14 vertebrae of *Crotalus atrox*, the diamond-back rattlesnake, in Area B. These vertebrae, as mentioned above, were all from a single, articulated individual. On the other hand, the remaining five *C. atrox* vertebrae found in Area D were scattered, single elements, and though any two or more of them might have come from a single individual, the chances are excellent that they did not. In the latter case, NISP probably accurately depicts minimum number of individuals as well as relative abundance, while in the former, the NISP for the unit is 14 while the MNI is 1. In cases similar to the Area B *C. atrox*, the relative abundance of the species in question would be grossly overestimated.

The analysis that follows is based on NISP, as recommended by Grayson (1984); however, an attempt was made to eliminate some of the distorting effects of concentrations of bone from a single individual. Though no absolutely reliable method of doing this was found, in cases where more than 70 percent of the bone from a species came from a single unit/level, the NISP for this species was lowered to one in those unit/levels (under the assumption that the bone counted was remains from a single individual). For instance, in the case of *Crotalus atrox*, the 14 vertebrae in Area B were 73.68 percent of the *C. atrox* recovered. If the NISP of *C. atrox* for the unit/level in which these 14 vertebrae were recovered is lowered to 1, the resulting modified NISP for the entire collection becomes 6, which probably much more closely denotes the actual number of individuals represented in the collection. Limited but systematic use of this approach appears to take advantage of the best aspects of both the MNI and NISP methods. However, the degree to which it actually improves the relationship of

relative abundance derived from NISP to actual relative abundance of taxa represented in the collection cannot be verified.

Only the *Crotalus atrox* and *Odocoileus virginianus*, the white-tailed deer, had more than 70 percent of its NISP in one unit/level. The *O. virginianus* bone in one level of one shovel test numbered 14, 87.50 percent of the total NISP for deer. These bones were the phalanges and metatarsals of one foot, a few extra phalanges, and several rib and vertebra fragments, making it likely that they are the remains of a single individual. In this analysis, the *C. atrox* in Area B and *O. virginianus* in the shovel test which contained 14 bones will each be considered to have an NISP of 1. The actual NISP will appear in parentheses in any table which uses this modified NISP.

Another methodological problem is the attempt to segregate species which formed part of the diet from species which did not. Discrimination among food, non-food, and intrusive faunal material from archaeological deposits is a perennial problem, especially in multicultural settings. Although some of the San José bone may have been introduced by the natural death of small animals (rats and snakes) or the deliberate disposal of non-food carcasses (horses and dogs), all identifiable remains are included in the analysis, since any of them could have formed part of the diet at some point in the past. It should be noted, however, that the number of bones representing such animals as rats and snakes in this collection is very small.

ANALYSIS

The sample from Area A (Table 15) is too small (NISP=6) to reveal much information. The small amount, the lack of burned bone, and the highly fragmented nature of the bones recovered indicate scattered deposition, with no evidence of formal trash dumping.

Despite the fragmented nature of the collection, sufficient samples were identified from Areas B and D to make analysis worthwhile. As noted above, the remains of wall footings found in Units B-5 and B-6 indicate the south wall may not have had a gate at its western end in the Colonial period although the reconstruction has one there today. It appears then, that all of the Area B excavation units except B-4 were actually inside, or under, the original Colonial period south wall. Therefore both Areas B and D should be considered inside proveniences, and will be considered together in some of the analyses below.

Midden. An attempt was made to define bone concentration areas inside the compound walls (Area D). Table 18 shows the bone count per shovel test, based on the Area D shovel test grid, the information used to create Figure 29 in Chapter 4. The shovel tests show the highest density of bone along the central and southern portions of the B, C, and D transects and in the southeastern corner of the compound. This large area of bone concentration is probably a midden or trash dump. Shovel tests B-2, B-4, B-5, and B-6 all have greater than 200 bone pieces, more than in any other area of the compound. Shovel test B-3 was included in the high-density group because the entire B-2 to B-6 line appears to represent the densest portion of the midden which dissipates to the east. The high bone density may, however be an indication of more fragmentation rather than more trash. In order to assess the relative degree of bone fragmentation, the total bone weight from each shovel test was divided by the count, giving an average weight per piece of bone for each shovel test. These values were then averaged, yielding a mean weight per bone piece for all Area D shovel tests of .532 grams. The B-2 to B-6 shovel tests had an average bone weight of .875 grams, showing that these shovel tests have a higher-than-expected average bone weight. If the area along the B-2 to B-6 line was a trash dump area, then there may have been less post-depositional

Table 18. Bone Counts in Area D

	A	B	C	D	E	F	G	H	I
11	0	40	38	0	0	0	0	0	0
10	13	2	5	1	0	0	0	0	0
9	0	26	0	0	0	0	0	0	0
8	27	125	17	36	0	14	12	13	63
7	30	27	107	149	0	31	4	40	106
6	15	337	70	40	7	5	7	93	87
5	13	208	118	173	15	9	0	33	83
4	22	630	38	1	34	11	8	44	87
3	19	84	32	63	35	7	76	5	163
2	27	238	79	191	98	97	6	131	117
1	10	55	83	88	18	25	13	44	120

trampling damage. Table 19 displays the total bone count and total NISP for the densest part (B-2 to B-6) of the suspected midden area compared to all other bone from Area D.

A comparison of the bones from the densest part of the suspected midden (B-2- to B-6) with the rest of the bones reveals considerable differences. The percentage of identified bone in the midden is 2.67 percent, which is somewhat lower than that for all of Area D (3.20 percent). The lower identification rate may be explained by the higher percentage of cow bones present in the midden. Bones from large animals break into more unidentifiable fragments than do bones from smaller species, and even though on the average each bone fragment is heavier, the large fragments still cannot be identified as specifically cow, horse, or other large mammal.

Table 20 compares counts of the species from the midden shovel tests B-2 to B-6 with the rest of Area D, and reveals that the identified animals in the B-2 to B-6 area are, with the exception of one rabbit, one rat, and one squirrel, domesticated animals (the turkey bone may have been wild but will be assumed domesticated). In contrast, the proportion of domesticated bone from the rest of Area D is far less. This is made clearer by eliminating the species which were insignificant dietary items, leaving only the major food species, shown in Table 21. Of the major food animals, the domestic stock—cow, sheep/goat, and pig—make up 92.31 percent (36 out of 39 bones) of identified bone in the midden. In the rest of Area D only 76.19 percent (64 of 84) of the bones are from domestic stock, although there is considerably more sheep/goat present in the

Table 19. Comparison of Midden Area with the Rest of Area D

	Midden	Rest of Area D	All of Area D
Total Bone	1497	3541	5038
% of Total Bone	29.71	70.29	100.00
NISP	40	121	161

Table 20. Species Identified in Midden and the Rest of Area D

	Midden NISP	% of Total	Rest of Area D NISP	% of Total
<i>Bos taurus</i>	21	52.50	28	25.93
<i>Sus scrofa</i>	14	35.00	20	18.52
<i>Capra/Ovis</i>	1	2.50	13	12.04
<i>Canis</i> sp.	0	0.00	4	3.70
<i>Sylvilagus</i> sp.	1	2.50	10	9.26
<i>Lepus californicus</i>	0	0.00	3	2.78
<i>Odocoileus virginianus</i>	0	0.00	3	2.78
			(16)	
<i>Sigmodon hispidus</i>	1	2.50	4	3.70
<i>Oryzomys palustris</i>	0	0.00	1	.93
<i>Sciurus niger</i>	1	2.50	1	.93
<i>Equus caballus</i>	0	0.00	2	1.85
<i>Didelphis marsupialis</i>	0	0.00	3	2.78
<i>Meleagris gallopavo</i>	1	2.50	0	0.00
<i>Crotalus atrox</i>	0	0.00	5	4.63
<i>Lampropeltis getulus</i>	0	0.00	11	10.19
TOTAL	40	100.00	108	100.00
		%	(121)	%

() Actual NISP, see text

latter. Non-domesticated animals make up 23.81 percent (20 of 84) of bone from major food animals in the rest of Area D, but only 5.13 percent (2 of 39) of bone from major food animals in the midden area are wild.

There is a substantially lower proportion of nondomestic species from the midden than from outside the midden. Non-midden proveniences contain more rabbit, deer, and opossum than midden contexts. The high bone count, the large bone size, the high percentage of domesticated animal bone, and the high density of artifacts suggest that the area tested by STs B-2 to B-6 was part of a trash dump during at least a portion of the history of the mission. The differences in faunal remains seen between this high-density

area and the rest of Area D indicate that it is the result of more intensive deposition of bone from domestic stock than seen in the remainder of the compound.

As discussed in Chapter 4, the bone concentration also correlates with a similar concentration of unrefined ceramics (Figures 27 and 29) suggesting that most of the bone is Colonial in age. The midden proveniences contained 26.60 percent of the unrefined sherds (275/1034), 29.71 percent of the bone (1497/5038), and only 13.12 percent (50/381) of the refined sherds, suggesting that the bulk of the midden deposits, including the bone, relate to the Colonial period. Recall that five concentrations of refined sherds, encompassing 12 shovel tests,

Table 21. Major Food Species in the Midden Area (B2-B6) and the Rest of Area D

Species	Midden		Rest of Area D	
	NISP	% of Total Major Food Species	NISP	% of Total Major Food Species
<i>Bos taurus</i>	21 [17]	53.85 [65.38]	31 [24]	36.90 [35.29]
<i>Sus scrofa</i>	14 [7]	35.90 [26.92]	20 [17]	23.81 [25.00]
<i>Capra/Ovis</i>	1 [1]	2.56 [3.85]	13 [7]	15.48 [10.29]
<i>Sylvilagus</i> sp.	1 [1]	2.56 [3.85]	10 [10]	11.90 [14.71]
<i>Lepus californicus</i>	0 [0]	0.00 [0.00]	3 [3]	3.57 [4.41]
<i>Odocoileus virginianus</i> *	0 [0]	0.00 [0.00]	3 [3] (16)	3.57 [4.41]
<i>Sciurus niger</i>	1 [0]	2.56 [0.00]	1 [1]	1.19 [1.47]
<i>Didelphis marsupialis</i>	0 [0]	0.00 [0.00]	3 [3]	3.57 [4.41]
<i>Meleagris gallopavo</i>	1 [0]	2.56 [0.00]	0 [0]	0.00 [0.00]
Total	39 [26]	100.00%	84 [68] (97)	100.00%

Numbers in brackets refer to totals after subtracting the bone from shovel tests in which large quantities of post-Colonial refined wares are present.

*NISP of *O. virginianus* is adjusted as described in text. Number in parentheses is actual count.

were identified in Chapter 4 (Figure 28). Two of these shovel tests, B-3 and B-6, are from the midden, the rest are from outside the midden (A-2, A-3, A-4, A-7, A-11, B-8, F-1, G-1, I-5, and I-6). Removal of the bone data from these 12 shovel tests, on the assumption that they contained substantial proportions of post-Colonial bone, results in the recalculated NISP and percentages shown in brackets in Table 21. The essential pattern is unchanged. The midden bone as well as the non-midden bone is heavily

dominated by domestic livestock, and still more nondomestic species are from outside the midden. Thus, when the 12 shovel tests with high numbers of refined ware are removed, presumably leaving only bone which is Colonial in age, the difference between the midden area and the rest of Area D remains, suggesting that the difference was the result of behavior in the Colonial period and is not a reflection of changing practices in post-Colonial times.

Colonial Bone Deposits. In order to check the validity of this approach, completely unmixed Colonial deposits were isolated. Each level of each excavation unit in Area B and each shovel test in Area D were examined. Those levels which contained only Colonial period artifacts were identified as Colonial deposits while the remaining levels which contained some post-Colonial artifacts are referred to as mixed, although it appears that the proportion of post-Colonial material in these mixed deposits in most parts of the compound is minor. A detailed discussion of the Colonial levels is given in Chapter 4. Table 22 displays the total bone count and the total NISP for both categories.

In order to compare the bone known to be from unmixed Colonial levels with bone believed to be largely from the Colonial period, the data from the 12 shovel tests with high counts of refined ceramics was removed from the mixed category. The species breakdown for the Colonial and adjusted mixed deposits from Areas B and D are presented in Table 23. Figure 32 is a graphic representation of the information in Table 22. There is clearly little difference between the two categories once these adjustments have been made. In species with more than 10 total NISP, the sole exception is the high percentage of pig in the mixed category. Otherwise, the comparison seems to validate the assumption

Table 22. Bones from the Colonial and Mixed Deposits, Areas B and D

	Colonial	Mixed	Total
Total Bone	1,736	5,246	6,982
% of Total Bone	24.86	75.14	100
NISP	100	166	266

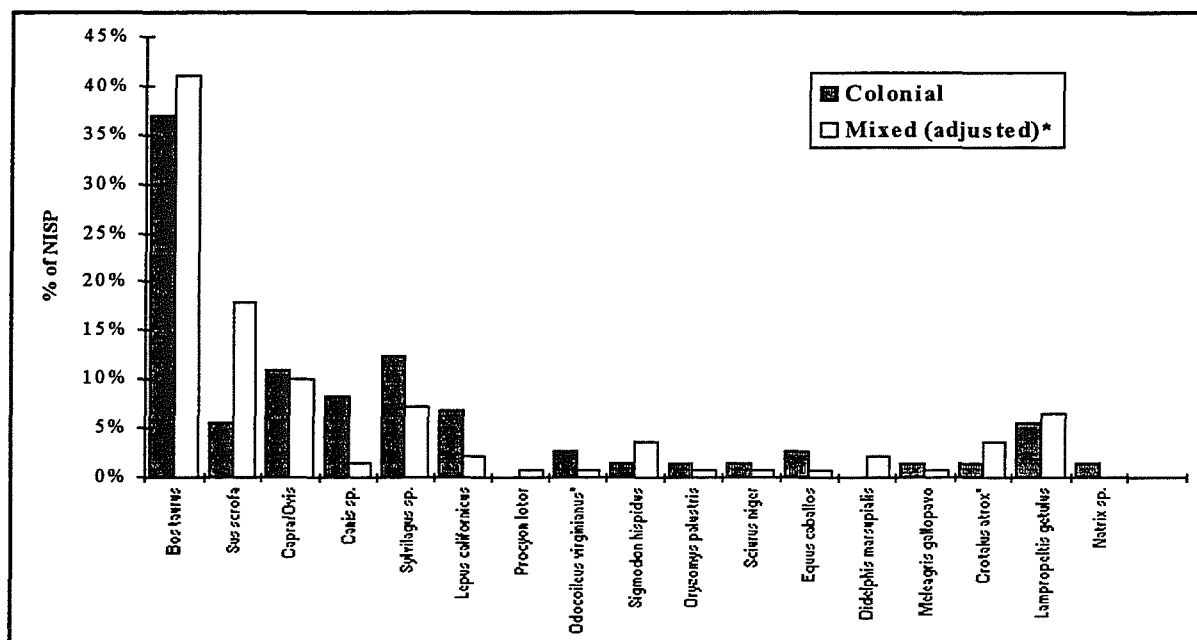


Figure 32. Graph of Table 22, comparing bone from Colonial levels and mixed levels from which bone associated with high numbers of refined ceramics have been removed. *Mixed category was adjusted by removing bone from shovel tests with large numbers of refined earthenwares. In addition, NISP for *C. atrox* and *O. virginianus* was adjusted as described in text.

Table 23. Identified Species in Colonial and Mixed Levels of Areas B and D, Excluding Shovel Tests with High Densities of Refined Ceramics

Species	Colonial		Adjusted Mixed Levels	
	NISP	%	NISP	%
<i>Bos taurus</i>	27	36.99	57	41.01
<i>Sus scrofa</i>	4	5.48	25	17.99
<i>Capra/Ovis</i>	8	10.96	14	10.07
<i>Canis</i> sp.	6	8.22	2	1.43
<i>Sylvilagus</i> sp.	9	12.33	10	7.19
<i>Lepus californicus</i>	5	6.85	3	2.16
<i>Procyon lotor</i>	0	0.00	1	0.72
<i>Odocoileus virginianus</i> *	2 (15)	2.74	1	0.72
<i>Sigmodon hispidus</i>	1	1.37	5	3.60
<i>Oryzomys palustris</i>	1	1.37	1	0.72
<i>Sciurus niger</i>	1	1.37	1	0.72
<i>Equus caballus</i>	2	2.74	1	0.72
<i>Didelphis marsupialis</i>	0	0.00	3	2.16
<i>Meleagris gallopavo</i>	1	1.37	1	0.72
<i>Crotalus atrox</i> *	1 (14)	1.37	5	3.60
<i>Lampropeltis getulus</i>	4	5.48	9	6.47
<i>Natrix</i> sp.	1	1.37	0	0.00
Total NISP	73 (99)	100%	139	100%

The Adjusted Mixed category excludes data from shovel tests with high counts of refined ceramics (see text).

*NISP of *C. atrox* and *O. virginianus* is adjusted as described in text. Number in parentheses is actual NISP.

that, with the exception of the shovel tests containing large numbers of refined ceramics, the bone in Area D is largely Colonial in age.

Eighteenth vs. Nineteenth Century. The final analysis compares bone from the 12 shovel tests containing large numbers of refined

earthenwares, suspected to be largely nineteenth century in origin, with the rest of the bone from Areas B and D, as shown in Table 24. It should be considered with caution, since the total NISP for the presumed nineteenth-century shovel tests is only 28, while the rest of Areas B and D contained 239 identified bones. Some of the

differences seen in Table 24 may be a result in different sample sizes.

The data in Table 24 indicate that nineteenth-century inhabitants at San José were using domestic species exclusively, while only 67.79 percent of the presumed eighteenth-century bone is from domesticated food animals. The percentage of cattle remains virtually the same,

while nineteenth-century inhabitants seem to have replaced wild food resources with increased numbers of pig and goat/sheep.

Table 25 shows percentages of domestic stock—cow, pig, and goat/sheep—from the presumed nineteenth-century bone compared to the percentage of these animals in the midden area (excluding bone shovel tests with high counts of

Table 24. Comparison of NISP from Presumed Eighteenth- and Nineteenth-century Bone

Species	Presumed 19th century		Rest of Areas B and D	
	NISP	%	NISP	%
<i>Bos taurus</i>	11	39.29	95	39.75
<i>Sus scrofa</i>	10	35.71	39	16.32
<i>Capra/Ovis</i>	6	21.43	28	11.72
<i>Canis sp.</i>	0	0.00	8	3.35
<i>Sylvilagus sp.</i>	0	0.00	19	7.95
<i>Lepus californicus</i>	0	0.00	8	3.35
<i>Procyon lotor</i>	0	0.00	1	0.42
<i>Odocoileus virginianus</i> *	0	0.00	3 (16)	1.26
<i>Sigmodon hispidus</i>	0	0.00	6	2.51
<i>Oryzomys palustris</i>	0	0.00	2	0.84
<i>Sciurus niger</i>	0	0.00	2	0.84
<i>Equus caballus</i>	1	3.57	4	1.67
<i>Didelphis marsupialis</i>	0	0.00	3	1.26
<i>Meleagris gallopavo</i>	0	0.00	1	0.42
<i>Crotalus atrox</i>		0.00	6 (19)	2.51
<i>Lampropeltis getulus</i>	0	0.00	13	5.44
<i>Natrix sp.</i>	0	0.00	1	0.42
Total NISP	28	100%	239 (265)	100%

*NISP of *C. atrox* and *O. virginianus* is adjusted as described in text. Number in parentheses is actual count.

Table 25. Comparison of Percentages of Domestic Stock from the Presumed Nineteenth-century and Presumed Colonial Bone from the Midden Area

Species	% of presumed 19th-century bone (see Table 24)	% of presumed 18th-century bone from the midden (see Table 21)
<i>Bos taurus</i>	39.29	65.38
<i>Sus scrofa</i>	35.71	26.92
<i>Capra/Ovis</i>	21.43	3.85
Total	96.43	96.15

refined wares). Though both categories contain more than 95 percent of the total bone from these areas, the proportions are quite different, especially in the reduction of the relative abundance of cattle and the large increase in goat/sheep. The reason for this is not immediately apparent, and deserves further research. Again, these observations concerning the presumed nineteenth-century bone must be viewed with caution, however, they do suggest an area in which future analyses can reveal much about changing diets at San José.

CONCLUSION

We have suggested that most of the bone in Areas B and D can be associated with the Colonial period and that these assemblages are heavily dominated by cow with lesser amounts of pig and goat/sheep. Nondomesticated species are present, with Leporidae (rabbits) and deer dominating. Other economic species include squirrel, opossum, raccoon, and turkey, all represented by insignificant quantities.

A separate analysis of the midden demonstrated that it was probably largely Colonial in origin and that there were substantially fewer nondomesticated species present in the midden in

comparison to the rest of Area D. This difference is even more noticeable when shovel tests containing large numbers of refined earthenwares were removed from consideration. The midden, therefore, represents a set of behaviors during Colonial times substantially different from those which resulted in the deposits of bone in the rest of the mission compound.

The bone from those levels which contained only Colonial period artifacts was analyzed separately and compared to all the other bone from Areas B and D, excluding bone from presumed nineteenth-century contexts. The results indicate that, with the exception of larger amounts of pig in the mixed category, there is little difference between the two groups. This provides added evidence that the bone at San José is largely of Colonial origin, as indicated by the correlation between bone count and unrefined ceramics.

Finally, bone presumed to be of nineteenth-century origin was compared to that presumed to be of eighteenth-century origin. Increasing use of pig and goat/sheep was noted, as was the absence of wild animals. When compared to the midden area, the nineteenth-century bone was found to have substantially less cow and more goat/sheep.

This analysis has demonstrated that cattle played the largest role of any species in the subsistence base of the Colonial period occupants of San José as indicated in the archival records. Pig and sheep/goat were also important with occasional use of nondomesticated species, including minor use rabbit and deer and rare use of opossum, raccoon, and squirrel. Turkey, whether domesticated or not, was present as well. The large cattle herds maintained at the mission which were apparently being butchered and distributed in substantial quantities may have served as a major inducement for Native Americans to settle, at least temporarily, at the mission.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

The study of land use and ownership on the south side of the mission included in this report provides important information for understanding the evolution of land use around the entire perimeter of the mission and, by inference, at the other San Antonio missions. This is also the first time that documentary research has been applied to the plaza of the mission in an attempt to identify locations of specific mission activities. The fact that we have been unable to tie activities to specific locations with the limited testing done during this project is an indication that more documentary research is necessary to determine exactly what to expect at these sites and that more extensive archaeological excavations will be needed in specific areas in order to identify them.

Testing in Area A has confirmed that the corral structure recorded by the SDHPT in 1984 does not extend south of the curb on Napier Avenue. Testing in the route of the relocation of Napier Avenue and in the footprint of the planned visitors' center showed no evidence of eighteenth- or nineteenth-century structures. Therefore, we recommend no further excavation in this area, but suggest that construction of the foundation of the visitors' center and the parking lots be monitored by an archaeologist. Because evidence of the corral may remain beneath Napier Avenue, removal and regrading of the road should also be monitored.

Testing in Area B examined the road bed of Mission Road as it ran diagonally through the plaza and continued out the southeast gate. Cross-sections of the road and road remnants examined in the gate area suggest that the road bed was constructed of imported caliche gravels, probably in the late-nineteenth century. This bears out the known date of construction in 1888. Excavations in the vicinity of the gate revealed wall footings across the present gate opening. These footings had been covered by wall collapse and then by construction of the road. Apparently the reconstruction efforts

begun in 1935 mistakenly assumed the extant roadway was associated with a Colonial-period gate where there was none. The excavation adjacent to the southeast corner bastion indicated it, too, was a product of the reconstruction with no historical basis. No changes are recommended in the plans for the visitors' center landscaping based on these findings.

Test trenches in Area C confirmed that traces were still visible of the acequia outside the east wall of the mission, north of Napier Avenue. However, the section of the acequia south of Napier and parallel to Mission Road has been eliminated by a gravel quarry. Archaeological monitoring will be necessary during reconstruction of the acequia north of Napier Avenue, as planned in the landscaping for the parking lots.

The gridded shovel testing in Area D failed to positively identify features, other than Pyron and Mission roads, that the background research suggested should have been within the mission plaza. However, a midden in the southwest quadrant (Feature 8) strongly suggests the use of this portion of the plaza during both the eighteenth and nineteenth centuries. Relatively undisturbed remnants of Colonial deposits were found to remain intermittently throughout the plaza, but particularly in the south end, generally beginning at 12–24 inches below the present surface and extending 12–25 inches in depth. Any plans for alteration of drainage patterns in the plaza must be carefully designed so not to impact these deposits. Generally, if modifications are limited to the least sensitive portions of the complex including the top 12 inches of sediment throughout the compound and the central portions of the compound (Rows 5–8 in Transects E–G), the potential impact would be substantially reduced. The most sensitive areas include the area between the church and the granary, the western half of the compound, and the intact Colonial levels. All planned subsurface impacts should be coordinated with professional

archaeological and Texas Historical Commission consultations so that the specifics of each project can be considered with what is currently known about the archaeological deposits.

A number of additional projects are suggested in order to identify specific areas and structures where specific mission-related activities took place within the plaza. Chemical analysis such as phosphate testing may be useful in determining more exactly the location and orientation of the Indian housing at various periods during the history of the site. A detailed study of the processes and tools involved in Colonial sugar making, brick manufacture, carpentry, food and fiber processing, etc. is recommended in order to be able to identify the sites of these activities when they are found.

Finally, more extensive archaeological excavations should be centered on areas and/or stone wall fragments expected to relate to various activities within the plaza, particularly in the midden, intact Colonial-period deposits, and Indian houses. It would also be advisable to conduct archaeological trenching in the vicinity of the known locations of Indian housing to search for Gov. Barrios's flowing water and bathing pools, traces of which are surely still present below the surface if indeed they ever existed.

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APPENDIX A: ADDITIONAL TESTING IN AREA A

On April 4, 1994 the CAR crew returned to Mission San José to do further testing in Area A, as requested by the Department of Antiquities Protection of the Texas Historical Commission (DAP). An area 50 x 25 ft, centered on the location of the proposed corral recorded by the SDHPT (Figure 33), was excavated using a Gradeall machine. The purpose of the excavation was to remove the soil in search of indications that the corral extended south of the south edge of the street into Area A.

Once the grass root level was removed, the excavation consisted of slowly scraping and removing the soil with the bucket of the machine over the entire area in two-inch levels to a depth of 30 inches below the surface. The 0-4 inch level consisted of grass roots and bits of broken glass and ring tabs of recent vintage. Below this level, the soil was sterile and showed no evidence of stratification. The only disturbances found were those caused by the construction of the curb at the edge of Napier Street, traces of

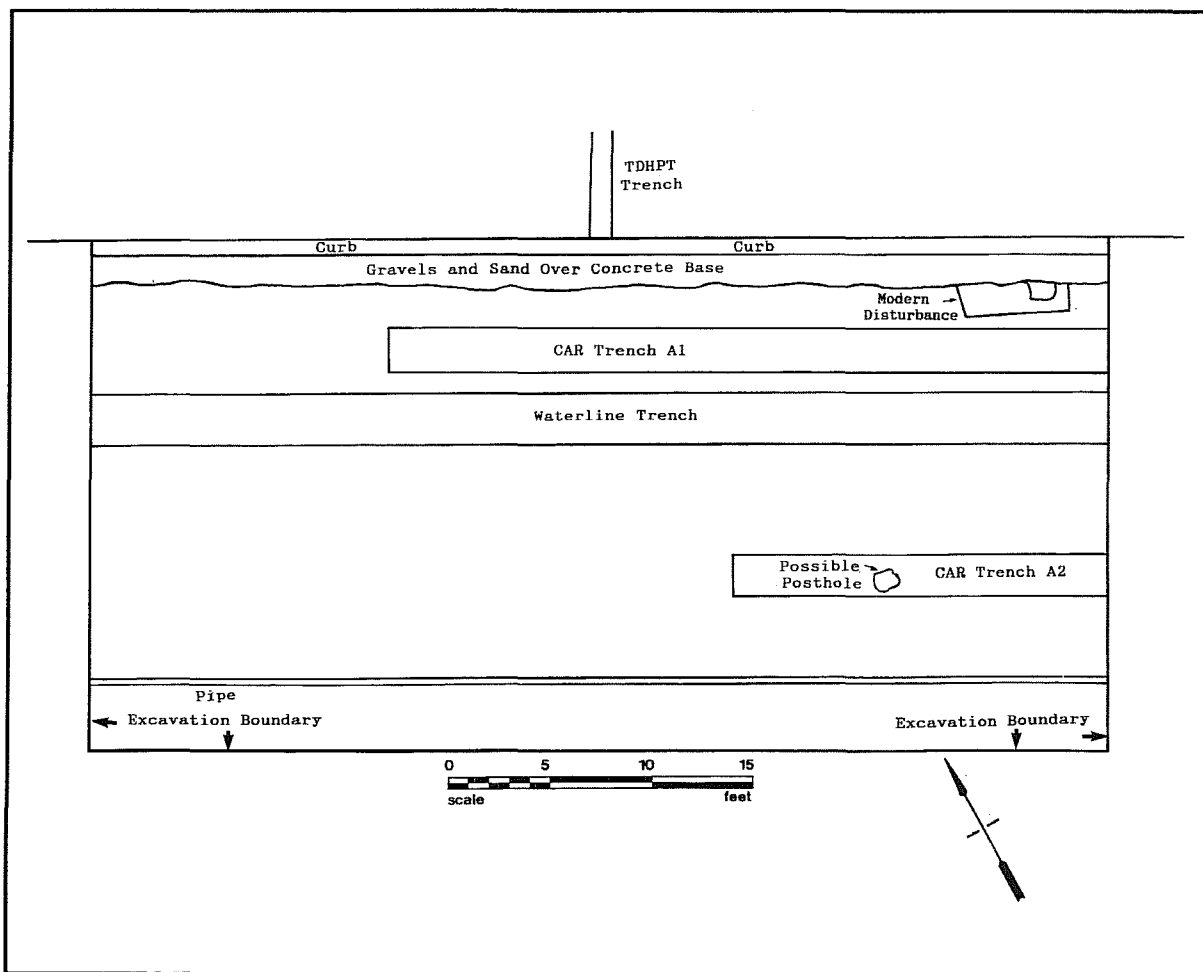


Figure 33. *Additional testing in Area A.*

the previous CAR test trenches, a water line trench which ran parallel to and approximately eight feet from the curb, a shallow water pipe near the south edge of the area, and a relatively recent unidentified disturbance at the east end of the area. The latter disturbance contained chunks of asphalt paving and a large concrete intrusion, as well as a sherd of a twentieth-century, Mexican-made flower pot; several fragments of a clear glass bottle; a rusted tin can; and a few fragments of animal bone. No evidence was found of a continuation of the corral found by the SDHPT. The presence of a number of gopher burrows at various depths suggest that the "possible posthole" previously found in Trench A2 was probably also a gopher burrow.

When the testing had progressed to the 30-inch level, six inches below the level at which the SDHPT feature was found, excavation was stopped and a measured drawing was made of the entire investigation area. Staked flagging tape was installed around the open excavation until the site could be examined by DAP personnel, as they had requested.

Nancy Kenmotsu of DAP met Anne Fox and Wayne Cox on the site on April 18, 1994. She was satisfied that no indications that the corral trench and postholes continued south of the curb were present, and gave permission for the excavation to be backfilled.

**APPENDIX B:
ARTIFACT PROVIENCES**

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Table B1. Ceramic Proveniences

Area	Unit	Depth	UNREFINED							REFINED														Area Total
			Goliad	Valero	Galera	Lead-glazed	Burnished	Majolica	Olive Jar	Stoneware	Undec. Whiteware	Hand-painted	Sponge	Transfer	Decal	Banded Slip	Edge-decorated	Luster	Plaincolored	Yellowware	Band & Line	Porcelain	Other	
A	ST 2										1													
A	ST 3																			8				
A	ST 5										2													
Area A Totals			0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	8	0	0	0	11
B	B1	0-10	3					2																
B	B1	10-15	7			1		1														1		
B	B1	15-20	33																					
B	B1	20-25	54																					
B	B2	0-10	4				1					12												
B	B2	10-20				1					2													
B	B2	20-25	3					1																
B	B3	0-10																	1					
B	B3	10-20	57								2													
B	B3	20-25	16																					
B	B3	25-27	3																					
B	B4	0-10									2								3				1	
B	B4	10-15	9												1							1		
B	B4	15-20	4																					
B	B4	20-25	26			1		1														1		
B	B4	25-30	23			1		1																
B	B4	30-35	32																					
B	B5	0-10	3							1	1													
B	B5	10-15									1													
B	B5	15-20																				2		
B	B5	20-25	3			1		1																
B	B5	25-30	8																					
B	B5	30-35	2																					
B	B6	0-10									1													
B	B6	10-15	1																					
B	B6	15-20	1																					
B	B6	20-25	1																					
B	B6	25-38	4																					
Area B Totals			297	0	0	5	1	7	0	1	9	12	0	0	1	0	0	0	4	0	0	5	1	343
C	TR2										1													
C	TR4										1		2					1				3		
Area C Totals			0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	1	0	0	0	3	8

Table B1. cont.

			UNREFINED							REFINED														
Area	Unit	Depth	Goliad	Valero	Galera	Lead-glazed	Burnished	Majolica	Olive Jar	Stoneware	Undec. Whiteware	Hand-painted	Sponge	Transfer	Decal	Banded Slip	Edge-decorated	Luster	Plain-colored	Yellowware	Band & Line	Porcelain	Other	Area Total
D	ST A1	0-12	3									1	1	1				1			1	1		
D	ST A2	0-8										1						1						
D	ST A4	0-12									2													
D	ST A5	0-12									1	1												
D	ST A7	0-12	1							3	19	1		2								2		
D	ST A8	0-12									1													
D	ST A11	0-12				2				1	18	5	2	3		5	1	1						
D	ST A2	8-11	3							1	9			1										
D	ST A3	10-17	3							1	9			1										
D	ST A4	11-24	5					1			8	2		1		3						2		
D	ST A5	12-24	1								1					3								
D	ST A7	12-19	2								2	1												
D	ST A8	12-15	1																					
D	ST A11	12-18									1													
D	ST A2	11-23	12		1	3										1								
D	ST A3	17-24	1																					
D	ST A5	24-32	1																					
D	ST A7	19-27	9								4	2	1			2						1		
D	ST A8	15-24	2																					
D	ST A10	17-18	1																					
D	ST B1	0-12	12	4	1			2		3	1				1									
D	ST B2	0-10	20					5		2		1												
D	ST B3	0-12	16			1				6	4		2				1					2		
D	ST B4	0-12	59	2		4				1	1	1												
D	ST B5	0-12	5	3		1				3				2		1								
D	ST B6	0-10	6							2	1	1	1			1								
D	ST B7	0-12	4	1																				
D	ST B8	0-12	4		1					5				3										
D	ST B11	0-12	2																					
D	ST B2	10-13						1																
D	ST B3	12-22	4																					
D	ST B4	12-24	33			2		1																
D	ST B5	12-24	14					1		1						1								
D	ST B6	10-22	46		5	28		8		8	5					2								
D	ST B7	12-24	2							1														
D	ST B8	12-20	5							2				1								1		
D	ST B11	12-18	1																					
D	ST B2	13-16	3																					
D	ST B6	22-28	1																					
D	ST B9	20-27	4			1		1		1														
D	ST B2	16-23	7																					

Table B1. cont.

			UNREFINED							REFINED															
Area	Unit	Depth	Goliad	Valero	Galera	Lead-glazed	Burnished	Majolica	Olive Jar	Stoneware	Undec. Whiteware	Hand-painted	Sponge	Transfer	Decal	Banded Slip	Edge-decorated	Luster	Plain-colored	Yellowware	Band & Line	Porcelain	Other	Area Total	
D	ST C1	0-12	17			1		1			3	4													
D	ST C2	0-12	4																						
D	ST C3	0-12												1											
D	ST C4	0-10	5					1																	
D	ST C6	0-12									1														
D	ST C7	0-12									1														
D	ST C8	0-12	4					1			1											2			
D	ST C11	0-12				1										1	1								
D	ST C1	12-24	4								1		1												
D	ST C2	12-20	14			1								1											
D	ST C3	12-26	16								1														
D	ST C5	12-21	19																						
D	ST C6	12-20	2					1																	
D	ST C7	12-20	41				1	1																	
D	ST C8	12-23	5			1					2														
D	ST C11	12-18	4								1														
D	ST C6	20-24	4																						
D	ST D1	0-12	3																						
D	ST D2	0-12	4								2											1			
D	ST D4	0-12	1																						
D	ST D5	0-12	1											1											
D	ST D6	0-12	1																						
D	ST D1	12-24	17																						
D	ST D2	12-24	9																						
D	ST D3	12-24	17			2						1													
D	ST D4	12-24	2																						
D	ST D5	12-24	72																						
D	ST D6	12-24	7	1																					
D	ST D7	12-24	32								1														
D	ST D8	12-25	4																						
D	ST D5	24-26	2																						
D	ST E2	0-12	5			2					1	2													
D	ST E3	0-12	1																						
D	ST E5	0-12	3			1																			
D	ST E6	0-12	2																						
D	ST E7	0-12	1																						
D	ST E1	12-24	12			1		1																	
D	ST E2	12-24	4																						
D	ST E4	12-24	8								1														
D	ST E5	12-15	1																						
D	ST E7	12-16								1															
D	ST E3	15-28	10																						
D	ST E5	15-23	5																						
D	ST E6	18-22	3																						

Table B1. cont.

			UNREFINED							REFINED														
Area	Unit	Depth	Goliad	Valero	Galera	Lead-glazed	Burnished	Majolica	Olive Jar	Stoneware	Undec. Whiteware	Hand-painted	Sponge	Transfer	Decal	Banded Slip	Edge-decorated	Luster	Plain-colored	Yellowware	Band & Line	Porcelain	Other	Area Total
D	ST E6	22-27	3																					
D	ST E7	24-26	2																					
D	ST F1	0-12								1	7	2	2											
D	ST F3	0-12				2																		
D	ST F4	0-12										1												
D	ST F7	0-12									1													
D	ST F1	12-24	11																					
D	ST F2	12-23	6	1																				
D	ST F5	12-22									1													
D	ST F6	12-24				1																		
D	ST F8	12-18										1												
D	ST F1	24-33	1		1	2					2					1								
D	ST F4	17-23	1																					
D	ST F7	18-24	2						1						1									
D	ST F4	23-27	2					1																
D	ST F7	24-30	1																					
D	ST G1	0-12	1							1					2	1						6		
D	ST G4	0-12	2			1		1			2											1		
D	ST G5	0-10									1	1												
D	ST G8	01-2									2						1							
D	ST G1	12-14	4																					
D	ST G3	12-26	12																					
D	ST G4	12-24	4								1													
D	ST G5	10-18									2													
D	ST G7	12-24	3																					
D	ST G1	14-25	2																					
D	ST G2	15-22	3																					
D	ST H2	0-8	1																					
D	ST H3	0-12	5																					
D	ST H4	0-12	2								1		1									3		
D	ST H5	0-12									1													
D	ST H6	0-10	1			3				1	1	1												
D	ST H7	0-12	2																					
D	ST H8	0-12	1								1	2												
D	ST H1	12-24	2																					
D	ST H2	8-15						1																
D	ST H4	12-26	1								1													
D	ST H6	10-22	11					2			2											1		
D	ST H7	12-26	5					2																
D	ST H8	12-24												1		1							1	
D	ST H2	15-28	8							1					1									
D	ST H3	19-28	2																					
D	ST H6	22-24	1					1																

Table B1. cont.

Area	Unit	Depth	UNREFINED							REFINED														Area Total
			Goliad	Valero	Galera	Lead-glazed	Burnished	Majolica	Olive Jar	Stoneware	Undec. Whiteware	Hand-painted	Sponge	Transfer	Decal	Banded Slip	Edge-decorated	Luster	Plain-colored	Yellowware	Band & Line	Porcelain	Other	
D	ST I1	0-12	2								2													
D	ST I2	0-12																				1		
D	ST I3	012	6	1												1								
D	ST I5	0-9									2													
D	ST I6	0-12	4	1		1					4													
D	ST I8	0-12	1								2													
D	ST I1	12-24	3								2													
D	ST I2	12-24	15			3																		
D	ST I3	12-24	31	1		2		2																
D	ST I4	12-18	16					1																
D	ST I5	9-14		1		1				1	12	2												
D	ST I6	12-18	3	1						1	7	2	2											
D	ST I7	12-28	12	1							1	1		2									1	
D	ST I8	12-24	10			1								1								1		
D	ST I1	24-26	11			1																		
D	ST I2	24-29	4																					
D	ST I3	24-30	1																					
D	ST I4	18-26	3																					
D	ST I5	14-24	2			4		1		1	16	2	4											
D	ST I6	18-24	6								1	1	1											
D	ST I5	24-30				1					1	1												
Area D Totals			891	18	9	76	1	38	1	13	203	50	18	26	5	24	4	2	0	0	1	25	2	1407
GRAND TOTAL			1188	18	9	81	2	45	1	14	216	63	18	28	6	24	4	2	5	8	1	30	6	1769

Table B2. Glass Proveniences

	Clear	"Black"	Green	Brown	Aqua	Blue	White	Other	Total	% of Total
Area A										
ST# 2	5			1					6	1.74%
ST# 3	54			4					58	16.86%
ST# 4	39		2	18	1		1		61	17.73%
ST# 5	9			1					10	2.91%
ST# 6	87			48					135	39.24%
ST# 7	2			31					33	9.59%
ST# 9			1						1	0.29%
ST# 11				3					3	0.87%
ST# 12				37					37	10.76%
Total	196	0	3	143	1	0	1	0	344	
% of Total	56.98%	0.00%	0.87%	41.57%	0.29%	0.00%	0.29%	0.00%		
Area B										
B2/1	129		44	213			1		387	16.59%
B1/1	2		3	2					7	0.30%
B4/1	343		124	259	15				741	31.76%
B3/1	122		54	232	11		6		425	18.22%
B2/2	15		2	21			1		39	1.67%
B2/3	2			5				1	8	0.34%
B1/4					1				1	0.04%
B2/4				1			1		2	0.09%
B3/2	20			7	1				28	1.20%
B4/2	62		1	42	3				108	4.63%
B4/3	2				1				3	0.13%
B3/3	1								1	0.04%
B4/4	3								3	0.13%
B4/5	1								1	0.04%
B5/1	28		3	78	9				118	5.06%
B6/1	78		36	155	10	2			281	12.04%
B5/2	31		2	38	16	1			88	3.77%
B6/2	39		3	25	1				68	2.91%
B5/3	5								5	0.21%
B6/3	3		2				1		6	0.26%
B5/3	5			4					9	0.39%
B5/4				1					1	0.04%
B6/4	1						1		2	0.09%
B5/5									0	0.00%
B6/5							1		1	0.04%
Totals	892	0	274	1083	68	3	12	1	2333	
% of Total	38.23%	0.00%	11.74%	46.42%	2.91%	0.13%	0.51%	0.04%		

Table B2. cont.

	Clear	"Black"	Green	Brown	Aqua	Blue	White	Other	Total	% of Total
Area C										
Backhoe# 2				1					1	7.14%
Backhoe# 3	1				3				4	28.57%
Backhoe# 4	6			1				2	9	64.29%
Totals	7	0	0	2	3	0	0	2	14	
% of Totals	50.00%	0.00%	0.00%	14.29%	21.43%	0.00%	0.00%	14.29%		
Area D										
A3/1	5			2					7	1.00%
A3/2	15			6	5				26	3.72%
A4/1	1								1	0.14%
A4/2	9		6						15	2.15%
A4/3				2					2	0.29%
A5/1									0	0.00%
A5/2	8		4	1					13	1.86%
A6/3				2					2	0.29%
A6/4	1	1		4	5				11	1.58%
A7/1	32			3	3		1		39	5.59%
A7/2	7		1	1			1		10	1.43%
A7/3	3		4	1					8	1.15%
A8/1	4								4	0.57%
A8/3	4		1	3					8	1.15%
A9/1	1								1	0.14%
A10/1					1				1	0.14%
A10/2	2								2	0.29%
A11/1	5		6	1	1				13	1.86%
B1/1	3		1					1	5	0.72%
B2/1	1		1	1				4	7	1.00%
B2/2	1						1		2	0.29%
B2/3				1					1	0.14%
B3/1	11	1	2	2	1				17	2.44%
B3/2									0	0.00%
B4/1	2			2	2				6	0.86%
B4/2	1								1	0.14%
B5/1	3		1		1				5	0.72%
B5/2	1								1	0.14%
B6/1	3		3			2			8	1.15%
B6/2	1		1	1					3	0.43%
B6/3									0	0.00%

Table B2. cont.

	Clear	"Black"	Green	Brown	Aqua	Blue	White	Other	Total	% of Total
B7/1		1							1	0.14%
B8/1	4		3	1	2				10	1.43%
B8/2	1		1						2	0.29%
B9/1							1		1	0.14%
B9/2	2			1					3	0.43%
B10/1	1								1	0.14%
B11/1	2		1						3	0.43%
B11/2									0	0.00%
C11/1			4	1					5	0.72%
C2/1	7			1	1			1	10	1.43%
C2/2	10		2	1	1				14	2.01%
C3/1	3								3	0.43%
C3/2			1	1	1				3	0.43%
C4/1	3			1					4	0.57%
C5/1	1								1	0.14%
C6/1	3								3	0.43%
C6/2	1						1	2	4	0.57%
C7/1	2				1				3	0.43%
C7/2	1						1		2	0.29%
C8/1	10		1	1					12	1.72%
C8/2	8			5	1				14	2.01%
C9/2	2								2	0.29%
C9/3	3								3	0.43%
D1/1	1			1					2	0.29%
D2/1	2		7	2					11	1.58%
D3/1				1					1	0.14%
D3/2	4								4	0.57%
D4/1	4		2	1					7	1.00%
D5/1	3		2						5	0.72%
D5/2	3			1					4	0.57%
D7/2			1						1	0.14%
D8/2	2								2	0.29%
D10/3	2								2	0.29%
E1/2	1				1				2	0.29%
E2/1	16		1						17	2.44%
E3/1			2						2	0.29%
E3/3	2		1						3	0.43%
E4/2	3								3	0.43%
E5/1	2								2	0.29%
E5/2	6			1					7	1.00%
E5/3			1	1					2	0.29%
E8/3	1								1	0.14%

Table B2. cont.

	Clear	"Black"	Green	Brown	Aqua	Blue	White	Other	Total	% of Total
F1/1	10		3	3	6				22	3.17%
F1/2	6		1						7	1.01%
F1/3			1						1	0.14%
F2/2	3								3	0.43%
F3/1	2								2	0.29%
F4/3	1								1	0.14%
F4/4	3			2					5	0.72%
F5/1	1								1	0.14%
F6/1			35						35	5.04%
F6/2				1					1	0.14%
F8/2	3								3	0.43%
F8/3	6			3	1				10	1.44%
G1/2			1						1	0.14%
G2/1	1		1	1					3	0.43%
G2/2	2			1	1				4	0.58%
G2/3				1					1	0.14%
G3/2	1			1					2	0.29%
G4/1	7				1				8	1.15%
G4/2	1								1	0.14%
G5/1	2		1						3	0.43%
G5/2	4								4	0.58%
G5/3	1								1	0.14%
G6/1	1		1						2	0.29%
G6/2								1	1	0.14%
G7/2	7		1						8	1.15%
G8/1	1		1						2	0.29%
G8/2				1					1	0.14%
H2/3	3								3	0.43%
H3/1	1								1	0.14%
H3/2	1								1	0.14%
H4/1	11		2		1				14	2.01%
H4/2	1		1						2	0.29%
H5/1				1					1	0.14%
H5/2	1								1	0.14%
H6/1	1								1	0.14%
H6/2			1						1	0.14%
H7/1	1			1					2	0.29%
H7/2	1								1	0.14%
G1/2			1						1	0.14%
G2/1	1		1	1					3	0.43%
G2/2	2			1	1				4	0.58%
G2/3				1					1	0.14%

Table B2. cont

	Clear	"Black"	Green	Brown	Aqua	Blue	White	Other	Total	% of Total
G3/2	1			1					2	0.29%
G4/1	7				1				8	1.15%
G4/2	1								1	0.14%
G5/1	2		1						3	0.43%
G5/2	4								4	0.58%
G5/3	1								1	0.14%
G6/1	1		1						2	0.29%
G6/2								1	1	0.14%
G7/2	7		1						8	1.15%
G8/1	1		1						2	0.29%
G8/2				1					1	0.14%
H2/3	3								3	0.43%
H3/1	1								1	0.14%
H3/2	1								1	0.14%
H4/1	11		2		1				14	2.01%
H4/2	1		1						2	0.29%
H5/1				1					1	0.14%
H5/2	1								1	0.14%
H6/1	1								1	0.14%
H6/2			1						1	0.14%
H7/1	1			1					2	0.29%
H7/2	1								1	0.14%
H8/1			1						1	0.14%
H8/2			1						1	0.14%
I1/1	13			1	1				15	2.16%
I1/2			1						1	0.14%
I2/1	2								2	0.29%
I3/1	3								3	0.43%
I4/1	2								2	0.29%
I4/2			1						1	0.14%
I5/1	3		1						4	0.58%
I5/2	9		3						12	1.73%
I5/3	4		5	1	2	1			13	1.87%
I5/4	1		1						2	0.29%
I6/1			3		6				9	1.29%
I6/2	6					1		1	8	1.15%
I6/3	2		1						3	0.43%
I7/1	2			1					3	0.43%
I7/2	3		2						5	0.72%
I8/2	21		3	3					27	3.88%
Totals	412	3	137	77	46	4	6	10	695	
% of Total	59.28%	0.43%	19.71%	11.08%	6.62%	0.58%	0.86%	1.44%		

Table B3. Lithic Debitage Data

Area	Unit	Level	Flake Type ¹	Size Category ²	Dorsal Scar Count	Notes
B	B1	IV	3	3	5	
B	B3	II	3	3	-	
B	B3	II	2	3	1	
B	B3	II	2	3	-	
B	B3	II	3	3	5	
B	B3	II	2	3	2	
B	B3	II	3	3	3	
B	B5	I	1	5	-	granular chert
B	B5	I	2	5	2	
B	B5	IV	3	2	-	
B	B6	I	3	3	3	
B	B6	II	2	2	-	
B	B6	II	2	3	2	
B	B6	II	3	2	3	
B	B6	II	3	2	2	
D	A11	I	2	3	2	
D	A11	II	3	3	3	
D	A2	III	2	3	1	
D	A2	III	1	3	-	
D	A3	I	2	3	1	
D	A3	II	2	2	4	
D	A3	II	3	2	2	
D	A3	II	3	2	2	
D	A4	I	3	2	2	
D	A4	II	3	3	4	
D	A8	I	3	2	1	
D	B2	I	2	3	1	
D	B2	I	2	3	2	very granular
D	B2	I	3	3	1	
D	B2	I	3	2	2	
D	B2	I	3	2	3	
D	B2	II	3	2	-	
D	B2	III	2	3	4	
D	B4	I	3	4	2	
D	B4	I	3	2	2	
D	B4	I	2	4	2	
D	B4	I	2	4	1	
D	B4	I	3	2	1	
D	B4	IV	2	5	3	
D	B4	IV	2	2	3	
D	B4	IV	2	3	2	
D	B5	II	3	3	1	potlid fractures
D	B6	III	2	3	-	
D	B7	II	3	3	7	
D	B7	II	1	3	-	
D	B8	II	3	0	-	
D	B8	I	3	3	5	
D	C2	I	1	3	-	potlid fractures
D	C5	II	2	2	2	
D	C5	II	3	3	4	
D	C6	II	2	3	1	
D	C7	I	2	3	3	
D	D3	II	2	3	2	

Table B3. cont.

Area	Unit	Level	Flake Type	Size Category	Dorsal Scar Count	Notes
D	D3	II	3	3	2	
D	D3	II	3	2	-	
D	D3	II	3	3	2	
D	D3	II	3	2	-	
D	D3	II	2	2	-	
D	D3	II	3	7	9	
D	D4	II	3	2	2	
D	D6	II	3	2	2	
D	D8	I	2	3	4	
D	D8	I	3	2	2	
D	E2	I	3	3	3	
D	E3	III	2	9	3	potlid fractures
D	E3	III	2	4	3	potlid fractures
D	E4	II	3	3	2	
D	F1	I	2	8	4	
D	F8	II	3	2	2	
D	G1	I	1	3	3	
D	G1	I	2	3	3	
D	G2	III	3	3	4	
D	G3	II	3	4	-	potlid fractures
D	G3	II	3	3	-	quartzite
D	G3	II	3	3	3	
D	G5	I	2	3	2	
D	G8	I	2	3	2	
D	H2	III	3	2	1	potlid fractures
D	H4	III	2	4	1	
D	H5	III	3	3	7	
D	H7	II	3	4	5	
D	I1	I	3	3	3	
D	I1	III	3	4	2	
D	I1	III	2	3	2	
D	I3	I	2	5	4	
D	I3	I	3	2	2	
D	I3	II	2	3	2	
D	I3	II	3	3	-	
D	I3	II	2	2	-	
D	I4	II	3	2	3	
D	I5	III	3	3	7	
D	I5	III	2	4	-	
D	I5	III	1	2	-	
D	I8	I	2	2	2	

¹Flake type: 1-primary; 2-secondary; 3-tertiary

²Size category (diameter in cm): 1 = < .5; 2 = .5-1.5; 3 = 1.5-2.5; 4 = 2.5-3.5; 5 = 3.5-4.5; 6 = 4.5-5.5; 7 = 5.5-6.5; 8 = 6.5-7.5; 9 = 7.5-8.5

Table B4. Historic Artifact Proveniences, Area A

Provenience	Screw Caps	Toys	Marbles	Wire	Wire Nails	Asphalt	Carbon Rod	Total	Notes
ST 2				1	1			2	
ST 3			1		1			2	See text
ST 4		1	1					2	See text
ST 5							1	1	See text
ST 6	1							1	
ST 9						3		3	
Total	1	1	2	1	2	3	1	11	

Table B5. Historic Artifact Proveniences, Area B

Unit / Level	Crown Caps	Pop Tops	Lamp Glass	Buttons	Beads	Jewelry	Hairpins	Coins	Mother-of-Pearl	Marbles	Pencils	Shell Casings	Machinery Parts	Wire	Window Glass	Cut Nails	Wire Nails	Screws	Nuts	Washers	Staples	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Linoleum	Carbon Rod	Electrical Ceramics	Plastic	Rubber	Unidentified	Miscellaneous	Total	Metal weight (gm)	Notes			
B1/1		4															3				1					1							1 Dr. Pepper can	10	2.77				
B1/4		1			1									2			2																		6		See text		
B2/1				1																																1		See text	
B2/2												1					3																			4	26.40	See text	
B2/3									2																												2		
B3/1	2		1		1	1								1	1		7					3			8					2	5					32	83.90	See text	
B3/2							1		1					6			5					1		7							1	1				23	160.50		
B3/3									4																												4		
B4/1	2	3					1	2		1		1		2			1					2						1		15		5	1 metal spring	37	74.80	See text			
B4/2																	2															1				3	2.60		
B4/3																																				0	2.90		
B4/5																																				0			
B4/6									1																												1		
Total	4	8	1	1	2	1	2	2	8	1	0	2	0	11	1	0	23	0	0	0	1	6	0	7	8	1	0	1	2	21	1	6		2	123				

Table B6. Historic Artifact Proveniences, Area C

Backhoe Trench	Artifact Count	Artifact
Trench 3	1	Window glass
Trench 4	3	Wire nails
	1	Red plastic whistle in the shape of a bird. This is modern plastic of post-World War II origin
	1	Sewer pipe fragment
Total	6	

Table B7. Historic Artifact Proveniences, Area D

ST# /Level	Kitchen Items	Crown caps	Pop top	Flower pot	Lamp glass	Button	Eyebits	Shoe parts	Beads	Jewel	Combs	Mirror glass	Mother-of-pearl	Marbles	Toys	Pencil	Slate pencil	Slate frag	Grape shot	Hornshoes	Tack	Wire	Window glass	Cut nail	Wire nail	Screw	Bolt	Nut	Washer	Staple	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Concrete	Carbon rod	Sewer pipe	Plastic	Rubber	UID Metal Objects	Misc. Items	Total Counted Items	Metal Scrap (g)			
A1/1			1																			2			1													1	1			8					
A1/2																																											0	0.15			
A2/2																						1	1																				2				
A2/3													1																												1			2			
A3/1																							2								1													3			
A3/2		2											1									6		3	1																1			14			
A4/1								16																1	1																				18		
A4/2		1																						2	1																				4	20.06	
A5/1																									1						2														3	3.27	
A5/2																						1		1	2																			4	31.89		
A6/1																									1																				1		
A6/3																								1	1																				2	10.08	
A6/4																						6		5							1										1			13	28.30		
A7/1																																													0	11.68	
A7/2																						1		4	14	1						2													22	3.70	
A7/3		1																						4																					5		
A8/1																						3			2							6									1				13		
A8/2																						2										1				2									5	37.80	
A8/3																							2	1																					3	28.50	
A9/1																						1			1							2													4		
A10/2																									3							3	4													100	
A11/1										1																																1	1		3		
B1/1					1								1												1							1														4	2.55
B2/1																					1			1	1																				3	0.30	
B2/2													1											1																						2	
B2/3													1																																1		
B3/1									1				4									2										2														9	2.25

Table B7. cont.

ST# / Level	Kitchen Items	Crown caps	Pop top	Flower pot	Lamp glass	Button	Eyeballs	Shoe parts	Beads	Jewel	Combs	Mirror glass	Mother-of-pearl	Marbles	Toys	Pencil	Slate pencil	Slate frag	Grape shot	Hornshoes	Tack	Wire	Window glass	Cut nail	Wire nail	Screw	Bolt	Nut	Washer	Staple	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Concrete	Carbon rod	Sewer pipe	Plastic	Rubber	UID Metal Objects	Misc. Items	Total Counted Items	Metal Scrap (¢)				
B4/1													2																															3	4.80			
B4/2													1												1																					2		
B5/1			1																						1						1															3		
B5/2				1																			1									1														3	3.200	
B6/1																								2																						2		
B6/2				5		1							3																																1	9	8.400	
B7/1												1													1											1										3		
B8/1													2																																	2		
B8/2																			1				1	2	1						1															6	16.500	
B9/1																							1											1												2		
B9/2																				1		2		1										1													5	7.500
B10/1													1													2																					3	
B10/2																																2															2	
B11/1		1																							1																					2		
C1/1													1											1																							2	
C2/1		1											1																																	2	6.900	
C2/2																						1								1		3														5	0.322	
C3/1																																													1	1		
C3/2																																															0	0.455
C4/1	3																								1																					4		
C5/1																								1																						1	14.000	
C5/2																																	2										1	1		4		
C6/1																									3																					1	4	3.722
C6/2																									1																					1	36.000	
C6/3																																															0	7.333
C7/1		2																								2				1		1															6	1.077
C7/2															1																	1		2													4	

Table B7. cont.

ST# /Level	Kitchen Items	Crown caps	Pop top	Flower pot	Lamp glass	Button	Eyebits	Shoe parts	Beads	Jewel	Combs	Mirror glass	Mother-of-pearl	Marbles	Toys	Pencil	Slate pencil	Slate frag	Grape shot	Horseshoes	Tack	Wire	Window glass	Cut nail	Wire nail	Screw	Bolt	Nut	Washer	Staple	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Concrete	Carbon rod	Sewer pipe	Plastic	Rubber	UID Metal Objects	Misc. Items	Total Counted Items	Metal Scrap (g)					
C8/1													1																													1		2	6.344				
C8/2													5								1	8		1	2																				177	20.800			
C9/2																									1																					1			
C9/3																								1																						1			
C10/1																								1								1														2	1.600		
C10/2																																1													1	3.000			
C11/1			1																													3													4	0.188			
D1/1												1																																		1	0.500		
D2/1																							1																							3	11.400		
D2/2													1																																	1			
D3/1																																	1														1		
D3/2													2																																	2	2.600		
D4/1																										1																					1	0.377	
D4/2																																		2												2			
D5/1																																															0	10.500	
D5/2		1																																													1	1.000	
D6/1																										1								3													4		
D8/1																								1																						2	3		
D10/1																									1	1																						1	
D10/3																								1									1															2	
E1/1																							1																								1	0.355	
E1/2													3										2		2								1														8	0.455	
E2/1		1								1												1	3		1			1																			8	13.055	
E2/2																																		2													2		
E3/3																								1																							1		
E4/2																																																	

Table B7. cont.

ST# / Level	Kitchen Items	Crown caps	Pop top	Flower pot	Lamp glass	Button	Bicycle	Shoe parts	Beads	Jewel	Comb	Mirror glass	Mother-of-pearl	Marbles	Toys	Pencil	State pencil	Slate frag	Grape shot	Horseshoes	Tack	Wine	Window glass	Cut nail	Wire nail	Screw	Bolt	Nut	Washer	Staple	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Concrete	Carbon rod	Sewer pipe	Plastic	Rubber	UID Metal Objects	Misc. Items	Total Counted Items	Metal Scrap (g)
E5/2																								1																			1	1.355
E5/3																																											0	2.000
E6/1																									5																		5	
E6/3													5											1									1										7	0.100
E6/4																																									2	2		
E7/3													1																														9	
E8/3		5											1																													6	31.600	
F1/1	16					1	1											10					4	8	1																		422	
F1/2																		2						2																		2	9	11.022
F2/1		1																																									1	1.600
F3/1																								1																			4	
F3/2																						1																					1	
F4/1																						1																					1	
F4/3																																											0	0.300
F4/4																																											0	18.800
F5/1																																											3	0.188
F6/1																						1		1																		3		
F6/2																																											1	
F7/1																								1																			1	
F7/2																																											1	
F7/3		1																																									2	3
F8/1																																											2	13
F8/2																							2																				7	18.900
F8/3																									1																		2	26.155
F9/1																																											1	1.988
G1/1																																											4	
G2/1																																											1	

Table B7. cont.

ST# /Level	Kitchen Items	Crown caps	Pop lop	Flower pot	Lamp glass	Button	Eyefits	Shoe parts	Beads	Jewel	Combs	Mirror glass	Mother-of-pearl	Marbles	Toys	Pencil	State pencil	State flag	Grape shot	Horseshoes	Tack	Wire	Window glass	Cut nail	Wire nail	Screw	Bolt	Nut	Washer	Staple	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Concrete	Carbon rod	Sewer pipe	Plastic	Rubber	UMD Metal Objects	Misc. Items	Total Counted Items	Metal Scrap (g)			
G3/2																																												1	6.900		
G3/2																																												0	0.500		
G3/2																																												3			
G5/1																																												3			
G5/2		2																																										5			
G5/2																																												3			
G6/1													1																															1			
G6/2													1																															2	0.566		
G8/1															1																													1	6	0.835	
G8/2																																												1	1.200		
H2/1																																												1	1	5	
H2/2																																												2	1.077		
H2/3																																												1			
H3/1		1																																										2	0.377		
H3/2																																												3	4.000		
H4/1																																												2	11.200		
H5/1		1																																										5	0.500		
H5/2																																												1	2	2.800	
H5/3																																												4	2.872		
H6/2																																												6			
H7/1			2																																									1	3	0.755	
H7/2																																												2			
H8/1																																												2	0.972		
H8/2																																												0	0.588		
I1/1																																												6			
I2/1																																												1	2	0.322	
I2/2																																												0			

Table B7. cont.

ST# /Level	Kitchen Items	Crown caps	Pop top	Flower pot	Lamp glass	Button	Eyefels	Shoe parts	Beads	Jewel	Combs	Mirror glass	Mother-of-pearl	Marbles	Toys	Pencil	Slate pencil	Slate frag	Grape shot	Hornshoes	Tack	Wire	Window glass	Cut nail	Wire nail	Screw	Bolt	Nut	Washer	Staple	Brick	Mortar	Asphalt	Asphalt Shingles	Tile	Concrete	Carbon rod	Sewer pipe	Plastic	Rubber	UID Metal Objects	Misc. Items	Total Counted Items	Metal Scrap (g)	
13/1												2												1			1																3		
13/2																										1																		1	2,400
13/3																																												1	0,400
14/1																								2																				188	
14/2													1																															2	
14/3																																												2	
15/1																																												2	
15/2																								1																				2	
15/3																							2	1																			3	1,000	
15/4																								1																				1	1,644
16/1																							2	1																			4		
16/2																								2																				3	0,800
16/3																							1																					1	0,500
17/2																								1																				6	1,800
18/1																																												3	18,600
18/2													50																														0	8,600	
Totals	19	22	6	6	2	3	1	16	1	2	1	2	50	1	2	1	1	12	1	1	2	51	34	51	84	2	1	1	3	72	18	32	2	1	5	2	1	7	3	12	22	578	562.2		

Table B8. Animal Bone Proveniences

Provenience	Count	Burned	Bos	Sus	Capra/Ovis	Canid	Sylvilagus	Lepus	Odocolleus	Procyon	Sigmodon	Oryzomys	Sciurus	Equus	Didelphis	Meleagris	Crotalus	Lampropeltis	Natrix	Ictalurus	NISP	% ID'ed	% Burned
Area A																							
A.ST#3	14	0	2																		2	14.29	0.00
A.ST#4	21	0	2																		2	9.52	0.00
A.ST#6	30	0																			0	0.00	0.00
A.ST#7	2	0																			0	0.00	0.00
A.ST#9	16	0		1																	1	6.25	0.00
A.ST#11	1	0																			0	0.00	0.00
Area B																							
B1/1	40	1	4	1																	5	12.50	2.50
B1/3	245	7	7	2	3	1								1							14	5.71	2.86
B1/4	428	1	13		3																16	3.74	0.23
B2/1	16	1			1																1	6.25	6.25
B2/2	7	0																			0	0.00	0.00
B2/4	7	0																			0	0.00	0.00
B3/1	5	0	1																		1	20.	0.00
B3/2	159	4	1			1	5			1				1							9	5.66	2.52
B3/3	55	7			3	2	1				1										7	12.73	12.73
B3/4	32	4															14				14	43.75	12.50
B4/1	14	3																2			2	14.29	21.43
B4/2	43	0					1														1	2.33	0.00
B4/3	93	23	3																		3	3.23	24.73
B4/4	286	10	4	2				3													9	3.15	3.50
B4/5	190	1			2			2				2							1		7	3.68	0.53
B5/1	9	2			1																1	11.11	22.22
B5/2	1	0																			0	0.00	0.00
B5/3	8	0																			0	0.00	0.00
B5/4	23	0																			0	0.00	0.00
B5/5	73	0			1		1														2	2.74	0.00
B5/6	17	3																			0	0.00	17.65
B6/1	2	0	2																		2	100.	0.00
B6/4	17	0																			0	0.00	0.00
B6/5	39	1																			0	0.00	2.56
B6/6	135	1	11																		11	8.15	0.74
Area D																							
D/A1/1	10	0																			0	0	0
D/A2/3	27	1			1									1							2	7.41	3.70
D/A3/2	3	0																			0	0	0
D/A3/3	16	0																			0	0	0
D/A4/1	1	0																			0	0	0

Table B8. cont.

Provenience	Count	Burned	Bos	Sus	Capra/Ovis	Canid	Sylvilagus	Lepus	Odocoileus	Procyon	Sigmodon	Oryzomys	Sciurus	Equus	Didelphis	Meleagris	Crotalus	Lampropeltis	Natrix	Ictalurus	NISP	% ID'ed	% Burned
D/A5/1	4	0																			0	0	0
D/A5/3	9	2																			0	0	22.22
D/A6/4	15	0																			0	0	0
D/A7/2	10	0																			0	0	0
D/A7/3	20	0																			0	0	0
D/A8/1	7	0										1									1	14.29	0
D/A8/2	3	0																			0	0	0
D/A8/3	17	0							1												1	5.88	0
D/A10/1	7	0																			0	0	0
D/A10/2	6	1																			0	0	16.67
D/A10/3	1	0																			0	0	0
D/A11/1	107	0	3																		3	2.80	0
D/B1/1	55	1																			0	0	1.82
D/B2/1	81	3																			0	0	3.70
D/B2/2	22	0											1								1	4.55	0
D/B2/3	130	2														1					1	0.77	1.54
D/B2/4	5	1																			0	0	20.
D/B3/1	57	2																			0	0	3.51
D/B3/2	27	0	2																		2	7.41	0
D/B4/1	255	9	4		1						1										6	2.35	3.53
D/B4/2	365	0	3	7			1														11	3.01	0
D/B4/3	10	0	10																		10	100.	0
D/B5/1	103	1																			0	0	0.97
D/B5/2	105	0																			0	0	0
D/B6/1	67	2		7																	7	10.45	2.99
D/B6/2	270	6	2																		2	0.74	2.22
D/B7/1	23	0																			0	0	0
D/B7/2	4	0																			0	0	0
D/B8/1	41	3																			0	0.00	7.32
D/B8/2	1	0		1																	1	100.	0.00
D/B8/3	83	2	3		2																5	6.02	2.41
D/B9/1	2	0																			0	0.00	0.00
D/B9/1	1	1																			0	0.00	100.
D/B9/3	23	0	2																		2	8.70	0.00
D/B10/1	1	0																			0	0.00	0.00
D/B10/2	1	1																			0	0.00	100.0
D/B11/1	10	0			1																1	10.	0.00
D/B11/2	30	0	1						1												2	6.67	0.00
D/C1/1	78	3															2				2	2.56	3.85
D/C1/2	5	1																			0	0.00	20.
D/C2/1	15	6	1																		1	6.67	40.

Table B8. cont.

Provenience	Count	Burned	Bos	Sus	Capra/Ovis	Canid	Sylvilagus	Lepus	Odocolleus	Procyon	Sigmodon	Oryzomys	Scturus	Equus	Didelphis	Meleagris	Crotalus	Lampropeltis	Natrix	Ictalurus	NISP	% ID'ed	% Burned
D/C2/2	2	2																			0	0.00	100.
D/C2/3	62	0																			0	0.00	0.00
D/C3/1	3	0																			0	0.00	0.00
D/C3/2	29	2		1														1			2	6.90	6.90
D/C4/1	34	13																			0	0.00	38.24
D/C4/2	4	2																			0	0.00	50.
D/C5/1	77	11																			0	0.00	14.29
D/C5/2	40	2																			0	0.00	100.
D/C5/3	1	0																			0	0.00	0.00
D/C6/1	8	1																			0	0.00	12.50
D/C6/2	33	1	1																		1	3.03	3.03
D/C6/3	29	1		1																	1	3.45	3.45
D/C7/1	18	0																			0	0.00	0.00
D/C7/2	89	20													2						2	2.25	22.47
D/C8/2	17	0																			0	0.00	0.00
D/C10/2	5	0																			0	0.00	0.00
D/C11/1	38	0		7																	7	18.42	0.00
D/D1/1	16	1																			0	0.00	6.25
D/D1/2	72	4					2														2	2.78	5.56
D/D2/1	38	2					1														1	2.63	5.26
D/D2/2	153	2							14												14	9.15	1.31
D/D3/1	2	1																			0	0.00	50.
D/D3/2	61	0	1																		1	1.64	0.00
D/D4/1	1	1																			0	0.00	100.
D/D5/1	8	0																			0	0.00	0.00
D/D5/2	165										3							1			4	2.42	0.00
D/D6/2	40	0																			0	0.00	0.00
D/D7/2	149	1																			0	0.00	0.67
D/D8/2	30	0																			0	0.00	0.00
D/D8/3	6	0																			0	0.00	0.00
D/D10/1	1	1																			0	0.00	100.
D/E1/1	14	1																			0	0.00	7.14
D/E1/2	3	0		2																	2	66.67	0.00
D/E1/3	1	0																			0	0.00	0.00
D/E2/1	98	8	1																		1	1.02	8.16
D/E3/1	7	2			1																1	14.29	28.57
D/E3/3	28	2																			0	0.00	7.14
D/E4/2	34	0			1																1	2.94	0.00
D/E5/1	3	0																			0	0.00	0.00
D/E5/2	2	0																			0	0.00	0.00
D/E5/3	10	1																			0	0.00	10.

Table B8. cont.

Provenience	Count	Burned	Bos	Sus	Capra/Ovis	Canid	Sylvilagus	Lepus	Odocoileus	Procyon	Sigmodon	Oryzomys	Sciurus	Equus	Didelphis	Meleagris	Crotalus	Lampropeltis	Natrix	Ictalurus	NISP	% ID'ed	% Burned
D/E5/4	2	0																			0	0.00	0.00
D/E6/3	7	0																			0	0.00	0.00
D/F1/1	6	1																			0	0.00	16.67
D/F1/2	11	0	1																		1	9.09	0.00
D/F1/3	8	1																			0	0.00	12.50
D/F2/2	13						2														2	15.38	0.00
D/F2/3	84	0				3															3	3.57	0.00
D/F3/1	4	0																			0	0.00	0.00
D/F3/2	3	0																			0	0.00	0.00
D/F4/1	3	0																			0	0.00	0.00
D/F4/4	8	1																			0	0.00	12.50
D/F5/1	3	0																			0	0.00	0.00
D/F5/2	2	0																			0	0.00	0.00
D/F5/2	4	2																			0	0.00	50.
D/F6/1	1	0																			0	0.00	0.00
D/F6/2	4	0																			0	0.00	0.00
D/F7/3	25	10																			0	0.00	40.
D/F7/4	6	6																			0	0.00	100.
D/F8/2	2	0																			0	0.00	0.00
D/F8/3	12	0																			0	0.00	0.00
D/G1/3	13	0																			0	0.00	0.00
D/G2/1	2	0																			0	0.00	0.00
D/G2/3	4	4																			0	0.00	100.
D/G3/2	76	2					2						1								3	3.95	2.63
D/G4/1	8	0															1				1	12.50	0.00
D/G6/1	2	1																			0	0.00	50.
D/G6/2	5	0																			0	0.00	0.00
D/G7/2	4	0																			0	0.00	0.00
D/G8/1	8	3																			0	0.00	37.50
D/G8/2	4	1																			0	0.00	25.
D/H1/2	44	0	7				1										1				9	20.45	0.00
D/H2/2	1	0																			0	0.00	0.00
D/H2/3	130	35			1												2		1		4	3.08	26.92
D/H3/3	5	1																			0	0.00	20.
D/H4/1	24	2	2	1																	3	12.50	8.33
D/H4/2	20	0																			0	0.00	0.00
D/H5/1	9	3																			0	0.00	33.33
D/H5/2	5	0																			0	0.00	0.00
D/H5/3	19	0																			0	0.00	0.00
D/H6/1	6	1																			0	0.00	16.67
D/H6/2	82	4																			0	0.00	100.

Table B8. cont.

Provenience	Count	Burned	Bos	Sus	Capra/Ovis	Canid	Sylvilagus	Lepus	Odocoileus	Procyon	Sigmodon	Oryzomys	Sclurus	Equus	Didelphis	Meleagris	Crotalus	Lampropeltis	Natrix	Ictalurus	NISP	% ID'ed	% Burned
D/H6/3	5	0																			0	0.00	0.00
D/H7/1	4	0																			0	0.00	0.00
D/H7/4	36	1													1						1	2.78	2.78
D/H8/1	7	0																			0	0.00	0.00
D/H8/2	5	0																			0	0.00	0.00
D/H8/3	1	0	1																		1	100.	0.00
D/I1/1	18	0					1														1	5.56	0.00
D/I1/2	40																1				1	2.50	0.00
D/I1/3	62	2					1											2			3	4.84	3.23
D/I2/1	7	2																			0	0.00	28.57
D/I2/2	102	1	2										1								3	2.94	0.98
D/I2/3	8	2	1															1			2	25.	25.
D/I3/1	70	1			1																1	1.43	1.43
D/I3/2	87	2	3		2			2									1	3			11	12.64	2.30
D/I3/3	6	0																			0	0.00	0.00
D/I4/1	3	1																			0	0.00	100.
D/I4/2	35	0		2																	2	5.71	0.00
D/I4/3	47	0																			0	0.00	0.00
D/I5/1	13	2																			0	0.00	15.38
D/I5/2	10	0		1																	1	10.00	0.00
D/I5/3	53	2																			0	0.00	3.77
D/I5/4	7	0																			0	0.00	0.00
D/I6/1	31	2																			0	0.00	6.45
D/I6/2	42	0		1																	1	2.38	0.00
D/I6/3	14	2																			0	0.00	14.29
D/I7/1	1	0																			0	0.00	0.00
D/I7/2	105	0	1	3		1		1													6	5.71	0.00
D/I8/1	16	0																			0	0.00	0.00
D/I8/2	47	0									1										1	2.13	0.00
Total	7174	297	102	40	28	8	19	8	16	1	6	3	2	4	3	1	19	13	1	1	275	3.83%	4.14%

APPENDIX C

HORIZONTAL AND VERTICAL DISTRIBUTION OF SELECT, TEMPORALLY DIAGNOSTIC ARTIFACTS EXCAVATED IN AREA D SHOVEL TESTS ("x" denotes presence)

Table C1. Transect A

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
A1.1 0-12		x	x					x	x	x
A1.2 12-14										
A2.1 0-8								x		
A2.2 8-11			x					x		x
A2.3 11-23			x			x	x			
A2.4 23-30										
A3.1 0-10										x
A3.2 10-17			x					x	x	x
A3.3 17-24			x							
A4.1 0-11		x						x	x	x
A4.2 11-24			x		x			x	x	x
A4.3 24-29										
A5.1 0-12								x	x	
A5.2 12-24			x					x	x	x
A5.3 24-32			x							
A6.1 0-12									x	x
A6.2 12-17										
A6.3 17-20									x	
A6.4 20-30									x	x
A7.1 0-12		x	x					x	x	
A7.2 12-19			x					x		x
A7.3 19-27			x					x	x	
A8.1 0-12								x	x	x
A8.2 12-15			x							x

Table C1. cont.

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
A8.3 15-24		x	x						x	x
A9.1 0-8									x	
A9.2 8-12										
A10.1 0-7										
A10.2 7-17										x
A10.3 17-18			x							
A11.1 0-12		x				x		x		
A11.2 12-18								x		

Table C2. Transect B

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
B1.1 0-12			x	x	x		x	x	x	x
B1.2 12-24										
B2.1 0-10		x	x					x		
B2.2 10-13	x				x					
B2.3 13-16			x						x	
B2.4 16-23			x							
B2.5 23-28										
B3.1 0-12			x		x	x		x		x
B3.2 12-22			x							
B3.3 22-24										
B4.1 0-12		x	x	x		x		x		x
B4.2 12-24			x			x			x	
B5.1 0-12			x	x		x		x	x	x
B5.2 12-24			x		x			x		x
B6.1 0-10			x					x	x	
B6.2 10-22			x		x	x	x	x		x
B6.3 22-28			x							
B7.1 0-12			x	x					x	x
B7.2 12-24			x					x		
B8.1 0-12			x				x	x	x	x
B8.2 12-20			x					x		x
B8.3 20-28										
B9.1 0-6										x
B9.2 6-20									x	x
B9.3 20-27			x		x			x		
B10.1 0-12									x	x
B10.2 12-18										
B11.1 0-12			x						x	x
B11.2 12-24			x							

Table C3. Transect C

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
C1.1 0-12			x		x			x		
C1.2 12-24			x					x		
C2.1 0-12			x							
C2.2 12-20			x			x		x		x
C3.1 0-12								x		
C3.2 12-26			x					x		
C4.1 0-10		x	x		x					x
C4.2 10-15									x	
C5.1 0-12									x	
C5.2 12-21			x							x
C5.3 21-28	x									
C6.1 0-12								x	x	
C6.2 12-20			x		x				x	
C6.3 20-24			x						x	
C7.1 0-12								x	x	x
C7.2 12-20			x		x					x
C7.3 20-24										
C8.1 0-12			x		x			x		
C8.2 12-23			x			x		x	x	x
C8.3 23-28										
C9.1 0-9										
C9.2 9-19									x	x
C9.3 19-24										
C10.1 0-12										x
C10.2 12-18										
C11.1 0-12						x		x		x
C11.2 12-18			x					x		

Table C4. Transect D

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
D1.1 0-12			x							
D1.2 12-24			x							
D2.1 0-12			x					x		x
D2.2 12-24			x							
D3.1 0-12										
D3.2 12-24			x			x		x		
D4.1 0-12			x						x	x
D4.2 12-24			x							
D5.1 0-12			x					x		x
D5.2 12-24			x							x
D5.3 24-26			x							
D6.1 0-12			x							x
D6.2 12-24		x	x	x						
D6.3 24-26										
D7.1 0-12										
D7.2 12-24			x					x		
D7.3 24-26										
D8.1 0-10										
D8.2 10-25			x						x	
D10.1 0-3										
D10.2 3-10										
D10.3 10-16									x	
D10.4 16-18										
D10.5 18-20										

Table C5. Transect E

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
E1.1 0-12						x				
E1.2 12-24			x		x	x			x	x
E1.3 24-27										
E2.1 0-12			x					x	x	x
E2.2 12-24			x							
E2.3 24-26										
E3.1 0-12			x							
E3.2 12-15										
E3.3 15-28			x							
E4.1 0-12										
E4.2 12-24		x	x					x		
E4.3 24-26										
E5.1 0-12			x			x				
E5.2 12-15			x						x	
E5.3 15-23			x							
E5.4 23-24										
E6.1 0-12			x							
E6.2 12-18										
E6.3 18-22			x						x	
E6.4 22-27			x							x
E7.1 0-12			x							
E7.2 12-16		x						x		
E7.3 16-24										
E7.4 24-26			x							
E8.1 0-12										
E8.2 12-20										
E8.3 20-24										x

Table C6. Transect F

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
F1.1 0-12								x	x	x
F1.2 12-24			x						x	x
F1.3 24-33			x			x	x	x		
F2.1 0-12										x
F2.2 12-23			x	x						
F2.3 23-26										
F3.1 0-12						x			x	x
F3.2 12-24										
F4.1 0-12								x		
F4.2 12-17										
F4.3 17-23			x							
F4.4 23-27			x		x					
F5.1 0-12										x
F5.2 12-22								x		
F6.1 0-12										
F6.2 12-24						x				
F7.1 0-12								x	x	
F7.2 12-18										
F7.3 18-24		x	x					x		x
F7.4 24-30			x							
F8.1 0-12										x
F8.2 12-18								x	x	x
F8.3 18-24									x	x
F9.1 0-9										x
F9.2 9-12										

Table C7. Transect G

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
G1.1 0-12			x					x	x	x
G1.2 12-14			x							
G1.3 14-25			x							
G2.1 0-10										
G2.2 10-15										x
G2.3 15-22		x	x							x
G3.1 0-12										
G3.2 12-26			x							
G4.1 0-12			x		x	x		x	x	
G4.2 12-26			x					x		
G5.1 0-10								x	x	
G5.2 10-18								x	x	x
G5.3 18-22										
G6.1 0-12										x
G6.2 12-24										
G6.3 24-28										
G7.1 0-12										
G7.2 12-24			x							
G8.1 0-12										x
G8.2 12-24								x	x	

Table C8. Transect H

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
H1.1 0-12										
H1.2 12-24			x							
H2.1 0-8			x							
H2.2 8-15					x					
H2.3 15-28			x					x		x
H3.1 0-12			x							x
H3.2 12-19										x
H3.3 19-28			x							
H4.1 0-12			x					x	x	
H4.2 12-26			x					x		
H5.1 0-12								x	x	x
H5.2 12-15									x	x
H5.3 15-22									x	
H6.1 0-10			x			x		x		
H6.2 10-22			x		x			x	x	x
H6.3 22-24			x		x					
H7.1 0-12			x							x
H7.2 12-26			x		x					x
H8.1 0-12			x					x	x	
H8.2 12-24								x	x	
H8.3 24-30										

Table C9. Transect I

Shovel Test Level Depth	Guerrera	Other Lithic Tools	Goliad	Valero	Tin-glaze	Lead-glaze	Galera	Refined wares	Machined nails	Other post-Colonial
I1.1 0-12			x					x	x	
I1.2 12-24	x		x					x		
I1.3 24-26			x			x				
I2.1 0-12								x		
I2.2 12-24		x	x			x				
I2.3 24-29			x							
I3.1 0-12			x	x				x	x	
I3.2 12-24			x	x	x	x		x		x
I3.3 24-30			x							
I4.1 0-12										x
I4.2 12-18			x		x					
I4.3 18-26			x							x
I5.1 0-9								x		x
I5.2 9-14				x		x		x	x	
I5.3 14-24		x	x		x	x		x	x	x
I5.4 24-30		x				x		x		
I6.1 0-12			x	x		x		x	x	x
I6.2 12-18			x	x				x	x	x
I6.3 18-24			x					x		x
I6.4 24-30										
I7.1 0-12										x
I7.2 12-28			x	x				x	x	x
I8.1 0-12			x							x
I8.2 12-24			x			x		x	x	x
I8.3 24-26										