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Archaeological Investigations in the Courtyard of Mission Nuestra Señora de la Purisima Concepción Acuña (41BX12)

Antonia L. Figueroa
Center for Archeological Research, University of Texas at San Antonio

Steve A. Tomka
Raba Kistner

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Texas Antiquities Permit No. 2820

Prepared for:
Los Compadres and National Park Service
6701 San José Drive
San Antonio, Texas 78233

Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Report, No. 403

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Principal Investigator

Steve A. Tomka

Prepared for:
Los Compadres and National Park Service
16701 San José Drive
San Antonio, Texas 78214

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Abstract:

Archaeological investigations took place in the courtyard of Mission Concepción between 2002 and 2005 in order to identify remnant architectural remains of Spanish Colonial structures prior to the installation of a drainage system. Archaeological investigations were performed under the auspices of two field schools held by the Department of Anthropology's Center for Archaeological Research of The University of Texas at San Antonio (UTSA). The Center's Legacy Public Outreach Program also held a field school as part of these investigations. Archival documents indicate that the granary and another structure, possibly the community storeroom or corridor, occupied the courtyard. Investigations in the courtyard uncovered several foundations or architectural alignments that may represent remnants of these structures. Excavations within the said granary area revealed disturbances derived from utilities installations and the construction of a restroom facility during the 1940s. A trash pit containing artifacts dating to the late 1800s early 1900s was uncovered near the northwest corner inside the granary foundations. Test units excavated between the granary and *convento* situated west of the granary identified three features. East of the granary, high densities of Spanish Colonial ceramics and a plastered surface were exposed. The archaeological investigations were conducted under the Texas Antiquities Permit 2820 with Dr. Steve A. Tomka serving as Principal Investigator.

All artifacts collected during this project and all project-associated documentation is permanently curated at the Center for Archaeological Research according to Texas Historical Commission guidelines.

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The University of Texas at San Antonio field schools were directed by Dr. Steve Tomka and Dr. Raymond Mauldin. Legacy Program field schools were supervised by Donna Edmondson, Kristi M. Ulrich and Antonia L. Figueroa. Special thanks to Anne A. Fox for her contributions during the progression of the project. Her expertise and time spent in the field is greatly appreciated. Cynthia Muñoz conducted monitoring in preparation for the 2004 fieldschool. Many thanks to Marybeth Tomka who supervised the laboratory team members at CAR and our thanks to Susan Snow for her supervision of the NPS volunteers that worked on the artifacts. During the production of this report Dr. Steve Tomka and Dr. Raymond Mauldin helped with straightening out the often incongruous documentation that tends to emerge during multi-year projects. Bruce Moses spent time on site laying out the units and explaining mapping procedures and the operation of the TDS. He also created the figures for this report and served as the Technical Editor; his quality work is greatly appreciated.

Chapter 1: Introduction

Antonia L. Figueroa

Mission Nuestra Señora de la Purísima Concepción is located on the east bank of the San Antonio River in the vicinity of its confluence with San Pedro Creek in San Antonio, Bexar County, Texas (Figure 1-1). The church and *convento* form the boundaries of a small courtyard on the north and west sides respectively, and the mission walls that extended to the north and west are no longer standing. The quarry that furnished the construction stones for the more permanent building is still visible immediately east of Mission Road at the southwest corner of the compound (Figure 1-2).

Archaeological investigations took place in the courtyard of Mission Concepción between the summer of 2002 and the fall of 2005. During this time, two field schools were held by the University of Texas at San Antonio (UTSA), Anthropology Department in conjunction with the Center for Archaeological Research (CAR). Two Legacy Program CAR/Gear-Up field schools and several Saturday volunteer sessions were also held during these years. Excavations were conducted in the courtyard in order to locate Spanish Colonial architectural remains prior to the installation of a drainage system in the courtyard. Due to the uneven surface in the courtyard area, water tends to drain in the direction of the *convento* building. The *convento* structure is constructed of porous limestone material which absorbs moisture. As a result of the dampness, over time the frescos in the structure are badly deteriorating and the drainage system is being installed to alleviate these problems.

During the 2002 through 2005 archaeological investigations several architectural remnants were uncovered that represent the remains of the granary and possibly the community

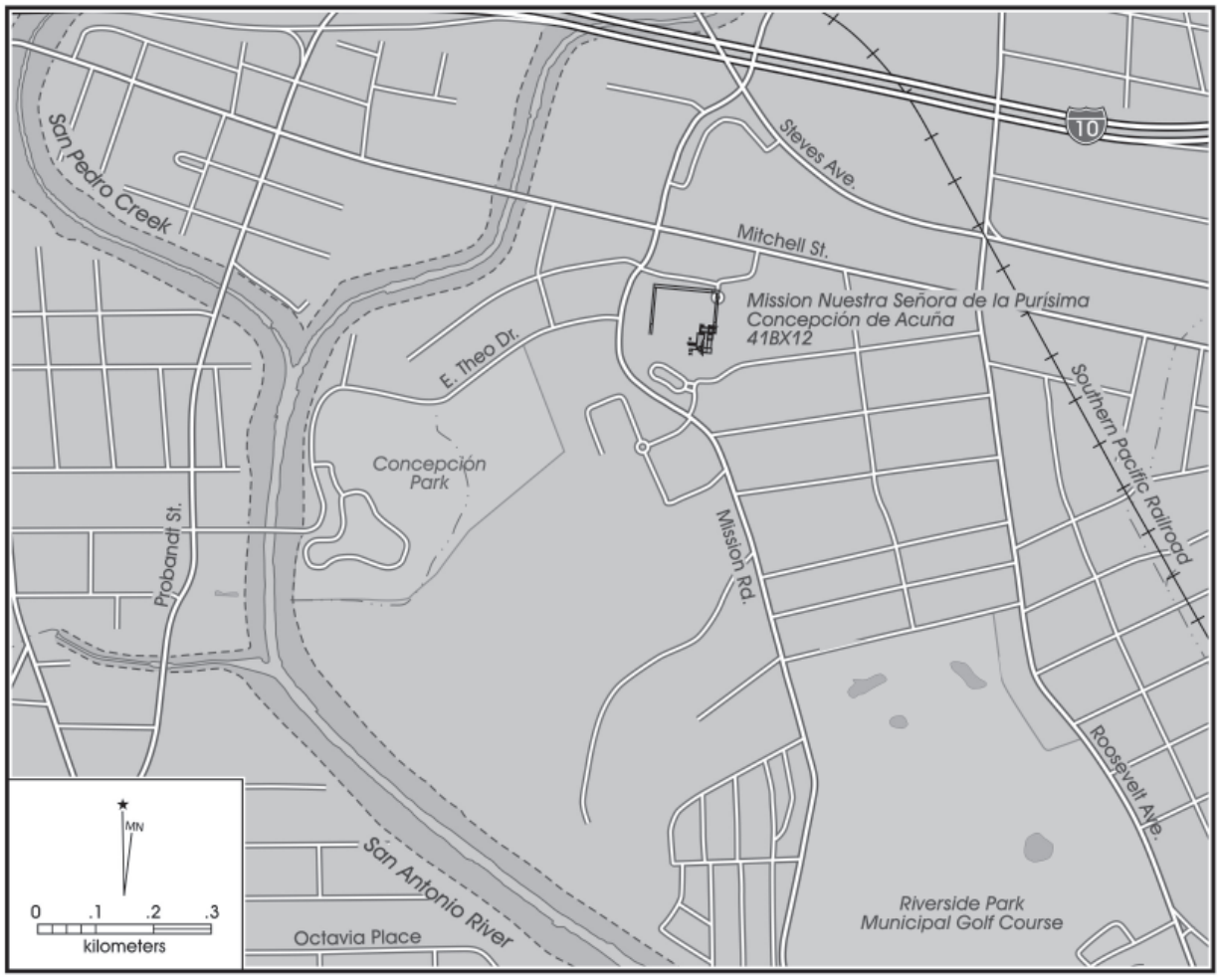

Figure 1-1. *Map showing the location of Mission Concepción.*

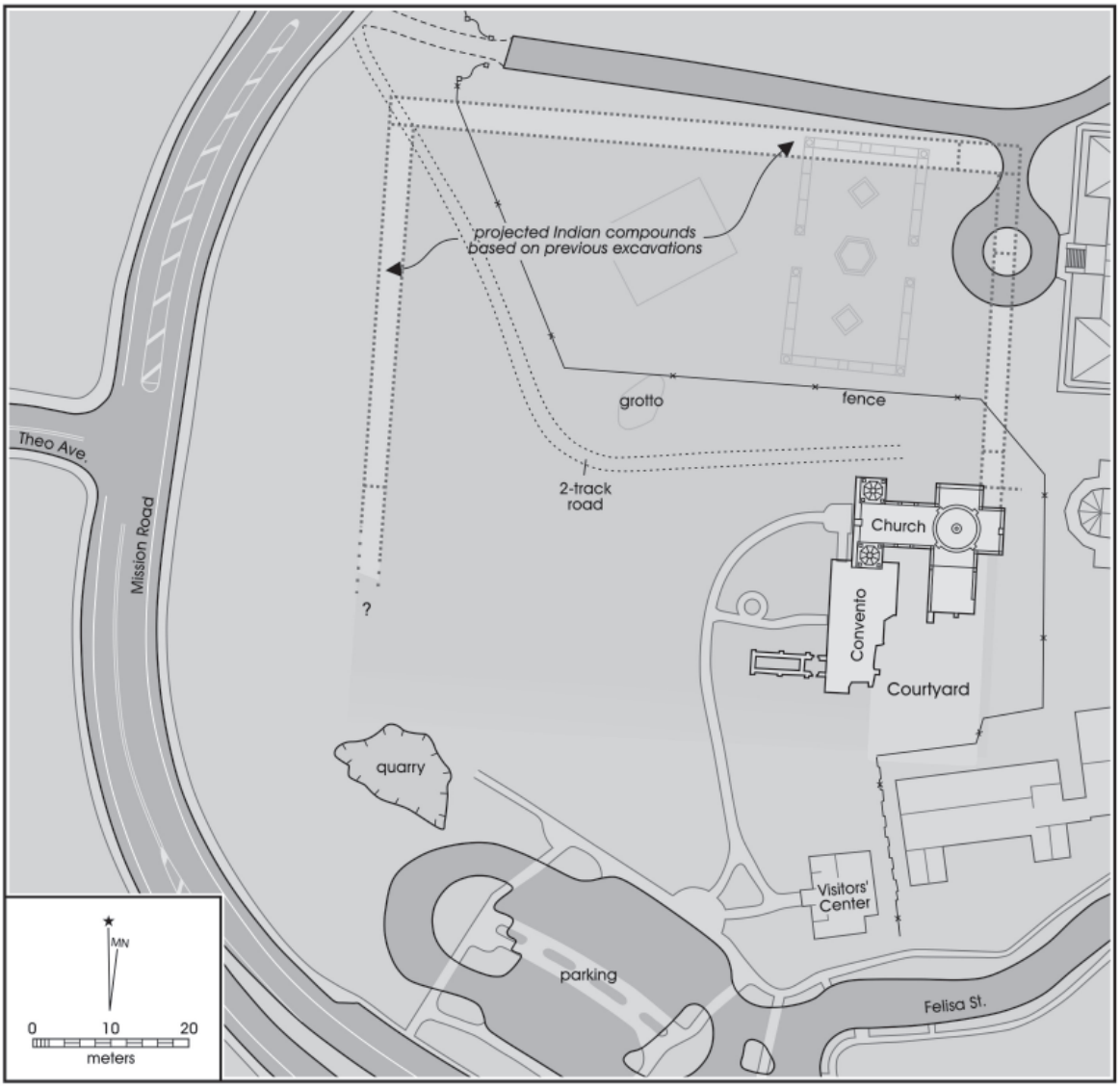

Figure 1-2. *The layout of Mission Concepción.*

storeroom. In addition, five features were also exposed during excavations. The foundations adjoined to the southern portion of the granary may be remnants of a Post Colonial structure. The area between the sacristy and the granary proved to have some undisturbed soils and contained three features, two that date to the Spanish Colonial period and one to the mid 1800s. An area at the southeast corner of the excavations, east of the granary, contained high densities of Colonial period ceramics and evidence of a plaster floor. The majority of the units located within the granary remnants revealed disturbed soils. Post Colonial occupation of the site was apparent from a trash pit feature located along the western foundation of the granary.

This report is organized in seven chapters. Chapter 2 discusses the history of the mission along with archival information about the granary and other structures that might have occupied the courtyard. Chapter 3 reviews the previous archaeology conducted at the mission, while Chapter 4 discusses the project activities. The results of field investigations are summarized in Chapter 5. Ceramic descriptions and a lithic analysis are provided in Chapter 6. A summary of the results and conclusions are presented in Chapter 7. The faunal analysis, conducted by Barbara Meissner is presented in Appendix A. Appendix B gives the results of the Goliad Ware analysis.

Chapter 2: Historical Background and Archival Research

Antonia L. Figueroa

This chapter begins with a discussion of the historic background of Mission Concepción from its establishment in East Texas to it's relocation along the San Antonio River. The second section of the chapter provides an overview of the archival documentation regarding the granary, *convento* and other structures formerly or currently present on site. This information is imperative considering several investigators have indicated that the courtyard is the location of the granary and was the focus of excavations conducted by UTSA.

Historical Background

Alonso Alvarez de Pineda was the first known (recorded) Spanish explorer to make his way into Texas in 1519 (Chipman 1992). Other Spanish *entradas* continued into Texas until 1540 although hitherto undiscovered expeditions may have continued after this date. The Spanish settlements in northeast Mexico begin in 1590. Texas was part of four Spanish provinces at various times, including Nueva Vizcaya, Nuevo Santander, Tejas and Coahuila (Chipman 1992).

The first Spanish attempt to colonize Texas began with the establishment of several missions in West Texas during the late 1600s. This first wave of colonization was followed by the East Texas missions established during the early 1700s in response to the perceived French threat of domination. The several San Antonio mission established between 1718 and 1731 represented the entrenchment of Spanish interests in the new frontier. These waves of colonization are intimately inter-related and occurred in response to international events and logistical trials and errors of establishing, supplying and maintaining outposts far-removed from the core of the Spanish empire. A key component of these colonizing efforts was the mission-presidio couplet.

Mission Concepción was first established in East Texas in 1716 in present day Nacogdoches County. Between 1717 and 1718 a severe drought occurred in the area that resulted in a poor harvest and shortages of food. To make matters worse a smallpox epidemic also occurred at the same time (Habig 1968). In 1718, after establishing Mission San Antonio de Valero along the San Antonio River, Governor Don Martin de Alarcón visited the missions in East Texas. To underscore the crowns attitude about the French threat, he confiscated all the French goods which had been obtained in illegal trade by mission inhabitants. Even before his return to Mexico, Alarcón was under harsh criticism due to the poor welfare of the missions in East Texas and for not supplying additional manpower and settlers during his visit. The pressure mounted to such degree that Alarcón resigned upon his return to Mexico (Chipman 1992).

In 1719, spurred by a French attack on Presidio los Adaes, the inhabitants of the six recently established East Texas missions, including Mission Concepción, fled for San Antonio and the recently established Mission Valero. By 1721, however, the threat of French encroachment lessened. Marquis de San Miguel de Aguayo was sent to East Texas to push the French out, but he found them willing to go without a fight (Hackett 1945). He re-established the missions and built a new presidio, Loreto de la Bahía (E) on the site of La Salle's Fort Saint Louis.

The native inhabitants of East Texas were never very receptive to the Spanish presence in the region and as time went on the French became less of a threat. The convergence of these factors coupled by the financial burdens of sustaining such remote outposts, by 1727 led to the recommendation of Brigadier General Pedro de Rivera to abolish Presidio Dolores in East Texas and close all the other missions, including Concepción, and relocate their population to the Colorado River.

The missions did not fare well at the new location along the Colorado River and in 1729 Fr. Miguel Sevillano de Paedes sent a petition to the viceroy asking for the missions to be moved to the San Antonio River. In 1731, mission Nuestra Señora de la Purisima Concepción Acuña along with San Juan Capistrano and San Francisco de la Espada were re-established along the San Antonio River (Chipman 1992). Natives were gathered from various areas to inhabit the newly established mission.

It has been speculated (Ivey and Fox 1999:45) that the present site of Nuestra Señora de la Purisima Concepción Acuña was the first site of Mission San Francisco Xavier de Najera established in 1722 and abandoned in by 1726 (Habig 1968). The 1729 Aguayo map also shows that the Mission Concepcion site was also the location of the first site of Mission San Jose y San Miguel de Aguayo (Habig 1968b:29-30).

Mission Concepción was moved from the banks of the Colorado River and reestablished in San Antonio in 1731

on the east side of the San Antonio River. Early records kept by the Spanish missionaries indicate that a number of named native groups were usually brought together in each mission although at times the population of a mission was primarily made up of one group (Campbell and Campbell 1996). Campbell and Campbell (1996:22-44) identify 33 native groups based on early marriage registers from Mission Concepción. The majority of native groups were from Northern Mexico, South Texas and the Texas Gulf Coast (Campbell and Campbell 1996:Table 2).

In 1739 an epidemic of small pox and measles sickened the inhabitants of the San Antonio missions (see Dixon 2004 and de la Teja 1995) resulting in the death of over 1000 mission Indians. At Mission Concepción, the epidemic took the life of 130 natives, reducing the population by fifty-two percent. In 1745 when Father Francisco Xavier Ortiz visited the San Antonio missions (OLLU 2006; Chipman 1992; Leutenegger 1976) there were 207 Indians living at the mission. Eleven years after Ortiz returned to the mission, the number of Indians living there had increased to 247 (Habig 1968).

As with all missions, two key elements that allowed a high degree of self-sufficiency were the irrigated lands and the mission ranch. The irrigated fields or *labores* were found in the vicinity of the mission and along the banks of the San Antonio River. They produced large quantities of corn and wheat that was essential to keeping the native populations tethered to the mission. The lands of Rancho del Paistle (Rancho el Pasthle), the Mission Concepcion ranch established sometime around 1740 (National Parks Service, 2009), stretched from San Antonio to the southeast to Cibolo Creek. The ranch headquarters may have been located on the banks of Cibolo Creek. It provided the mission with a majority of its meat although the native population appears to have supplemented its diet with terrestrial and aquatic resources from time to time. As with the inhabitants of the mission, the number of cattle tended to fluctuate widely over time. By 1756, the ranch had 700 head of cattle, 1,800 sheep, 12 pigs and horses (Thompson 2004). However, the number of cattle dropped through the years with 610 cattle by 1762. An increase in Indian attacks in the San Antonio area and on the mission ranches in the 1760s prompted the abandonment of the Rancho el Paistle (Almaráz 1989).

In general, the construction sequence followed by missionaries was to first build most facilities needed for day-to-day operations out of temporary materials (jacales) until the first few years of occupation proved that the site was adequate (i.e., did not flood), could be brought under irrigation, and the soils were productive. It is therefore expected that during the first few years, structures such as the church, the friary, and quarters for the native population would have been temporary jacales.

By 1756 when Fr. Ortiz returned to the mission, he noted that the new stone church was completed (Habig 1968) and describes the exterior and interior of the church in detail. He found the friary in ruins but a new one was being built. The Indian quarters were of abode and/or jacal and other facilities included a weaving shop with three looms, and a carpentry and blacksmith shop. He also described an irrigation ditch running through the plaza (Habig 1968).

In 1762, Fr. Parras and Fr. Joseph Guadalupe Ramirez de Prado wrote that the friary was located next to the church and a large hall with two store rooms extended west of the friary, containing looms for manufacturing cloth. A granary, blacksmith shop and carpentry shop is also described in the vicinity. The Indian quarters were arranged in two rows on two sides of the church and friary. An irrigated farm was located outside the compound walls.

In 1772 the mission was transferred to the College of the Zacatecas. Fr. José Saenz de Gumiel, served as the last Queretaran president and his inventory of the mission lists a population of 171 Natives, five Pajalat, 18 Tacame, 14 Sanipao, 48 Manos de Perro and 18 Toareque (Handbook of Texas Online, 2009a).

In 1773, the College of Zacatecas, appointed Fray José Francisco Lopez as the new resident minister. In his inventory he noted that the granary functioned as part of the wall behind the church on the east wall.

Fr. Morfi describes, in 1777, the mission with the Indian quarters in two parallel rows on two sides of the friary and the square of the mission being completed by the granary on the east side. In 1789 Fr. Lopez mentions 23 Indian rooms and the granary located east of the church. The population of the mission steadily declined through the years and by 1794 only 38 individual resided on site. This same year the mission was secularized. Remaining natives received land and Fray Josef Maria de Jesus Camarena, the last resident missionary of Mission Concepción, was relieved of his duties. The land was partitioned into 26 plots (Habig 1968). The ranch left the hands of the missionaries in 1777, well before the secularization of the mission.

The revolutionary forces of Bernardo Gutierrez de Lara chose the mission as their headquarters in 1813 (Handbook of Texas Online, 2009a). Gutierrez was part of the Hidalgo Independence movement. Mission Concepción was a sub-

mission of San José until 1824 when it was taken over by San Fernando Church (Cook 1980).

In 1806 Governor Antonio Cordero granted property adjacent to Mission Concepción and the granary to José Antonio Huizar (Almaráz 1982). Though Huizar never received the granary he was granted full title to the remainder of the property in 1815. The granary was granted to Manuel Yturri Y Castillo in 1823 (Ivey and Fox 1999) and then deeded to Asa Mitchell by 1838 (BCCC Vol. A2:77). The granary was described at that time as having three rooms, built of stone and connected in a row, and adjoining the church at its southeast corner (BCCC Vol. A2:74). A survey of the property conducted in 1849 for Mitchell mentions the house that was used by Yturri (BCCC P1:619). It is thought that Ramon Musquiz owned some of the buildings, including the convento from 1824 till 1860. Bishop Odin began purchasing portions of the mission compounds that did not already belong to the church in 1841 (Ivey et. al. 1990). He purchased portions from Ramon Musquiz and transferred the building to the Brothers of Mary.

It appears the mission was still divided amongst different individuals well into the late 1800s. The church began to be used again around 1861. In 1873 some the land was still being leased to share croppers but the mission grounds, including the church, were returned to the San Antonio archdiocese in 1911. The mission became a part of the San Antonio National Park Service in 1978 and the church continues to be controlled by the San Antonio archdiocese.

Archival Research of the Granary and Convento

Previous investigations, summarized in Chapter 3, suggest the mission courtyard was once the site of the granary and a community storeroom. In this section, we compile the available archival information related to the location, dimensions and characteristics of the Mission Concepcion granary.

Several documents were consulted for information regarding the Mission Concepción granary and courtyard structures (Almaráz 1982; Ivey 1992; Ivey et al. 1990; Rock 2006). Almaráz conducted comprehensive research on the land tenure of the San Antonio missions, consulting several records. Manuscripts by Ivey (1992) and Ivey et al. (1990) rely on several sources in reconstructing a comprehensive architectural history of the San Antonio missions. Rosalind A. Rock, the National Park Service (NPS) historian, transcribed and translated inventories made of Mission Concepción in 1772 and 1745. These original records were obtained from Our Lady of the Lake University archives and Mexico City (Rock 2006) and the translations were made available to the CAR staff. A majority of the information presented in this section on the granary and other courtyard structures is taken from these documents.

The missionary building period in Texas, between 1724 and 1737, is sketchy and uncertain. However, the traditional approach of the Franciscan friars was to establish the *convento* yards and the initial layout of the missions and its buildings soon after selecting a favorable spot for the mission, its agricultural lands and the irrigation system (Gilmore 1979; Ivey 1992). Typically, the first structures were temporary *jacal* buildings. This approach provided immediate basic shelter and facilities while also giving time for a more detailed survey of the lands for building resources and afforded a trial period of the chosen location (Castañeda 1936). In some instances, flooding of the chosen location during the early years of occupation would allow the friars an opportunity to relocate the mission to higher ground without having invested a large effort and resources into an unfavorable location. If the location did not experience any unfavorable events during the first few years of occupation, the friars began investing in more permanent structures and facilities. Following this model, while the mission was reestablished on the San Antonio River in early March 1731, by early May of the same year the missionaries had already erected on the site a temporary chapel, quarters for the priests and neophytes, and store houses for some of the supplies they transferred from East Texas (Habig 1968:122-125). Sometime in 1732 or 1733 (Ivey 1990), the temporary *jacal* chapel had already been replaced by a more substantial adobe church and an adobe *convento* also was erected. It is not know whether the temporary storerooms were also replaced with adobe structures around this time. The two structures were likely located to the southwest of the present buildings (Ivey 1990). The adobe *convento* was razed and replaced by a stone structure sometime during the late 1730s (Ivey 1990; Ivey 2006). It is thought that the original stone granary would have been built about the same time as the stone *convento* (Ivey et. al. 1990) and Fr. Ortiz mentions the stone granary in 1745 (Ivey 2006).

In 1737 Antonio Tello was hired to design and build the churches for the San Antonio missions, including Misson Concepción. Apparently, he used the same design for each church, changing the scale slightly for each. His architectural plans always included a *convento* and stone granary. Antonio Tello began construction on the stone church for Mission Concepción by 1738 (Ivey 1992). Since some of the compound and permanent structures had already been erected by the Franciscans before him, Tello found it difficult to combine

his architectural plans and vision with the pre-existing layout of structures (Ivey 1992:11). He designed a new a plan for the *convento* with the new church near the northeastern corner of the compound, facing west. A new section of the *convento* extended to the south from the south bell tower of the new church to join with the already existing *convento*. Tello laid out the foundations of a "new" granary that is described by Ivey as having large buttresses, intended for a vaulted building (similar to San José). It measured about 19 feet in width and 55 feet in length (interior measurements). Tello also intended to construct a corridor 9 feet wide, along the north side of the old *convento* to the end of the new granary (Ivey 1992). The granary was standing by 1744 (Ivey 1992:13), but the new church was only half-finished by the same time when Tello departed San Antonio (Ivey et al. 1990). The church remained unfinished until 1750 when Geronimo Ybarra and Felipe de Santiago began part-time work at Concepción. It was finished and dedicated in 1755 (Ivey et al. 2006).

The granary construction was completed by the Franciscans, at a height of 15 feet with a flat roof. Ybarra and Santiago reduced the size of the new *convento*. According to Ivey (1992), the new *convento* extended south of the new church to 9 feet north of the old *convento*, also another vaulted corridor was built on the east side. Walls were apparently built across the inner patio between the *convento* and the granary, with the space roofed and used as a community storeroom (Ivey 1992:20). A community storeroom or *officina de habasto comun* is also mentioned by Ivey et al., it measured 39 feet in length and 17 feet in width with its east wall being the west wall of the granary (1990:158). It is speculated that the doorway to the granary would have been at the north end, near the entrance to the sacristy.

Ortiz's revisit to the mission in 1756 claims the granary was located inside the mission square and constructed of lime and stone. The recent translation of Ortiz's visit in 1745 only mentions the granary and unfortunately provides no physical descriptions (Rock 2006b).

The 1745 inventory made by Fr. Juan Fogueras (Rock 2006b) makes no mention of the granary. In the 1772 Archivo Franciscano de Zapopan inventory, the granary is described as being 20 *varas* long, with its width being divided into two 5-*vara* sections (Rock 2006a). This inventory does not give specifics on its location and neither does a 1794 inventory that describes the granary as an adobe and stone structure 20 *varas* long and nine *varas* in width (Almaráz 1982). Almaráz's discussion of an 1815 land grant, given to Huizar by the Spanish, suggests the house or granary is 40 *varas* long and eleven *varas* wide (Almaráz 1990).

Chapter 3: Previous Archaeological Investigations

Antonia L. Figueroa

This chapter reviews the previous archaeological investigations conducted at the mission. Figure 3-1 is a composite of previous excavations at the mission. We have reviewed nine reports summarizing the results of investigations at the mission (Brown et al., 1994; Fox 1988, 1989, 1992; Ivey and Fox 1999; Krueger and Meskill 1992; Labadie 1989; Meissner 2001; Miller and Meissner 2001; Scurlock and Fox 1977). The locations of the archaeological

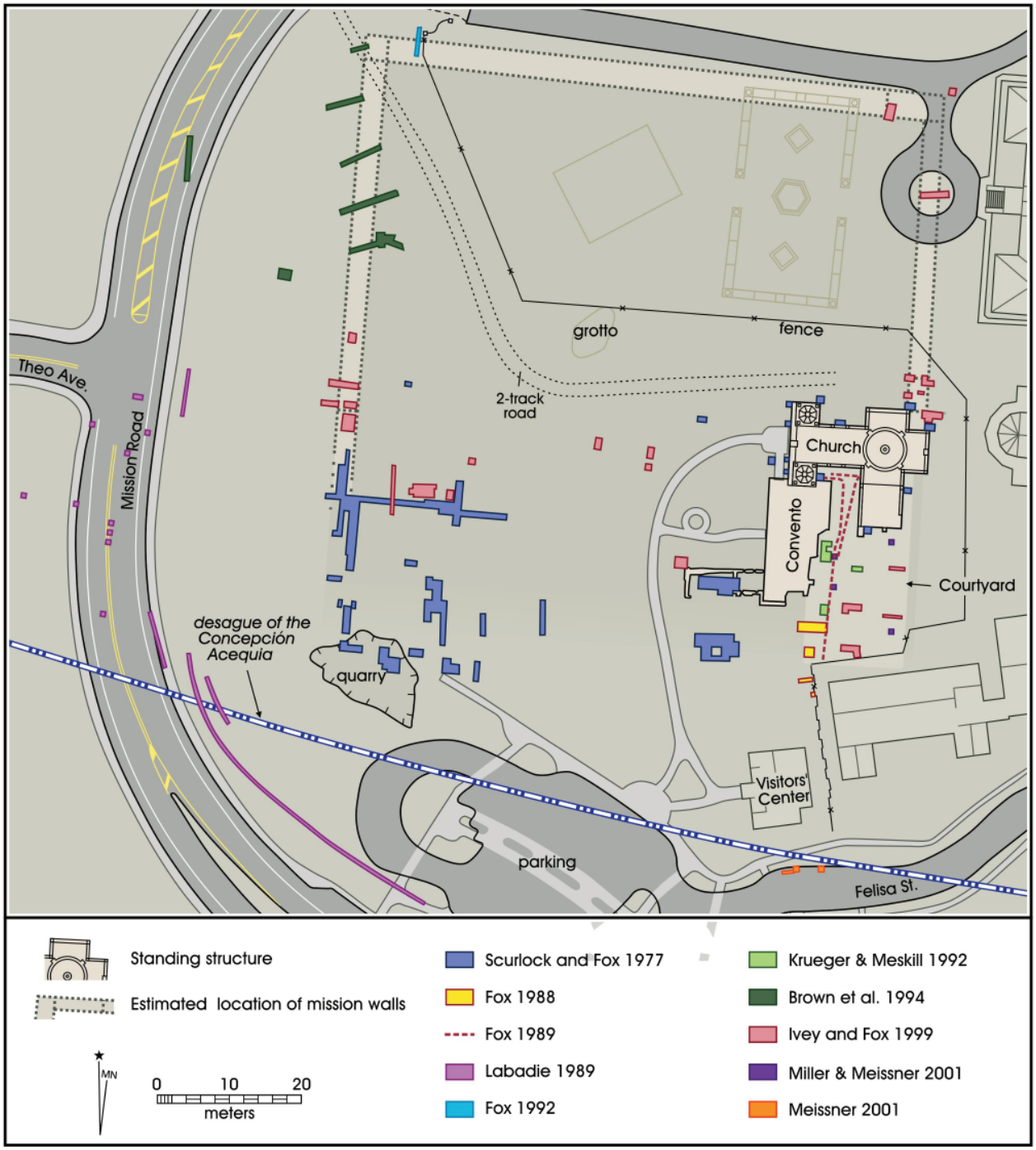

Figure 3-1. *Map of Mission Concepción showing the location of previous excavations.*

units depicted in Figure 3-1 were derived from maps provided in these reports. A number of difficulties were encountered in this process. For instance, the scales provided in the different reports had to be standardized. In addition, landmarks that could be used to orient and scale the different maps have shifted position (i.e., Mission Road) or have been entirely eliminated (i.e., construction of parking lot and Visitor Center eliminated fence lines, trees, etc.) through development and are no longer useful in scaling and orienting maps presented in previous technical report. These difficulties let to only approximate locations for some of the units depicted on Figure 3-1. Specifically, units located near the southwest corner of the mission compound associated with the Scurlock and Fox (1977) and Ivey and Fox (1999) excavations are positioned approximately but within 1-3 meters of their actual position. However, we feel that the remainder of the units are precisely plotted and only about 10 percent of the units being located roughly within 3-5 meters of their likely position. Finally, units from some previous excavations at Mission Concepcion could never be located and do not appear on Figure 3-1. These units are discussed in field notes on file at the CAR and appear to represent investigations that were never written up as technical reports.

The first systematic investigations of the mission occurred during the early 1930's, when Harvey P. Smith directed excavations under the Works Progress Administration. These excavations centered on the mission structures and the identification and mapping of buried foundations south of the convento and sacristy (Krueger and Meskill 1992). While resulting in a map showing the locations of extant structures and buried foundations (Figure 3-2), no notes associated with the investigations have been located to date.

In 1971 and 1972 the Texas Historical Commission (THC) conducted the first professional archaeological excavations at Mission Concepcion (Scurlock and Powers 1975; Scurlock and Fox 1977; Figures 3-1 and 3-3). The goals of these investigations were to determine the moisture content and structural integrity of the church, located the west wall of the mission, and investigate the area south of the convento (Scurlock and Fox 1977). During the course of excavations, several Spanish-Colonial features were encountered, including middens and hearths.

In 1980, Ivey and Fox (1999) conducted small block excavations in several areas of the mission (Figures 3-1 and 3-3). The placement of preliminary block excavations east of the *convento*, in the presumed area of the granary, was based on maps of the mission compound dating to 1874 (at the San Antonio Conservation Society) and 1912 (at the Center for American History at The University of Texas at Austin). Four rooms were identified in the likely location of the granary. Excavations also encountered foundations below the granary indicative of the first permanent phases of construction at the mission (Ivey and Fox 1999:15). Other areas investigated included the east, west and south walls of the Indian Quarters. Evidence of trash middens and an irrigation ditch were encountered in these areas (see Ivey and Fox 1999). The remnants of what appeared to be the first church constructed at the mission along with burial pits were also located during these excavations (Ivey and Fox 1999). The structural remains consisted of adobe floors and rubble beneath the remains of the former kitchen.

Due to increasing problems with flooding in the low area east and south of the *convento* the installation of drainage pipe became necessary. CAR was contracted in 1986 to conduct archaeological testing in the area to help determine the best approach for the drainage installation (Fox 1988). Test units were placed in the corridor, southeast of the *convent* (Figure 3-1), to locate buried foundations and walls crossing the corridor that had been mapped by Harvey Smith (Figure 3-2). A test trench also was placed south of the park fence to identify any undocumented walls in the area (Figure 3-1). Two foundations were encountered in the *convento* area; both were disturbed during the installation of electrical conduits. Excavations laid out presumably over the north wall of the first *convento* (Fox 1988:7) indicated the second *convento* had been built atop the ruins of the first. The test trench south of the park fence identified disturbed deposits and no sign of foundations or walls (Figure 3-1).

In 1987, prior to the relocation of Mission Road, testing was conducted along the proposed Right of Way of Mission Road (Labadie 1989). Several backhoe trenches and test units were excavated within the proposed ROW and immediately adjacent to it (Figure 3-1). The maximum depth of test units was 40 centimeters. Backhoe trenches varied in depth from 2.2 meters to over 3 meters. These excavations identified the location of an *acequia* but failed to locate any prehistoric or early historic occupation debris or evidence of structures. Ceramics recovered from the excavations consisted of Goliad ware, white earthen wares and stone wares (Labadie 1988:10). No colonial wares were encountered though a variety of glass and metal objects were recovered.

Phase II of the Mission Road Realignment Project was conducted in 1988 by CAR (Brown et al. 1994; Figure 3-1). Testing consisted of the excavation of backhoe trenches and test units in the vicinity of the northwest corner of the mission compound to determine if and where structural or cultural remains were located outside the west mission wall. These investigations located the foundations of the exterior

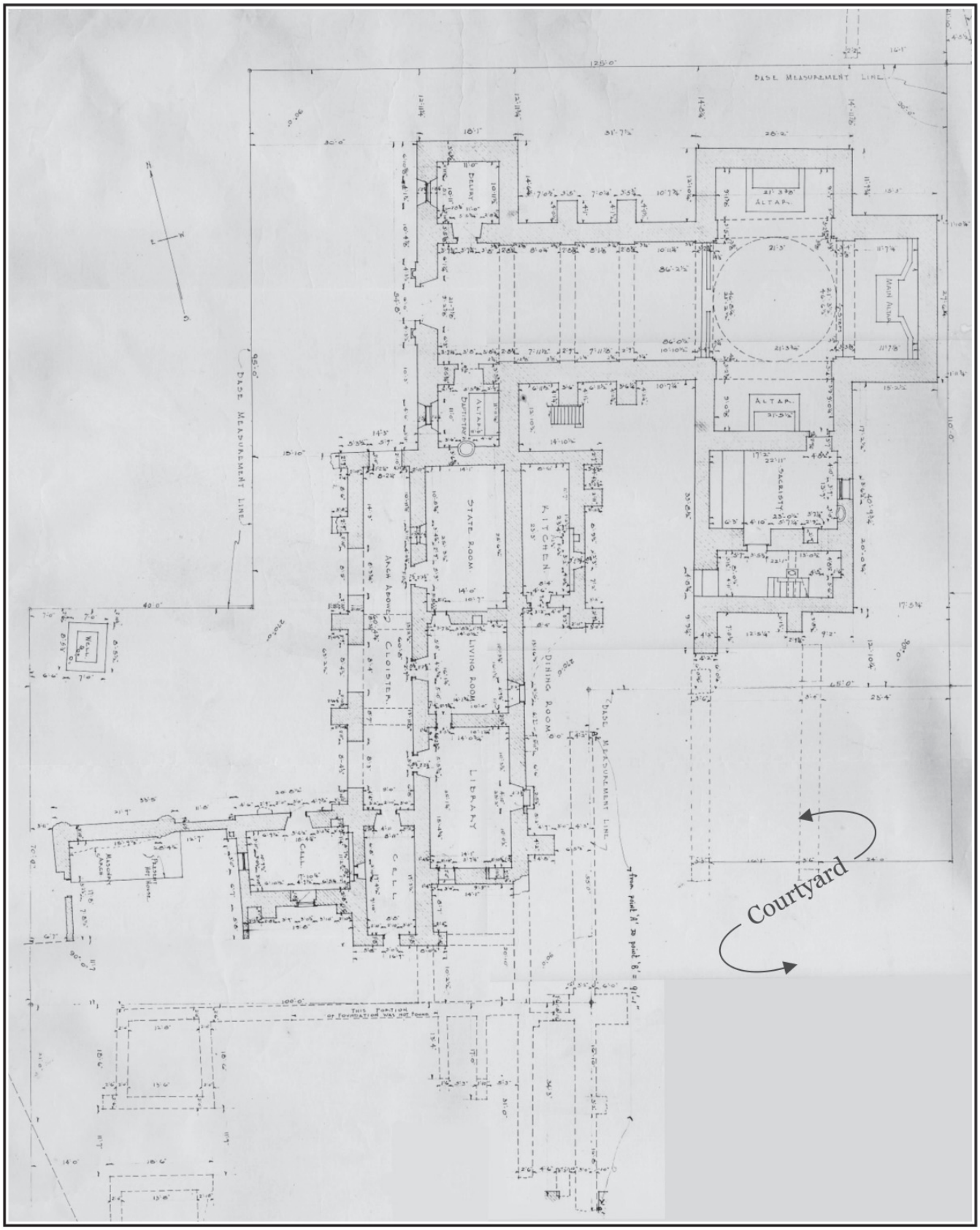

Figure 3-2. *Map of Mission Concepción illustrated by Harvey Smith, during Works Progress Administration Project.*

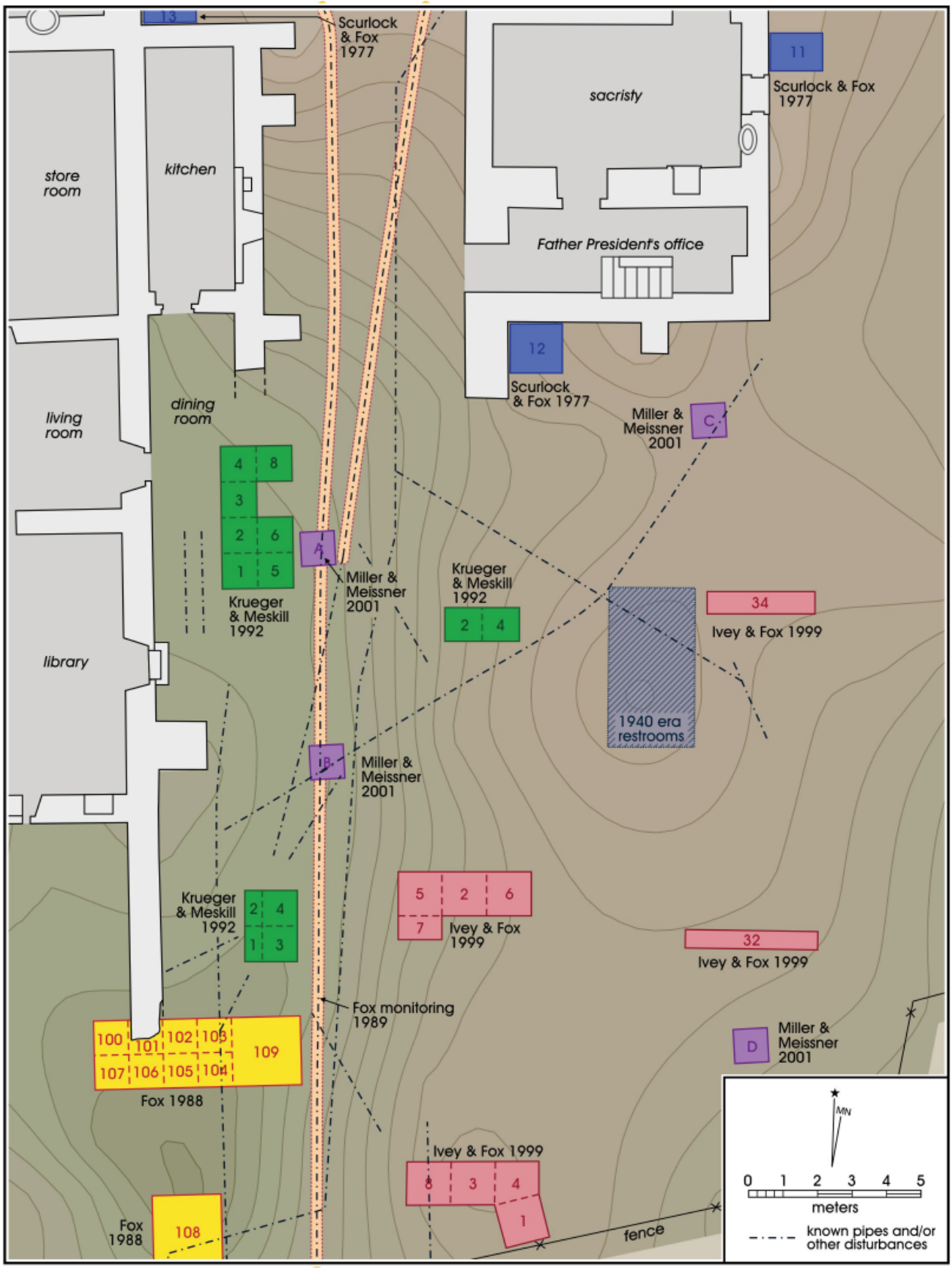

Figure 3-3. *Previous excavations and known pipes and other disturbances in the courtyard area of Mission Concepción.*

and interior west walls of the mission compound and also documented a hearth and a Colonial period trash midden.

Also in 1988, CAR monitored the excavation of trenches for utility lines associated with the installation of an air conditioning system in the church (Fox 1989, see Figure 3-1). Utility trenches excavated exposed the foundation of the first *convento* 6 to 8 inches below the surface (Fox 1989:3). Numerous Spanish and English ceramics were noted and collected from trenches, along with metal, glass and other artifacts. The archaeological crews also excavated a circular unit measuring 36-inches in diameter and extending to a depth of three feet in front of the church. The unit was to serve as the location of a dry well. A few fragments of animal bones were the only finds from this unit.

In 1990, the CAR conducted test excavations in the courtyard of the mission (Krueger and Meskill 1992; Figures 3-1 and 3-3). Identification of cultural deposits and architectural features in the courtyard was needed prior to drainage installations to avoid impacts to significant deposits. Of particular concern was locating the eastern arcade wall, any associated doorways and pilasters. The location of the north and south walls of the storage room also was a primary goal of the investigations. Three areas were excavated, with the first two concentrating on locating the eastern wall of the *convento* and the north and south walls of the storeroom. The third area of excavations concentrated on locating the west wall of the granary.

Excavations resulted in the documentation of the eastern *convento* wall, encountered at 3-13 cm below surface. An adobe-like surface that was encountered at an approximate depth of 39 cmbs was identified as the storeroom floor. Investigations in Area C encountered the west granary wall footings and remnants of a wall buttress along with a trash pit (Krueger and Meskill 1992:8, Figure 3). It was concluded that the midden deposit was formed when the Yturri family occupied the granary (see Chapter 2).

In 1990, CAR was contracted by the National Park Service to excavate a backhoe trench across the anticipated location of the north wall of the mission compound near its northwest corner (Fox 1992). The single backhoe trench was located on the south side of the entrance drive to the St. John's Seminary buildings. The top of north wall of the compound was found 75 cm below the surface and measured approximately 75 cm in thickness (Fox 1992:4).

In 1999, CAR conducted excavations at Mission Concepción related to the construction activities associated with the Mission Trails Underground Conversion Project (Meissner 2001). During excavations for a manhole, south of the Visitors' Center, a portion of an acequia was encountered that had been filled. The excavation of four 1x1 meter units revealed two dumping episodes, the earliest dated to the Spanish Colonial period.

The discovery of the acequia prompted monitoring of trench excavations for the installation of an electrical conduit that was being placed south of the mission on Felisa Street and Mission Road (Robinson 2001). An intact Colonial wall foundation was encountered in one of the trenches that ran north of Felisa Street into the grounds of the Integrated Family Rehabilitation Center. The wall was identified in the east wall profile of the trench, approximately 10-20 centimeters below surface. The wall measured 83 cm in width (roughly equivalent to a Spanish *vara*) and 58 cm in height (Robinson 2001:108).

In January of 2000, CAR was contracted to test the courtyard area south of the church prior to exposing and stabilizing Colonial period walls and floors (Miller and Meissner 2001; Figures 3-1 and 3-3). The goal of archaeological investigations was to determine the depth of the original floors of the buried rooms within the courtyard. Excavations consisted of four 1x1 meter test units. Surfaces that were assumed to be floors were encountered between 12-31 cmbs. One of the test units (Unit D) revealed intact deposits that contained a high density of colonial ceramics. A portion of the south wall of "Room 1", as described by Ivey and Fox (1999), was uncovered 15 cm below the ground surface.

The final non-field school investigations at Mission Concepción consisted of the monitoring of the installation of two light poles and tree removal in the visitor's parking lot during October 2005 (Dowling 2006-not shown on Figure 3-1). Auger holes reaching a depth of approximately 200 cmbs were excavated for the light pole installations. Only a sparse amount of animal bones was observed during excavations.

Chapter 4: Project Activities

Antonia L. Figueroa and Steve A. Tomka

The excavations in the courtyard of Mission Concepción summarized in this report were prompted by the National Park Service's planned installation of a drainage system. During frequent spring and fall rain events, sheet wash would regularly accumulate and pool at the base of the east wall of the *convento* and migrate into the wall. The rising damp would loosen the plaster on the inside to the wall causing the collapse of the plaster layer containing some of the rarest Colonial Period frescoes still present in the San Antonio missions. Following detailed consideration of the causes and impacts of the rising damp, it was determined that the long-term solution would have to consist of the installation of a drainage system that would allow for the pooling water to be drained away from the base of the wall and to the outside of the courtyard.

Archaeological investigations of the courtyard were to aid in identifying the architectural features that may be impacted by the drainage system installation. While, as summarized in the previous chapter, other archaeological projects had the same goals, the small number of units excavated coupled with their dispersed distribution, limited the conclusions that could be drawn about the types and locations of architectural features found in the courtyard.

Excavation efforts consisted of a combination of field schools and volunteer labor. The Department of Anthropology of the University of Texas at San Antonio (UTSA) conducted two Summer Archaeology Field Schools at the site during 2002 and 2004. In addition, the Center's Legacy Public Outreach Program, in conjunction with the University's Gear-Up program also held two summer field schools at the site during 2002 and 2003. Finally, when weather, holiday, and personnel schedules permitted, volunteer Saturday excavations were held on site between August 2002 and January 2005. The final field effort carried out within the courtyard followed the field schools and consisted of the clearing of fill during 2006. Besides removing fill, this operation also targeted the exposure of colonial foundation alignments and the removal of modern disturbances within the courtyard (i.e., restroom foundation).

The overall collaborative opportunity provided a great learning laboratory for students attending the field schools and at the same time provided a cost-effective means for NPS to excavate and expose large areas of the courtyard. The weekend volunteer excavations also encouraged local and regional archaeology enthusiasts to participate and often attracted members of the public from Austin, Victoria, Corpus Christi and San Antonio.

Prior to the inception of the 2002 field school, a 5 x 5 meter grid system was laid across the courtyard with a primary datum located adjacent the chain link fence at the south end of the courtyard (Figure 4-1). Secondary data were established as needed to reposition the Total Data Station around obstacles in clear lines of sight. None of the data were set in concrete. Rather, they consisted of three penny nails beaten into the ground and marked with flagging tape. Individual test units within the grid system were typically laid out by field school participants using tapes. In general, the southwest corner of each unit served as the datum for the line level string. In the case of some units positioned on uneven ground, the corner with the highest elevation was chosen as the line level datum even if other than the southwest corner. In all instances, the line level string was tied at ground level.

Excavation methods employed during the field schools and Saturday sessions consisted primarily of 1x1 meter (m) test units. In addition, eleven of the test units measured 100 x 50 centimeters (cm). Seven test units were placed in previously excavated areas (Test Units 4, 14, 16, 19, 22, 26, and 27), with the intention of relocating previously documented foundations. Two (TUs 26 and 27) of these eleven units were not dug in levels, but excavated with shovels until black plastic from the former excavations was encountered. With the exception of these two units, all soil extracted from all other test units was screened through ¼" hardware cloth. The matrix removed from TUs 26 and 27 was not screened.

The test unit excavations were typically started and completed within the time frame of a field school, although there were instances when the completion of a test unit occurred during a Saturday volunteer session following the field school. In some instances, the completion of a test unit was accomplished months after its inception with two to three different crews working on the same unit during that span of time.

The test units were excavated in 10-cm levels. However, the calculation of volumes of matrix excavated during each field school or during volunteer Saturdays is complicated by the fact that units placed on top of or straddling architectural features such as foundations would rarely result in the excavation and screening of a full .10 m^3 of matrix per level. In some instances, even the first level of excavation would

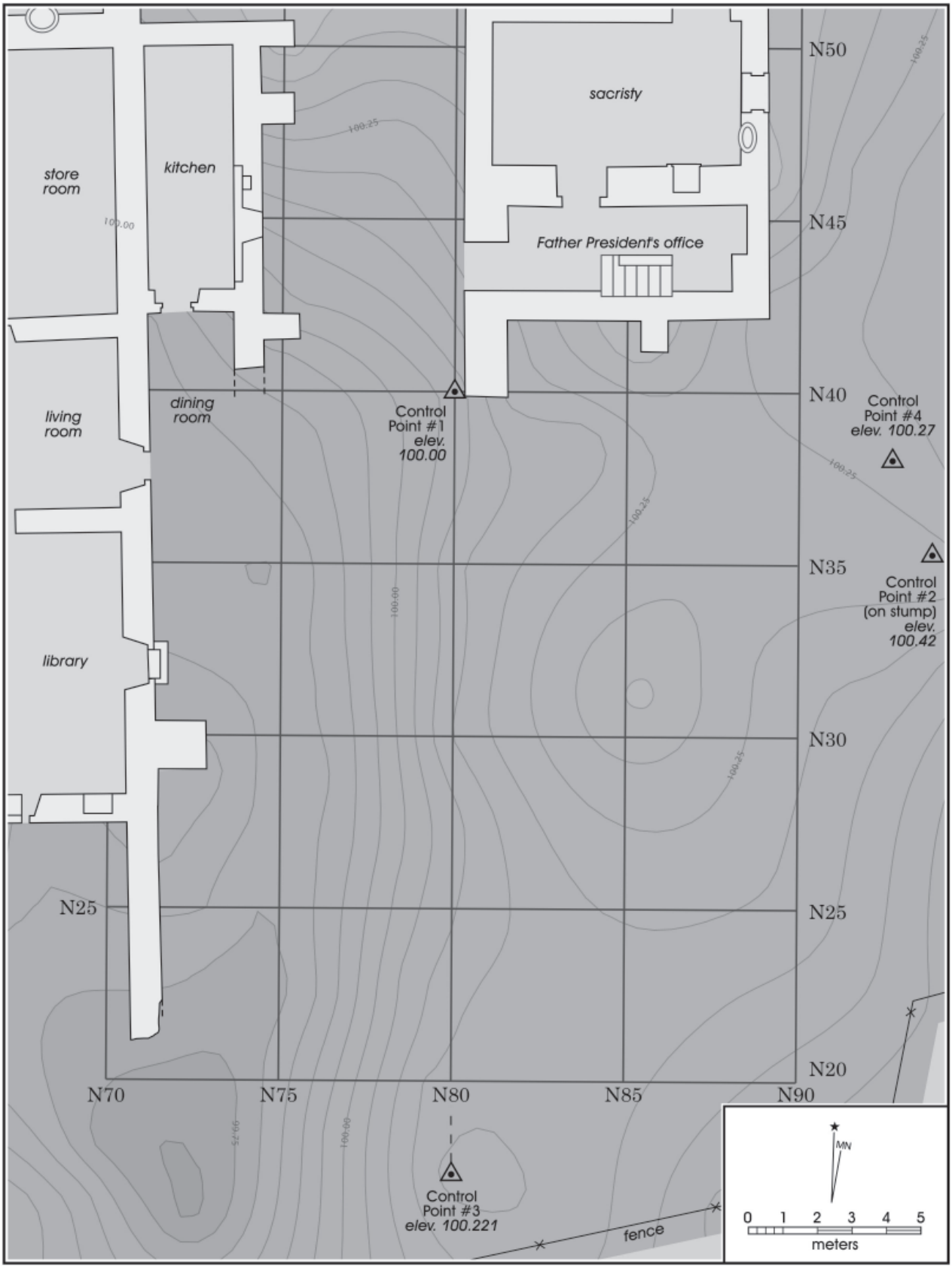

Figure 4-1. *Grid system and selected datum points used during courtyard excavations.*

reach the tops of the foundations and thereafter the excavator would be carefully removing small amounts of loose matrix from between rocks rather than the conventional amount expected from a level. Therefore, the volumetric amounts presented in this text are best approximations rather than precise calculations.

Standard excavation level forms were completed on each level and the bottom of the level was drawn and/or photographed only when it contained a feature. The extraction of soil samples was limited to matrix from selected features. No soil samples were extracted from general level contexts. Profiles were drawn of one selected wall of each unit at the end of the field schools while units excavated during volunteer weekends were not profiled before their closure.

All artifacts recovered either in the screen or during the excavation of the levels were bagged by provenience. All historic and modern artifacts were recovered from the screen and participants were instructed not to collect snails and modern charcoal.

UTSA Field School and Legacy Program Field School 2002

The first field school excavations in the courtyard of Mission Concepción started in June of 2002 as part of the Department of Anthropology's Summer Archaeology Field School under the direction of Dr. Steve Tomka and Dr. Raymond Mauldin (Figures 4-2 and 4-3). During the 2002 UTSA field school, 35 test units were opened for excavation and by the end of the field school 31 test units had been completed (Figure 4-2). The volume of matrix excavated during the field school totaled 15.4 m^3.

The following month in July, the Legacy Public Outreach program in conjunction with the Gear-Up program performed excavations under the supervision of the then Legacy coordinator Donna Edmondson (Figures 4-2 and 4-4). During the Legacy field school 12 1x1 meter test units were open for excavation and approximately 3.7 m^3 of matrix was excavated. In this same year two test units (TUs 48 and 49) were opened and 1.1 m^3 of matrix was excavated during Saturday volunteer sessions.

The 2002 excavation units were positioned immediately south of the Father President's Office (FPO, Figure 4-2). Two N-S running lines were placed in line with the east and west corners for the office hoping to expose presumed foundations located in the area. Only after consulting the WPA map produced by H.P. Smith, was it realized that the eastern foundation alignment was closer to the small buttress along the south wall of the Father President's Office rather than the corner of the office. At this point, a second alignment of units was placed immediately west of the first line. This alignment was not in the location suggested by the H.P. Smith plans for the foundation but did encounter it nonetheless. In addition, an E-W running set of units were also excavated connecting the two N-S rows of units. The goal of these units was to determine whether any additional N-S running alignments were present in this space and also define the nature of the deposits. The E-W running row of units was positioned approximately five meters south and paralleling the south wall of the Father President's Office.

Legacy Outreach and Saturday Sessions 2003

Excavation efforts continued at Mission Concepción during 2003 in the form of Saturday volunteer excavations scheduled for once a month (weather permitting) and a Legacy Outreach Program/UTSA Gear-UP field school also was held during the summer. Nineteen test units were opened for excavation in 2003 including the field school and Saturday volunteer excavations. In addition, several test units that were initiated in 2002 were completed during 2003.

A majority of test units excavated during 2003 were located along the western portion of the courtyard (Figure 4-2). Six adjoining test units were placed perpendicular to the east wall of the *convento* to expose the foundation of the wall and also more fully expose the N-S running alignment in line with the east wall of the kitchen. Five 1x.5 meter test units (TU's 54, 56, 57, 59 and 61) were positioned parallel the east wall of the *convento* approximately 6 meters from the wall. The goals of these units were to cross-cut and/or expose any potential E-W running intersecting walls in this area. Unfortunately, these units were placed directly within an existing trench used for the installation of electric conduits within the area (Figure 3-3). Only two levels were excavated in each unit prior to the discovery of the disturbed context. Nonetheless, no architectural alignments were noted in the walls of these units suggesting that no E-W running walls were present in the area. In addition, six 1x1 meter units excavated during volunteer Saturdays were dispersed south of the sacristy to explore architectural features partially exposed during previous excavations. The volume of matrix excavated from the 2003 test units is approximately 6.2 m^3.

UTSA Field School and Saturday Sessions 2004

The second Summer Archaeology Field School held by the Department of Anthropology at Mission Concepción occurred in the summer of 2004 (Figures 4-1 and 4-5). Along

Figure 4-2. *Map of test units and trench excavations conducted from 2002 to 2004.*

Figure 4-3. *Anthropology students at work during 2002 Summer Archaeology Field School.*

Figure 4-4. *Legacy Public Outreach participants at work during 2002 Field School.*

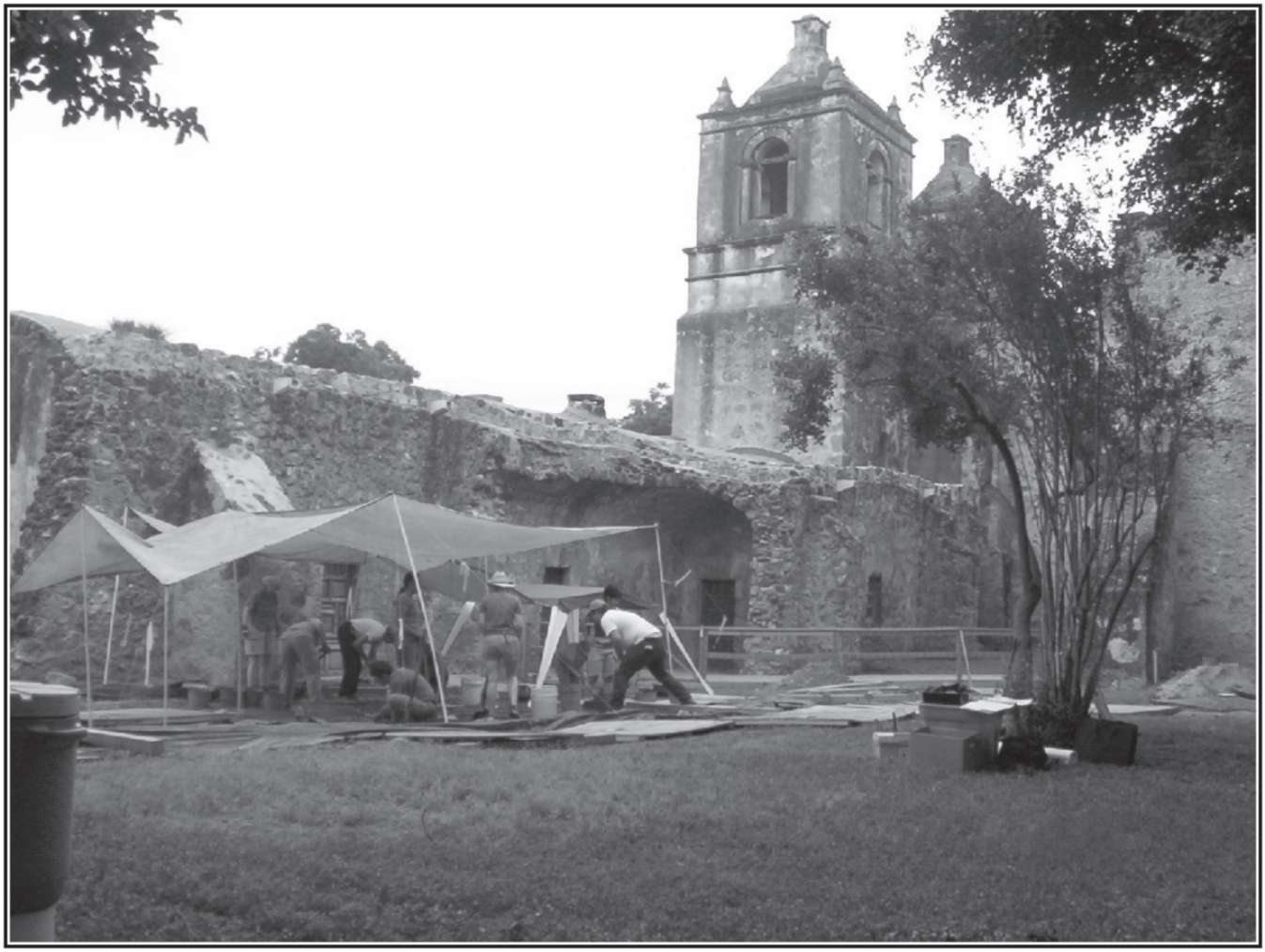

Figure 4-5. *Anthropology students at work during 2004 Summer Archaeology Field School.*

with the field school efforts, Saturday sessions also continued in 2004. In preparation of the 2004 field school, CAR and NPS staff oversaw controlled mechanical excavations of six trenches to outline the extent of known foundations and investigate unexplored areas of the courtyard (Figures 4-1 and 4-6). These trenches were excavated by a small backhoe and five of the six were oriented N-S within the courtyard while the sixth was positioned immediately east of the courtyard running E-W (Figure 4-2). The goal of the N-S trenches was to more fully expose architectural alignments both in terms of horizontal extend and depth. The intent of the E-W running trench was to search for any architectural features to the southeast of the Father President's Office.

Thirty-one 1x1 meter test units were started in 2004. The majority of the test units excavated during the field school were located in the western portion of the courtyard in the form of two block excavations (2-x-4 meters). Additional units were placed south of the sacristy (TU's 74, 103, and 75) and in the vicinity of the former restroom facilities (TU's 73, 97, 98, 99 and 100). The intent of the block excavation units was to investigate in more detail what could potentially be open-air activity surfaces situated adjacent to the *convento*. The units immediately south of the Father President's Office were opened to further investigate details of the E-W running alignment just two meters south of the wall of the office and also expose the foundation of the south wall of the office (TU 103). The cluster of five units near the center of the courtyard (TUs 73, 97, 98-100) were dug to determine if any portion of the N-S running architectural alignment remained following the construction of the foundation of the restroom in this area.

A total of 11.7 m^3 of soil was excavated during the 2004 field school and Saturday sessions. Saturday sessions continued until 2005, but only to finish partially excavated test unit levels.

Figure 4-6. *National Park Service and CAR staff monitoring trenching within the courtyard.*

Post-Field School Investigations Conducted by NPS Staff and Volunteers

During 2006, the National Park Service in coordination with the Texas Historical Commission reached agreement that since sufficient systematic archaeological work had been conducted to define the depth and extent of disturbed deposits, mechanical excavation would be undertaken to remove the disturbed matrix and expose any architectural alignments not identified or fully uncovered during the previous investigations. Some of these mechanically aided investigations occurred in conjunction with weekend volunteer opportunities (Figure 4-7). As part of these excavations, the foundations of the restroom facility were fully exposed and eventually removed. In addition, a concerted effort was made to locate the south wall of the probable granary by exposing portions of E-W aligned rock concentrations that proved to represent the probably remains of wall falls or other disturbed architectural features (i.e., possibly buttresses).

Laboratory Processing

During the UTSA-CAR field schools a field processing laboratory was set up on site to wash, dry and sort artifacts recovered during the excavations and introduce participants to laboratory processing tasks associated with archaeological investigations (Figures 4-8 and 4-9). All but the artifacts accumulated during the last two weeks of the 2004 field school were washed. The washing of the materials collected during the Saturday volunteers occurred between 2003 and 2006 and the sorting and cataloging of the remains took place over the same period and was carried out by volunteers provided by NPS and CAR.

Summary

Excavations in the courtyard of Mission Concepción were held between the 2002 and 2006. Two UTSA Department of Anthropology Summer Archaeology Field Schools, numerous Saturday volunteer sessions, two Legacy/Gear-Up Field Schools, and NPS directed excavations were carried out on site. As a result, during the UTSA-associated investigations a total of 39.2 m^3 of soil was excavated.

The number of years of ongoing field investigations, the breaks between field seasons, the mix of field school participants and experienced and inexperienced volunteers provided a great learning experience for how to carry out such projects and what works and does not work under those circumstances. Inconsistent oversight and in particular lack of systematic review of field records immediately after their completion, caused significant difficulties in the reconstruction of field procedures and results years removed from the investigations.

Figure 4-7. *Courtyard following the mechanical removal of fill.*

Figure 4-8. *Anthropology students working in field artifact processing laboratory.*

Figure 4-9. *Artifacts drying in screens adjacent to field laboratory.*

This could have been alleviated by more systematic and careful oversight by project personnel and the production of brief post-field reports summarizing the results of each field school immediately after their termination. Better synchronization of the number of volunteers and trained project personnel to provide sufficient and effective field supervision could also have helped to ensure that all field efforts and project-associated documents were properly inspected and corrected if necessary during the day of their creation. Laboratory processing that occurred at both CAR and NPS facilities was not systematized and therefore several lots of artifacts required re-cataloging. Again, this could have been prevented by systematic oversight and careful coordination between different entities and/or the processing of the materials by a single entity.

Even with these difficulties, however, the multiple field schools, Saturday volunteer excavations and NPS investigations have yielded significant results regarding architectural features present within the courtyard that would not have been possible through smaller-scale and more limited efforts. While not all questions regarding the distribution and nature of architectural features present in the courtyard have been answered, the combined projects have been able to facilitate the installation of measures to prevent the reoccurrence of rising damp and the continued destruction of frescoes found on the walls of the *convento*. As such, these projects have achieved their combined principal goal.

Chapter 5: Project Results

Antonia L. Figueroa and Steve A. Tomka

This chapter discusses the results of the test unit excavations that were conducted from 2002 to 2004 in the courtyard of Mission Concepción. Six architectural alignments and five features were exposed during excavations. The first section of this chapter describes each alignment and other architectural features that were unearthed. Although the architectural alignments more than likely represent the remnants of the granary and the *convento* foundations they are presented as alignments because no undisputable evidence of the fact that they are part of the granary and *convento*, respectively, were documented during the excavations. Following the discussion of the architectural alignments, we present the results of excavations in areas that were not associated with architectural features.

Architectural Alignments

During the course of excavations six stone alignments were exposed. All the alignments were composed of tufacious limestone cemented in what appeared to be slurry mortar. Segments of many of the alignments mentioned in this section have been identified in previous excavations.

Figure 5-1 illustrates the location of the six alignments. For easy reference, the alignments are numbered 1-6 from west to east across the courtyard and are discussed in numerical order. Alignment 1 is closest to the *convento* and could represent remains of the east wall foundation. Three alignments appear to belong to the granary (Alignments 2, 3 and 5). The function of Alignment 4 was difficult to determine but it does seem to be related to the granary. One buttress (Buttress 1) and the remnants of a probable second buttress were also uncovered.

Although the cultural material above the alignments could aid in determining when the structure collapsed or was removed, the degree of disturbance created by the WPA investigations, is difficult to determine. Subsequent impacts resulting from facilities construction and utilities installations may have further disturbed deposits and associated artifacts. Therefore, any correlations between the ages of the artifacts recovered and the timing of mission activities and or post-depositional processes derived from artifact distributions should be viewed with caution.

The cultural material recovered from above or in immediate association with each alignment was grouped into broad analytical categories including: Colonial ceramics (Colonial c.), 19th century English ceramics (19th c.), debitage, metal, glass, modern debris, construction debris, personal items, burned rock and lithic tools. A discussion on the distribution of the material is provided for each alignment and area. Chapter 6 presents a detailed discussion of the results of the analyses of the ceramics, debitage and historic artifacts. Chapter 7, the summary and conclusions provides a brief review of the project findings. The analysis of the faunal material from the excavations is presented in Appendix A, while Appendix B presents the results of the analysis of the Goliad ceramics.

Alignment 1

Alignment 1 was exposed during the 2003 and 2004 excavations (Figure 5-1). Segments of the alignment were visible in TU's 63, 64, 79, 78, 77, 76 and 92. These test units created a contiguous north/south line paralleling the standing east wall of the *convento*. At its closest, the alignment was located approximately 2.25 meters east of the standing wall of the *convento*. Alignment 1 lines up with the eastern wall of the structure identified by Harvey Smith as the kitchen, although there is a significant gap between the two features. The northern portion of the stone alignment is exposed in TU's 63 and 79. The top of the stone alignment was exposed at 13 to 14 centimeters below surface (cmbs) and completely exposed at 34 cmbs (Figure 5-2). The western edge of this alignment segment was also encountered in TU 64. The top of the alignment in TU 64 ranged from 20 to 35 cmbs. Excavations in TU 64 found the bottom of the alignment to be at approximately 55 cmbs. TU 79 also contained portions of the alignment at a depth of 40 cmbs. The alignment continues south and was also recorded in TU's 78, 77, 76 and 92, where the top was encountered between 20 and 23 cmbs. There was some visible disturbance to the alignment in TU 92 by a utility line in the northwest corner of the unit that has impacted the alignment (Figure 5-3).

Mechanical excavations between the northern portion of the alignment and the outer wall of the kitchen failed to encounter any signs of architecture. The alignment measures 13.92 meters in length including the portions uncovered in the test units excavations and NPS mechanical excavations.

The northern portion of this tufacious limestone alignment was recorded in the 1990 excavations (Krueger and Meskill 1992) and documented by Harvey Smith during WPA investigations. The Krueger and Meskill investigations encountered one segment of the alignment just north of the CAR TUs 63 and

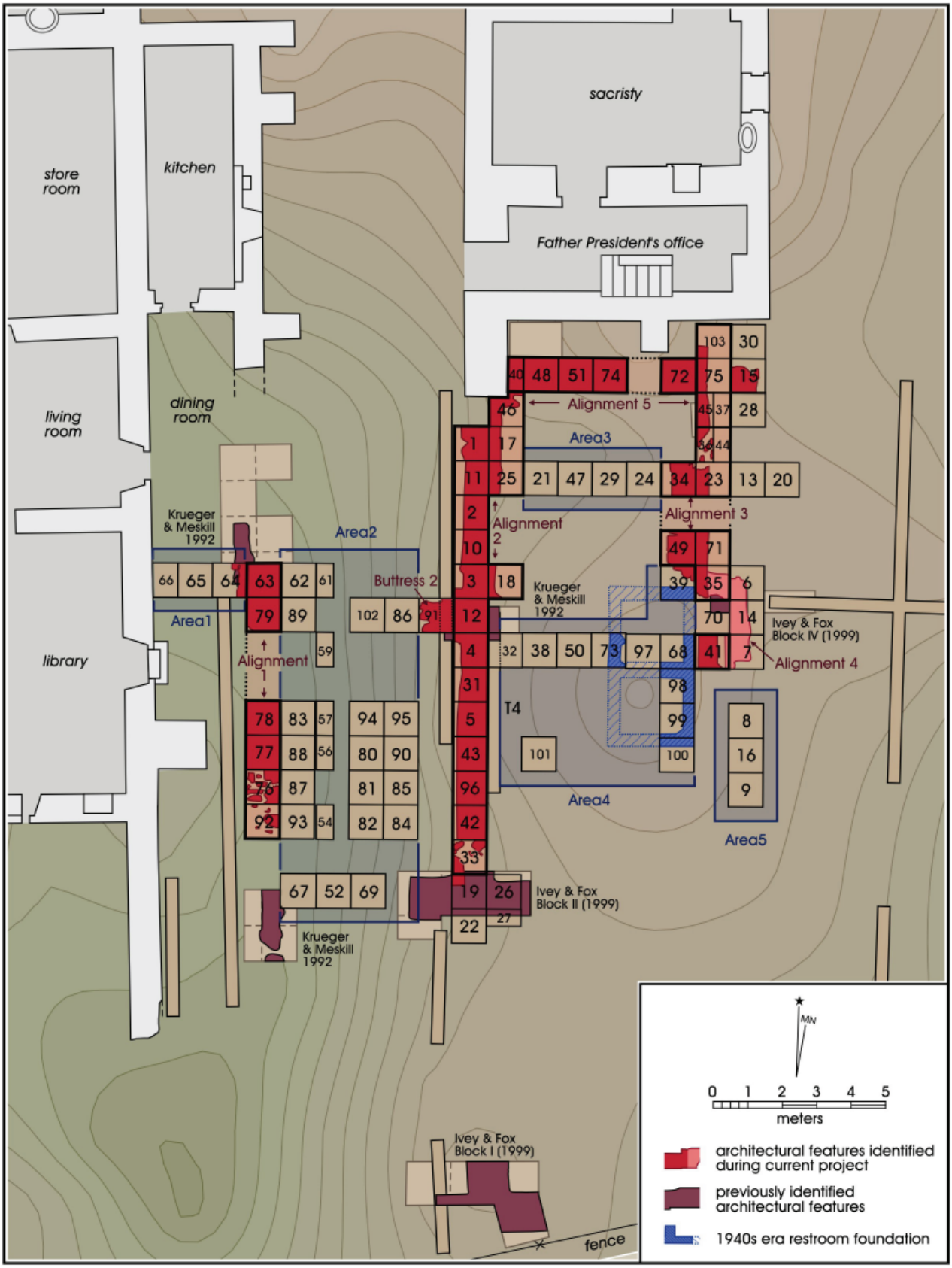

Figure 5-1. *Map indicating test units, alignments and non architectural areas.*

Figure 5-2. *Alignment 1 uncovered in Test Unit 63.*

64. However, the alignment did not extend further north to meet with the kitchen wall. Ivey et. al. (1990) suggests that a continuous wall may never have existed in the area.

Based on the disturbed nature of the foundation rocks found in their unit, Krueger and Meskill (1992:16) suggested that the missing portion of the alignment was the result of stone robbing (Krueger and Meskill 1992:10). The reuse of construction stones derived from collapsed buildings for the repair of old and/or construction of new buildings was a common practice as the readily available materials reduced quarrying and transportation costs (Ivey et. al. 1990). For instance, in 1841, Bishop Odin was authorized to purchase stone from the Concepción convento to repair San Fernando Cathedral (Ivey et. al 1990 after Castañeda 1958:50).

On the other hand, based on 1860 deed transfer records, Ivey et al. (1990:167) suggest that there may never have been a continuous foundation in the area. The deed records indicate that the kitchen's east wall may have been formed by two closed arches. One is still present at the northern end of the kitchen while the other may have been in the area of the missing foundation.

The cultural material obtained from the test units of Alignment 1 consists of a mixture of Spanish Colonial and 19th century ceramics in the first two levels, as well as glass, metal and modern materials (Table 5-1). Levels 3 and 4 are void of modern materials, although both English (hand painted and undecorated white earthen ware) and Colonial wares are present. There is a single unglazed ceramic Colonial ware in

Table 5-1. Cultural Material Recovered from Alignment 1 Test Units

Level	Colonial c.	19th c.	debitage	metal	glass	modern	construct.	personal	burned rock	lithic tools	Grand Total
1	22	7	4	18	40	5	6	3	1	1	107
2	24	29	4	12	53	3	8	8	4	0	145
3	13	14	6	4	19	1	2	3	3	0	65
4	1	3	4	7	5	0	1	1	0	0	22
Grand Total	60	53	18	41	117	9	17	15	8	1	339

Level 4. A majority of Colonial wares were present in Levels 2 and 3 and the amount of English wares decreases below Level 3. The bulk of the cultural material consists of glass with 26% of it being olive green in color. Though this glass color is typically associated with Colonial components, there is an array of glass colors present along with 19th century material. Lithic debitage (n=18) and a lithic tools (n=1) also were present. Colonial wares (36.4 sherds per m^3) are present in a slightly higher density than 19th century English wares (32 sherds per m^3). The density of cultural material in this area was 73 artifacts per m^3.

Figure 5-3. *Alignment 1 in Test Units 78 through 92.*

Alignment 2

Alignment 2 was exposed in an N-S oriented line of test units beginning just south of the sacristy and the Father President's Office, in line with the western buttress (Figure 5-1). The line of units measured slightly less than 17 meters in length and a majority of it was excavated during the 2002 field school. Alignment 2 was identified in Test Units 46, 1, 17, 11, 25, 2, 10, 3, 18, 12, 91, 4, 31, 5, 43, 96, 42 and 33. The average depth of the units was 60 cmbs. Before coming down on the alignment, a layer of bricks was uncovered in TU 17 at 10 cmbs (Figure 5-4). The bricks appear to represent the remnants of a sidewalk perhaps leading from the *convento* door to the 1940s restroom facility. Alignment 2 appeared to be more intact in the northern set of units, while in the southern half the alignment has been heavily disturbed. A circular depression was identified in the northwest corner of TU10 immediately at the top of the alignment (Figure 5-5). Test Units 11 and 25 uncovered significant disturbances immediately east of the alignment. The disturbance extended further to the east and consisted of a large trash pit (Feature 5) filled with refuse including complete and fragmentary bottles, shoes, and miscellaneous unidentified metal objects. A second even larger pit impacted approximately a 5-meter segment of the southern part of the alignment between TUs 5 and 35 (Figure 5-6 and 5-7). Test Unit 5, near the southern end of the alignment clearly shows a severely impacted portion of the alignment (Figure 5-6) with none of the alignment rocks exposed during the excavation found in situ. Metal objects and debris were present among the loose alignment rocks suggesting that the pit created by the disturbance may have been used as a dump at some time. The continuation of the disturbances also can be seen in TU 42 (Figure 5-7).

No signs of the alignment were encountered in Test Units 19, 26, 22 and 27 during or following the removal of the backfill. However, previous excavations by Ivey and Fox (1999) reported the encounter of a rock alignment in this area. Figure 5-8 pulled from the project archives, shows a portion of the rock alignment encountered by Ivey and Fox (Block I) near the current fence that bounds the courtyard to the south. The alignment was not visible in Test Units 96 and 33, but mortar and limestone fragments were common within the matrix suggesting that the alignment has been depleted of limestone rocks. During the excavations, the alignment was encountered between 25- 30 cmbs. Evidence of a buttress was noted in Trench 3 running along the western edge of Alignment 2 and

Figure 5-4. *Partial layer of bricks forming sidewalk in Test Unit 17.*

Figure 5-5. *An intact portion of Alignment 2 uncovered in Test Unit 10 (note the possible posthole in northwest corner of the unit).*

Figure 5-6. *Disturbed portion of Alignment 2 uncovered in Test Unit 5.*

Figure 5-7. *Portion of Alignment 2 uncovered in Test Unit 42.*

Figure 5-8. *Ivey and Fox (1999) excavations, Block I, probable southwest corner of structure represented by Alignment 2.*

in Test Unit 91 (Buttress 1; Figure 5-9). The buttress is approximately 95 cm wide and extends approximately 100 cm away from the Alignment (Figure 5-9). Its base extends to the same depth as the base of Alignment 2 and it is made of the same tufacious limestone present in the alignment. Its top was identified about 15 cm below the surface but it is likely that it originally continued above the ground surface.

During the NPS excavations (Summer 2006), it was apparent that the alignment extended further south than indicated by CAR test unit excavations. The length of the alignment measures approximately 17 meters, including the portions exposed during the NPS excavations.

Previous excavations also had encountered portions of Alignment 2. Smith indicates the remnants of this alignment on his map of Mission Concepción (Figure 3-2). Ivey and Fox (1999) uncovered portions of this alignment during their excavations (Figure 3-1). Block II of the Ivey and Fox excavations picked up portions of it, though a large pit had been dug into the area (1999: Figure 5). Block I excavated by Ivey and Fox (1999) uncovered a portion of this alignment and describe it as a "massive foundation" (Figure 5-7; Ivey and Fox 1999:10). These segments exposed during Ivey and Fox's excavations could represent the southern portion of the building and/or a later addition. Ivey mentions a room that was added on to the south end of the granary and the 1980-81 excavations might have uncovered it (Ivey 2006).

The overall density of artifacts derived from the units along Alignment 2 was 390 artifacts per m^3. Colonial ceramics, 19th century English ceramics, debitage, metal, glass, modern materials, construction materials, personal items, burned rock and lithic tools were among the artifacts recovered (Table 5-2). A majority of the material from these units consisted of glass (51%). Metal artifacts made up 28% of the materials recovered from the area. The bulk of cultural material was recovered in Level 2. Only two units along this alignment (TU's 5 and 18) reached a depth of 80 cmbs. Level 8 had few ceramics, Mexican black luster and English wares consisting of transfer, hand painted, undecorated and porcelain fragments. The recovery rate of English wares in this area was higher (41.8 sherds per m^3) than Colonial wares (14.4 sherds per m^3).

Figure 5-9. *Alignment 2 (at top of photo) and Buttress 1 (center of photo) in Test Unit 91.*

Table 5-2. Cultural Material Recovered from Alignment 2 Test Units

Level	Colonial c.	19th c.	debitage	metal	glass	modern	construct.	personal	burned rock	lithic tools	Grand Total
1	8	24	3	24	414	6	27	8	1	0	515
2	30	99	25	40	481	10	40	12	9	2	748
3	42	99	0	69	331	4	19	5	10	1	580
3.1	0	0	0	0	3	0	0	0	0	1	4
3.2	0	0	0	0	2	0	0	0	0	0	2
3.3	0	0	0	1	3	0	0	1	0	0	5
4	16	13	4	81	138	0	15	2	1	0	270
4.1	1	5	0	8	13	0	2	1	0	0	30
4.2	1	0	0	1	4	0	0	0	0	0	6
5	8	24	4	22	50	0	8	2	6	0	124
5.1	0	13	1	26	26	0	2	3	0	0	71
5.2	1	1	0	3	5	1	2	0	0	0	13
6	1	24	0	46	33	0	2	1	1	0	108
7	1	12	1	496	28	0	2	2	1	0	543
8	1	6	1	8	19	0	3	3	0	0	41
9	1	2	0	1	1	0	1	0	0	0	6
Grand Total	111	322	39	826	1551	21	123	40	29	4	3066

Alignment 3

This north-south running alignment was exposed in a block of test units excavated south of the sacristy (Father President's Office; Figure 5-1). The alignment is immediately east of the small existing buttress, on the south side of the sacristy. The alignment is depicted on Harvey Smith's map of the mission (Figure 3-2). The alignment does not appear to be related to or connected to the FPO building. Portions of the alignment were evident in TU's 103, 75, 36, 23, 34, 35, 49, 35, 39, and 41. The top of the alignment was exposed from 38 to 35 cmbs.

Test Unit 23 contained an intact portion of the alignment (Figure 5-10) though the units excavated immediately east of the alignment (i.e., TUs 30, 28, 13 and 20) only contained wall fall (Figure 5-11). A large void was uncovered in TU 20 under the wall fall. NPS staff had the void filled with cement slurry. TU 30, positioned adjacent the southeast corner of the sacristy/Father President's office was excavated to determine the depth and condition of the foundation of the south wall. It reached the bottom of the foundation at and 130 cmbs. While the foundation was intact and structurally sound exhibiting no cracks or deterioration, a large void was encountered immediately under the corner. This void also was filled with a slurry of cement to provide a solid footing for the foundation (Figure 5-12).

The integrity of this alignment has been compromised at several points along its length. A restroom facility was installed in the east-central portion of the courtyard in the late 1940s (Figure 5-13). Its foundation and the water and sewer lines that led to and from it have cross-cut the alignment in several places (Figure 5-14- and 5-15). In total we documented approximately of 5.28 meters of construction related impacts along Alignment #3. The disturbances were particularly extensive in Test Units 39, 73, 97, 68, 98, and 99.

Upon the NPS clearing of the courtyard area in late summer of 2006, it became evident that the alignment extended a length of 15.32 meters. A narrow stone alignment measuring only about 25 cm in width found in Test Unit 15 abuts Alignment 3 (Figure 5-16). This wall is only 30 centimeters high and may represent a small garden wall erected after the mission was secularized (Personal Communication, Susan Snow 2007).

Cultural material recovered from test units in this area are presented in Table 5-3. As the case with Alignment 2, glass constitutes 40% of cultural material from these units and is

Figure 5-10. *Intact portion of Alignment 3 revealed in Test Unit 23.*

Figure 5-11. *Alignment 3 uncovered in Test Units 23, along with wall fall present in adjacent Test Units 13 and 20.*

present throughout the levels in this area (the majority in the first two levels). Surprisingly, the highest number of lithic debitage is found in the upper three levels. This pattern may be a direct result of the backdirt from invasive trench excavations having been tossed onto and spread on top of the surface. Colonial wares compose 63% of the ceramics. The density of Colonial ceramics is 11 sherds per m^3, while English wares have a density of 6.17 sherds per m^3.

There is an absence of 19th century wares below Level 4, though only seven of the units in this area were excavated below this level. Ceramics from Level 5 and below consist entirely of Colonial specimens including 12 unglazed, 7 tin glazed and four lead glazed types (three being Tonala). The unglazed types are mostly comprised of Valero Redware and Red Burnished wares. Both Valero Redware and Red Burnished were produced in the early to mid 18th century.

Although Level 6 does contain a small number of glass, metal and construction debris, such intrusive materials are virtually absent from deeper levels suggesting that Level 6 and deeper levels in this area of the courtyard and east of Alignment 3 could contain intact Colonial deposits.

Alignment 4

In Test Units 6, 14 and 7 there is evidence of a short stone alignment, which is just east of (Figure 5-1) and appears to abut Alignment 3. The segment is directly opposite of Buttress 1 and measures just under 3 meters in length although some of the materials may be wall fall rather than in situ foundation. Figure 5-17 depicts a profile of Test Unit 7 where the architectural feature was encountered. This alignment was encountered between 22 and 28 cmbs. It is possible that at least a portion of this alignment is part of a buttress; however, excavations by Ivey and Fox (1999) (Block IV, Test Unit 34) revealed an architectural feature in the vicinity of Test Units 6, 14 and 7. The segment previously recorded by Ivey and Fox could possibly be related to Alignment 4.

The density of cultural material in this area was 122.6 artifacts per m^3. The most frequent artifact type encountered in this area was glass (Table 5-4). The majority of glass is occurring in the first three levels (81%). Modern debris,

Figure 5-12. *Cement slurry at bottom of Test Unit 30.*

Figure 5-13. *Restroom facilities and storage shed in courtyard installed in the late 1940s and removed in the late 1980s.*

Figure 5-14. *Concrete sewer pipe south of remnants of possible buttress in Test Units 8, 16 and 9.*

Figure 5-15. *Foundation remnants of restroom facility.*

Figure 5-16. *Cement-reinforced stone wall identified in Test Unit 15.*

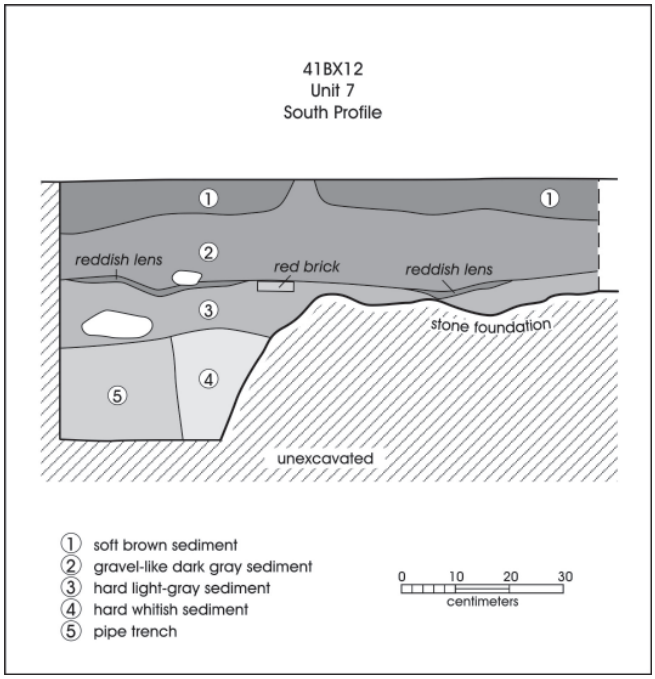

Figure 5-17. *Profile of Alignment 4 uncovered in Test Unit 7.*

Table 5-3. Cultural Material Recovered from Alignment 3 Test Units

Level	Colonial c.	19th c.	debitage	glass	metal	modern	construct.	personal	burned rock	lithic tools	Grand Total
1	11	7	20	31	37	28	25	1	7	0	167
2	15	27	29	39	168	31	49	2	9	1	370
3	16	7	22	24	69	4	28	3	2	0	175
3.2	1	0	0	0	0	0	1	0	0	1	3
4	8	1	6	20	56	9	17	4	8	0	129
5	8	0	2	7	3	0	16	1	2	0	39
6	11	0	8	5	29	0	2	0	1	0	56
7	4	0	0	0	0	0	1	0	2	0	7
8	1	0	12	0	0	2	0	0	0	0	15
9	0	0	0	0	1	0	0	0	0	0	1
10	0	0	2	0	0	0	0	0	0	0	2
13	0	0	1	0	0	0	0	0	0	0	1
Grand Total	75	42	102	126	363	74	139	11	31	2	965

such as plastic, is also contained in the upper three levels. Colonial ceramics were predominant in this area with a density of 23.4 sherds per m^3 and English wares were only 0.8 sherds per m^3. A majority of the Colonial wares were present in Level 4 (n=14), mostly tin glazed types (unknown polychromes =9; Puebla Blue on White =1). There were only a few artifacts in Levels 5 and 6, with only six ceramic sherds, metal (n=3), glass (n=7) and building materials (n=5). The six ceramics from Level 5 were lead glazed (n=1), Red Burnished (n=2) and unknown tin glazed polychromes (n=3). Though the production date of Red Burnished wares is as early as 1725, the tin glazed polychromes may represent Aranama types which begin to be produced during the late 18th century (Dixon 2004: 221). Though a penny and plastic fragment are present in the lower levels, they are in Test Unit

Table 5-4. Cultural Material Recovered from Alignment 4 Test Units

Level	Colonial c.	19th. c.	debitage	metal	glass	modern	construct.	personal	burned rock	lithic tools	Grand Total
1	1	0	7	3	13	2	3	0	0	1	30
2	4	1	2	4	25	3	10	1	0	0	50
3	4	0	4	4	14	3	8	0	2	1	40
4	14	0	2	1	5	0	4	0	0	0	26
5	6	0	1	3	5	1	4	2	0	0	22
6	0	0	1	0	2	1	1	0	0	0	5
Grand Total	29	1	17	15	64	10	30	3	2	2	173

Table 5-5. Cultural Material Recovered from Alignment 5 Test Units

Level	Colonial c.	19th c.	debitage	metal	glass	modern	construct.	personal	burned rock	lithic tools	Grand Total
1	0	0	8	15	25	3	3	13	1	1	69
2	4	3	7	7	196	3	7	0	7	0	234
3	2	4	2	2	74	1	4	0	3	1	93
4	1	1	2	6	50	4	3	6	1	0	74
5	1	0	0	0	22	1	1	0	0	0	25
Grand Total	8	8	19	30	367	12	18	19	12	2	495

14; therefore, it is possible that sediments below 40 cmbs and to the east of the alignment may be undisturbed.

Alignment 5

East-west running Alignment 5 appears to connect Alignments 2 and 3, approximately 1.15 m south of the south wall of Father President's Office. It was exposed in Test Units 40, 48, 51, 74, and 72 (Figure 5-1). The top of this alignment was encountered between 30-40 cmbs. The length of the alignment measured 5.05 meters, and runs from Test Unit 40 to 72. A 1-meter segment along the alignment has not been excavated. The outer corner of a corner stone is present in TU 103 where Alignments 3 and 5 come together.

Alignment 5 does not appear to be related to the sacristy (Father President's Office; FPO) since there is only about a 1.25 meter gap between the south wall of the FPO and Alignment 5. Rather, the alignment appears to form the north wall of a structure defined by Alignments 2 and 3. The alignment is not shown on the Smith maps (Figure 3-2) suggesting that it was not identified during his work at the site.

Evidence of Test Unit 12 excavated under THC-sponsorship (Scurlock and Fox 1977) in the corner between the south wall of the sacristy and the large buttress was present in Test Unit 40 and 48. The THC unit appears to have stopped just short of exposing the edge of Alignment 5. THC investigations note a clay floor and three post holes in the unit.

As the case with most of the areas, glass was the most frequent artifact type encountered (Table 5-5), with the largest percentage coming from Level 2 (53%). Few Colonial and English ceramics were recovered in this area (n= 16). Colonial wares consisted of tin glazed (unknown) and unglazed types (Red Burnished, unknown and Tonalá). Interestingly, a small amount of modern material was evident throughout the five levels of excavation and lithic debitage is again most common in the upper two levels. These trends are suggestive of significant post-depositional mixing of the materials. The overall artifact density of the area was 300 artifacts per m^3.

Alignment 6

A portion of this alignment was first identified during hand-excavations in TU 101 (Figure 5-1). The hand excavations uncovered a layer of tufacious limestone between 20-30 cmbs in the western half of the unit. The excavations in the unit did not proceed sufficiently deep to define whether the stones were part of a foundation or wall fall. During the NPS trenching to remove fill from within the courtyard, the trench on the east side of Alignment 2 encountered the continuation of the rock layer seen in TU 101. While it appears that the ruble seen in TU101 is part of an alignment, it is clear that it did not span the distance between Alignments 2 and 3. It is possible that the construction of the Public Restroom would have disturbed or even removed any signs of it closer to Alignment 3. Similarly, the age and architectural function of the alignment cannot be determined although it may represent the remnants of an interior wall connecting the two N-S alignments.

The 1772 inventory indicates that at the width of the granary are two flights of stairs with stairwells 5 *varas* in size (Rock 2006a). It is quite possible that Alignment 6 may represent the remnants of one of the sets of stairs.

Non-Architectural Test Units

This section examines those test units that were not associated with architectural alignments. Using the stone alignments described above, we have clustered the excavation units not associated with architectural alignments into five areas. Area 1 is located between the existing *convento* wall and Alignment 1 and includes Test Units 66, 65 and 64. Area 2 is located between Alignment 1 and Alignment 2 and includes TUs 52, 54, 56, 57, 59, 61, 62, 80 thru 90, 67, 69, 93, 94, 95, and 102. Area 3 includes a series of E-W running TUs (21, 24, 29, and 47) between Alignments 2 and 3. Area 4 is made up of Test Units 18, 32, 38, 50, 73, 97, 100 and 101 and also includes those units that revealed evidence of the former restroom facilities that once occupied the courtyard. Area 5 is east of Alignment 3 and includes TUs 8, 16 and 9.

Area 1

Test units 66, 65 and 64 of this area created a block excavation (2.7 x 1 meters) that started at the *convento* wall and moved east towards Test Unit 63. Test Unit 64 contained a portion of Alignment 1 (Figure 5-18) and terminated at 60 cmbs. A small section of a previous excavation unit (Krueger and Meskill 1992) was evident in the northeast portion of Test Unit 64. Test Unit 66 was not a complete 1x1 due to it's location against the *convento* wall and it was excavated to a depth of 110 cmbs, the depth of the *convento* foundation (Figure 5-19). Test Unit 65 was excavated to a depth of 30 cmbs and excavations were limited due to weather constraints and two N-S running pipes that were present in Levels 1 through 3.

The principal goal of these units was to determine the depth of the foundation of the east wall of the *convento* and examine the foundation itself. The top of the foundation began roughly 20 cmbs. The foundation consisted of large boulders of limestone that expanded toward the base creating a trapezoidal appearance. The rocks are held in place by what appears to be mortar. The outline of a trench that would have been dug for the foundation rocks could not be discerned in the north or south walls of TU 66. The large rocks that form the foundation and its trapezoidal shape are different from architectural Alignments 2 and 3. The difference may reflect

Figure 5-18. *Eastern face of Alignment 1 as seen in Test Unit 64.*

Figure 5-19. *Foundation of Convento wall exposed in Test Unit 66.*

different load-bearing requirements or different construction methods employed by distinct architects.

Table 5-6 presents a tabulation of the artifacts retrieved from Area 1 by level. The density of cultural material in this area was 73 artifacts per m^3. A majority of the artifacts represent modern debris (32%) concentrated in Levels 1 and 2. Metal objects that were represented by screws, and wire and cut nail constituted 19% of the artifact assemblage in this area. Post-colonial glass fragments (i.e., not olive in color), made up 17% of the artifacts in the area. Lithic debitage was contained in the first four levels. The density of Colonial wares (9.3 sherds per m^3) was higher than the density of English wares (1.4 sherds per m^3). It appears that the first 30 to 40 cmbs of this area is disturbed with a mixture of modern and colonial debris. Only Test Unit 66 reached depths beyond 40 cmbs, producing one Colonial period ceramic each, in Levels 6 and 7, (Red Burnished-see ceramic section). The manufacture dates for Red Burnished ware range between 1725 and 1800.

Table 5-6. Cultural Material Recovered from Area 1

Level	Colonial c.	19th c.	debitage	metal	glass	modern	brick	burned rock	Grand Total
1	1	0	8	3	3	28	1	1	45
2	5	1	7	7	16	5	2	0	43
3	4	1	2	9	3	0	0	1	20
4	1	0	2	1	1	0	1	0	6
5	0	0	0	0	0	0	0	0	0
6	1	0	0	0	0	0	0	0	1
7	1	0	0	0	0	0	0	0	1
Grand Total	13	2	19	20	23	33	4	2	116

Area 2

This area is located between Alignments 1 and 2 and encompasses TU's 52, 54, 56, 57, 59, 61, 62, 67, 69, 80-91, 93 and 102. According to archival documentation, this area between the *convento* and the granary served as a community storeroom (see Chapter 2). Due to the size of the area, the 24 units were further subdivided into four blocks (I thru IV). As shown in Figure 3-2, there were several pipes and conduits that cross cut many of the units in this area. The density of cultural material recovered from this area is 114 artifacts per m^3.

Test Units 61, 62, 89, 59, 86 and 102

Six test units at the north end of the area, are TU's 61, 62, 89, 59, 86 and 102 (Block 1). Two conduits were observed in TU's 61 and 59 and a pipe also was present in the eastern portion of Test Unit 86. A layer of reddish sandy soil was noted within the upper 20 centimeters in four of six test units. This layer represents the remnants of a pedestrian surfacing agent commonly employed in the past (Figures 5-20).

More importantly, a distinct layer of soil was observed in three of the units (Feature 3). The layer was a yellowish caliche/gravel matrix. It was encountered in TU's 61 (bottom of Level 3), 62 (19 cmbs) and 89 (20 cmbs) (Figure 5-21). The western edge of the sediment was delineated by the foundation trench associated with Alignment 1 and its eastern extent was recorded in the western portion of Test Unit 61 (8-9 cm). Krueger and Meskill (1992) noted an adobe surface in their 1990 excavations (1992) just north of this area (see Figure 3-1). Miller and Meissner also observed a similar layer, just north of Test Unit 61 that was encountered at 19 cmbs in their Test Unit A (Miller and Meissner 2001:5).

Cultural material noted in this matrix included brick, a small fragment of burned rock, lithic debitage and one sherd of Goliad ware (Table 5-7; Level 3.1). Deposits below this feature contained Goliad ware and undecorated white earthen ware along with glass and metal. The single piece of modern material was from Test Unit 61, which was noted as having disturbance from pipe installations. The ceramic data from within and below the possible floor feature could be interpreted in two ways. First, the presence of both English and Native wares could suggest a disturbed matrix. The dates of certain English wares and Goliad wares have been challenged at other Colonial sites (Figueroa and Mauldin 2003). The presence of both wares in presumably undisturbed contexts has suggested that particular English wares may have arrived in the San Antonio area earlier than 1825 and/or that Goliad wares continued to be produced beyond the presumed 1800 terminal date (Figueroa and Mauldin 2003).

Perttula has suggested that the bone-tempered Native ceramics at the Carvajal Crossing site (41KA26) were produced beyond 1800 (2001:61-62). Additional research is needed to make determinations about these ceramic dates. If we accept Perttula's argument that Goliad ware was produced beyond

Figure 5-20. *Layer of red sand that formed surface of foot path within courtyard.*

Figure 5-21. *Test Unit 89 (Area 2, Block I) excavation with hard-packed gravel surface (Feature 3) exposed.*

1800 then the floor feature was possibly formed around 1825, possibly by later inhabitants of the mission courtyard.

The majority of cultural material noted coming out of Test Units 59, 86 and 102 consisted of Colonial wares (n=23) and metal (n=69) (Table 5-7). Modern materials were limited to the upper four levels of these units. A pipe was observed in Test Unit 86, which accounts for the presence of modern materials. The highest artifact count was in Level 2 (n=49). The drop in artifact counts in Level 5 could be attributed to the fact that only two of the units (TU's 102 and 86) were excavated to this depth. There was a mixture of Colonial and 19th century English wares in Levels 1 through 4. Levels 5 and 6 possessed only Colonial ceramic types. San Agustin was present in Level 5 (TU 102). The San Agustin type has a manufacture date that spans from 1700 to the late 1700s. A single glass fragment (TU 86) and a brick fragment were also in this level. The deepest level in TU 86 produced a Goliad sherd, clear glass and a brick fragment. Deposits below Level 3 may be intact or minimally disturbed as suggested by the presence of Goliad ware, San Agustin, glass, mortar and brick.

Table 5-7. Cultural Material Recovered from Area 2, Block I

Test Units with Floor Feature (61, 62 and 89)									
Levels	**Colonial c.**	**19th c.**	**lithics**	**metal**	**glass**	**modern**	**construction**	**burned rock**	**Grand Total**
1	1	2	1	4	19	1	1	0	29
2	2	7	9	0	1	0	4	0	23
3	2	0	9	1	4	1	3	0	20
3.1	1	0	9	0	0	0	2	1	13
4	1	3	2	2	6	1	0	0	15
5	0	0	2	1	0	0	0	0	3
6	0	0	2	0	0	0	0	0	2
7	0	0	1	0	0	0	0	0	1
Grand Total	7	12	35	8	30	3	10	1	106
Test Units 59,86 and 102									
Levels	**Colonial c.**	**19th c.**	**lithics**	**metal**	**glass**	**modern**	**construction**	**personal item**	**Grand Total**
1	*1	0	1	*2	9	4	2	1	20
2	1(*5)	*7	0	9 (*2)	8(*5)	2	6 (*4)	0	49
3	10 (*1)	2	5	4	20(*5)	0	1 (1*)	0	49
4	3	5	2	0	20	0	2	0	32
5	*1	0	0	0	1	0 0	2		15
6	1	0	0	0	1	0	1	0	3
Grand Total	23	14	8	17	69	6	30	1	168

*TU 102

Test Units 83, 87, 88, 93, 54, 56, and 57

Test Units 83, 88, 87, 93, 54, 56 and 57 (Block II) adjoin Alignment 1. Two utility lines cross this block and are evident in all of the test units (see also Figure 3-2). The discussion of the artifact distribution in this area does not include Test Units 54, 56, 57 and 87 because the matrix from the utility line trenches was not kept separate from undisturbed deposits during screening.

Level 2 produced the highest amount of cultural material (Table 5-8) with Colonial ceramics (n=25) and glass (n=13) making up the majority. Colonial wares in this level included lead glaze types (n=11), tin glazes (n=5), Goliad (n=8) and Red Burnished ware (n=1). English wares in this level were represented by one hand painted sherd. Modern material is contained in the upper 20 centimeters. A small amount of burned rock and lithic debitage is present throughout the levels. The amount of ceramics decreases by Level 4 that contained only one piece of Valero Redware. The type has a manufacturing date spanning from 1700 to around 1790.

The yellowish matrix that was part of Feature 3 in Block 1 also is present in TUs 83 and 93 of this block. No concerted effort was made to keep the feature matrix separate in the excavation of TU 93, though it was separated in TU 83. The portion of the feature may have been disturbed by the utility line present in Test Unit 83. Materials derived from the feature included ceramics, represented by Colonial wares (7 unglazed wares and 3 Goliad) and a single glass fragment (Table 5-8; Level 3.1). The only non Colonial ware was an Albany slip stoneware sherd, which was not produced till after 1870 (Greer 1981).

Test Units 67, 52, and 69

The Test Unit 67, 52 and 69 (Block III) varied in depth, with TU 52 reaching a depth of 50 cmbs and TU 64 only reaching 20 cmbs. Cultural material in these units (Table 5-8) consisted mostly of Colonial wares (n=46) and glass (n=98). More than half of the material was recovered from Level 2 (57%), and consisted of a mix of Colonial wares and 19th century English wares and a variety of glass colors. The tin glaze Colonial ceramics from this level were late types (Guanajuato and

Table 5-8. Cultural Material from Area 2, Blocks II and III

Block II									
Level	Colonial c.	19th c.	debitage	metal	glass	modern	construction	burned rock	Grand Total
1	1	5	3	1	2	1	1	1	15
2	25	1	7	0	13	1	3	0	50
3	13	2	6	1	0	0	2	2	26
*3.1	10	1	6	0	1	0	0	2	20
4	1	0	0	0	0	0	2	1	4
5	0	0	1	0	0	0	1	1	3
Grand Total	50	9	23	2	16	2	9	7	118

Block III											
Level	Colonial c.	19th c.	debitage	metal	glass	modern	construction	personal	burned rock	lithic tools	Grand Total
1	5	2	1	9	43	6	3	1	3	0	73
2	40	9	5	6	52	0	3	0	7	3	125
3	0	0	1	0	3	1	2	0	4	0	11
4	1	0	0	0	0	0	1	0	1	0	3
5	0	0	0	0	0	0	1	0	0	0	1
Grand Total	46	11	7	15	98	7	10	1	15	3	213

* floor feature material (TU 83)

Huejotzingo). It seems that those levels that extend beyond 30 cmbs are more likely to contain intact deposits, with the exception of TU 52 which contained two utility lines in Level 5. One tin glaze (blue on white) ceramic was recovered from Level 4 of TU 67. This ceramic type was produced from the early to the late 1700s. Debitage (n=7) and lithic tool (n=3) frequencies were highest in Level 2.

Test Units 80-82, 84, 85, 90, 94 and 95

Test Units 80-82, 84, 85, 90, 94 and 95 (Block IV) measured 2-x-4 meters. One utility line was uncovered in TUs 80, 94 and 95 (see also Figure 3-2). Two features were identified in this block located in TUs 82 and 80. Feature 1, a possible hearth feature encountered in TU 82, was circular in shape, measured approximately 85 cm in diameter, and was defined by charcoal, burned rock and burned bone, (Figure 5-22). It was encountered at approximately 26 cmbs and ended at 52 cmbs. It occupies almost the entirety of the 1x1 meter unit. Cultural material in the feature was sparse, consisting of a 19th century brick fragment (n=1), burned rock (n=1), debitage (1), Goliad ware (n=1) and metal (n=1). The feature appeared to end at roughly 52 cmbs. The only artifact in this lowest level (7) of the unit was a gunflint.

Feature 2 was uncovered in Test Unit 80. This unit has a small degree of disturbance caused by a utility line encountered at 25 cmbs. The feature was observed just beyond this disturbance at 40 cmbs and extending to a depth of 45 cmbs. It was described as a circular shaped ash feature, with an abundance of charcoal (Figure 5-23). The only material in this feature consisted of faunal remains (very large mammal and fish species) and a single piece of debitage. Cultural material from above the feature included Goliad ware and Sandy Paste lead glazed ware. Both wares were manufactured from as early as 1700 to about 1800, though as mentioned previously the dates of Goliad ware may surpass 1800.

When examining the artifacts from these units, it is evident that Level 2 produced the majority of material (40%), mostly of English wares. Modern debris was recovered in the first three levels. Table 5-9 presents the observed ceramic counts and adjusted residuals for this block. Adjusted residuals provide information on the contribution of each individual cell to the overall significance of the contingency table. The residuals are analogous to Z-scores, whereas absolute values

Figure 5-22. *Feature 1, Test Unit 82.*

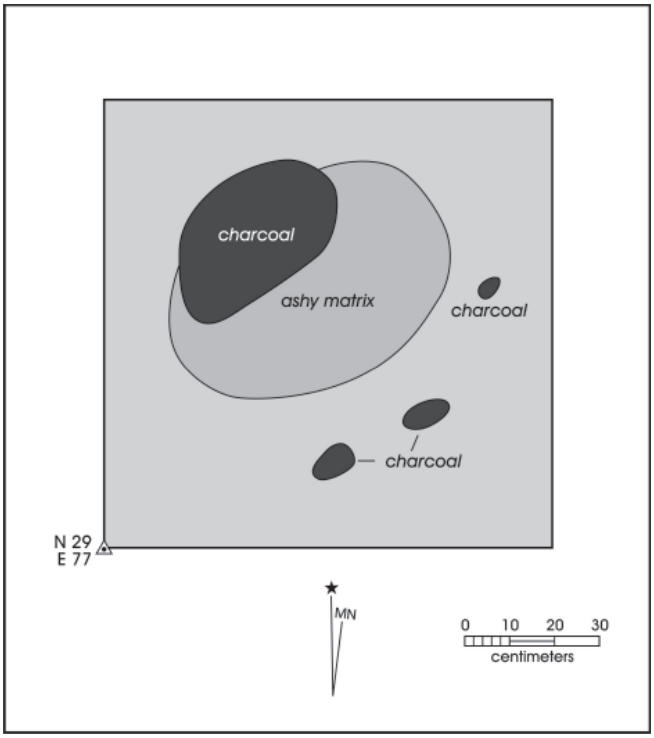

Figure 5-23. *Planview of Feature 2, Test Unit 80, at 40 cmbd.*

exceeding 1.96 suggests that cell differences are statistically significant at a probability beyond the .05 level (Figueroa and Mauldin after Everitt 1977; Haberman 1973). The overall chi-square value for the table is significant (p=.000) attesting that the distribution of Colonial and 19th century English wares is significantly different between the levels in this block. The adjusted residuals for Level 2 suggests the large quantity of English (4.83) versus Colonial wares (-4.83) is statistically significant. Colonial ceramics appear to dominate the ceramic assemblage below Level 2; furthermore, lithics are only present in Levels 4 and 5. The adjusted residuals for Level 5 suggest the over-representation of Colonial wares (4.69) and under-representation of English wares (-4.69) is statistically significant.

The profile drawing of Test Units 80, 81 and 82 indicate there are no disturbances in the block, with the exception of the utility line crossing TU's 80 and 95 (Figure 5-24). This profile was drawn prior to the termination of test unit excavations and it does not show at least two excavated levels. The profile of the east wall of these three units showed evidence of three distinct stratigraphic zones. Zone I was present in all three units but varied in color, ranging from a grayish brown to a brown (10YR 4/3), two thin lens of ash and charcoal are

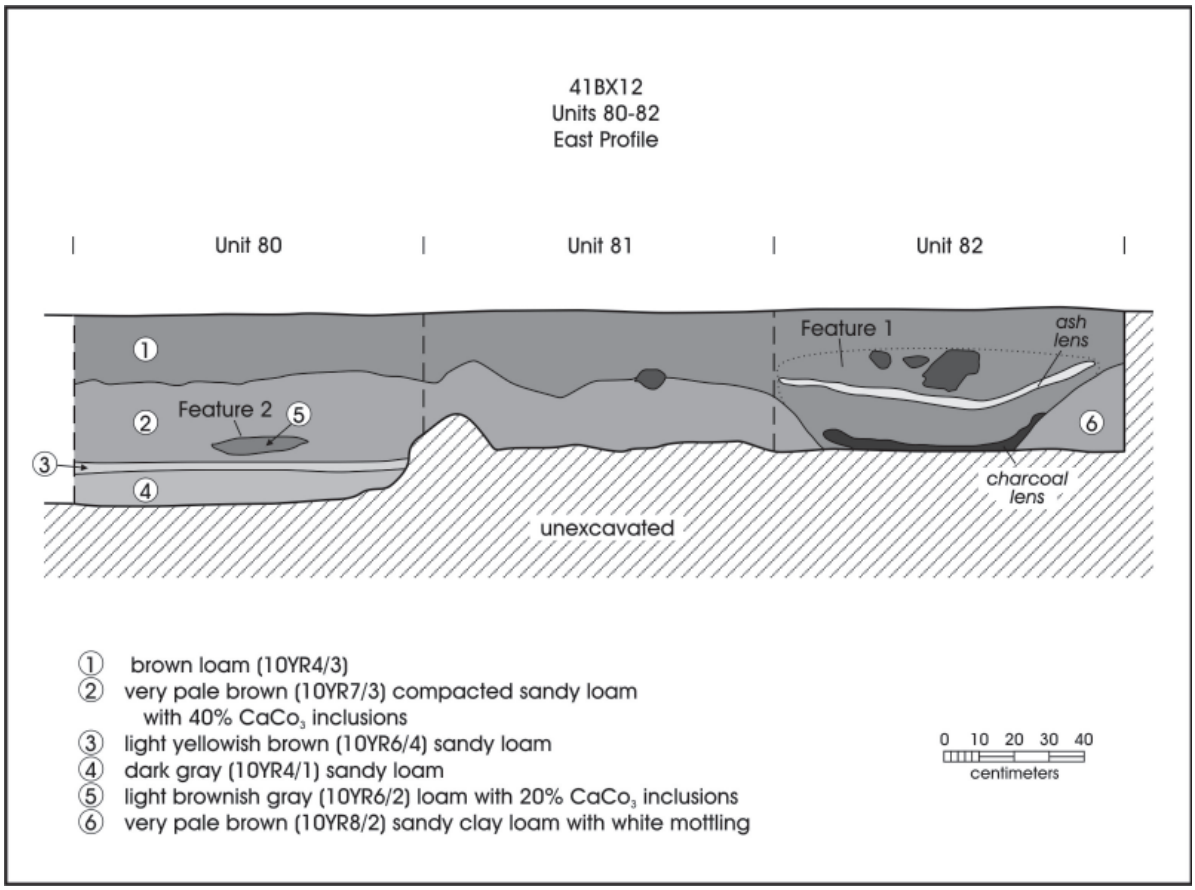

Figure 5-24. *Profile of east wall of Test Units 80-82.*

present within Zone I. This first zone extended approximately 20 cmbs in Test Unit 80 to 40 cmbs in Test Unit 82. The second zone was also present in all three units and consisted for a very pale brown sandy loam (40 % $CaCO_3$) and spanned about 18-20 cmbs to 40 cmbs. In Test Unit 80, just below zone II was Zone III, a thin lens that consisted of a light yellowish brown sandy loam (1 cm in thick). A fourth zone, that was a dark gray (10YR 4/1) matrix with calcium carbonate inclusions and small flecks of charcoal, was observed in Test Unit 80 and spanned from 40 to 45 cmbs. The fourth zone is absent in Test Unit 82. The charcoal lens profiled at the bottom of Test Unit 82 was the top of Feature 1.

Area 3

Area 3 includes a set of E-W running test units that were excavated between Alignments 2 and 3, they include TUs 21, 47, 29, and 24. The test units create a 4-meter long line of units. Excavations in the western edge of this area showed evidence of disturbance by a trash pit that was present in three of the units.

Test Unit 21 abuts TU 25 and revealed a trash pit that was dug inside Alignment 2 (Feature 5). The edge of the pit extended well into TUs 25 and 21. The pit did not appear to have defined stratigraphy, but was composed mostly of a soft sandy matrix (Figure 5-25 and 5-26). The trash pit observed in TU 21 continued to the east into Test Unit 47. A change in soils occurred at approximately 70 cmbs in Test Unit 47.

The cultural material recovered from the test unit suggests that the pit was filled and perhaps even dug in the early 1900s, possibly by inhabitants of the mission compound (Table 5-10). Metal, found mostly in Level 9, made up a majority of the material from this unit (42%). The ceramics recovered from TUs 21 and 47 consisted mainly of English wares (n=63) and only six Colonial ceramics were recovered from the units. Glass accounted for 17% of the material. The different peaks in artifact densities (i.e., Levels 2, 7, and 9) suggest different filling episodes. The bottom of the trash pit was reached at 150 cmbs in Test Unit 21.

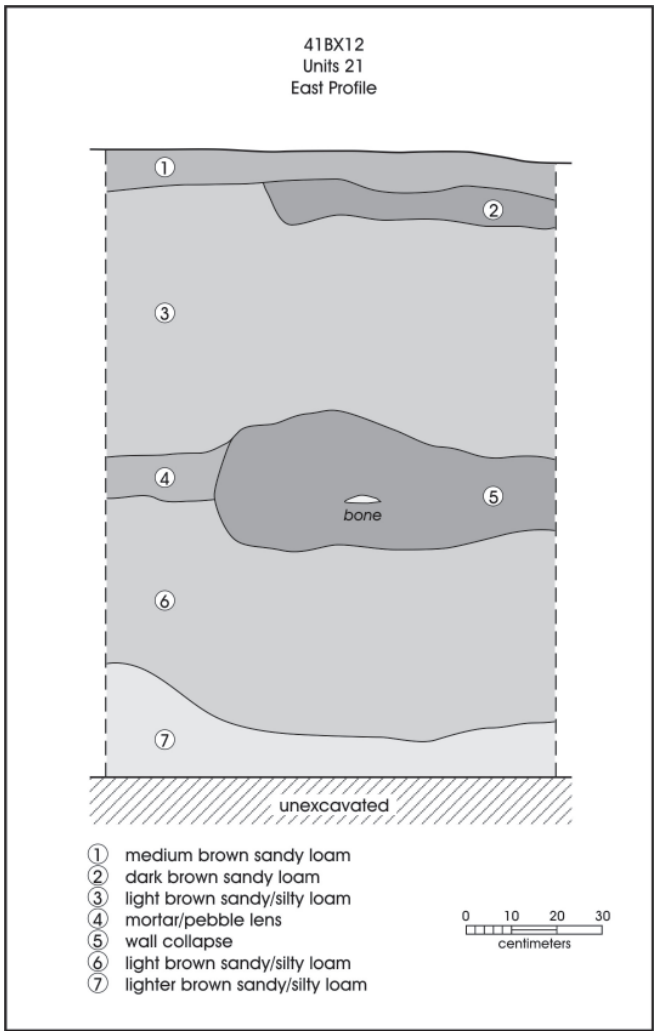

Figure 5-25. *Profile of south wall of Test Unit 21.*

Figure 5-26. *Garbage in Feature 5, Test Unit 21.*

Table 5-9. Observed Ceramic Counts and Adjusted Residuals for Block IV, Area 2

	Level	1	2	3	4	5	Total
Spanish Colonial	Count	1	42	47	12	31	133
	Adjusted Residual				1.88	**4.7**	
English 19th Century		1	53	25	2	0	81
	Adjusted Residual				-1.88	**-4.7**	
	Total Count	2	95	72	14	31	214

In Level 3 and along the southern margin of Test Unit 29, just to the west of TU 47, the edge of a trench or other disturbance was identified. The excavation unit what may or may not have been archaeological in origin, contained darker matrix than the surrounding soil and contained few artifacts. The presence of synthetic materials within the fill indicates that the disturbance was likely of recent origin. Our review of the previous excavations does not show an archaeological excavation unit in the vicinity of TU 29. Artifacts from the remainder of the unit contained construction material (brick and mortar), metal and colonial period ceramics (unglazed and Native American).

Test Unit 24 was located adjacent to TU 29 (Figure 5-27), and contained a fair amount of mortar in the upper 30 cms, along with the majority of the artifacts (see Table 5-10). The few recovered ceramics were represented by Colonial (n=4) and English (n=1) wares. The faunal remains in this unit were mostly in Level 5 (69.3g), which only contained a single sherd of undecorated white earthen ware.

TU 24 may have been the only excavation unit without some evidence of post-depositional disturbance along this E-W line of units. The stratigraphy of what the intact portions of the E-W running units may have been like is exemplified in

Figure 5-27. *Hard-packed level surface below top soil in Test Units 24 and 29.*

Table 5-10. Cultural Material from Area 3

Test Unit 21and 47											
Levels	Colonial c.	19th c.	debitage	metal	glass	modern	construction	personal	burned rock	lithic tools	Grand Total
1	0	1	4	3	20	3	3	0	0	0	34
2	1	16	4	9	50	4	1	4	1	0	90
3	1	13	1	21	3	0	3	2	0	0	44
4	1	8	0	4	19	0	2	1	0	0	35
5	0	4	0	2	13	0	2	0	1	0	22
6	1	5	0	24	18	0	2	2	1	0	53
7	0	3	0	143	24	0	2	1	1	0	174
8	0	0	0	6	4	10	2	1	2	0	25
9	0	9	0	335	83	2	2	41	0	0	472
10	1	0	0	0	21	8	0	94	1	0	125
11	1	4	0	16	34	1	8	74	1	0	139
12	0	0	1	2	11	0	2	6	0	0	22
13	0	0	1	13	1	0	2	0	0	0	17
14	0	0	0	1	0	0	1	11	0	0	13
15	0	0	0	0	1	0	1	0	1	0	3
Grand Total	6	63	11	579	302	28	33	237	9	0	1268

Test Unit 24											
Levels	Colonial c.	19th c.	debitage	metal	glass	modern	construction	personal	burned rock	lithic tools	Grand Total
1	1	0	0	6	15	1	2	1	0	0	26
2	2	1	3	1	4	0	3	0	0	0	14
3	1	0	2	0	0	0	0	0	0	1	4
5	0	1	0	0	0	0	0	0	0	0	1
Grand Total	4	2	5	7	19	1	5	1	0	1	45
Test Unit 29											
1	0	0	0	2	3	0	1	1	0	0	7
2	0	3	6	1	36	1	2	0	0	2	51
3	0	1	0	2	3	0	1	0	0	0	7
4	0	0	1	2	1	1	6	0	0	0	11
5	1	0	0	1	1	0	2	0	9	0	14
6	1	0	0	0	0	0	3	0	4	0	8
7	1	1	1	0	0	0	2	0	1	0	6
Grand Total	3	5	8	8	44	2	17	1	14	2	104

the north walls of TUs 24 and 29. The upper two levels of brown organic matrix contained the bulk of the artifacts. The yellowish caliche-enriched and rather compact zone (Figure 5-28) that was present immediately below the brown organic matrix contained few if any cultural materials (i.e., no artifacts were recovered from Level 4). In addition to containing few artifacts, this deposit was very compact and appeared to be fill that was brought in and deposited within the area encompassed by Alignments 2 and 3. It is possible that the deposit may represent artificial fill used to prepare a compact floor for the structure partially defined by Alignments 2 and 3.

Area 4

Area 4 included Test Units 32, 38, 39, 50, 73, 97, 68, 98, 99, 100 and 101 and is located at the southern end of the courtyard bounded by Alignments 2 and 3. Only ½ of Level 1 was excavated in Test Unit 97, therefore, it will not be discussed. Evidence of the previous restroom facilities that once occupied a portion of this area was present in Test Units 39, 73, 68, 98 and 99 (Figure 29). Segments of the concrete foundation

Figure 5-28. *Top of hard-packed surface in Test Unit 29.*

associated with this facility were exposed at the bottom of Level 2 (10-20 cmbs) in each of the test units (39, 73, 68, 98, and 99). Spanish colonial foundation remains were identified beneath the 1940s bathroom when the bathroom was removed.

Figure 5-29. *Remnant of concrete foundation of restroom facility in Test Unit 39.*

Test Units 32 and 38 were heavily disturbed by trenches dug for utility pipes, and a large portion of TU 32 contained two separate pipe trenches. Matrix not associated with the trenches in TU 32 was screened separately and contained a mix of English wares and tile. Both TU 32 and 38 were practically void of any colonial remains, with the exception of a few pieces of olive green glass (Table 5-11). Test Unit 50 had evidence of a trench and concrete. Modern material, English wares and glass was found in the upper 40 cm, while the remainder of the unit only contained brick, debitage, colonial ceramics, metal and olive glass. Intact deposits were very difficult to discern in this area but it appears that relatively intact materials may be present below 40 centimeters.

Test Unit 100 and 101 were only excavated to 20 cmbs and few artifacts were recovered from these units. The artifacts recovered did however include modern materials and ceramics consisting of Goliad and Red Burnished wares. Intact Colonial deposits in the area were not discernable. Cultural material from those units with disturbances from the former restroom facilities was not tabulated.

Table 5-11. Cultural Material from Area 4

Test Unit	Level	Colonial c.	19th c.	debitage	metal	glass	modern	construction	personal	burned rock	lithic tools	Grand Total
32	1	0	0	1	4	2	0	0	0	0	0	7
	2	0	2	2	2	9	0	3	0	1	1	20
	3	0	1	0	0	4	0	2	0	0	0	7
	3.1	0	2	0	0	0	0	2	0	0	0	4
	4	0	0	0	4	1	1	2	0	0	0	8
Grand Total		0	5	3	10	16	1	9	0	1	1	46
38	1	0	0	0	0	4	0	3	0	0	0	7
	3	0	1	3	1	6	0	2	0	1	0	14
	4	0	0	3	0	0	0	0	0	0	0	3
	5	0	0	1	0	0	0	0	0	0	0	1
Grand Total		0	1	7	1	10	0	5	0	1	0	25

Test Unit	Level	Colonial c.	19th c.	debitage	metal	glass	modern	construction	personal	burned rock	lithic tools	Grand Total
50	1	0	1	0	1	5	1	1	0	1	0	10
	2	1	1	5	5	5	1	3	0	0	0	21
	3	0	18	1	2	21	0	1	1	1	0	45
	4	0	1	0	0	1	0	2	0	0	0	4
	5	2	0	0	0	0	0	1	0	2	0	5
	6	0	0	1	4	1	0	1	0	2	0	9
Grand Total		3	21	7	12	33	2	9	1	6	0	94
100	1	0	0	2	0	0	0	2	0	2	0	6
	2	1	0	1	6	4	3	3	0	0	0	18
Grand Total		1	0	3	6	4	3	5	0	2	0	21
101	1	0	0	1	2	2	4	3	1	1	0	14
	2	1	0	0	9	6	1	3	0	0	0	20
Grand Total		1	0	1	11	8	5	6	1	1	0	34

Area 5

Area 5 was located in the eastern portion of the courtyard and includes Test Units 8, 9 and 16 (3 x 1 meters) east of Alignment 3. A concrete sewer line cut through the northwest corner of TU 8 at a depth of approximately 30-60 cmbs and heads to the southeast (Figure 5-14). The trench housing the pipe disturbed approximately 1/3rd of the unit. The southern half of TU 8 and the two southern units in this alignment appeared to be undisturbed.

As a result of the sewer pipe disturbance, two distinct soils were observed in Level 3 of Test Unit 8. The western and southern portion of the unit contained a layer of compact mortar/plaster described as Zone A. Zone B found in the northeast corner of the unit consisted of a dark soil associated with the pipe trench that was uncovered in Level 4. These two soils were screened separately through the remainder of the excavation, which terminated at 60 cmbs. Test Unit 16 adjoined Test Unit 8 to the south. A similar plaster surface was uncovered in Level 4 (Figure 5-30 and 5-31) in the eastern portion of the test unit (Feature 4). Imbedded in the plaster were red tile and bone fragments. The plaster layer terminated at 65 cmbs. Test Unit 9 was located south of Test Unit 16. Bone and plaster was uncovered at 41 cmbs in this unit. Test Unit 9 was excavated to a depth of 60 cmbs and plaster fragments were still visible.

Table 5-12 presents the vertical distribution of artifacts from the three units in Area 5. The artifacts from the pipe trench in Test Unit 8 are not included on the table. A large percentage of the artifacts in this area were colonial ceramics (32%) and glass (15%). Modern debris only made-up 8% of the artifacts and it is contained in the first four levels of the excavations. Only one piece of English ceramic (19th century) was encountered in the area. Artifacts that are colonial, such as olive glass and debitage were sparse. The modern debris in the area terminated in Level 4 (porcelain insulator); though a piece of clear flat glass is present in Level 6. The artifact count was highest in Level 2 (n=65) then steadily decreased. In Level 7 the artifact count increased again (n=28). These artifacts consisted mostly of tin glazed, unglazed and Native

Figure 5-30. *Plaster surface exposed in Test Unit 16, Area 5.*

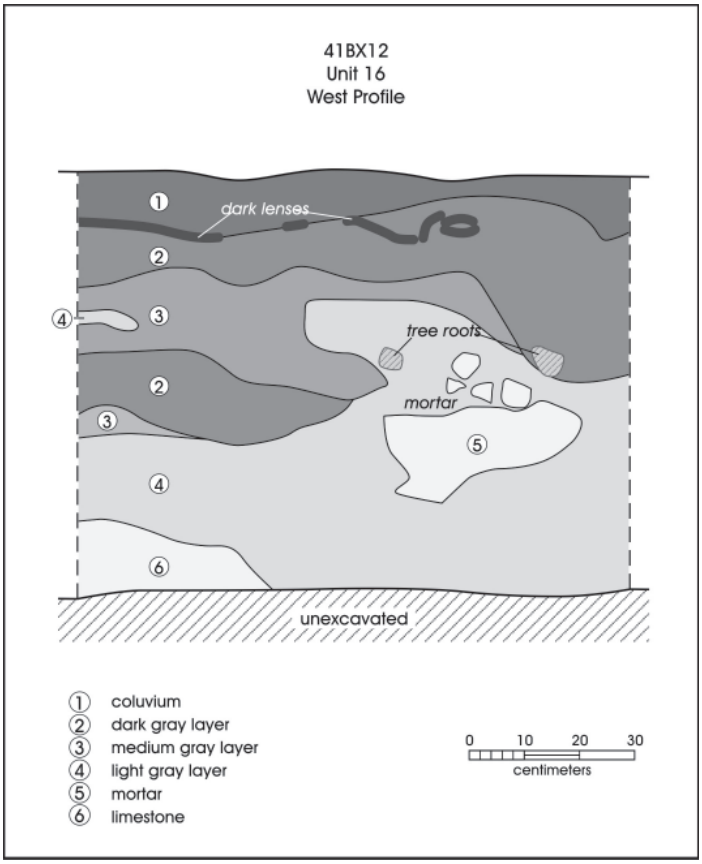

Figure 5-31. *Profile of the west wall of Test Unit 16.*

Table 5-12. Cultural Material Recovered from Area 5

Level	Colonial c.	19th c.	debitage	burned rock	metal	glass	modern	construction	personal	lithic tools	Grand Total
1	1	0	10	1	5	9	0	3	0	0	29
2	11	1	8	4	8	19	2	10	2	2	65
3	10	0	3	0	8	21	1	5	0	0	48
4	12	0	12	2	5	4	1	6	1	3	43
5	8	0	1	0	0	6	0	8	1	0	24
6	5	0	0	0	0	3	0	6	0	0	14
7	23	0	2	0	1	0	0	2	0	0	28
7.1	1	0	0	0	1	0	0	2	1	0	5
8	1	0	4	1	1	0	0	0	0	0	7
Total	72	1	40	8	29	62	4	42	5	5	263

American ceramics. A majority of the ceramics in this level consisted of Valero Redware, manufactured between 1710 and 1790. The tin-glaze ceramics included San Agustin (1700-1780) and Puebla Blue on White II (late 18th century). The overall density of cultural material is this area was 253 artifacts per m^3. Out of all the areas, the density of Colonial ceramics (43.6 per m^3) was greatest in this area.

Trenches

Six trenches were excavated in preparation of the 2004 field school (Figure 5-1; Figure 5-32). Trench lengths varied from 3 to 11 meters in length and reached depths ranging from 20 centimeters (cm) to 1 meter (m). During the mechanical excavations one architectural feature was encountered (see Alignment 6). Though there was a light scatter of cultural material, including faunal remains, noted in the backdirt of the trenches no features were identified during the monitoring of the mechanical excavations.

Summary

The remains uncovered in the courtyard of Mission Concepción between the summer of 2002 and 2005 included six alignments. Alignment 1 was found east of the existing *convento* wall. The northern end of the alignment is in line with the doorway of the *convento* living room and was identified by Krueger and Meskill (1992). There is an approximately four-meter gap between this alignment and the south end of the kitchen's east wall. Smith's plan of the courtyard also shows a gap between the alignment and the east wall of the kitchen. Although it is possible that the gap may be due to stone robbing, it is also likely that an arched entryway occupied the space and a continuous foundation was never present in the area.

It is probable that Alignments 2, 3, 4 and 5 represent the remains of the granary (see Figure 5-1. There are several historical accounts that describe the dimensions of the granary structure and its location (see Archival Accounts of the Granary and *Convento* in Chapter 2). In the 1772 inventory, the granary is described as constructed of rough-cut stone, having six pillars (i.e., buttresses) of limestone mortar, and measuring twenty *varas* (55.55 feet; 17.2 meters) in length. Alignments 2 and 3 measure approximately 17 meters in length when considering that the alignment extends partially into TU 103 at the north end of Alignment 3 and TU 22 at the south end of Alignment 2 exposed by Ivey and Fox (1999). This figure matches well with the reported length in the 1772 inventory. The pattern also suggests that the continuation of Alignment 2 south of TU 22 exposed during NPS clearing of the area in 2006 could represent a later addition either to the granary or the remnants of an unrelated structure. The width of the granary was reported in one document (Rock 2006a) as measuring 27.7 feet (8.4 meters). This figure is approximately one meter wider than the 7.5-meter width between the outer margins of Alignments 2 and 3. Buttress

Figure 5-32. *Southern portion of Trench 3 excavated by small trackhoe.*

1 appears to have been positioned nearly in the center of Alignment 2. Alignment 4 appears to be located directly across from Buttress 1 and while it's configuration does not resemble a buttress, its construction may have disturbed a buttress that should have been located in the area. It is also possible that the construction of the restroom facilities that once occupied the area may have disturbed the buttress if one was in the area as well as impacting Alignment 3.

Areas 2 and 5 represent portions of the courtyard that contain undisturbed Colonial deposits. Two Colonial period hearth features (Features 1 and 2) were unearthed of Area 2 (Test Units 80-82, 84, 85, 90, 94 and 95). According to the manufacture dates of the ceramics, the features in Area 2 could have been formed as early as 1700. Though the mission had not been established at this time, the two hearth features could be evidence of Spanish or Native encampments on the site.

Feature 1, a circular hearth measuring approximately 85 cm in diameter, was encountered in TU 82 between 26-52 cmbs. The artifacts associated with it are of Colonial age and suggest that it represents a Colonial-period feature. Feature 2, another circular hearth, was defined in TU 80 less than two meters from Feature 1. The hearth extended from 40-45 cmbs. Only Colonial period materials were found in the vicinity of the feature. Both hearths were found at the southern end of Area 2 between Alignment 1 and Alignment 2. The area may have been part of a storeroom at some point but prior to this may have served as an outdoor activity area. Feature 3 is a relatively flat zone of yellowish colored matrix that extends over large parts of the area between the *convento* wall and Alignment 2. It is likely that this zone that ranges from 5-15 cm in thickness represents a prepared surface constructed across a previously open area and/or the community storeroom. A similar flat prepared surface also was noted between Alignments 2 and 3 and appeared to represent a prepared floor. Here, however, the zone was much thicker reaching a thickness of approximately 40 centimeters beginning at approximately 15-20 cmbs. Although not defined as a feature in the field, excavations in TUs 8, 9, and 16 reveled patches of what appeared to be plaster between 58-65 cmbs. Although rather friable and patchy, the continuity of the plaster across

three units suggests the presence of plastered activity surfaces that most likely represent an interior space rather than extra-mural activity areas. This plastered surface was designated as Feature 4 during the laboratory analyses and write-up stage of the project. The trash pit noted in TUs 25 and 21 also was not defined as a feature during the field work. However, it was defined as Feature 5 during the subsequent analysis and report writing. The artifacts encountered in the pit suggest that it may have been dug and filled during the early 1900s.

The highest density of Colonial wares (43.6 sherds per m^3) was retrieved from Area 5. The lowest levels of excavation from the three units containing ceramics with manufacture dates ranging from 1700 to 1790. Area 3 had the greatest density of 19th century English wares (18 per m^3). Of the test units positioned on or along alignments, units along Alignment 1 had the highest density (36.4 per m^3) of Colonial wares and Alignment 2 had the highest density of 19th century English wares (41.8 per m^3).

Excavations in the confines of alignments associated with the granary failed to encounter undisturbed sediments. The areas of the courtyard that seem to be the best candidates for containing undisturbed Colonial deposits are in Test Units 80-82, 84, 85, 90, 94 and 95 of Area 2 and Area 5 (Test Units 8, 9, and 16). It appears that Test Units 80-82, 84, 85, 90, 94 and 95 of Area 2 represented the highest potential for Colonial deposits. However, when examining the scale of area, Area 5 contained the highest density of Colonial ceramics per volume of excavated matrix.

Overall, units associated with Alignment 2 contained the highest density of artifacts (390 per m^3) while Alignment 4 test units produced the lowest density of artifacts (122.6 per m^3). Out of the areas that did not contain architectural features, Area 3 revealed the highest density (351 per m^3) of artifacts, while Area 1 produced the lowest (73 per m^3).

Chapter 6: Artifact Descriptions

Kristi M. Ulrich and Antonia L. Figueroa

This chapter includes a description of artifacts encountered during the 2002-2005 archaeological investigations at the site. The ceramics were identified and described by Kristi M. Ulrich. An analysis of the lithic material also is presented in this chapter. A brief a discussion of other artifact categories such as metal and glass also is included.

Ceramics

A total of 1467 ceramic fragments were recovered over the course of the excavations conducted in the Mission Concepción courtyard. The ceramic sherds were initially sorted into broad temporal categories (i.e. native, colonial, English) upon arrival to the laboratory, and were later divided into more specific types. The following sections will discuss the ceramic types in more detail.

Native American Ceramics

Goliad (n=240)

Goliad was first identified as a type in 1959 during analysis on a collection of sherds from Mission Espritu Santo (Mounger 1959:64; Figures 6-1a and 6-1b). These vessels were constructed using the coil technique, with crushed bone utilized as the tempering agent. Due to open firing, the surface colors on the sherds range from black to red-orange. The inability to control the temperature of the fire resulted in individual vessels exhibiting the range of colors. Typical vessel shapes include bowls, cooking vessels and storage jars (Mounger 1959: 64).

Goliad is common at the missions located within the San Antonio River Valley. It appears to be a continuance of the Toyah Phase Leon Plain tradition although its exact relationship to the Leon Plain has not been determined. The ware is utilized throughout the mission period.

Unglazed Colonial Types

Tonalá Burnished Ware (n=5)

Tonalá Burnished wares are molded vessels manufactured in the town of Tonalá in western Mexico between 1650 and 1810 (Charlton and Katz 1979:46; Fox and Ulrich 2008). The vessels have a distinctive burnished tan body that is

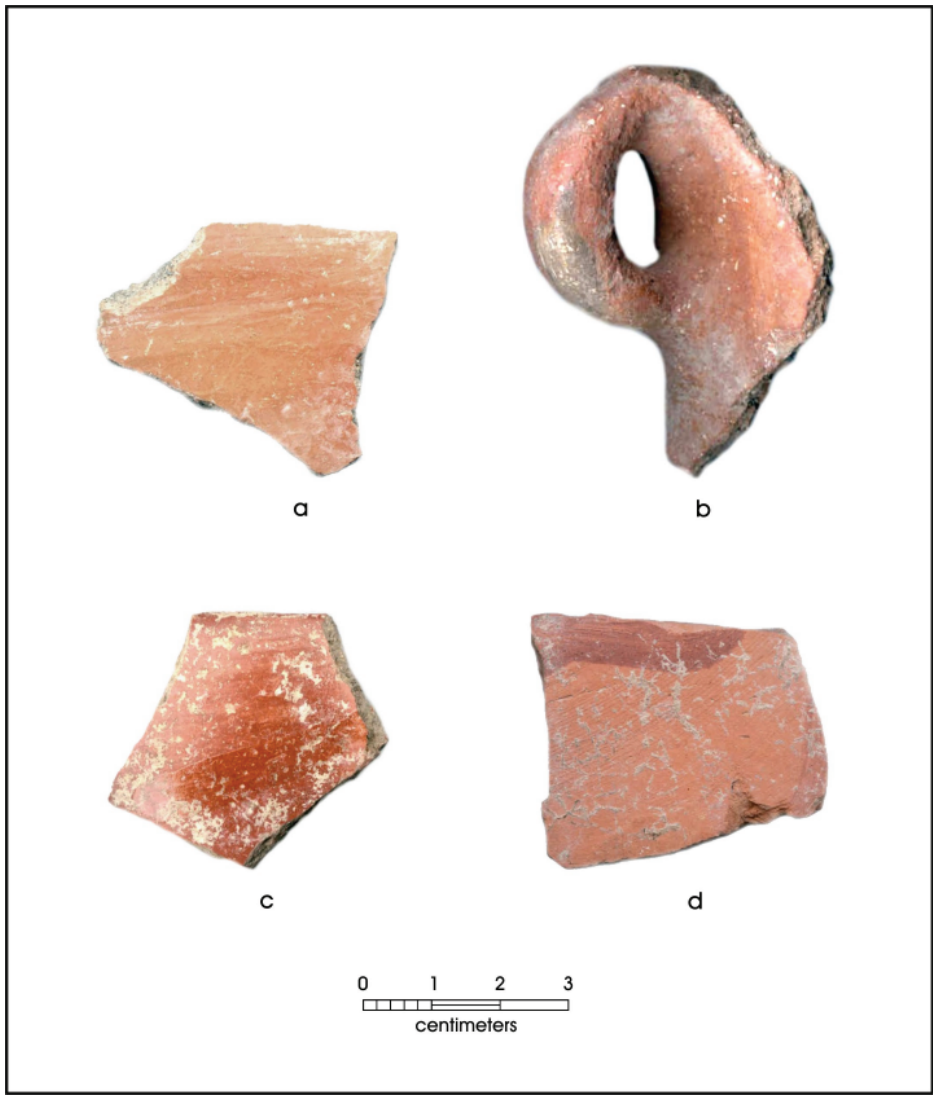

Figure 6-1. *Native Goliad Ware and Unglazed types recovered from excavations: a) Goliad rim sherd, b) Goliad handle sherd, c) Red Burnished rim sherd, d) Valero body sherd.*

painted with red and black designs. The paste gives off a distinguishing sweet-earthy odor when damp.

Red Burnished Ware (n=31)

This type exhibits a fine-grained red paste with highly burnished surfaces (Figure 6-1c). Designs on the vessels consist of matte and glossy loops, bands, and dots (Gilmore 1974:63; Fox and Ulrich 2008). Red Burnished wares are common to most eighteenth century mission sites in Texas.

Valero Redware (n=38)

This type, first identified during the mid 1960s (Schuetz 1969), is a wheel-thrown, high-fired ware (Figure 6-1d). The paste ranges from orange-buff to a dark orange color. Wheel marks are visible, and the vessels are sometimes decorated with red paint. Valero is common at the San Antonio Missions, dating between 1710s and 1790s.

Unidentified Unglazed Wares (n=21)

None of these twenty-one unglazed sherds could be identified. Very small sherds are oftentimes unidentifiable due to the lack of distinguishing characteristics.

Lead-Glazed Wares

Sandy Paste Lead-Glazed (n=70)

The sandy-pasted wares were manufactured in Mexico throughout the eighteenth century (Figure 6-2a; Fox and Ulrich 2008). The vessels were constructed on the potter's wheel, and usually exhibit a yellow or yellow and green glaze. The paste appears to be tempered with sand, which gives it a gritty feel. Typical vessel forms include bowls and pitchers.

Galera Ware (n=50)

Galera wares exhibit thin, red pasted walls covered with a clear lead glaze (Fox and Ulrich 2008). Typical decorations on the vessels include brown, cream and green designs (Figure 6-2b). Galera ware dates to the last half of the eighteenth century, though similar wares are produced in Mexico today. This type has been recovered from many of the historic sites throughout Texas.

Green Glaze (n=2)

Green Glazed wares are similar in paste and construction as the Sandy Paste ware, but the glaze is thicker and uniformly green. Vessel walls tend to be a bit thicker in comparison. This type was manufactured in Mexico throughout the eighteenth century.

Mexican Black Luster (n=4)

The Black Luster fragments exhibit a terracotta paste, with a thick, glossy black lead glaze on the surfaces. Schuetz (1969: 52) indicates that this type was manufactured in Puebla, Mexico. Barnes (1980:100), on the other hand, suggests that the Black Luster wares originated from Santa Fe, Michoacan, between 1750 and 1850.

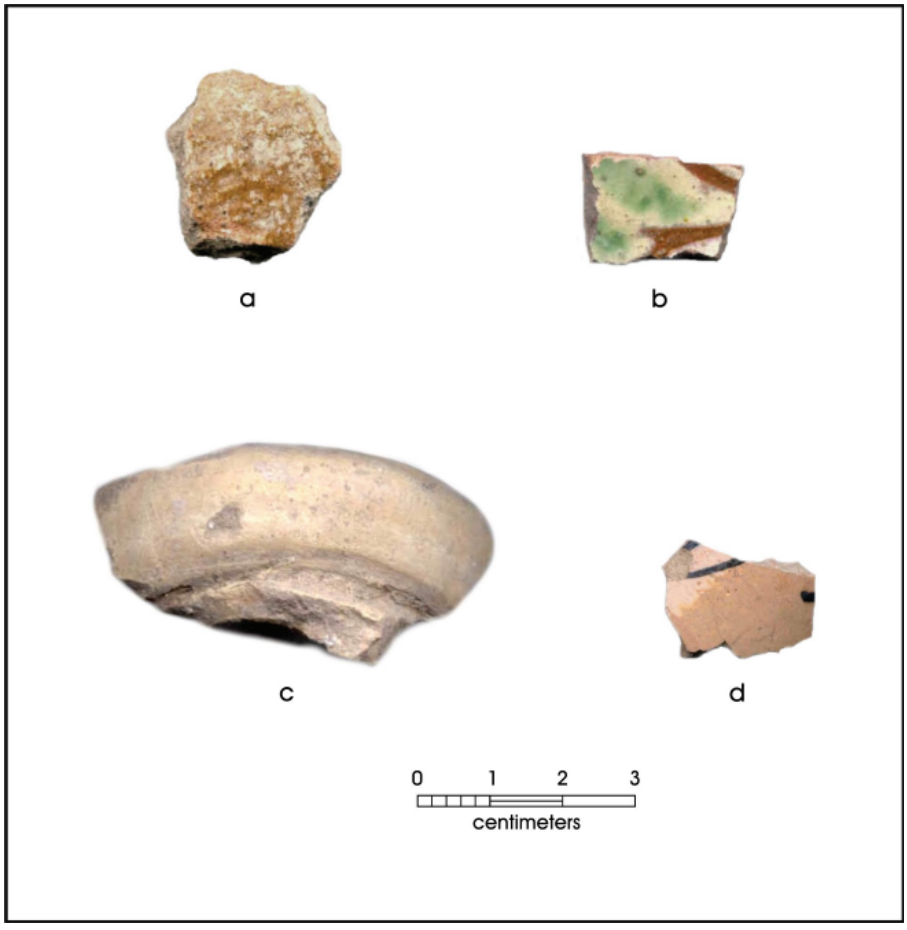

Figure 6-2. *Lead Glaze Wares recovered from excavations: a) Sandy Paste, b) Galera, c) Olive Jar, d) Tonalá.*

Olive Jar (n=2)

Olive jars were large, heavy vessels with thin lead glazes with a greenish tint (Figure 6-2c). These vessels were utilized to transport wine and olive oil during the colonial period (Avery 1997:221; Goggin 1964:256).

Smooth Brown Ware (n=2)

This ceramic type exhibits a red paste with a thick, smooth, translucent brown lead glaze (Fox and Ulrich 2008). The type was manufactured possibly during the late eighteenth to early nineteenth century. The exact location of manufacture is unknown, but likely came from Mexico.

Tonalá Glazed Ware (n=6)

This is another of the several ceramic types manufactured in Tonalá, Mexico. The paste has a white or cream-colored slip that is decorated with green, red, and black designs, and covered with a clear lead glaze (Figure 6-2d). Similar to the burnished variety, the paste gives off a distinctive odor when damp. Tonalá glazed wares begin to appear in Texas in 1780, and can be found at the missions that persisted until 1830 (Gerald 1968:54).

Unknown Lead Glazed (n=54)

These are fragments of lead-glazed wares that can not be identified. The majority of the fragments are red pasted, with thin, clear lead glaze, but do not show indication of sand tempering. The fragments do not exhibit enough characteristics to determine a specific type.

Tin Glazed Wares

Puebla Blue on White (n=14)

This type initially included all forms of tin-glazed wares with blue and white decoration. Ensuing research allowed for their division into more specific types. Puebla Blue on White is characterized by the use of a thick white enamel with decorations applied in shades of blue (Figure 6-3a). Decorations occur on the inside of plates and bowl, and outside of cups. Puebla Blue on White is found in Texas throughout the eighteenth century (Gerald 1968:43; Deagan 1987:84; Lister and Lister 1987:346).

San Agustin Blue on White (n=8)

San Agustin is one of the Blue on White varieties manufactured in Puebla, Mexico (Fox and Ulrich 2008). This type has a distinctive use of dark blue and lighter blue accents (Figure 6-3b). On the underside of plates and bowls, overlapping light blue loops are typical. San Agustin appears to have been made throughout the eighteenth century.

Huejotzingo Blue on White (n=7)

Huejotzingo is another variant of Puebla Blue tin glazed wares. This type is characterized by its single band of color at the rim of the vessel in either blue or green (Barnes and May 1972: 33-34). Huejotzingo was popular during the eighteenth and nineteenth centuries.

Molded Blue on White (n=3)

Often confused with San Agustin, this type has three main characteristics that set it apart (Fox and Ulrich 2008). First, decoration on the white enamel consists of blue designs, with no black accents. Second, less surface area is covered with the blue designs. Third, the edges of the vessel are molded into scallops. Molded Blue on White was manufactured during the latter part of the eighteenth century.

Aranama Polychrome (n=1)

Aranama Polychrome is the general description for many of the types of tin-glazed wares that exhibit decoration in green, orange, yellow, and blue combinations. Specific sub-types are defined based on decoration motifs and color schemes. One fragment of Aranama Polychrome was recovered that could not be placed into a sub-type. Aranama Polychromes were most likely produced in Puebla, between 1750 and 1850 (Goggin 1964:198; Barnes and May 1972:12, 34).

San Diego Polychrome (n=1)

San Diego Polychrome is one of the Aranama Polychrome sub-types (Fox and Ulrich 2008). This ware has a floral motif that distinguishes it from the rest of the Aranama category (Figure 6-3c). The color scheme is consistent with the main group, using yellows, green, blues, and oranges. Black accents are also utilized in the decoration. San Diego Polychrome appears in the Texas record between 1770 and 1800.

Monterrey Polychrome (n=5)

Another sub-type of the Aranama Polychromes, Monterrey also exhibits the typical orange band at the rim of the vessel. Monterrey Polychromes are distinct from the others with their stylized cornstalk motifs, and nonuse of the color blue. This type was possibly manufactured in both Puebla and Mexico City during the eighteenth and early nineteenth century (Barnes and May 1972:35).

San Elizario (n=11)

San Elizario falls into the Blue and White varieties found throughout Texas. The use of brown accents distinguishes this type from the other Blue on Whites (Figure 6-3d). It was initially referred to as Puebla Polychrome II, but was reclassified just a few years later (Gerald 1968). This ware was most likely manufactured in Puebla, Mexico sometime between 1750 and 1850 (Goggin 1964, Gerald 1968).

Puebla Blue on White II (n=16)

Originally considered part of the Puebla Blue on White, this type was distinguished by the thin bands and floral motif. Puebla Blue on White II wares are delicate vessels with very thin wall. This type was manufactured in Puebla, Mexico during the second half of the eighteenth century (Ricklis 2000:110).

Thin Brown and Blue on White (n=3)

Not much is known about this type to date. It is characterized by delicate brown and blue decoration in a floral motif (Schuetz 1969:57; Fox and Ulrich 2008). Most fragments recovered are extremely thin and represent cups. Manufacture of this type is estimated to the late eighteenth century.

Guanajuato Polychrome (n=19)

Guanajuato is a tin-glazed variety developed during the nineteenth century, originating out of Guanajuato, Mexico (Lister and Lister 1974:1). This type has a decoration style unlike any previously made majolica in Mexico. Guanajuato utilizes a unique color scheme of rust, green, yellow, and black-brown (Figure 6-3e; McKenzie 1989:1)). The enamel has a slight greenish tint, while the paste is a dark terra cotta color.

Blue on White (n=7)

These five fragments were too small to safely classify them as Puebla Blue on White. They exhibit blue decoration on white enamel, but there is not enough of the design to determine if they belong to one of the other blue on white varieties.

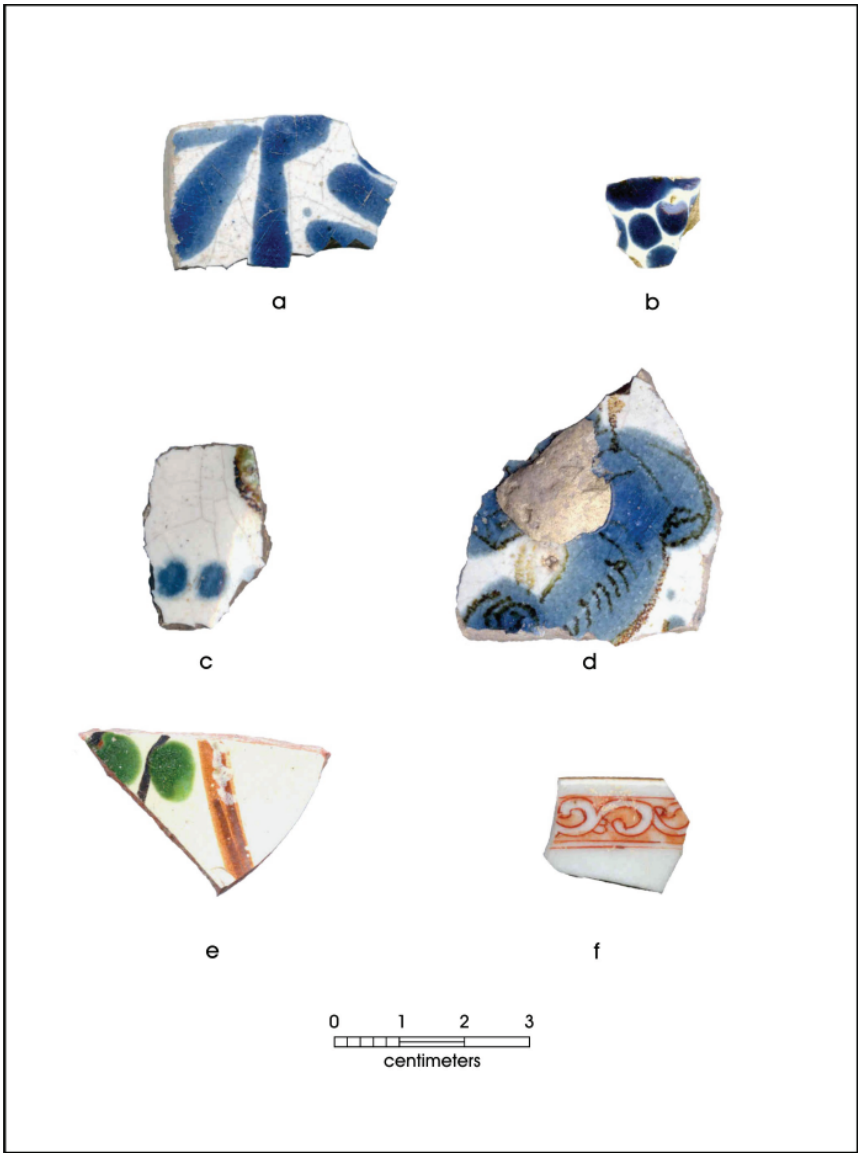

Figure 6-3. *Tin Glaze Wares and Chinese Porcelain recovered from excavations: a) Blue on White, b) San Agustin, c) San Diego, d) San Elizaro, e) Guanajuato, f) Chinese Porcelain.*

Undecorated (n=105)

Undecorated tin-glazed wares exhibit the white enamel typical of majolicas. The sherd fragments have no decoration, therefore are placed in this category. It is possibly that they belong to vessels that are decorated. Specifically, Huejotzingo exhibits only a rim band, therefore the remainder of the vessel lacks any decoration.

Unknown Polychrome (n=11)

These eleven fragments exhibit polychrome decoration, though the exact ceramic type cannot be determined.

Oriental Ware

Chinese Porcelain (n=4)

Four fragments of Chinese porcelain were recovered during the course of the excavations. Chinese porcelain is distinctive from English porcelain due to a slight blue hue to the vessel body (Figure 6-3f; Fox and Ulrich 2008). Decoration is commonly blue hand painted designs. One of the fragments collected exhibits an orange on white floral motif.

Chinese porcelain was imported to Mexico via the Philippines during the eighteenth century.

Refined English Wares

White Earthenware (n=634)

The following types all fall into the broad category of White Earthenware.

Annular Ware (n=43)

Annular ware, also referred to as Banded Slip, is a type of white earthenware decorated by applying bands of colored slip to a vessel before firing (Figure 6-4a; Tennis 2002). Common colors utilized include blue, tan, grey, burnt orange, green, yellow, brown and black. Decoration can be simple plain bands, cats-eyes placed on top of a colored slip, or mocha. Annular wares are common in the surrounding area during the nineteenth century.

Creamware (n=26)

Creamwares are early versions of white earthenware (Tennis 2002). After firing the paste the surfaces acquire a cream color, rather than a bright white. Manufacturing of creamwares began in the 1760s throughout England.

Cut Sponge (n=2)

Decoration on Cut Sponge wares is accomplished by stamping the vessel surface with a sponge carved to a certain design (Figure 6-4b). Often, the cut sponge decoration is accented with hand painted designs. Typical motifs include floral designs in reds, purples, blues, and greens. Cut sponge is common in San Antonio during the late nineteenth century.

Decal (n=6)

Decal decorated wares have also been referred to as Decalcomania. These wares are produced by transferring a colored, finished design from a sheet of thin paper onto a complete vessel. This technique of decoration began during the 1850s (Durrenberger 1965:21). Designs found on decal wares are predominantly floral.

Edgeware (n=43)

Another version of white earthenware, this type is characterized by its decorated edge (Tennis 2002; Miller n.d). The edges of these vessels are incised with shell or feather designs, then painted blue or green (Figure 6-4c). Edgeware became common in San Antonio during the early part of the nineteenth century, and persisted into the early twentieth century.

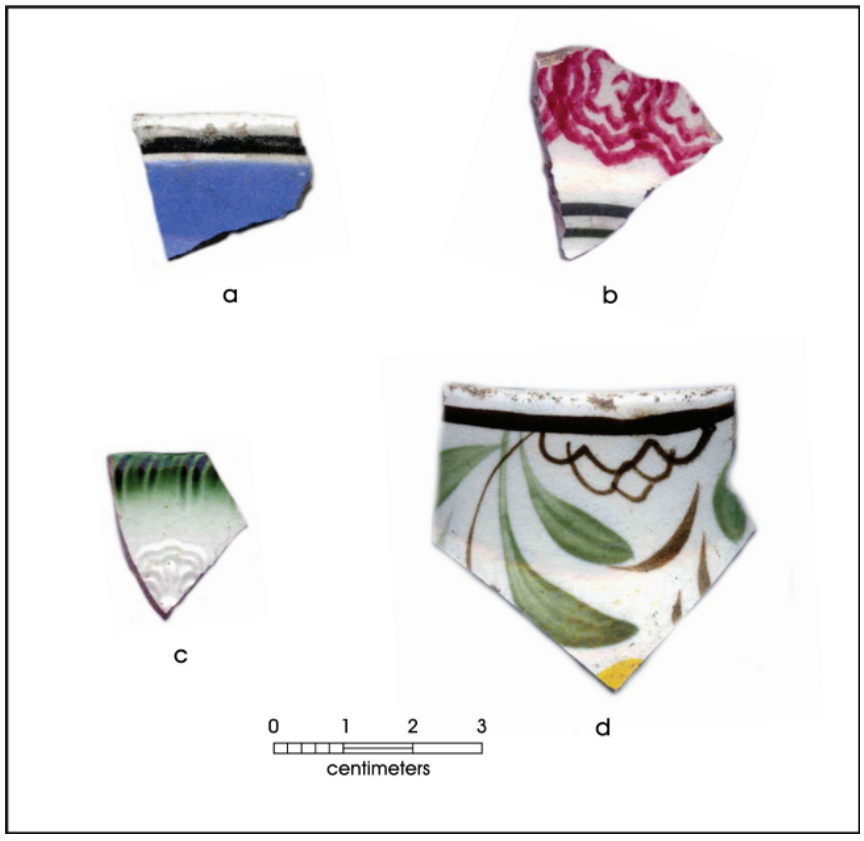

Figure 6-4. *White Earthen Wares: a) Annular ware, b) Cut Sponge, c) Edgeware, d) Hand painted.*

Hand Painted (n=122)

This variety of white earthenware is decorated with hand painted designs (Tomka et al. 2008). The common motif for these vessels is usually floral in reds, blues, greens, yellows, and black (Figure 6-4d). Some examples recovered appear to have floral designs in just blue on the white surface. This variety was common in San Antonio from the early nineteenth century to the early twentieth.

Ironstone (n=59)

Ironstone is a variety of white earthenware that is higher fired, producing a more vitrified paste. The sherds are denser than the typical white earthenware. The manufacturing of ironstone began during the 1850s in England (Miller 1991) and its production continues to this day.

Lusterware (n=5)

Lusterware is described as any ceramic vessel that has an iridescent sheen to the glaze. This treatment is found on both white earthenware and porcelain vessels. The technique of adding metallic oxides to the glaze became popular in England during the nineteenth century (Hughes 1967:85).

Sponge/Spatter ware (n=11)

Many times Sponge and Spatter wares are combined into one type (Tomka et al. 2008). Sponge decoration consists of daubing paint onto the vessel either before or after firing. Spatter decoration was applied by blowing powder or liquid onto the vessel. Spatterware was much more expensive and time consuming to make, so dabbing on the color became the more common decoration technique. These vessels were prominent during the mid-nineteenth century.

Transfer ware (n=30)

Decoration technique for transfer wares involves pressing a tissue with an inked design onto the vessel before firing (Tomka et al. 2008). Transfer ware initially tried to imitate Chinese porcelain. This allowed vessels that resembled the expensive Chinese version to be purchased at a much lower cost because the manufacturing and transporting the Transfer ware was much more cost effective. In addition to Asian inspired motifs, other decoration schemes included landscapes, sailing scenes, hunting scenes, and scenes of exotic locations. Transfer ware was a popular type in San Antonio throughout the mid-eighteenth century into the end of the nineteenth century.

Early versions of Transfer wares are represented by the Flow Blue type. Flow Blue is characterized by blurry transferred designs, resulting from the addition of lime or ammonia chloride to the kiln during firing. One fragment of Flow Blue was recovered during the excavations.

Undecorated (n=287)

The majority of the white earthenware fragments recovered during the course of the excavation happen to be undecorated. Plain vessels were not uncommon, but it is possible that some of the sherds represent portions of vessels that were decorated. Plain white earthenware is common from mid-eighteenth century to modern times.

Others (n=4)

One white earthenware sherd recovered exhibited a thin blue band. No other decoration was noted, and because of its fragmentary nature, it could not be determined whether it belonged to any of the types previously discussed.

Another sherd recovered possessed a thin green band typical of Hotel Ware. Hotel Ware is usually dense white earthenware, often ironstone that was utilized by many of the hotels in the area.

One example of Pearlware was identified at the site. Pearlware is an early form of white earthenware produced in England during the 1780s (Miller 1991).

One fragment of Plain Color Glaze was recovered during excavation. The type is sometimes referred to as Fiesta Ware. The type is characterized by the use of a colored glaze and no other decoration. Colors used are often vibrant yellows, greens, blues, and reds. Plain Color Glaze wares were popular between the 1930s and the 1950s (Lehner 1988).

Yellowware (n=4)

Yellowware is characterized by its distinctive yellow paste (Figure 6-5a; Tomka et al. 2008). The main production site of yellowwares is East Liverpool, Ohio. Yellowware vessels were typically kitchen wares such as mixing bowls, pie plates, pitchers, and milk pans. These were very durable wares that withstood the heat well. Yellowwares were popular from the mid nineteenth century to the early twentieth (Yakubik 1990:375).

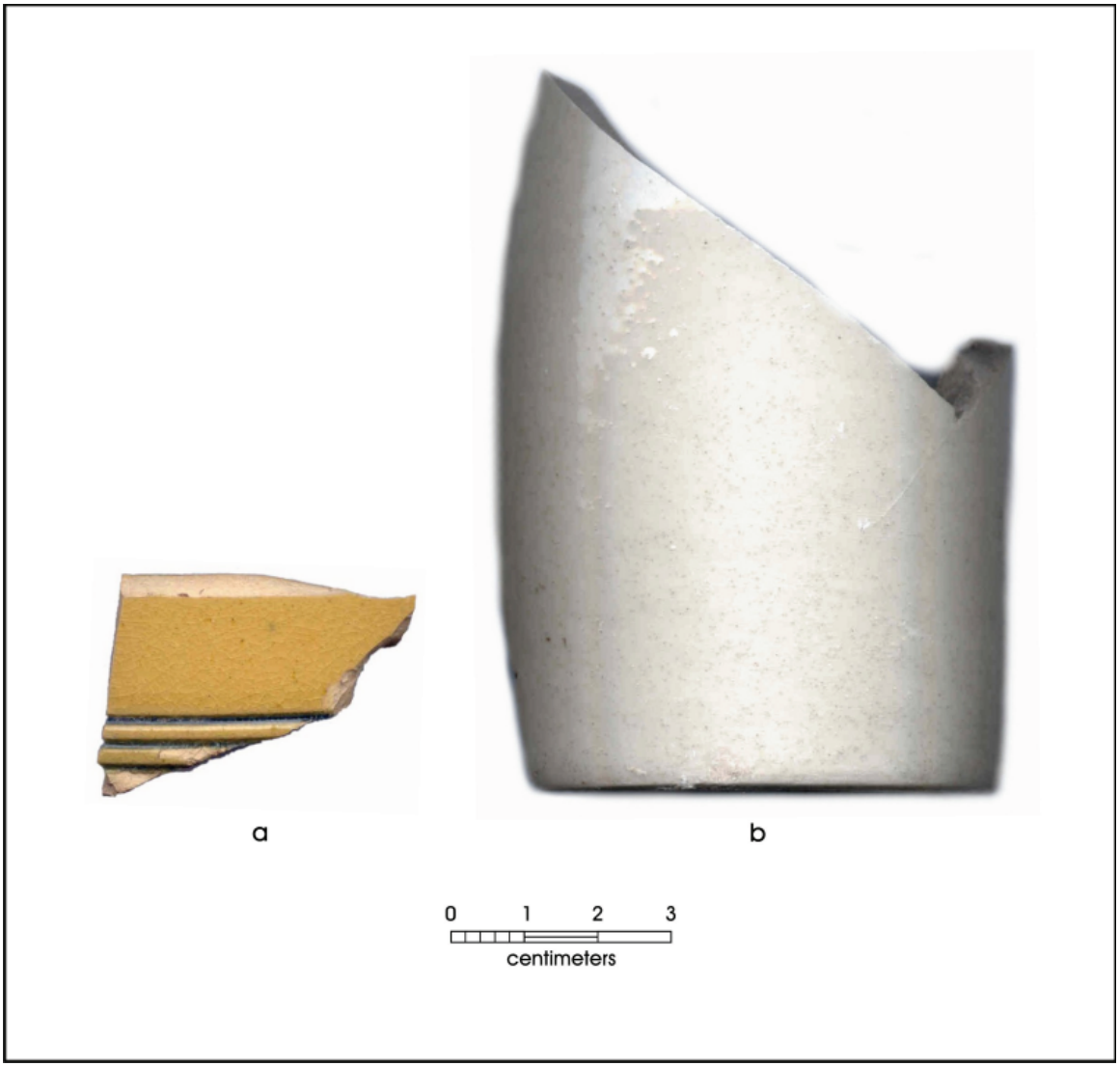

Figure 6-5. *Yellowware and Stonewares recovered from excavations: a)Yellowware, b) Ginger Beer Bottle.*

Porcelain (n=15)

Porcelain is a very high fired ware that is ranked at the top of the vitrification scale (Tomka et al. 2008). English porcelain is bright white, whereas the Chinese version has a blue tinge. Of the fifteen fragments recovered, thirteen are examples of undecorated porcelain. One is a fragment of a toy saucer. One has a floral decal decoration applied to the surface.

Semi-Porcelain (n=17)

Semi-porcelain is slightly lower fired than porcelain (Tomka et al. 2008). The result is that the vessel paste is still slightly porous, but not nearly as porous as ironstone. Semi-porcelain vessels tend to be thicker that porcelain, and are more likely utilitarian wares. All of the fragments of semi-porcelain recovered are undecorated.

Stoneware (n=20)

Stonewares are manufactured from local clays and fired at temperatures between 1200°and 1400°C creating vitrified and non-permeable vessels (Greer 1981:15-16). The type of clay used determines the color of the vessel body, though glazing of the vessels became a common thing during the mid-nineteenth century. Stonewares replaced many of the Lead Glazed versions of utilitarian vessels and for storage.

By the late 1800s, nine potteries were in operation in San Antonio. These family operated businesses supplied most of the communities stoneware needs. Typical vessel forms of stoneware include jars, bowls, pitchers, jugs, churns, cups, spittoons and chamber pots. The stoneware recovered has been sorted by glazing type and is presented below.

Albany Slip (n=9)

A slip is a watery suspension of natural clay that is strained to the point of a very fine texture. The solution is then applied to the vessel and fired. In 1870, a dark brown slip produced from clay in Albany, New York became popular. The ability of the Albany slip to be fired at different levels, and still produce a reliable glaze is one of the reasons that its use caught on. Potters using different varieties of clay, and variable firing temperatures were able to successfully produce glazed wares utilizing Albany slip. The slips on the stoneware vessels appear smooth, with the color ranging from a deep brown to yellowish brown. The firing temperature determined the intensity of the brown (Greer 1981).

Alkaline Glaze (n=2)

Alkaline Glaze is created by combining wood ash, clay, and sand during the glazing process. The combination of these ingredients along with the firing atmosphere determines the color of the resulting glaze. In an oxygen rich firing atmosphere, the glaze varied from cream to deep brown. A reduction atmosphere results in a glaze ranging from pale blue-green to olive green and even black in color (Greer 1981). The distinguishing characteristic of the alkaline glazes is its tendency to streak and run. The use of alkaline glazes became popular in Texas during the later half of the nineteenth century.

Bristol Glaze (n=1)

Bristol Glaze was first produced by American potters in 1884. The tradition first originated in England, but American potters quickly attempted to imitate the ware. Bristol glazes were popular because the potters were able to consistently produce viable wares utilizing the glaze, and the public was attracted to the white glaze because it appeared clean and sanitary. Early use of the Bristol glaze combined it with the Albany slip. Typically the interior of the vessel had the brown Albany slip, while the exterior had the white Bristol glaze. The one fragment recovered during the course of the excavation exhibited this trend. The combination was popular until the early 1920s when vessels with just Bristol glaze became sought after (Greer 1981).

Ginger Beer (n=2)

Ginger Beer, or ale, bottles were imported from England during the late nineteenth century. The bottles are characterized by the tan tops and white bodies (Figure 6-5b). The body of the vessel is dipped in Bristol glaze, whereas the top is ferruginous-slipped.

Salt Glazed (n=3)

Salt glazing is accomplished by adding common salt to the kiln when the vessels inside have almost reached the point of vitrification. The salt vaporizes, combines with the silica on the surface of the vessels, and produces a clear glaze with texture similar to an orange peel. On occasion, the process produces a colored glaze, but that it due to the iron content of the clay utilized in the vessel. Vessels manufactured prior to 1860 usually were glazed only on the exterior. After 1860, vessels tended to have a slipped interior and salt glazed exterior. Stoneware with Salt Glaze seems to have died in popularity by the turn of the twentieth century (Greer 1981).

Unknown (n=3)

Three fragments of unknown type of stoneware were recovered during the excavations. These fragments did not display the characteristics needed to place them in a specific type.

Other Ceramics (n=30)

Other ceramic fragments recovered at the site did not fall into any of the previously discussed categories. These include modern majolicas and lead glazed wares, porcelain insulators, kiln furniture, and flowerpot fragments.

Ceramic Distribution

Ceramic assemblages were examined according to the areas and alignments discussed in the preceding chapter. This was done to determine if patterns exist between the temporal affiliation of the ceramic collected and their spatial distributions.

Area 1 is dominated by late eighteenth century to early nineteenth century ceramics (Table 6-1). The majority (n=12) of the collection of ceramics recovered from this area is tin glazed wares, and just a few fragments of refined white earthenwares (n-4) indicated that these may have been deposited mainly during the later mission era. The lower levels of the units appear to contain mostly colonial ceramic sherds, with one fragment of undecorated porcelain at 20-30 cmbs. The sample size is too small, to reach a definitive conclusion.

Though the majority of the later made refined earthenwares appear in the upper levels of the units in Area 2, they are still present in mixed context in Level 4 (30-40 cmbs). Levels 5 and 6 (40-50 and 50-60 cmbs) contain solely colonial and

Table 6-1. Ceramics from Area 1

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	3
	Unknown	1
Colonial Ceramic: Lead Glazed Total		4
Colonial Ceramic: Tin Glazed	Puebla Blue on White	1
	Puebla Blue on White II	1
	San Elizario	1
	Undecorated	1
	Unknown	2
Colonial Ceramic: Tin Glazed Total		6
Colonial Ceramic: Unglazed	Red Burnished	2
Colonial Ceramic: Unglazed Total		2
English Ceramic: Porcelain	Undecorated	1
English Ceramic: Porcelain Total		1
English Ceramic: White Earthenware	Undecorated	1
English Ceramic: White Earthenware Total		1
Native American Ceramic	Goliad	1
Native American Ceramic Total		1
Grand Total		15

native ceramics, indicating that these levels may have not been disturbed. A total of 438 ceramic fragments were recovered from the Area 2 units, in which Goliad appears to account for a good portion (31%) of the sample (Table 6-2). Goliad was recovered from every level, and in larger quantities in Levels 2, 3, 4, and 5. The tin-glazed wares recovered in this area appear to be in mixed contexts with the later types (i.e. Guanajuato) appearing up to 40 cmbs and the earlier wares (i.e. San Agustin) being present in Levels 2 and 5.

Area 3 is unique in its ceramic assemblage due to the presence of a trash pit in TUs 21, 47, and 29. The pit contains nineteenth century deposits as indicated by the white earthenware fragments recovered. Nineteenth century

Table 6-2. Ceramics from Area 2

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	23
	Green Glaze	2
	Mexican Black Luster Glaze	1
	Olive jar	1
	Sandy Paste Lead Glazed	43
	Unknown	16
Colonial Ceramic: Lead Glazed Total		86
Colonial Ceramic: Tin Glazed	Blue on White	2
	Guanajuato Polychrome	11
	Huejotzingo Blue on White	2
	Puebla Blue on White	2
	Puebla Blue on White II	1
	San Agustin Blue on White	4
	San Elizario	2
	Undecorated	6
	Unknown	4
Colonial Ceramic: Tin Glazed Total		34
Colonial Ceramic: Unglazed	Red Burnished	12
	Tonala	1
	Unidentified	1
	Unknown	10
	Valero Redware	8
Colonial Ceramic: Unglazed Total		32
English Ceramic: Lusterware	Hand painted	1
English Ceramic: Lusterware Total		1
English Ceramic: Porcelain	Undecorated	2
English Ceramic: Porcelain Total		2
English Ceramic: Semi-Porcelain	Undecorated	1
English Ceramic: Semi-Porcelain Total		1
English Ceramic: Stoneware	Albany Slip	3
	alkaline slip	1
	Ginger Beer	2
	Salt glaze	1
English Ceramic: Stoneware Total		7
English Ceramic: White	Annular/Banded	8

Table 6-2. Continued...

Class	Type	Total
English Ceramic: White Earthenware	Annularware/Banded Slip	1
	Creamware	2
	Edgeware	7
	Hand painted	62
	Ironstone	1
	Spatter/Sponge	2
	Transfer	10
	Undecorated	40
English Ceramic: White Earthenware Total		133
Native American Ceramic	Goliad	136
	Unknown	1
Native American Ceramic Total		137
Other Ceramic	Flowerpot	2
	Tin Glaze	1
	Unknown	2
Other Ceramic Total		5
Grand Total		438

ceramics are recovered in some of the deepest levels in the pit. Very few colonial or native ceramics were encountered (Table 6-3). This is consistent with the nature of the feature located in Area 3.

Of the 62 ceramic fragments recovered from Area 4, nearly half of them (n=29, 47%) were fragments of white earthenware (Table 6-4). Twenty of the twenty-nine (69%) white earthenware sherds were undecorated, leaving few sherds with characteristics that are datable. It appears that the ceramic collection from this area consists of later varieties, or varieties that span a longer period of the site's use.

Interestingly, the ceramics collected from Area 5 (Table 6-5) mainly date from the mid to the end of the eighteenth century. A few fragments (n=5) of English ceramics were recovered, but in the upper levels. The remainder of the ceramics was colonial (n=73) and native wares (n=22). Many of the colonial types consisted of varieties that spanned mid eighteenth to nineteenth centuries, but a few types, such as Puebla Blue on White II and San Elizario, fell within a date range of 1750 to 1800.

Ceramic sherds were recovered to a depth of 40 cmbs within Alignment 1. Wall foundations were uncovered at this point and excavations ceased. The ceramic assemblage consists primarily of later colonial wares (n=40) mixed with nineteenth century English wares (n=53; Table 6-6). This is typical for soils that were deposited at a later date, covering colonial wall foundations.

Table 6-3. Ceramics from Area 3

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	2
	Sandy Paste Lead Glazed	1
	Unknown	4
Colonial Ceramic: Lead Glazed Total		7
Colonial Ceramic: Tin Glazed	Guanajuato Polychrome	1
	Undecorated	1
Colonial Ceramic: Tin Glazed Total		2
Colonial Ceramic: Unglazed	Red Burnished	2
Colonial Ceramic: Unglazed Total		2
English Ceramic: Lusterware	Undecorated	3
English Ceramic: Lusterware Total		3
English Ceramic: Porcelain	Undecorated	3
English Ceramic: Porcelain Total		3
English Ceramic: Semi-Porcelain	Undecorated	7
English Ceramic: Semi-Porcelain Total		7
English Ceramic: White Earthenware	Banded	1
	Edgeware	1
	Ironstone	23
	Plain Colored	1
	Spatter/Sponge	1
	Transfer	2
	Undecorated	35
English Ceramic: White Earthenware Total		64
Native American Ceramic	Goliad	3
Native American Ceramic Total		3
Other Ceramic	Flowerpot	1
Other Ceramic Total		1
Grand Total		92

Table 6-4. Ceramics from Area 4

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	3
	Sandy Paste Lead Glazed	2
	Unknown	1
Colonial Ceramic: Lead Glazed Total		6
Colonial Ceramic: Tin Glazed	Blue on White	2
	Undecorated	4
	Unknown	2
	Unknown Polychrome	1
Colonial Ceramic: Tin Glazed Total		9
Colonial Ceramic: Unglazed	Red Burnished	1
	Valero Redware	3
Colonial Ceramic: Unglazed Total		4
English Ceramic: Semi-Porcelain	Undecorated	1
English Ceramic: Semi-Porcelain Total		1
English Ceramic: Stoneware	Albany Slip	2
	Salt glaze	1
English Ceramic: Stoneware Total		3
English Ceramic: White Earthenware	Edgeware	5
	Hand painted	2
	Ironstone	1
	Spatter/Sponge	1
	Undecorated	20
English Ceramic: White Earthenware Total		29
Native American Ceramic	Goliad	5
Native American Ceramic Total		5
Other Ceramic	Flowerpot	1
	kiln furniture	3
	Porcelain	1
Other Ceramic Total		5
Grand Total		62

Table 6-5. Ceramics from Area 5

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	5
	Mexican Black Luster Glaze	1
	Olive jar	1
	Sandy Paste Lead Glazed	1
	Tonala	3
	Unknown	7
Colonial Ceramic: Lead Glazed Total		18
Colonial Ceramic: Tin Glazed	Huejotzingo Blue on White	2
	Puebla Blue on White	3
	Puebla Blue on White II	7
	San Agustin Blue on White	2
	San Elizario	2
	Undecorated	3
	Unknown	15
	Unknown Polychrome	3
Colonial Ceramic: Tin Glazed Total		37
Colonial Ceramic: Unglazed	Red Burnished	1
	Tonala	1
	Valero Redware	16
Colonial Ceramic: Unglazed Total		18
English Ceramic: Semi-Porcelain	Undecorated	1
English Ceramic: Semi-Porcelain Total		1
English Ceramic: White Earthenware	Annular/Banded	1
	Hand painted	1
	Undecorated	2
English Ceramic: White Earthenware Total		4
Native American Ceramic	Goliad	22
Native American Ceramic Total		22
Other Ceramic	Porcelain	1
	Unglazed	1
Other Ceramic Total		2
Grand Total		102

Table 6-6. Ceramics from Alignment 1 Units

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	6
	Sandy Paste Lead Glazed	8
	Unknown	4
Colonial Ceramic: Lead Glazed Total		18
Colonial Ceramic: Tin Glazed	Huejotzingo Blue on White	1
	Monterey Polychrome	3
	Puebla Blue on White II	1
	Undecorated	6
	Unknown	3
	Unknown Polychrome	3
Colonial Ceramic: Tin Glazed Total		17
Colonial Ceramic: Unglazed	Red Burnished	1
	Unknown	2
	Valero Redware	2
Colonial Ceramic: Unglazed Total		5
English Ceramic: Porcelain	Decal	1
English Ceramic: Porcelain Total		1
English Ceramic: Stoneware	Albany Slip	1
English Ceramic: Stoneware Total		1
English Ceramic: White Earthenware	Annular/Banded	6
	Creamware	3
	Edgeware	4
	Hand painted	17
	Ironstone	1
	Pearlware	1
	Transfer	5
	Undecorated	14
English Ceramic: White Earthenware Total		51
Native American Ceramic	Goliad	20
Native American Ceramic Total		20
Other Ceramic	Unknown	1
Other Ceramic Total		1
Grand Total		114

Alignment 2 produced a total of 436 ceramic fragments (Table 6-7) at depths up to 80 cmbs. More than two-thirds (n=317; 73%) of the ceramic fragments recovered were European made types and varieties. This may be due to the fact that the northern portion of the alignment is located near the nineteenth century trash pit. Similar to Alignment 1, the ceramic collection is mixed, with earlier types uncovered in the same level as later-made wares. English white earthenwares were recovered from Level 8. Colonial wares are absent below Level 5.

A total of 150 ceramic sherds were recovered from Alignment 3 (Table 6-8). Units in the alignment were excavated to approximately 60 cm below the surface, and encountered a colonial wall foundation. Interestingly in this area, the ceramics encountered remain consisted with typical colonial

Table 6-7. Ceramics from Alignment 2 Units

Class	Type	Total
Colonial Ceramic: Lead Glazed	Galera	8
	Mexican Black Luster Glaze	1
	Red Brown Ware	1
	Sandy Paste Lead Glazed	10
	Smooth Brownware	2
	Unknown	11
Colonial Ceramic: Lead Glazed Total		33
Colonial Ceramic: Tin Glazed	Guanajuato Polychrome	5
	Huejotzingo Blue on White	1
	Puebla Blue on White	3
Colonial Ceramic: Tin Glazed	Puebla Blue on White II	5
	San Agustin Blue on White	2
	San Elizario	2
	Undecorated	14
	Unknown	7
	Unknown Polychrome	2
Colonial Ceramic: Tin Glazed Total		41
Colonial Ceramic: Unglazed	Red Burnished	1
	Unknown	2
	Valero Redware	5
Colonial Ceramic: Unglazed Total		8

Table 6-7. Continued...

Class	Type	Total
English Ceramic: Porcelain	Porcelain	1
	Toy Saucer	1
	Undecorated	3
English Ceramic: Porcelain Total		5
English Ceramic: Semi-Porcelain	Undecorated	6
English Ceramic: Semi-Porcelain Total		6
English Ceramic: Stoneware	Albany Slip	3
	Bristol Glaze	1
	Unknown	1
English Ceramic: Stoneware Total		5
English Ceramic: White Earthenware	Annular/Banded	25
	Creamware	19
	Cut Sponge	2
	Decal	6
	Edgeware	25
	Flow Blue	1
	Hand painted	32
English Ceramic: White Earthenware	Hotel Ware	1
	Ironstone	30
	Spatter/Sponge	5
	Transfer	11
	Undecorated	141
English Ceramic: White Earthenware Total		298
English Ceramic: Yellowware	Decorated	1
	Undecorated	2
English Ceramic: Yellowware Total		3
Native American Ceramic	Goliad	29
Native American Ceramic Total		29
Other Ceramic	19th Century	4
	Flowerpot	3
	Unglazed	1
Other Ceramic Total		8
Grand Total		436

Table 6-8. Ceramics from Alignment 3 Units

Class	Type	Total
Chinese Ceramic: Porcelain		3
	Orange on White	1
Chinese Ceramic: Porcelain Total		4
Colonial Ceramic: Lead Glazed	Mexican Black Luster Glaze	1
	Sandy Paste Lead Glazed	5
	Tonala	3
	Unknown	6
Colonial Ceramic: Lead Glazed Total		15
Colonial Ceramic: Tin Glazed	Aranama Ploychrome	1
	Blue on White	1
	Guanajuato Polychrome	2
	Monterey Polychrome	2
	Puebla Blue on White	4
	Puebla Blue on White II	1
	San Elizario	2
	Undecorated	19
	Unknown	12
	Unknown Polychrome	1
Colonial Ceramic: Tin Glazed Total		45
Colonial Ceramic: Unglazed	Red Burnished	6
	Tonala	1
Colonial Ceramic: Unglazed	Unknown	3
	Valero Redware	4
Colonial Ceramic: Unglazed Total		14
English Ceramic: Porcelain	Undecorated	3
English Ceramic: Porcelain Total		3
English Ceramic: Stoneware	Salt glaze	1
	Unknown	2
English Ceramic: Stoneware Total		3
English Ceramic: White Earthenware	Hand painted	5
	Ironstone	2
	Spatter/Sponge	2
	Transfer	2
	Undecorated	31
English Ceramic: White Earthenware Total		42
English Ceramic: Yellowware	Undecorated	1
English Ceramic: Yellowware Total		1
Native American Ceramic	Goliad	18
Native American Ceramic Total		18
Other Ceramic	Flowerpot	3
	Unglazed	2
Other Ceramic Total		5
Grand Total		150

deposits. Late manufactured European wares are confined to the first three levels of the excavated units (n=42). The tin-glazed wares indicate that the soils were deposited possible during the late eighteenth century to the early nineteenth century. The absence of any white earthenwares below Level 3 signifies that the layers below date back to the final years of the mission.

Alignment 4 produced 19 ceramic sherd fragments (Table 6-9). The area was excavated to approximately 50 cmbs before encountering colonial wall foundation. A late majolica variety (San Diego Polychrome), produced between 1770 and 1800, was recovered in Level 1. In Level 4, a fragment of Tonala Burnished was recovered, though the production of this ware extended into the early nineteenth century. Red Burnished wares appear in Level 5, dating from the 1725 to the end of the century.

A total of 17 ceramic sherds were recovered from the units in Alignment 5 (Table 6-10). The ceramic assemblage appears to consist of later made wares, with the exception of the Red Burnished ware fragment that was recovered from Level 2 of Unit 72. The remaining types were common during the early nineteenth to the early twentieth century. The ceramics in the units along this alignment indicate that the soils were deposited after the mission period.

Lithics

The introduction of missionary life to the indigenous population caused changes in subsistence and mobility. These changes along with the introduction of metal impacted the use and manufacture of lithic tools. It is generally assumed that during the Spanish Colonial period the use and manufacture of formal lithic tools was less than prehistoric times and the

Table 6-9. Ceramics from Alignment 4 Units

Class	Type	Total
Colonial Ceramic: Lead Glazed	Unknown	2
Colonial Ceramic: Lead Glazed Total		2
Colonial Ceramic: Tin Glazed	Puebla Blue on White	1
	San Diego Polychrome	1
	Undecorated	2
	Unknown	3
Colonial Ceramic: Tin Glazed Total		7
Colonial Ceramic: Unglazed	Red Burnished	4
	Tonala	1
Colonial Ceramic: Unglazed	Unknown	1
Colonial Ceramic: Unglazed Total		6
English Ceramic: White Earthenware	Undecorated	1
English Ceramic: White Earthenware Total		1
Native American Ceramic	Goliad	1
Native American Ceramic Total		1
Other Ceramic	Flowerpot	1
	Unglazed	1
Other Ceramic Total		2
Grand Total		19

Table 6-10. Ceramics from Alignment 5 Units

Class	Type	Total
Colonial Ceramic: Tin Glazed	Unknown	2
	Unknown Polychrome	1
Colonial Ceramic: Tin Glazed Total		3
Colonial Ceramic: Unglazed	Red Burnished	1
	Tonala	1
	Unknown	1
Colonial Ceramic: Unglazed Total		3
English Ceramic: Lusterware	White Earthenware	1
English Ceramic: Lusterware Total		1
English Ceramic: Semi-Porcelain	Undecorated	1
English Ceramic: Semi-Porcelain Total		1
English Ceramic: White Earthenware	Annular/Banded	2
	Creamware	2
	Undecorated	2
English Ceramic: White Earthenware		6
Native American Ceramic	Goliad	2
Native American Ceramic		2
Other Ceramic	Flowerpot	1
Other Ceramic		1
Grand Total		17

use and manufacture of expedient tools was more wide spread (Hester 1989, 1998; D. Fox 1979; Tomka 1999; 2001). This section discusses the results of the debitage and tool analysis. The lithic assemblage recovered from the Mission Concepción courtyard was divided into the following categories: debitage (n=410), tools (n=38) and burned rock (n=206).

Debitage

Each piece of debitage was examined and the flake completeness, number of platform facets, and cortex amount were recorded as part of the analysis. In order to examine the variation in breakage patterns, the completeness of each piece of debitage was noted as complete (CMP), platform remnant bearing (PRB), medial/distal fragment (MD) or angular debris (AD). Breakage patterns can be attributed to several factors that include reduction processes, raw material type and post-depositional trampling (Sullivan and Rozen 1985; Amick and Mauldin 1997; Prentiss and Romanski 1989). In this collection of debitage 33% was identified as angular debris, compatible to nonorientable fragments (NF) produced during experimental reduction (Amick and Mauldin 1997; Prentiss and Romanski 1989). Complete flakes made up 28% of the debitage assemblage, followed by medial/distal fragments (25%) and PRB fragments (14%; Figure 6-6).

When comparing the assemblage from the current study with experimentally produced assemblages by Amick and Mauldin (1997) and Prentiss and Romanski (1989), the Mission Concepción assemblages appears to follow the Prentiss and Romanski core assemblage pattern (Figure 6-7).

It has been suggested that the number of facets on the platform is diagnostic of whether the flake was removed during core reduction or bifacial tool manufacture (Andrefsky 1998, Tomka 1989 and 2001). Single facet platforms are indicative of core reduction while, tool manufacture should produce multi-faceted platforms. Only a small percent of the analyzed debitage (12%) exhibited two platform facets, while 78% were single faceted (Figure 6-8). This supports the contention that they are the product of core reduction.

The amount of cortex present on flakes was recorded as either primary (100% to 51%), secondary (50% to 1%) or tertiary (0% cortex). The amount of cortex on a specimen is an indicator of reduction processes and it is expected that the amount of cortex should be less on late reduction specimens and greater on early reduction pieces (Andrefsky 1998). Another factor that affects the amount of cortex on a specimen is raw material size and availability. According to Andresky (1998:109), debitage derived from cobbles with complete cortical surfaces will exhibit a greater amount of dorsal cortex. Furthermore, a lack of raw material availability will result in variability in the reduction stage processes (Magne 1989). Hence, high amounts of cortex will be present on pebble-based material (Magne 1989).

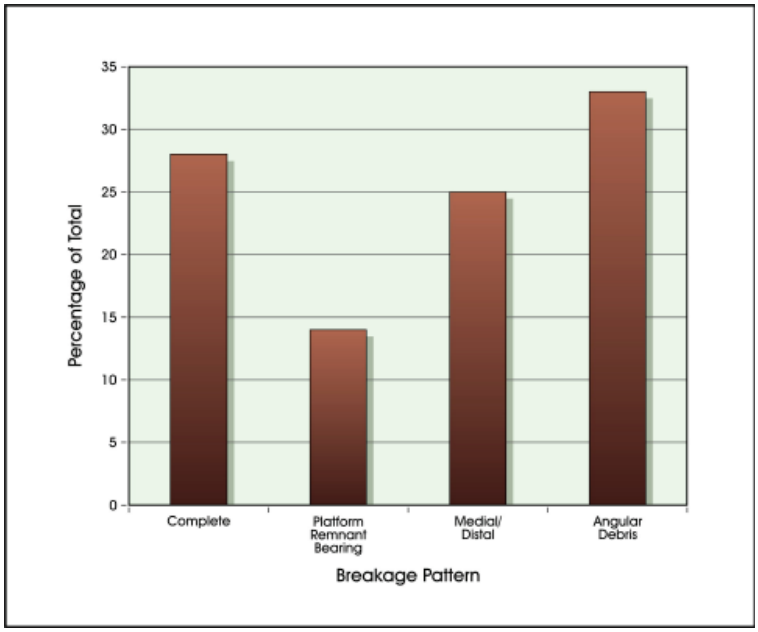

Figure 6-6. *Breakage pattern for Mission Concepión debitage assemblage.*

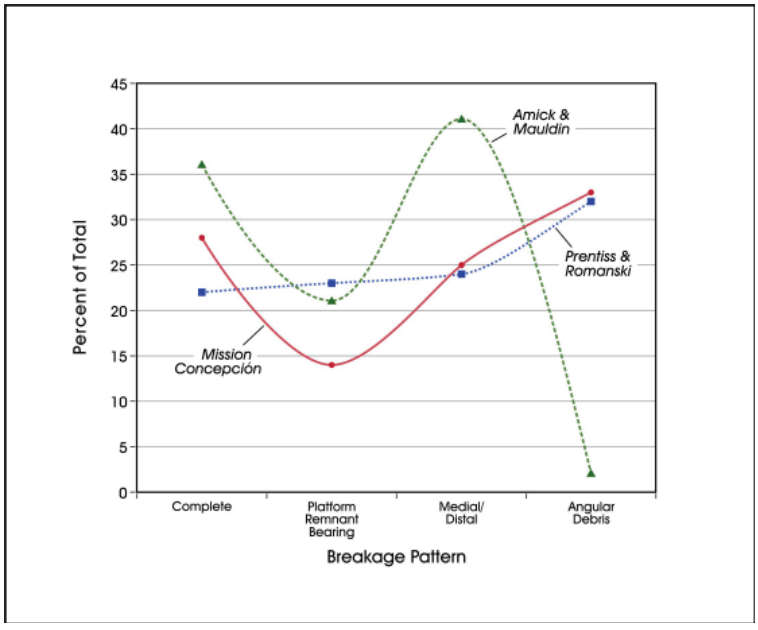

Figure 6-7. *Mission Concepción breakage patterns and experimental breakage patterns.*

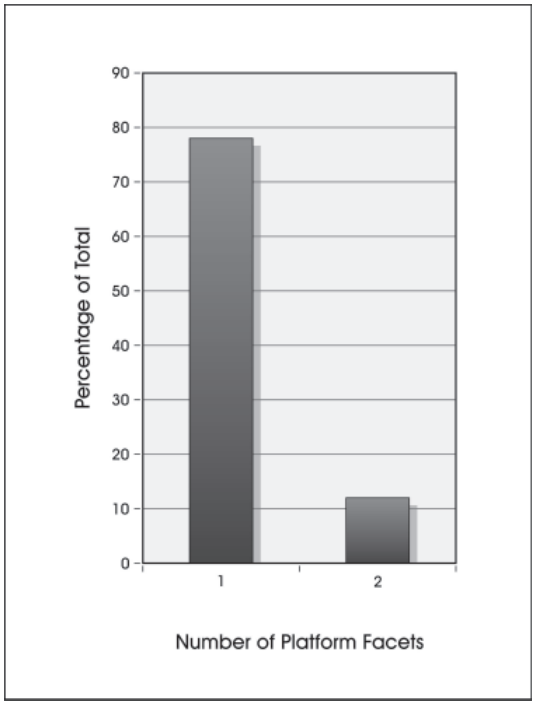

Figure 6-8. *Percentage of the number of debitage platform facets.*

Slightly more than half of the analyzed specimens consisted of tertiary flakes (52%), followed by secondary (41%) and primary flakes (7%; Figure 6-9). A comparison of the Mission Concepción assemblage and five data sets from other Spanish Colonial sites that include Mission San José, 41KA26-B, Mission Rosario, Mission Refugio and Mission Espiritu Santo are presented in Figure 6-10. The assemblages from the current study and Mission San José contain slightly more than 50% tertiary flakes, and the combination of primary and secondary flake percentages is almost equal to the percentage of tertiary flakes. There is variation in the sites southeast of Bexar County (in coastal settings) in regards to the percentage of tertiary flakes. While the Mission Rosario and Espíritu Santo samples exhibit over 67% tertiary flakes, the Mission Refugio assemblage exhibits 42% tertiary flakes and 50% secondary flakes. The combined percentages of secondary and primary flakes at 41KA26-B are higher than then percentage of tertiary flakes.

This variation could be attributed to the availability of raw material in the area of each site and whether local or non-local material was being exploited. A ratio of the amount of debitage and cores was calculated for each of the sites (Figure 6-11). Mission Concepción had a ratio of 205:1 and Mission San José a ratio of 40:1. The fact that both of these sites are located within an area of high raw material availability yet contain such different debitage to core ratios suggests that there will be variation in whether material is brought into the mission setting prepared or unprepared and we cannot yet explain what conditions this variability.

The Espíritu Santo assemblage that exhibited a high percentage of tertiary flakes, has no cores (ratio=590:0). This suggests that non-local material was being used and prepared or previously reduced material was being brought in. Mission Refugio had a higher percentage of secondary flakes and a ratio of six pieces of debitage for every core. This implies that local material was utilized. This supports Tomka's argument that local raw material was procured at the site (Tomka 2002:268).

Lithic Tools

Thirty-seven lithic tools were identified that included edge-modified flakes (n=23), bifaces (n=3), cores (n=2), gunflints (n=3), unifaces (n=3), projectile point (n=1), ground stone (n=1) and one possible burin. As previously mentioned, it is assumed that there is a shift in lithic tool types in the Spanish Colonial period (Tomka 1999; 2001). The majority of the lithic tools from this collection are expedient tools (72 %), while only 27% are formal tool forms requiring extensive modification of the parent materials.

The majority of tools recovered consisted of edge-modified flakes (Figure 6-12a; n=23), supporting the argument that expedient tools were prevalent over formal tools during the Spanish Colonial period (D. Fox 1979). All the specimens

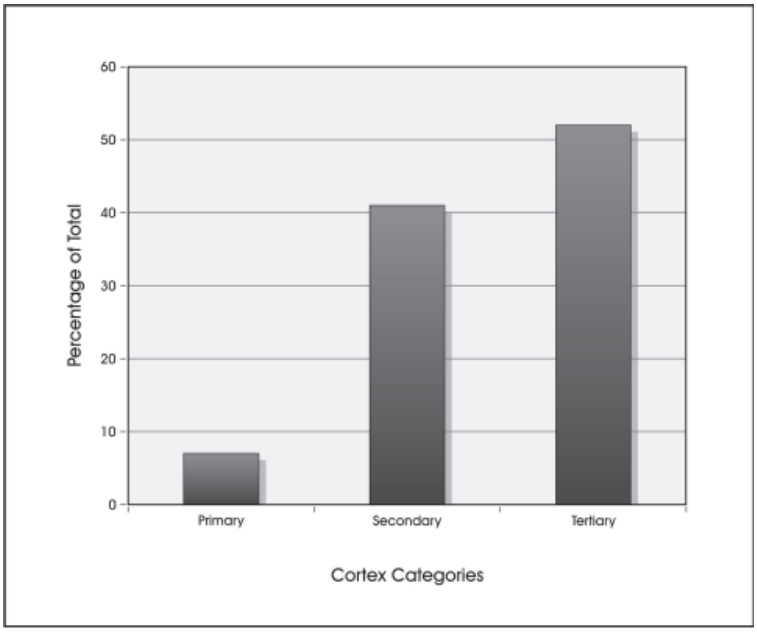

Figure 6-9. *The breakdown of cortex categories.*

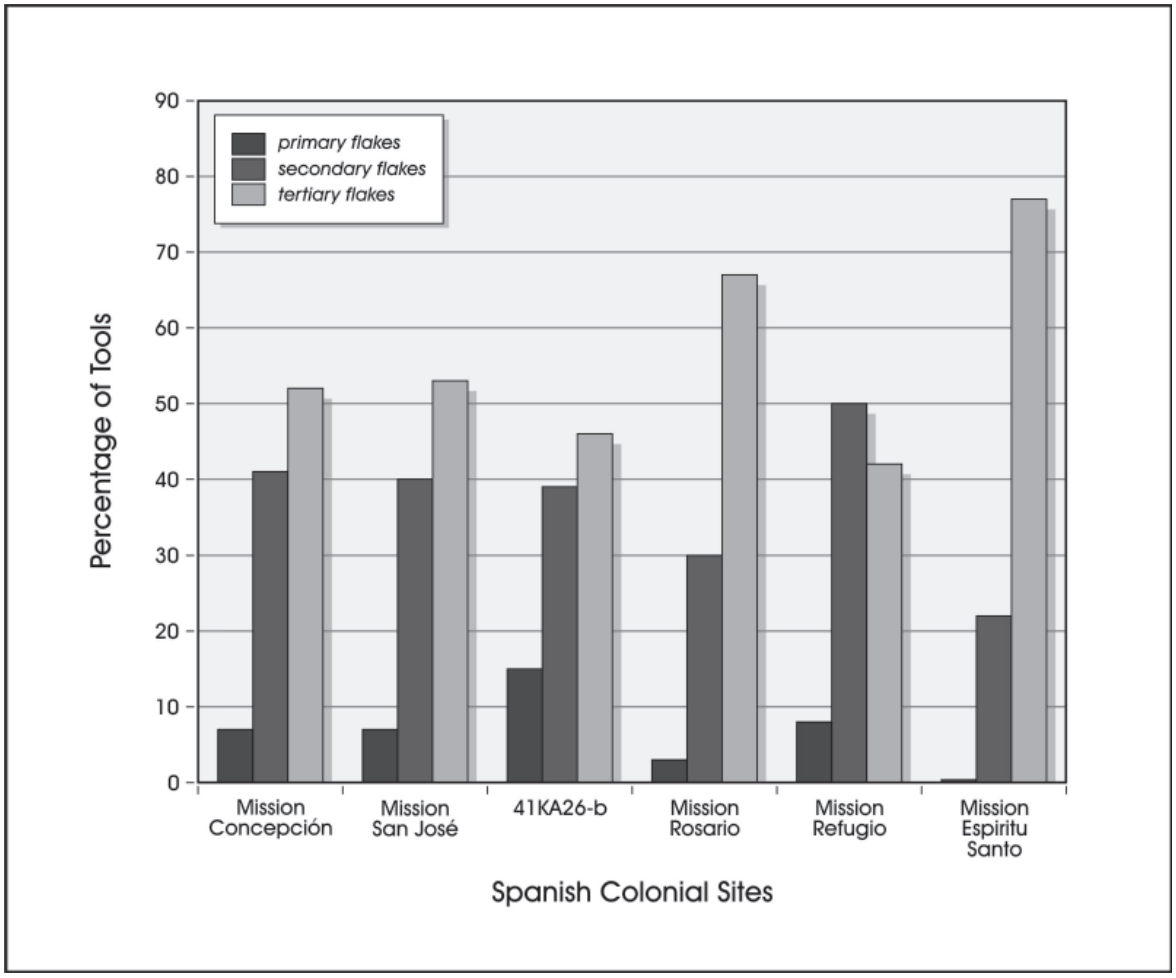

Figure 6-10. *The breakdown of cortex categories by site.*

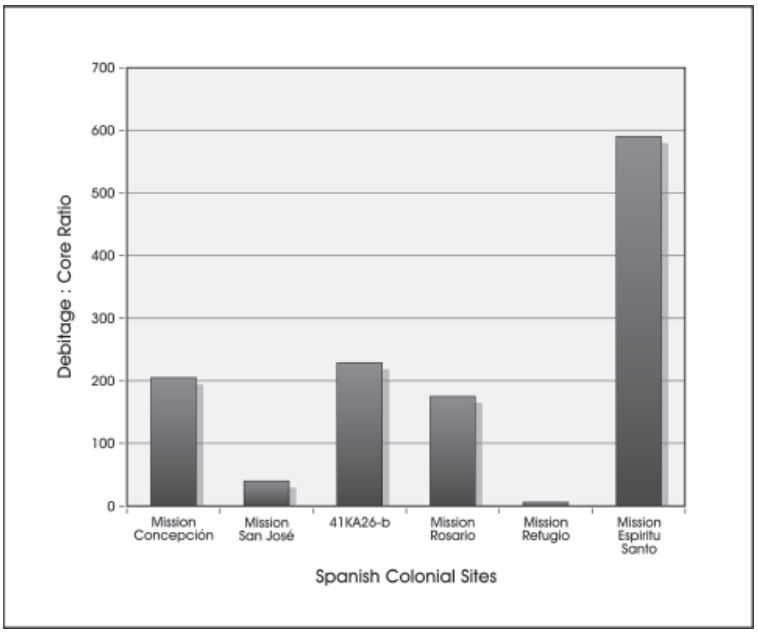

Figure 6-11. *Debitage to core ratios for Spanish Colonial sites.*

were made of chert. The average size of expedient tools was 28.34 mm in length by 21.55 mm in width. The average thickness was 6.9 mm. Over 60% of the edge-modified flakes consisted of tertiary flakes with the remaining represented by secondary flakes.

Three biface fragments were in the lithic tool assemblage. The first biface measured 31.2 mm long, 12 mm in wide and 11.29 mm in thickness (w/t ratio=1.06). The second biface fragment measured 25.36 mm long, 15.1 mm wide and 6.2 mm thick (w/t ratio=2.4). The third biface was 19.6 mm long, 21.7 mm wide and 7.6 mm thick (w/t ratio=2.8).

The smaller of the two cores in the collection was a small fragment with multiple flake scars taken off in a multi-directional method. Based on the size of the core (37 x 18 x 22 mm) it appeared to be exhausted. The second core was a larger bifacially worked chert nodule.

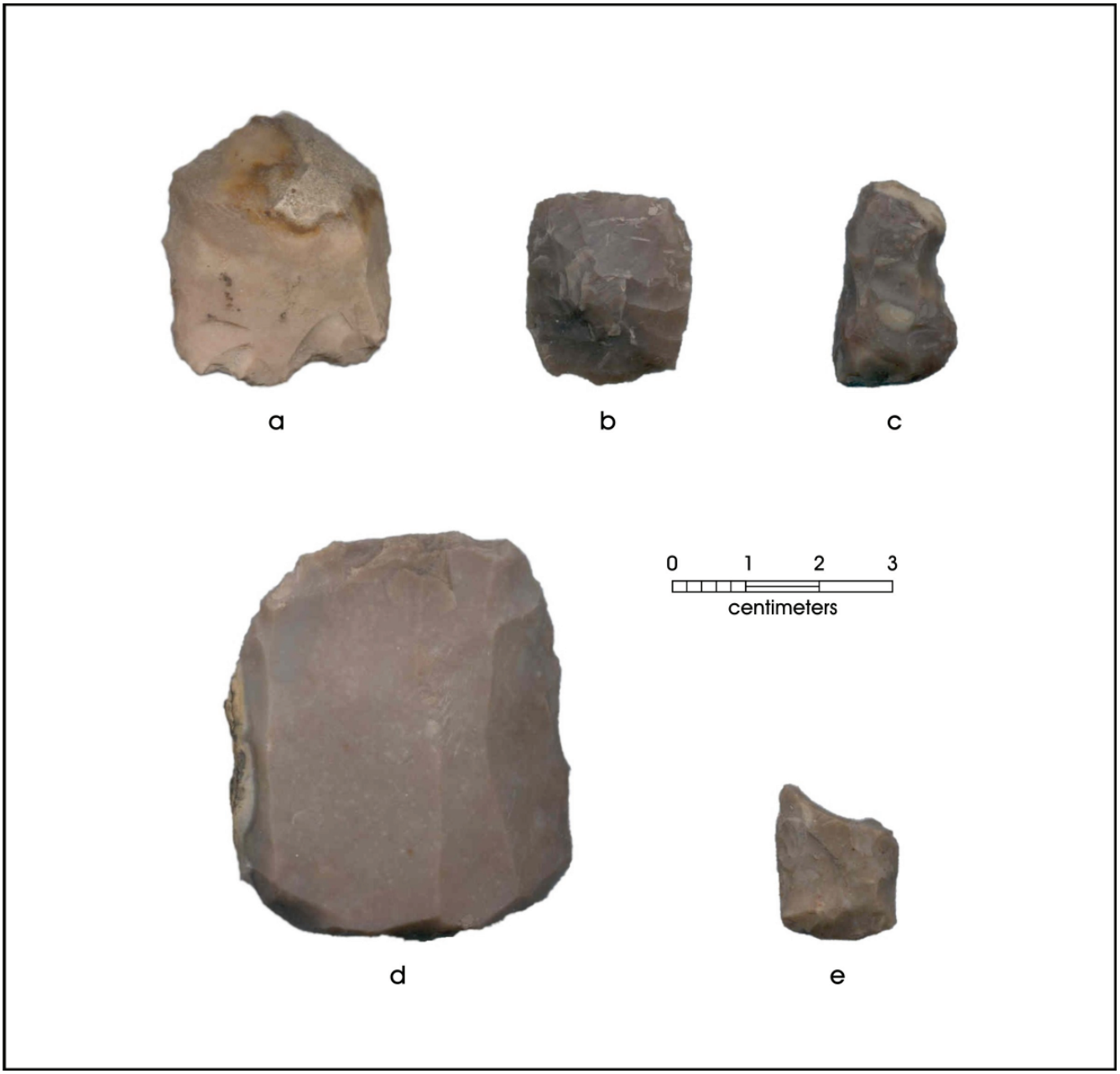

Figure 6-12. *Lithic tools recovered from excavations: a) utilized flake, b & c) gunflint, d) uniface, e) stem of untypable Archaic dart point.*

Three gunflints were recovered from excavations at Mission Concepción. All three specimens were bifacially worked and produced from chert (Figure 6-12b and 6-12c). Villalobos (2003) argues that in mission contexts there appears to be a higher percentage of bifacial and local spall gunflints produced by natives. Examining the specimens under a UV light revealed that both were produced from local material.

Three uniface tools were identified in the collection. Two specimens were fragments while one specimen was a complete specimen and had been worked on its ventral side. The complete uniface is 57.18 mm long, 48.02 wide and 11.91 mm thick (Figure 6-12d).

One possible burin was a recovered from excavations produced from chert and measuring 20.5mm long, 5.8mm wide and 2.84mm thick. The stem of an untypable Archaic dart point (16.4mm wide and 6.3 mm thick) was the only clearly prehistoric artifact encountered on the site (Figure 6-12e). Lastly, a ground stone fragment made out of sandstone was recovered from the excavations.

Discussion

When examining the density of lithic material in the courtyard there is variation. The area with the highest density of debitage (22 pieces per m^3) and lithic tools (2.77 pieces per m^3) is Area 5. This area also has the highest density of Colonial period ceramics. The lithic tools from Area 5 are all expedient edge-modified flakes (n=5). Area 2, which contained two hearth features, produced one gunflint, one biface fragment, one core, three edge-modified flakes and one ground stone fragment. The density of debitage for this Area is 11 pieces per m^3. The lowest densities were from within the granary area. Area 3 had a density of 7 pieces per m^3, while the density in Area 4 was 4.4 pieces per m^3. These two areas also exhibited the lowest density of lithic tools.

In summary, the lithic assemblage from Mission Concepción exhibits evidence of core reduction strategies utilizing local raw material sources. Slightly more than half of the debitage is represented by tertiary flakes. It appears that Areas 2 and 5 contain the highest densities of lithic material. A comparison between the current study and other Spanish Colonial sites reveals that sites in coastal setting exhibit a higher percentage of tertiary flakes than inland sites such as Mission Concepción and Mission San José. Also, the high percentage of expedient tools further supports the assumption that less formal tools were utilized during the Spanish Colonial period.

Other Historic Artifacts

In addition to the abundant amount of ceramic and lithic artifacts a large quantity of metal and glass also was encountered. This section briefly summarizes the glass, metal and other artifacts recovered during the 2002-2005 excavations.

Glass

The dating of glass typically involves discerning if a vessel was the result of hand-made or machine made manufacture. Color is often used as a diagnostic attribute in the dating of glass though it is not useful in determining vessel form. Sand, used in glass production, has the natural presence of iron impurities which in turn causes the coloring of glass (Lockhart 2006). Olive green colors are said to be the closest to the natural glass color. After 1900 olive colored glass was only seen in wine and champagne bottles. Early efforts to produce colorless glass began about 1870 and this technique was well on its way by 1890 (Lockhart 2006). An array of chemical additives resulted in purple, aqua and yellowish colors, after prolonged exposure to the sunlight (Historic Glass Bottle Identification & Information Website 2009).

CAR cataloging procedures included separating flat glass from vessel glass. Vessel shards were then separated by color. In total, there were 2295 pieces of flat glass and 1293 pieces of vessel glass. The color of sherds in the collection included clear, purple, green, aqua, amber, blue, brown and olive. A majority of the vessel glass was olive color (38%), followed by clear glass (36%).

Eleven bottles were recovered from Test Unit 21, seven of them were complete. Five of the identified bottles were medicinal, one wine bottle and a champagne bottle (both olive in color). Three of the medicinal bottles were from the Eagle Drug Store on Military Plaza. The drug store was founded in 1857 by Frederick Kalteyer (Handbook of Texas Online, 2009b). One bottle was an Ayer's Ague Cure medicine container, bottled in 1858. James Ayer owned a drugstore in Lowell, Massachusetts (Companies that Produced Antique Bottles, 2007). The fifth whole bottle contained Shilohs Consumption, made in Leory, New York by the S. C. Wells company. The five bottles were covered with heavy patina. These bottles and other historic artifacts in the trash midden confirm the continued use of the courtyard.

Metal and Other Artifacts

An array of metal objects was encountered during excavations. A distinction was made between cut nails, wire nails, metal fasteners (e.g. screws, bolts and other fastening hardware) and metal which included scrap. There were 1368 items in the metal category and only 84 were fasteners. The general consensus on nail manufacture is that cut nails predate wire nails. Cut nails were manufactured pre-1880 and were replaced by wire nails after the turn of the century (Gross and Meissner 1997:229). In this artifact assemblage there were more wire nails (n=270) than cut nails (n=176).

Other artifacts of interest that were recovered from the courtyard include musket balls (n=2; Figure 6-13a and b). A few personal items such eye glasses, metal buckles (Figure 6-13c) and hair accessories were also recovered. Three circular "gaming pieces" (Figure 6-13 d and e) and a religious pendant with the inscription "1830 Mother Mary" were among the personal items recovered in excavations.

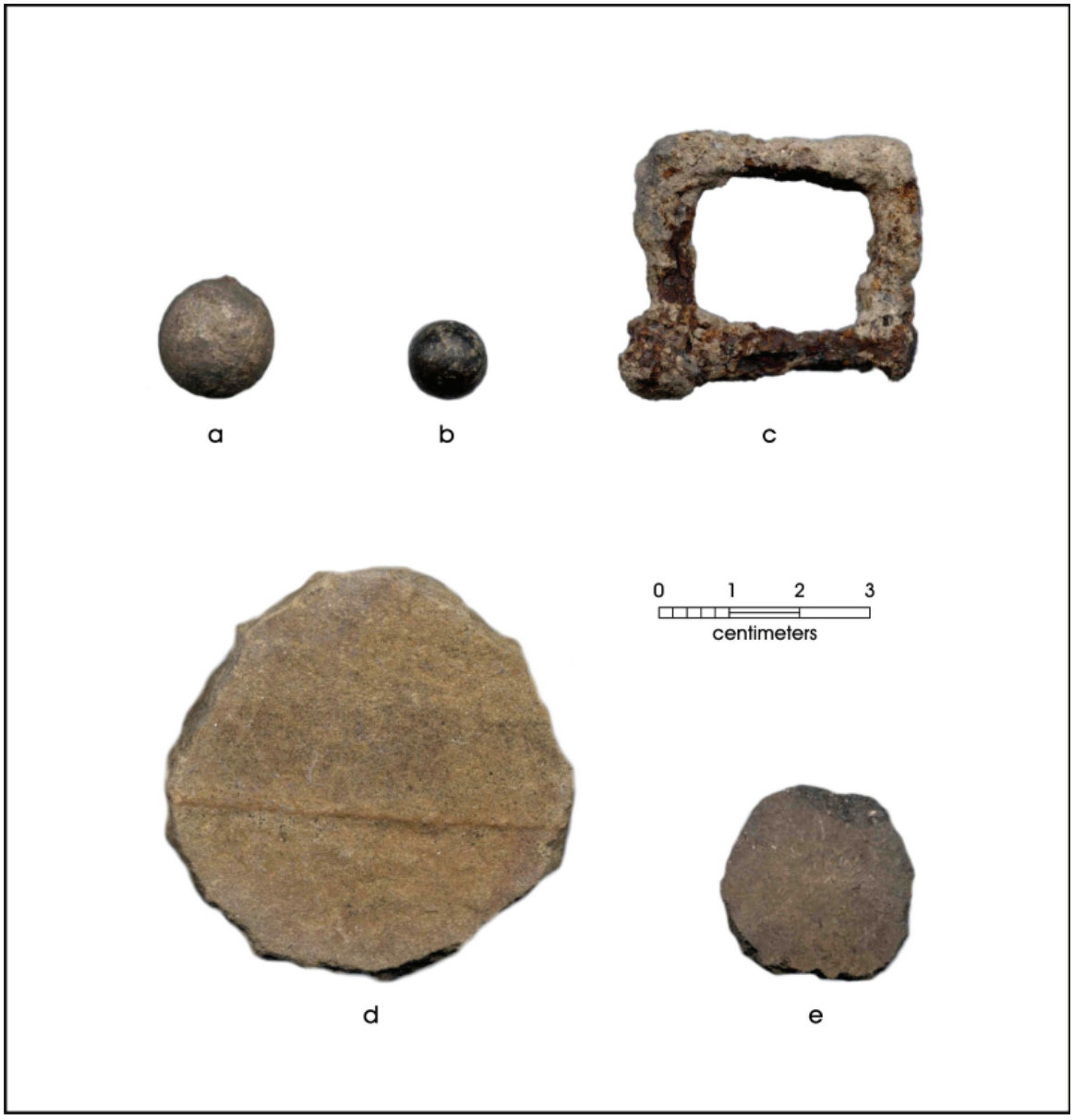

Figure 6-13. *Historic artifacts recovered from excavations: a & b) musket balls, c) metal buckle, d & e) gaming pieces (sandstone and Goliad ware).*

Chapter 7: Summary and Conclusions

Antonia L. Figueroa and Steve A. Tomka

The Center for Archaeological Research of the Department of Anthropology of The University of Texas at San Antonio carried out two Summer Archaeology Field Schools in 2002 and 2004. In addition, the Center's Legacy Public Outreach Program in conjunction with the Gear-Up program followed the 2002 field school with a public education field school. A second Legacy field school was carried out during the summer of 2003. Finally, between 2002 and 2005, the National Park Service in conjunction with Center staff oversaw volunteer Saturday excavations open to the general public. Following the field schools and the volunteer excavations, in 2006, the NPS used a small trackhoe to clear mixed fill from within the courtyard as well as expose extended segments of architectural alignments to locate possible cross-walls and hitherto undiscovered alignments. All of these investigations within the courtyard were prompted by the need to resolve drainage problems that systematically resulted in rising damp in the east wall of the *convento* leading to damage to frescoes found on the inside wall.

Numerous previous archaeological investigations have taken place in the courtyard of the mission but with the exception of the 1930s WPA-sponsored excavations by H.P. Smith none have opened large contiguous areas for detailed inspection. Unfortunately, while spatially extensive, Smith's excavations are poorly documented and cannot be used for planning purposes. Therefore, to determine if any significant resources may be impacted by planned drainage improvements, the National Park Service entered into an agreement with the CAR to make available the Mission Concepción courtyard for summer field schools.

The field schools and volunteer excavations open to the public served as an excellent example of inter-agency cooperation and provided a good learning opportunity to students and a chance for archaeology enthusiasts to practice archaeology alongside NPS and Center staff. The long-term project coupled with the involvement of numerous people and insufficient oversight made the compilation of information and the writing of the final technical report difficult. Nonetheless, the investigations did accomplish their goal of identifying architectural features and cultural deposits present in the courtyard.

During the investigations six architectural alignments and five features were uncovered. Figure 7-1 presents the alignments and features exposed during the current project and previous investigations. The figure also includes the approximate outlines of possible architectural alignments exposed when NPS mechanically cleared the area in late 2006 for the installation of the drainage system. These alignments are referred to as possible because none of them were exposed sufficiently to confirm that they are segments of walls and/or foundations. The possible alignments represent concentrations of wall fall that may be concealing architectural alignments but since this was not confirmed through excavations we chose to refer to them as possible architectural alignments.

As part of the research conducted for this report, archival documents and deed records were reviewed and they describe the granary and possibly a corridor or community storeroom in the courtyard area. According to Ivey (1992) the granary would have built by 1744, though the date of its completion was much later when Ybarra and Santiago finished construction. Alignment 1 could be the associated with the corridor Tello intended to construct or it could be part of the community storeroom (Ivey 1992; Ivey and Fox 1999).

Alignments 2, 3, 4 and 5, likely represent the structural remains of the granary. The 1772 inventory, translated by Almaráz (1982) and also Rock (2006a) describe the granary as 20 *varas* long and 9 to 10 *varas* wide. Deed records document that two rooms were constructed on the south end of the granary in the late 1770s or early 1780s (BCCC Vol. A2:74). The 1815 deed records document the house or granary as measuring 40 *varas* by 11 *varas*. When the southern possible alignment uncovered by NPS in 2006 and encountered by Ivey and Fox (1999) is included, the alignments revealed during excavations measure over 18 meters in length (21 varas). This is close to the measurements noted in the 1772 inventory (Almaráz 1982; Rock 2006a). However, it is difficult to determine where exactly the original granary structure ended because its southern wall was not well defined during the field investigations. Finally, the width of the remains represented by Alignments 2, 3, and 5 also is close to (7.4 meters) the width of the granary reported in the 1772 account (8.5 meters).

Test Units within the granary alignments failed to encounter undisturbed Spanish Colonial deposits. The high frequency of Post-Colonial artifacts and evidence of an intrusive trash pit (Feature 5) in Areas 3 and 4 indicates the courtyard continued to be utilized and perhaps inhabited long after the Colonial era. The areas of the courtyard that contained undisturbed Colonial deposits were in Test Units 80-82, 84, 85, 90, 94 and 95 of Area 2 and Area 5.

Figure 7-1. *Structural remains, conjectured alignments of the granary and features exposed during excavations.*

Area 2, in test units Test Units 61, 62, 89, 59, 86 and 102 revealed a hard-packed gravel surface (Feature 3) that was formed ca. 1825. The dates of Goliad and White Earthen wares have been brought up in other projects (Figueroa and Mauldin 2005) and are still questionable in the current study. Deposits below Feature 3, contained only Goliad and undecorated white earthen ware. Perttula (2001:61-62) has suggested that Native wares were produced beyond the 1800 terminal date. Unfortunately, with such a small sample size the issue could not be addressed.

Area 2 between the *convento* and the granary contained two hearth-like features that were Spanish Colonial in age. This area also produced a statistically significant amount of Spanish Colonial ceramics in Level 5. The presence of hearth features in Area 2 suggests that this area was not enclosed when the features were in use. Therefore, Feature 1 and 2 could predate the structural remains represented by Alignment 1.

Area 5, just slightly east of architectural alignment 3, contained the highest density of Colonial ceramics. A plaster surface (Feature 4) was also uncovered in this area. Colonial ceramics uncovered in this area span the 18th century. Trenching efforts in preparation for the 2005 field school did not encounter feature or high concentrations of artifacts east of this area.

When NPS mechanically cleared the courtyard the 1800 southern addition of the granary was not well defined and Figure 7-1 only gives a conjectured interpretation. A buttress was identified during this time under the existing buttress at the northwest corner of the Father President's Office. Alignment 1 was also fully exposed, though a gap still existed between it and the kitchen. A majority of the architectural remains were cleared from the courtyard for the proposed improvements and only portions of the granary remains will be preserved and interpreted for the public.

In summary, the overall collaborative effort between the Center for Archaeological Research and the National Park Service provided a great learning laboratory for students attending the field schools and at the same time provided a cost-effective means for NPS to excavate and expose large areas of the courtyard. The weekend volunteer excavations also encouraged local and regional archaeology enthusiasts to participate. Through the combined effort of students, volunteers and professional staff from both the CAR and NPS, these archaeological investigations identified the architectural features that would be impacted by the planned installation of the drainage system. The investigations also provided sufficient architectural details to allow the redesign of construction plans for a less intrusive alternative that minimized the impact to existing architectural features.

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Appendix A

Vertebtate Faunal Remains

Appendix A: Vertebrate Faunal Remains

Barbara A. Meissner

A total of 11,313 vertebrate faunal remains, weighing 13,298.15 g, from 93 excavation units were examined for this report. An additional 54 bones weighing 89.64 g were recovered from backhoe trenches on the site. The bone from the backhoe trenches will not be considered in this analysis. A complete list of faunal data recovered from this project will be provided upon request.

Most of the excavation units were placed to attempt to follow the remains of the foundations of the walls of the building identified as the granary and the *convento*. Others followed walls of a smaller room immediately adjacent to the south and at least one room to the west. Some units were also placed within and between these rooms (see Figure 5-1).

Methods

In the field, the bone was recovered by dry screening matrix through 0.64 cm (.25 inch) mesh. Bones were bagged with other artifacts by unit and level. In the laboratory all bone was washed, dried, and then bagged by unit and level. The bone was identified to the most specific taxon possible using the comparative collection at CAR, as well as several standard reference texts (Balkwill and Cumbaa 1992; Boessneck 1970, Gilbert 1990; Gilbert et al. 1981; Hildebrand 1955, Hillson 1986; Olsen 1960, 1964, 1968; Sobolik and Steele 1996). Taxonomic names are those defined at the Integrated Taxonomic Information System available online at <http://www.itis.gov/index.html>. Identifications were conservative, i.e., bone which appeared to be cow-sized was not identified as *Bos taurus* unless it could be differentiated from *Bison* and *Equus* species. All bone was weighed. Evidence of exposure to heat was noted on all bone. Element, portion of element, side, evidence of immaturity, butcher marks and evidence of damage from gnawing, root etching, chemical and atmospheric weathering was noted on bone identified to the order taxonomic level. In addition, the presence or absence of unidentifiable saw-cut bone was noted within each unit/level. When bone could be identified only to Class (i.e. mammal, bird, reptile, etc.), an estimate of the size of the animal (i.e., very small, small, medium, large, very large) was made when possible.

Methodological Problems

This collection is highly fragmented. The average bone weight was only 1.12 g. Most bone, 92.4 percent of the count (n=10,430) could be identified only as mammalian. Only 611 bones (5.4 percent) could be identified to the order taxonomic level, and only 201 (1.8 percent) could be identified to the genus taxonomic level. With bone collections in this condition, several important issues have to be considered before an analysis of data can begin.

Taphonomy, the study of what happens to a bone from the moment of the death of the animal to the moment the analyst examines it, provides a kind of checklist of the factors that can affect the condition and even survival of bone in archaeological contexts (Lyman 1994a). Non-cultural factors that can seriously alter bone include atmospheric weathering of exposed bone caused by rapid wetting and drying of bone on the ground surface; chemical weathering of buried bone due either to soil pH or the biological activity of bacteria and/or fungi; physical damage due to gnawing or trampling by animals; and the weight of overburden, and/or shrinking and swelling of some clay sediments. Taphonomic factors that are influenced by human culture include butchering practices; food preparation practices; garbage disposal practices; trampling, and disturbance by subsequent human activities, including modern construction practices in the area of the deposit.

If all bone was affected by taphonomic factors equally, the high degree of fragmentation would matter much less, as the identifiable bone could be considered a sample of the total bone originally deposited. But such is not the case. Small bones are more likely to be rendered unidentifiable by non-cultural taphonomic factors (Von Endt and Ortner 1984), while large bones, especially those of such food animals as cattle, may be more likely to be processed during butchering and cooking, leaving the majority of the bone unidentifiable. This is especially likely when bone is processed to extract bone grease (Vehik 1977). The degree to which any of these factors has affected the collection cannot be easily assessed.

The challenge presented to the faunal analyst is that, while we know that many if not most of the taphonomic factors listed above (as well as others) have affected a given collection, the degree to which any given bone has been effected may vary markedly even within a single component of a single site, due to the individual taphonomic history of the bone and the microclimate of the sediments in which it was buried. Even when bone is still present, there is very little useful information that can be gleaned from bone so damaged that it cannot be identified more specifically than "Mammal". Lyman and O'Brien (1987) have called such bone "analytically absent."

The majority of bone in most archaeological settings must be placed in this category, and the bone in Colonial sites, where several hundred years of intensive cultural activity in or near an enclosed place have taken their toll on the condition of the bone, is often so fragmented that the percentage of bone identifiable to even the order taxonomic level is usually less than 20 percent. In such cases, even the identifiable bone cannot be considered an unbiased sample of the bone originally deposited in the site. The analyst must, in these circumstances, make the best of a bad situation and attempt to glean as much information as possible from the available bone, while never losing sight of the fact that he or she is looking at a small sample biased by many (mostly unknown) factors.

Although faunal data can be used to extract a wide range of information about the past, the primary focus in historic sites is usually on estimating the meat diet of the inhabitants, and noting changes through time. An attempt to measure the relative abundance of various species must be made before such estimates can be undertaken. Two measures of relative abundance are commonly used in faunal analyses: the Number of Identified Specimens (NISP) and Minimum Number of Individuals (MNI). NISP is the count of specimens that have been identified to a particular taxonomic level, usually either order or genus (Lyman 1994b). NISP will be used in the latter sense in this report. The use of NISP as a measure of relative abundance is problematic (Grayson 1984:20-24; Reitz and Wing 1999:191-192). NISP cannot differentiate between 11 fragments from 11 different cows and 11 fragments of a single cow bone. Reliance on NISP alone will distort the estimate of relative importance in favor of small animals and animals with parts that are more readily identifiable in fragmentary form (Grayson 1984:20-24).

MNI is a derived measure commonly used to get around some of the problems of NISP. MNI is the minimum number of animals of each species that must have been present to account for the elements identified for that species (Lyman 1994b). This is determined by dividing paired elements (or portions of elements such as proximal or distal ends) into right and left side, and then finding the most abundant such element. Estimated age of the animals (at least immature vs. mature) is often considered in the analysis. MNI can, if properly calculated, be a useful counter-point to NISP. However, MNI also has problems as a measure of relative abundance. Grayson (1984: 29-49) has pointed out that MNI counts can be made to vary a great deal by changing how the analyst groups the data, for instance, by unit/level, by complete unit, by natural level, by the entire site, etc (see Grayson 1984:34-49). MNI is best used in situations where the bone has been found in limited contexts, such as storage pits or other features. It is far less useful in analyses of scattered midden deposits. Moreover, in a highly fragment collection in which only a very small percentage of the bone can be identified, MNI is of little use in estimating relative abundance. In such cases, MNI is often merely a list of the identified genera in any give analytic unit, with little additional information to be gained. For these reasons MNI will not be used to estimate the relative importance to the diet of the bone identified at the Mission Concepción Courtyard Field School.

Even if we were able to determine the actual number of individuals represented by bones at the site, it would not necessarily give us a good idea of the relative importance of each species to the diet. Obviously, the presence of five cows and five chickens in a deposit does not mean that chicken provided an equal amount of meat to the diet. Bone weight is, in general, a better indicator of relative dietary importance (as opposed to relative abundance) than NISP or MNI, but this measure must be used with caution. Larger bones carry more meat, but the relationship is not linear, varies among different taxa (Reitz and Wing 1999:222-231), and there is considerable variation from one part of the animal to another (e.g. lower legs of cattle are dense, heavy bones but carry relatively little meat compared to other bones of the body). Using bone weight as an assessment of dietary importance also suffers from the necessary assumption that all taphonomic factors that affect bone weight (such as leaching, mineralization, or encrustation) have affected all bone in the collection uniformly. Bone weight tends to emphasize the importance of larger, heavier animals, and because of this, tends to counter-balance the tendency of NISP to emphasize smaller animals.

Both NISP and bone weight used as estimates of relative importance to diet are subject to a number of biases (Reitz and Wing 1999:200). Used together, however, NISP and bone weight can provide a better picture of the relative importance of each species to the diet than either can provide when used alone. It is important to remember, however, that in highly fragmented collections the identifiable bone is a small and possibly substantially biased sample of the bone originally deposited at the site.

Analytic Units

In order to search for differences in patterns of bone in different parts of the excavation site, the units were grouped into a number of Analytic Units, as described in Figure 5-1. Units above wall alignments and areas placed between wall alignments were grouped into Alignments 1 to 5 and Areas 1 to 5 and bone from these groups will be considered separately below.

After at least 275 years of human activity at the site, and especially after the initial stone-robbing of many of the

walls of the mission buildings followed later by efforts to partially restore some of the structures and create a historic tourist attraction along with attendant utility construction, it is not surprising that the majority of the units excavated show at least some mixing of sediments. Separation of Colonial, nineteenth century and twentieth century components is extremely difficult in such circumstances. Using the absence of artifacts that date to the post-colonial period, as well as the observed degree of disturbance by such things as pipe trenches, it is possible to separate some units that appear to be relatively undisturbed. The bone from these units will be compared to the rest of the bone, and to bone from other mission excavations in the section that follows.

Results

Table A-1 is a list the taxa identified during the analysis with counts and weights of bone in each, excluding the bone located in the backhoe trenches. A total of 33 genera were identified in this collection. The genera shown in Table A-1 are typical of the kinds of animals found in Colonial sites in San Antonio. This includes the Black Bear (*Ursus americanus*), which, while not common, is sometimes seen in Colonial sites in South Texas (Meissner 1999a). Early travelers to the San Antonio region often mentioned seeing surprising numbers of bears (Weniger 1997:55).

Table A-2 compares bone identified to at least the Genus taxonomic level (NISP) from this project to bone from six recent projects at missions in San Antonio (Meissner 1998, 1999b, 1999c, 2001a, 2001b, and 2004). This collection, taken as a whole, is very much like many other faunal bone collections recovered from the missions in the past decade. It is extremely fragmented and dominated by mammals. In fact the percent of bone that could be identified to the Genus level in this collection (%NISP) is the lowest of the seven collections shown in Table A-2, indicating that this collection is even more fragmented than is usual at Colonial sites in San Antonio.

What is distinctive in this collection is the relatively large percentage of birds and the very small percentage of turtles and fish composing the NISP. In particular, the low percentage of turtle bone is remarkable. This strongly suggests that the low turtle count is a reflection of a real phenomenon, since very small fragments of turtle shell and fish can be differentiated from mammal and bird bone. Similarly, the large percentage of bird bone, especially in light of the susceptibility to both chewing and trampling damage that is a characteristic of bird bone, seems to reflect a real difference in the diet at this mission. The large number (n=220) of bird bones that could not be identified also suggests birds were unusually abundant in the diet at Concepción.

Analytic Units

The bone that was examined in this collection was grouped into the 10 analytic units defined in Figure 5-1. For each of these 5 Alignments and 5 Areas, the bone was divided into categories described below, intended to examine any notable differences in the meat diet as seen in each. Additionally, bones from the projects described in Table A-2 were similarly categorized and used for comparison with this collection.

When looking at animal bone from historic archaeological sites, it is instructive to highlight those animals that are commonly used for food in Western cultures (Meissner 2000, 2001a, 2004). While Native Americans can be assumed to have been willing to eat most animals (excepting any taboos), the milieu of the missions was European, and European food taboos (e. g. the refusal to eat rats and dogs except when starving) can be assumed to generate. Animals considered acceptable for food in most Western cultures were placed in one of six categories:

Cattle: For this analysis, bone which has been identified only as Bovinae (i. e., bone that could not be differentiated between cow (*Bos taurus*) and bison (*Bison bison*) was added to the Cattle total when no bison was identified in the collection). In one case (Meissner 1999b) where bison was identified, the unidentified bovid bone was divided between the Cattle and Wild Mammal categories by the percentage of the total identified bone weight represented by the identifiable cow and bison bone. Thus, for the bone collection described in Meissner (1999b), bison bone weight represented 3 percent of the total identified bovid bone weight, so 3 percent of the unidentified bovid bone weight was added to the Wild Mammals category and the rest was placed in the Cattle category. This was done to attempt to divide the Bovinae bone into cattle and wild in a reasonable way. Though, in fact, any of the Bovinae bone at any of these sites might have been bison.

Sheep/Goat/Pig: The small domestic artiodactyls. Bone identified as Caprinae (sheep or goat) is included in this category.

Wild Mammals: Animals included in the wild mammals category include: Pronghorn (*Antilocapra americana*), which, while not common in mission bone collections, are sometimes identified; Bison (*Bison bison*) which are also only occasionally identified in mission collections; White-tailed

Table A-1. Taxa Identified During Analysis

Taxon	Common name	Ct.	Wgt. (g)
CLASS: MAMMALIA			
Order: Artiodactyla (Even-toed ungulants)			
Bos taurus	Cattle	18	367.08
Capra hircus	Domestic goat	1	11.12
Odocoileus virginianus	White-tailed deer	10	44.74
Ovis aries	Domestic sheep	7	28.78
Pecari tajacu	Javelina, collared peccary	6	16.99
Sus scrofa	Domestic pig	26	109.02
Bovinae	Cattle or Bison	99	2,956.40
Caprinae	Goats or sheep	7	16.17
	Total Artiodactyls Identified to Family	174	3,550.30
	Unidentified Artiodactyls	214	675.64
	Total Artiodactyla	388	4,225.94
Order: Carnivora (Meat-eaters)			
Canis sp.	Dogs, coyotes, wolves	6	5.80
Felis sylvestris	Domestic cat	3	2.20
Conepatus mesoleucus	Hog-nosed skunk	1	0.29
Mephitis mephitis	Striped skunk	1	0.82
Procyon lotor	Raccoon	6	8.78
Ursus americanus	Black bear	1	2.23
Canidae	Dogs and relatives	1	0.17
	Total Carnivores Identified to Family	19	20.29
	Unidentified Carnivores	3	1.31
	Total Carnivora	22	21.60
Order: Didelphimorphia (Opossums)			
Didelphis virginiana	Opossum	15	9.92
	Total Didelphimorphia	15	9.92
Order: Lagomorpha (Rabbits and Hares)			
Lepus californicus	Blacktailed jackrabbit	1	0.60
Sylvilagus sp.	Cottontail rabbit	22	10.55
	Total Lagomorphia	23	11.15

Table A-1. Continued...

Taxon	Common name	Ct.	Wgt. (g)
CLASS: MAMMALIA			
Order: Perissodactyla (Horses and relatives)			
Equus sp.	Horse family	1	6.32
	Total Perissodactyla	1	6.32
Order: Rodentia (Rats and relatives)			
Neotoma sp.	Woodrats	2	0.59
Peromyscus sp.	Deer mice, white-footed mice	5	0.39
Rattus rattus	Black rat, roof rat	1	0.22
Sciurus sp.	Tree squirrels	7	3.38
Sigmodon hispidus	Cotton rat	9	1.18
	Total Rodents Identified to Family	24	5.76
	Unidentified Rodents	35	4.78
	TOTAL RODENTIA	59	10.54
	Total Mammals Identified to Order	508	4,285.47
Mammal--very small	Rat, mouse-sized	4	0.23
Mammal--small	Raccoon, rabbit-sized	37	10.14
Mammal--medium	Dog-sized	58	40.45
Mammal--large	Deer-sized	417	699.65
Mammal--very large	Cow, bison, horse-size	1,604	5,092.74
Mammal	Size interterminate	8,310	3,008.01
	TOTAL MAMMALIA	**10,938**	**13,136.69**
CLASS: AVES			
Order Anseriformes (Ducks, Geese, and relatives)			
Anatidae	Ducks and Geese	9	8.42
	Total Anserformes	9	8.42
Order Columbiformes (Pidgeons, Doves, and relatives)			
Columbidae	Doves and Pidgeons	2	0.44
	Total Columbiformes	2	0.44
Order: Ciconiiformes (Hawks, eagles, herons and relatives)			
Buteo sp.	Hawks	2	2.00
Accipitridae	Hawks, eagles, kites	1	0.21
	Total Falconiformes	3	2.21

Table A-1. Continued...

Taxon	Common name	Ct.	Wgt. (g)
CLASS: AVES			
Order: Galliformes (Pheasants, fowl, and relatives)			
Callipepla squamata	Scaled quail	3	0.50
Gallus gallus	Chicken	15	10.96
Meleagris gallopavo	Turkey	12	19.70
	Total Galliformes	30	31.16
	Total Birds Identified to Order	44	42.23
Aves--small	Robin-sized	6	0.38
Aves--medium	Pidgeon-sized	30	4.69
Aves--large	Chicken-sized	120	39.80
Aves--very large	Turkey-sized	22	22.77
Aves	Size interterminate	42	11.21
	TOTAL AVES	**264**	**121.08**
CLASS: REPTILIA			
Order: Squamata (Snakes and lizards)			
Crotalus sp.	Rattlesnakes	1	0.68
Elaphe sp.	Rat snakes	5	0.91
Thamnophis sp.	Garter snakes	1	0.12
Colubridae	Non-poisonous snakes	1	0.24
	Total Squamata Identified to Family	8	1.95
	Unidentified Squamata	1	0.06
	Total Squamata	9	2.01
Order: Testudines (Turtles)			
Terrepene sp.	Box turtles	1	1.58
Trionyx sp.	Softshelled turtles	2	4.32
Emydidae	Pond sliders, box turtles	4	3.28
	Total Identified Testudines	7	9.18
	Unidentified Testudines	6	2.92
	Total Testudines	13	12.10
	TOTAL REPTILIA	**22**	**14.11**
CLASS: AMPHIBIA			
Order: Anura (Frogs and Toads)			
	Unidentified Anura	25	1.56
	TOTAL AMPHIBIA	**25**	**1.56**

Table A-1. Continued...

Taxon	Common name	Ct.	Wgt. (g)
CLASS: AMPHIBIA			
Order: Anura (Frogs and Toads)			
	Unidentified Anura	25	1.56
	TOTAL AMPHIBIA	**25**	**1.56**
CLASS: ACTINOPTERYGII (Ray-finned Fishes)			
Order: Siluriformes (Catfishes)			
Ictalurus sp.	Freshwater catfish	8	4.17
Pylodictus olivaris	Bullhead catfish	2	1.97
Ictaluridae	Catfish	1	0.10
	Total Siluriformes	11	6.24
Order: Semionotiformes			
Lepisosteus sp.	Gars	2	0.13
	Total Semionotiformes	2	0.13
	Total Boney Fish Identified to Order	13	6.37
	Unidentified Actinopterygii	51	18.34
	TOTAL ACTINOPTERYGII	**64**	**24.71**
	Total identified to Order	**612**	**4,349.74**
	Overall Total	**11,313**	**13,298.15**

Table A-2. Comparison of Genus (NISP) from Missions Sites

Project	Mammals	Birds	Turtles	Fish	NISP*	%NISP	Av. Bone Wgt. (g)
Concepción (Meissner 2001)	72.9%	7.4%	8.5%	10.4%	376	1.9%	1.70
San José (Meissner 1999a)	75.7%	2.9%	14.7%	2.7%	449	2.4%	1.21
San José (Meissner 1999b)	49.7%	3.4%	16.9%	13.4%	320	3.7%	1.13
San José (Meissner 1998)	55.1%	4.7%	7.1%	10.8%	379	3.5%	0.94
San Juan (Meissner 2001)	63.1%	6.8%	10.6%	5.6%	425	3.4%	0.81
Espada (Meissner 2004)	82.2%	4.5%	6.7%	5.4%	726	3.3%	1.31
Average of Above	***66.5%***	***5.0%***	***10.8%***	***8.1%***	**446**	***3.0%***	***1.18***
Current Project	74.1%	15.9%	1.5%	5.0%	201	1.8%	1.12

*Snakes and amphibians are included in this total but not in the four categories listed.

deer (*Odocoileus virginianus*); Javelina (*Pecari tajacu*), also called the Collared peccary, the native pig of Texas; Raccoon (*Procyon lotor*); Opossum (*Didelphis virginiana*), Blacktailed jackrabbit (*Lepus californicus*); Cottontail rabbits (*Sylvilagus* sp.); and squirrels (*Sciurus* sp.). The armadillo (*Dasypus novemcinctus*) is not included, because it is known that until the middle of the nineteenth century, the armadillo's range in Texas consisted of a narrow strip along the southern banks of the Rio Grande (Weniger 1997:127-131).

Birds: All bird bone whether identifiable or not are included in this category.

Turtles: All turtle bone, whether identifiable or not are included in this category.

Fish. All fish bone, whether identifiable or not are included in this category.

Note that not all of these animals were identified in any one of the collections studied here.

Before comparing the current collection with bone from other mission projects the differences in food animal patterns across the courtyard will be examined. In order to have a better sense of the relative importance to the diet of the animals in the categories described above, a percentage of the total bone weight included in the categories was calculated for each category and shown in Table A-3. In addition, the total bone identified in the units of Alignments 1-5 and Areas 1-5, the NISP, the percentage of the total NISP, and the total number of bones used for the category calculations are included. Note that the categories include bones that are not included in the NISP (e.g. Bovinae bone and unidentified fish turtle and bird bone.). These data are presented in Table A-3.

Table A-2 shows that there is little bone in the Alignments that can be classed in one of the food categories described above. Alignment 4 had only one identifiable bone, from a domestic pig (*Sus scrofa*). Indeed, the numbers are so low that it is difficult to attach any significance to the differences seen in the various food categories.

In the other areas, the number of bones categorized is much higher and a distinct pattern is seen. Areas 2 and 4 have a lower percentage of cattle than Areas 1, 3, and 5. In Area 2 the increase in smaller domestic artiodactyls makes up most of the difference, while in Area 4 there is a larger percentage of bird bones. Unfortunately, we can attach only limited importance to these differences. While Area 4 has been shown to be severely disturbed, Area 2 excavation units contained a significant amount of Colonial ceramics in lower levels. Moreover, two features were unearthed in this area as well (see Chapter 5).

Given that the degree of disturbance varies within areas as well as between them, an attempt was made to identify those

Table A-3. Percentage of Total Bone Weight by Area

	Bone Counts				% of Total Category Bone Weight in Categories						
Analytical	**Total Bone**	**NISP**	**% of Total NISP**	**Bone included in Categories**	**Cattle**	**Sheep/ Goat/Pig**	**Wild Mammals**	**Birds**	**Turtles**	**Fish**	**Total**
Alignment 1	1045	17	8.4%	54	65.0%	7.2%	6.6%	17.6%	1.6%	2.0%	100.0%
Alignment 2	2192	38	18.7%	87	88.1%	4.0%	4.3%	3.5%	0.1%	0.1%	100.0%
Alignment 3	759	9	4.4%	29	92.7%	-	0.9%	6.4%	-	-	100.0%
Alignment 4	72	1	0.5%	1	-	100.0%	-	-	-	-	100.0%
Alignment 5	221	5	2.5%	9	30.7%	8.0%	38.2%	23.1%	-	-	100.0%
Alignment Totals	4289	70	34.5%	180							
Area 1	377	9	4.4%	18	96.3%	2.6%	0.5%	0.2%	-	0.5%	100.0%
Area 2	4292	74	36.5%	168	72.5%	13.8%	5.5%	5.2%	0.8%	2.2%	100.0%
Area 3	1261	22	10.8%	139	97.9%	0.4%	0.1%	1.4%	-	0.2%	100.0%
Area 4	547	10	4.9%	26	68.9%	4.3%	4.4%	18.6%	3.9%	-	100.0%
Area 5	547	18	8.9%	18	98.5%	-	0.4%	0.5%	0.3%	0.3%	100.0%
Area Totals	7024	133	65.5%	369							

units in which it appeared that a majority of the levels were minimally disturbed and contained identified Colonial period artifacts. These units were: 8, 9, 15, 16, 20, 28, 35, 61, 65, 66, 67, 80, 81, 82, 82, 89, 90, 91, 94, 102, and 103. Units 61, 67, 80-82, 89-91, 94 and 102 were located in Area 2. Table A-4 compares the percentages of total category bone weight in the food animal categories of the relatively undisturbed units versus the remaining units. Interestingly, the distribution of food animals seen in the relatively undisturbed units, including those in Area 2 more closely resembles Areas 1, 3 and 5 than the overall pattern seen in Areas 2 and 4.

However, when we compare the results seen in Table A-4 with the six other collections from projects at the San Antonio missions shown in Table A-5 neither the units believed to be relatively undisturbed nor the disturbed units closely resembles the average of the six collections from previous projects, except that in all collections cattle dominate the identified bone. In both, the percent of bone weight of the wild animals is very low compared to the average, while the percentage of domestic sheep goats and pigs in the apparently undisturbed units of this collection is the lowest of all the collections shown.

Discussion and Conclusion

The percentage of bone in this collection that could be identified even to the Order taxonomic level was low (5.4 percent). The percent of NISP, that is the bones that could be identified to the Genus taxonomic level was very low, only 1.1 percent. The average bone weight was only 1.18 g. Considering that the most commonly identified bones were those of bovids it is clear that this collection is extremely fragmented. Table A-2 shows that, while bone in mission contexts is usually highly fragmented, the bone from this project is unusually so. It has by far the lowest percentage of bone identified to the Genus taxonomic level. The average bone weight is equal to the average bone weight of the six mission collections, but the very low NISP strongly suggests that the bone in this collection is the most fragmented of the seven collections.

Table A-4. Percentage of Total Category Bone Weight in Undisturbed and Disturbed Units

	Bone Counts				% of Total Category Bone Weight in Categories						
	Total Bone	NISP	% of Total NISP	Bone included in Categories	Cattle	Sheep/ Goat/Pig	Wild Mammals	Birds	Turtles	Fish	Total
Predominately Colonial Units	3356	69	34.0%	161	93.0%	0.6%	2.1%	2.7%	0.6%	1.0%	100.0%
Disturbed and/or 19th Century Units	7957	134	66.0%	385	87.4%	6.3%	2.6%	3.1%	0.2%	0.4%	100.0%
	11313	203	100.0%	546							

Table A-5. Percentage of Total Category Bone Weight by Project

Project		Cattle	Sheep/Goat/ Pig	Wild Mammals	Birds	Turtles	Fish
Collections from San Antonio Missions	Concepción (Meissner 2001a)	84.8%	1.0%	11.2%	0.4%	1.6%	1.0%
	San José (Meissner 1999b)	85.6%	3.6%	6.8%	0.0%	2.0%	0.1%
	San José (Meissner 1999c)	85.6%	3.0%	8.5%	0.0%	2.7%	1.0%
	San José (Meissner 1998)	87.2%	4.1%	3.6%	0.6%	1.9%	2.7%
	San Juan (Meissner 2001b)	91.7%	2.9%	2.9%	0.1%	1.2%	0.5%
	Espada (Meissner 2004)	87.8%	6.0%	2.7%	0.5%	2.3%	0.8%
Average of Above		**87.1%**	**3.4%**	**6.0%**	**0.3%**	**1.9%**	**1.0%**
Current Project	AU 1	93.0%	0.6%	2.1%	2.7%	0.6%	1.0%
	AU 2	87.4%	6.3%	2.6%	3.1%	0.2%	0.4%

Given the degree of known disturbance, derived from a combination of stone robbing of the original structures and the attempts to examine the remains of those structures by previous investigators, the installation of utility lines and other more modern disturbances, it is not surprising that the bone collections is so highly fragmented. Although we are probably safe in stating that the collection reflects dominance of cattle in the diet that is seen in all of the colonial period faunal bone collections in San Antonio, it is probably not appropriate to go any further in comparing this collection even with the always highly fragmented collections described in Tables A-2 and A-5. One exception to this is turtle bone. The lowest percentage of turtle bone in the six collections shown in Table 2 is almost 5 times the percentage of turtle bone seen in the bone from the current project. The other collection from Concepción shown in Table A-2 is from a previously undisturbed bone deposit in an acequia located south of the mission on Felisa Street (Meissner 2001a:55). This collection also shows a relatively small percentage of identified turtle bone. Thus it is possible to suggest that turtle was a smaller component of the diet at Concepción than was true at the other missions.

While the bird bone percentages in the bone bed under Felisa St. (Meissner 2001a) are high, they are much lower than the 15% seen in the current project. It can be suggested that birds were a more important part of the diet than has been estimated during the Spanish Colonial period.

The very low NISP, only 203 of 11,313 bones, is too small a fraction even by the low standards set in the other six collections to be able to place very much confidence in any patterns seen in comparing the Alignments and Areas or comparing relatively undisturbed units with the remaining units. It is, however, possible to state that the bone from the courtyard at Mission Concepción reflects a typical dominance of cattle bone, as seen in other San Antonio mission sites, and an unusually small number of turtle bones.

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Appendix B

Goliad Ware Analysis

Appendix B: Goliad Ware Analysis

Antonia L. Figueroa

This analysis examines a sample of Goliad sherds recovered from excavations in the courtyard of Mission Concepción. Goliad ware is ubiquitous at various Spanish Colonial sites in Texas. It was first identified by Monguer (1959) at Mission Espirtu Santo in Goliad, Texas. Researchers assume that Goliad is a continuation of the Late Prehistoric Toyah ceramic tradition (Leon Plain) because both wares contain bone tempering. Although there have been several analyses on Goliad ware (see Córdova et al. 2005; Hill 2001, 2002; Neff and Glascock 2001, 2002; Perttula 2001, 2002; Ricklis 1999, 2000; Ulrich et al. 2005; Ulrich 2006a, 2006b), as well as Leon Plain (see Black 1986; Black and McGraw 1985; Heartfield 1966; Nickels 2000), a comparative analysis of the two types has not yet been conducted.

Methods

We recovered 240 Goliad sherds from the excavations at Mission Concepción. The assemblage was highly fragmented and no partial or whole vessels are represented. Only 83 sherds (35%) were larger than 2 cm, our arbitrary cut-off for analysis. Of these, 73 were body sherds, 8 rim sherds, and one sherd was a handle. Several attributes were recorded on these 83 sherds, including rim forms, orifice diameter, average thickness, temper type and density, firing atmosphere, interior and exterior surface treatments, and sherd weight. These attributes provide information on vessel form and function. Data from Mission San Juan (n=77) and the Bisenbach site (n=216), a Late Prehistoric site with a Toyah component located in Wilson County, was used in the analysis for comparative purposes.

For this analysis, I recorded rim forms as straight, everted, or inverted. Lip forms were recorded as either flat, pointed or rounded. Orifice diameter was estimated for rim sherds by placing the sherd on a template of concentric circles. Four thickness measurements were taken on each sherd from which an average thickness was calculated.

Two different methods were used to measure temper. On the one hand, temper density for each sherd was noted as sparse, moderate or abundant. Sparse temper is estimated to make up less than 5% of the paste, moderate temper is between 5 and 25% and abundant temper is above 25% of the paste. These estimates are based on the relative abundance of temper are relatively subjective but represent the more commonly employed analytical technique in previous analyses (Córdova et al. 2005; Ulrich et al. 2005; Ulrich 2006a; Ulrich 2006b). This method of determining temper density was used on all sherds. In addition, to begin to gather quantitative and data on temper density a sample of 10 sherds were cross-sectioned, scanned and placed under a dot grid with each dot spaced 1 mm apart (Figure B-1). Next, the numbers of dots that landed on pieces of temper were counted. Finally, the percentage of dots that landed on a piece of temper was calculated out of all of the dots that landed on a 10-x-10 mm area on the sherds cross-section.

The firing atmosphere for each sherd's interior, exterior and core was recorded as either reduced or oxidized. Colors of gray or black indicate a reduced firing environment while lighter colors of buff, red and orange indicate an oxidized firing environment. Lastly, surface treatment for each sherd was recorded as polished (i.e. burnished), smooth, or rough.

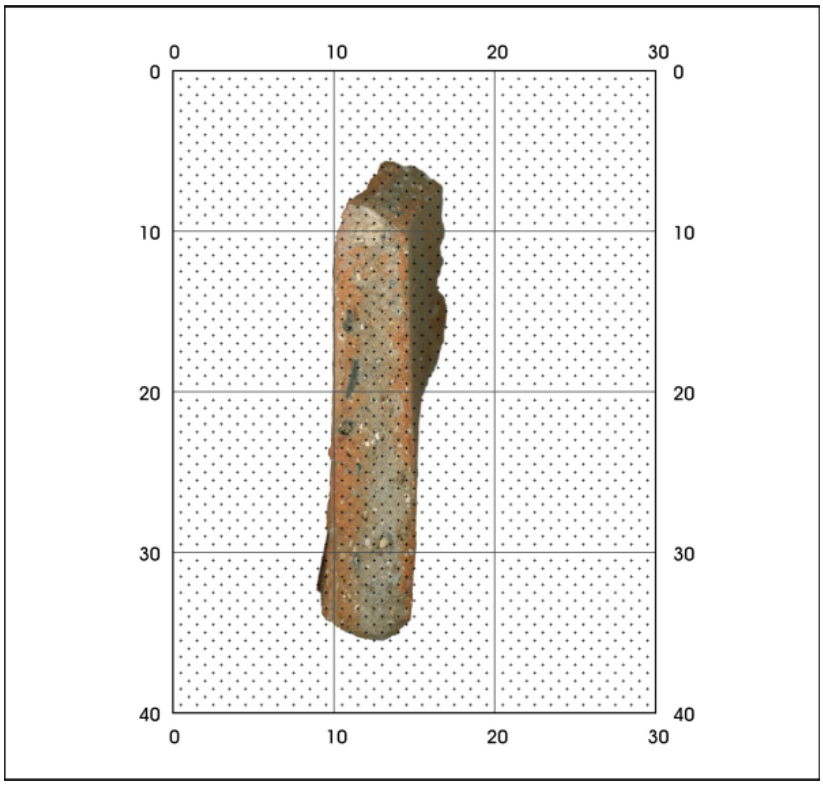

Figure B-1. *Cross section of Goliad sherd placed with dot grid.*

Results

The lack of whole vessels in the archeological record has made identifying Goliad vessel forms difficult. Ricklis (2000:91) has inferred some general vessel forms from rim sherds encountered at Mission Espiritu Santo and Mission Rosario that include bowls, ollas, jars and bottles. Straight or everted rims are thought to be from jars (Ricklis 2000), while inverted rims are narrow-mouthed ollas or neckless jars (Perrtula 2002). Of the eight rims in the current Mission Concepción sample, one was everted, two were inverted, four were straight, and one was not discernable. The everted or straight rims in this assemblage have an average orifice diameter of 14 cm, while inverted rims have an average orifice of 28 cm.

Sherd thickness is correlated with mechanical (Nuepert 1994) and thermal strength (Beck 2002; Braun 1983). While thick vessels are resistant to mechanic impacts, thin vessels are resistant to thermal shock. Thin walled vessels are well suited for cooking as they effectively transfer heat (Rice 1987:227), while thick walled vessels function best as storage or water containers. Vessel size can also affect thickness since large vessels have to be thicker (Rice 1987). The mean thickness of the 83 Mission Concepción sherds was 6.39 mm. Mission San Juan Goliad wares (n=) were used for comparison. The sherds were re-measured (Córdova et al. 2005) taking four thickness measurements to produce an average thickness of 6.12 mm. The two samples are nearly indistinguishable.

Both temper type (Bronitsky and Hamer 1986; Feathers 1989) and amount (Sinopoli 1991:14) are factors that affect the strength of the vessel. All Goliad sherds at Mission Concepción contained bone tempering. Sandstone was recorded for a few sherds but consisted of only one to two inclusions. While bone was intentionally added, organic inclusions could naturally occur in clays. The majority of the sherds (65%), according to categorical assignments, consisted of abundant temper density, followed by moderate (30%) and sparse (5%). Fifty-five percent of the San Juan sample contains sparse temper, followed by moderate (33%) and abundant (12%; Figure B-2). Using the cross-section dot grid method indicate that the Concepción sherds contained 62.8% temper, which strongly differs from San Juan ceramics which have an average of 37.7% temper. Figure B-3a shows that sherds in the abundant temper category have an average of 68% temper. Sherds assigned to moderate and sparse categories exhibited lower average percentages of 48% and 50% temper (Figure B-3). The variable amounts of temper could be related to the function of the vessel. If vessels are intended for cooking the high amounts of temper could increase thermal stress resistance (Sinopoli 1991).

A majority of the Concepción sherds (76.4 %) possessed a blackened (reduced) core, while only 23.6% were oxidized. This characteristic implies that this assemblage was created with highly carbonaceous clay that was not sufficiently fired to oxidize organics in the clay (Rice 1987). Researchers assume that the firing technique for Goliad ware was an open bonfire. An open bonfire will vary in temperature and atmospheric conditions, which results in variable colors on the ceramic surface (Gibson and Woods 1990:49; Sinopoli 1991:13). Blackened cores are another indicator of an open bonfire technique and results from organic material not being fully oxidized and short firing times (Gibons and Woods 1990:49; Sinopoli 1991:12). The presence of both dark and light colored ceramic cores in the sample could be attributed to the fluctuating heat of an open fire.

Smoothing, polishing and burnishing have been defined by researchers (Rice 1987; Sinopoli 1991) and each of the techniques involves the use of a hard object, such as a stone, that is rubbed on the surface of the ware (Sinopoli 1991:25). This technique can be performed on leather-hard or dry clay (Rice 1987: 138). Smooth surfaces have a matte appearance with uniform texture, while burnished and polished surfaces have a lustrous appearance. For the current analysis the

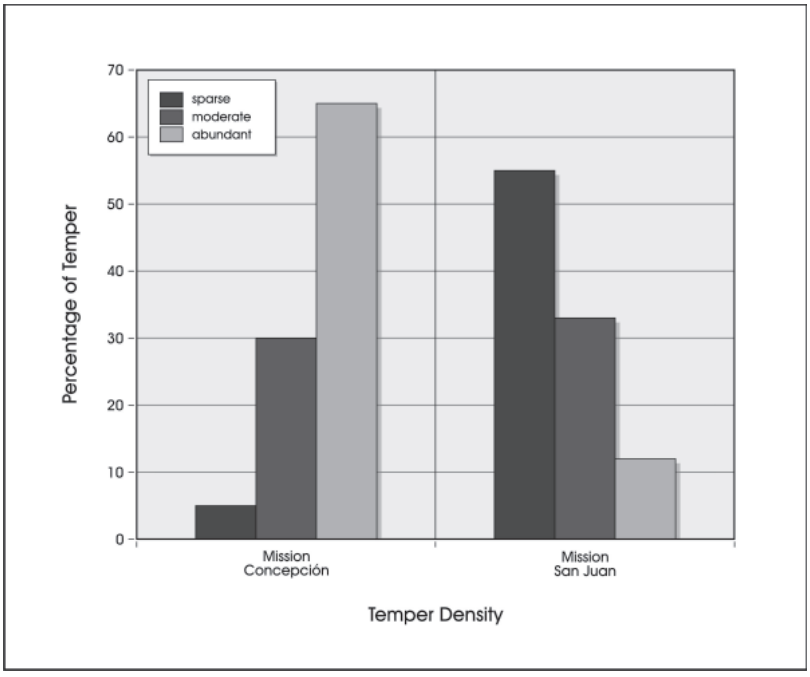

Figure B-2. *Temper density categories of Goliad wares from Mission Concepción and Mission San Juan.*

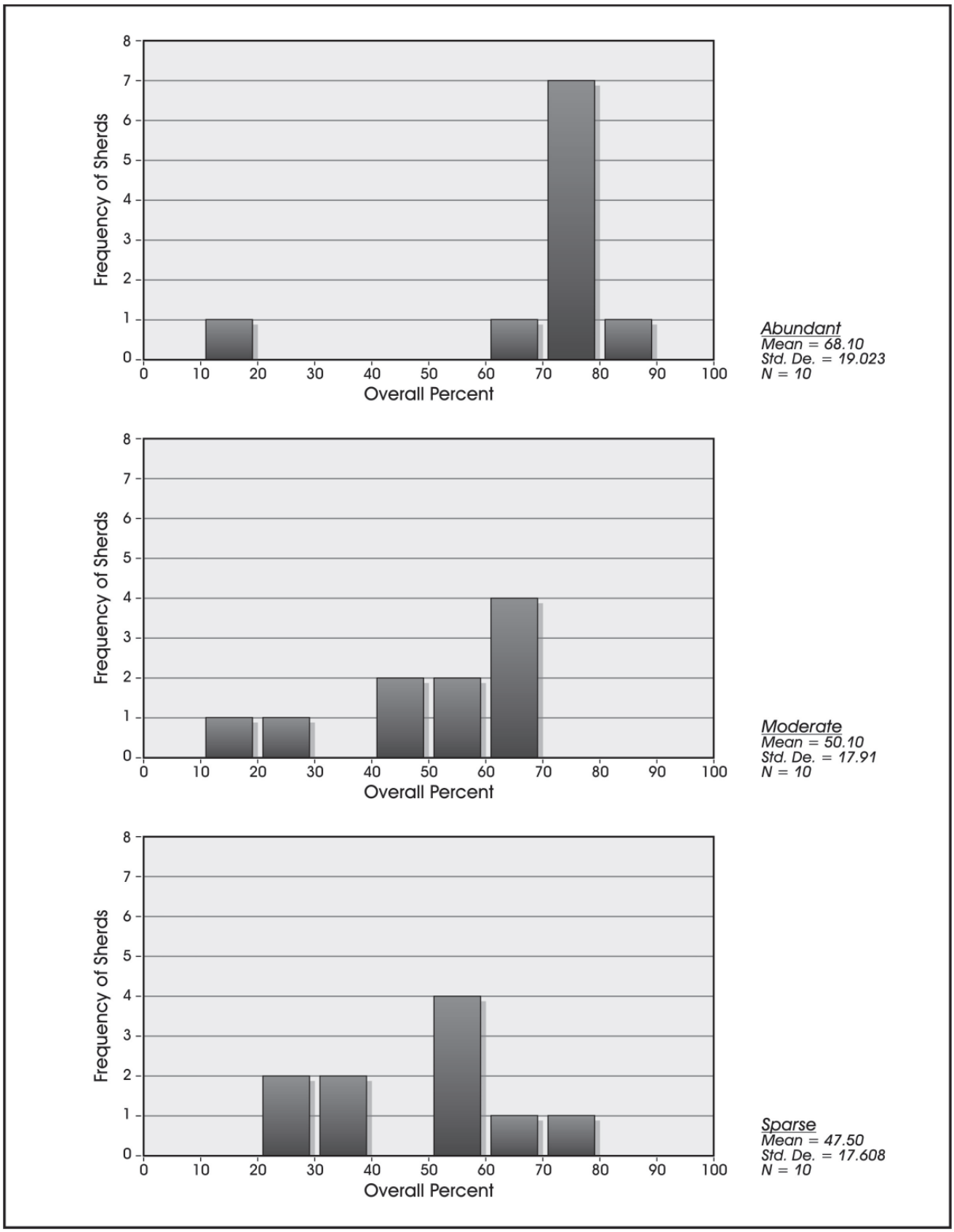

Figure B-3. *Percentage of temper according to temper categories (Mission Concepción assemblage).*

evidence of a lustrous surface was recorded as polished. Seventy percent of sherd exteriors and fifty-eight percent of interior surfaces had polished finishes (Figures B-4 and B-5).

The number of polished surfaces was also considered. Error plots of the average thickness of sherds and the number of surfaces polished indicates with 95% confidence that non polished sherds are thicker than sherds polished on both the interior and exterior surfaces. Data from Mission San Juan and Bisenbach exhibited similar results (Figure B-6).

The number of finished surfaces and average thickness was examined between Mission Concepción, Mission San Juan and Bisenbach (41WN88). Non polished sherds from Mission Concepción (mean=6.94) are nearly identical to those from Bisenbach (mean=6.83) and slightly thicker than those from the Mission San Juan (mean=6.38) assemblages (Figure B-7). Sherds polished on both sides are thicker at Bisenbach (mean=6.40) than at Concepción (mean=6.19) (Figure B-8). The Mission San Juan sample is the thinnest (mean=5.83; Figure B-8).

Vessel form could account for the differences in thickness between polished and non polished specimens. Bowls typically have polished interiors and exteriors. Jars may have polished exteriors but interiors tend to be rough or smooth. The restricted orifice of a jar would limit access to the interior and make polishing difficult.

Twenty-six sherds were polished on only one side (8 interior, 18 exterior). Polishing may serve as a functional attribute by making vessel surfaces less permeable, which in turn could improve heating effectiveness (Schiffer et al. 1994; Schiffer 1990). Those vessels that are only polished on the exterior surface may have functioned as cooking vessels. A bowl, represented by polished interior and exterior surfaces, would not be preferable for cooking. Cooking vessels would also have a large enough mouth to prevent boiling over and permit access to the food contents (Linton 1944).

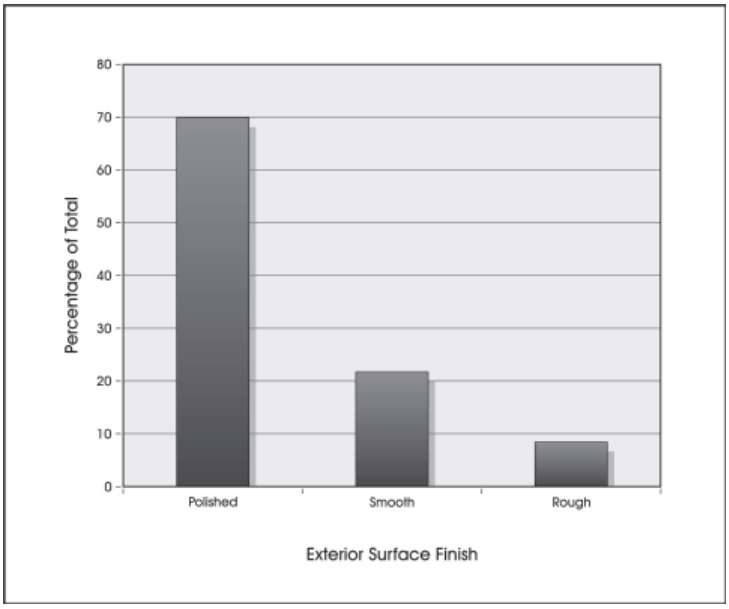

Figure B-4. *Finish of exterior surfaces of Goliad ware from Mission Concepción.*

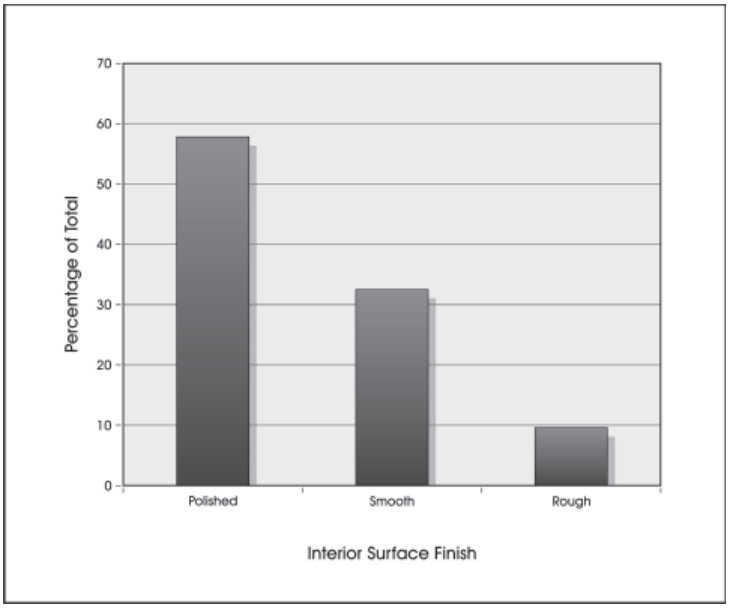

Figure B-5. *Finish of interior surfaces of Goliad ware from Mission Concepción.*

Summary and Conclusions

The Goliad ware from Mission Concepción, like that from other Mission Period sites, contained high densities of bone temper. Moreover, the dot grid counts suggest that there are likely to be significant differences in the amount of temper present in Goliad ware at Mission Concepción when compared to Mission San Juan. Interestingly, the amount of temper in the Goliad ware at Mission Concepción is similar to that present in Leon Plain from the Late Prehistoric Bisenbach site. Given these differences, and the wide variability in visual assessments of temper percentages, further analysis of Goliad ware should endeavor to acquire quantitative measures of temper similar to those reported here.

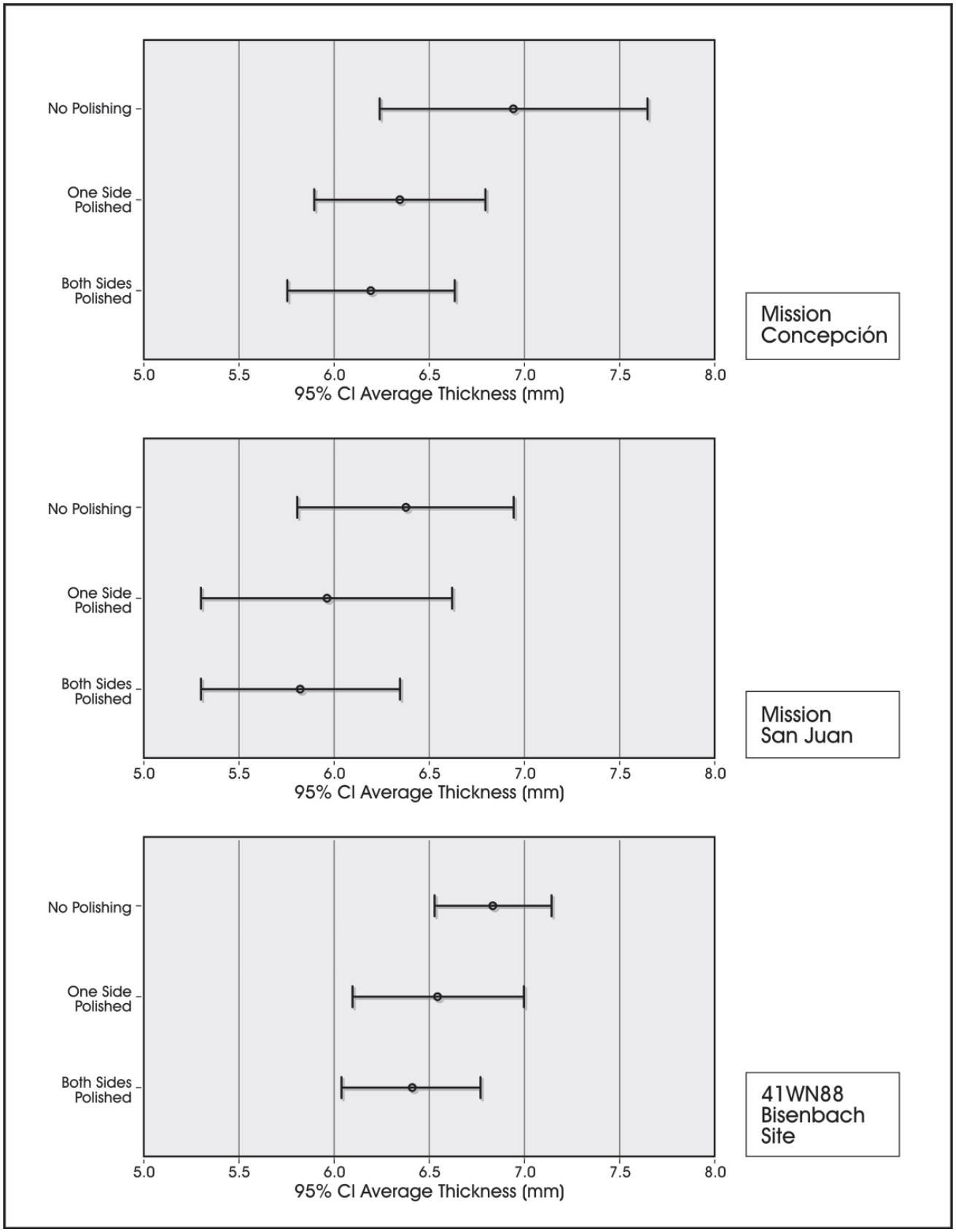

Figure B-6. *Errorbar graphs comparing the number of finished surfaces and thickness at a 95% confidence level.*

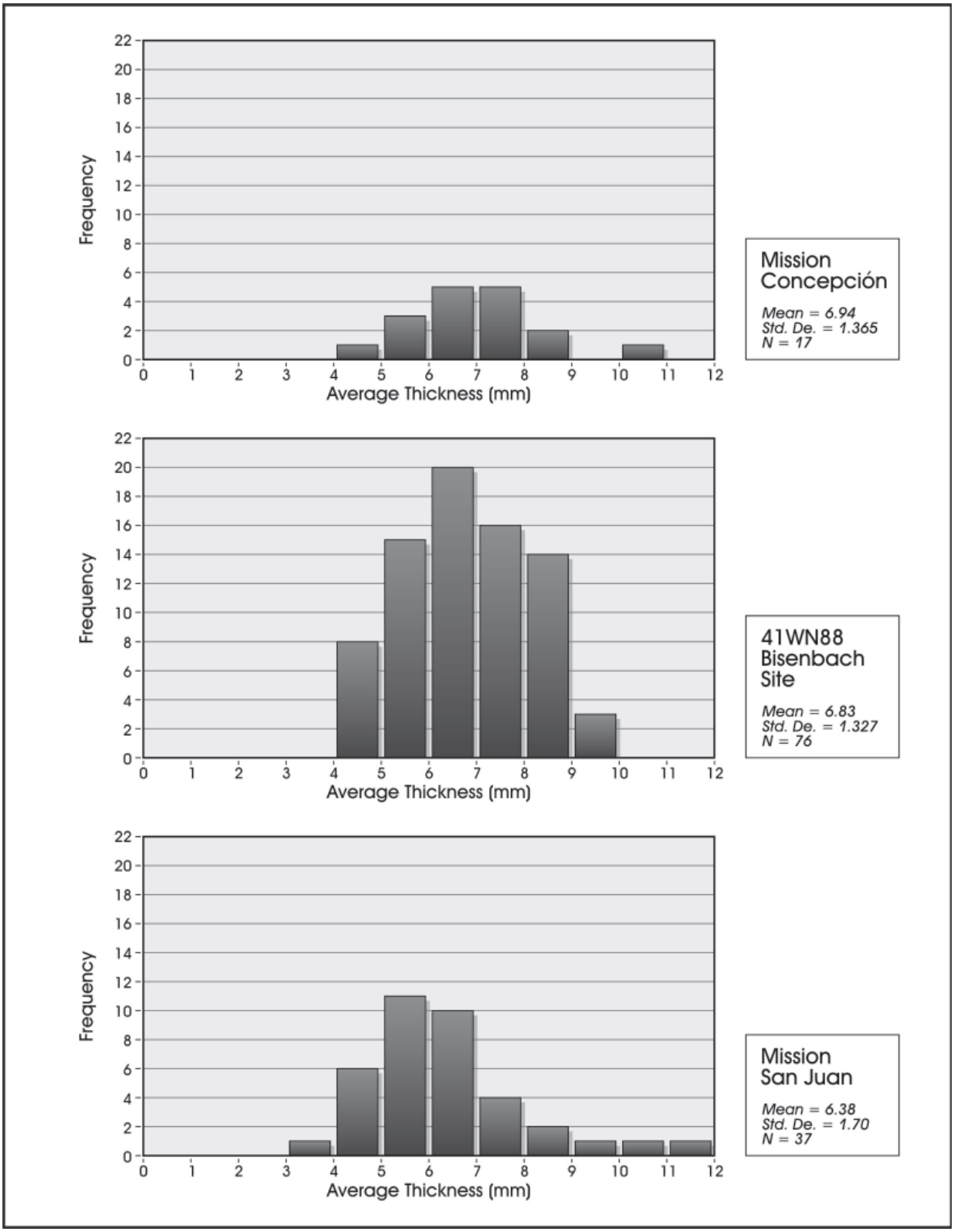

Figure B-7. *Thickness of sherds with no finished surfaces.*

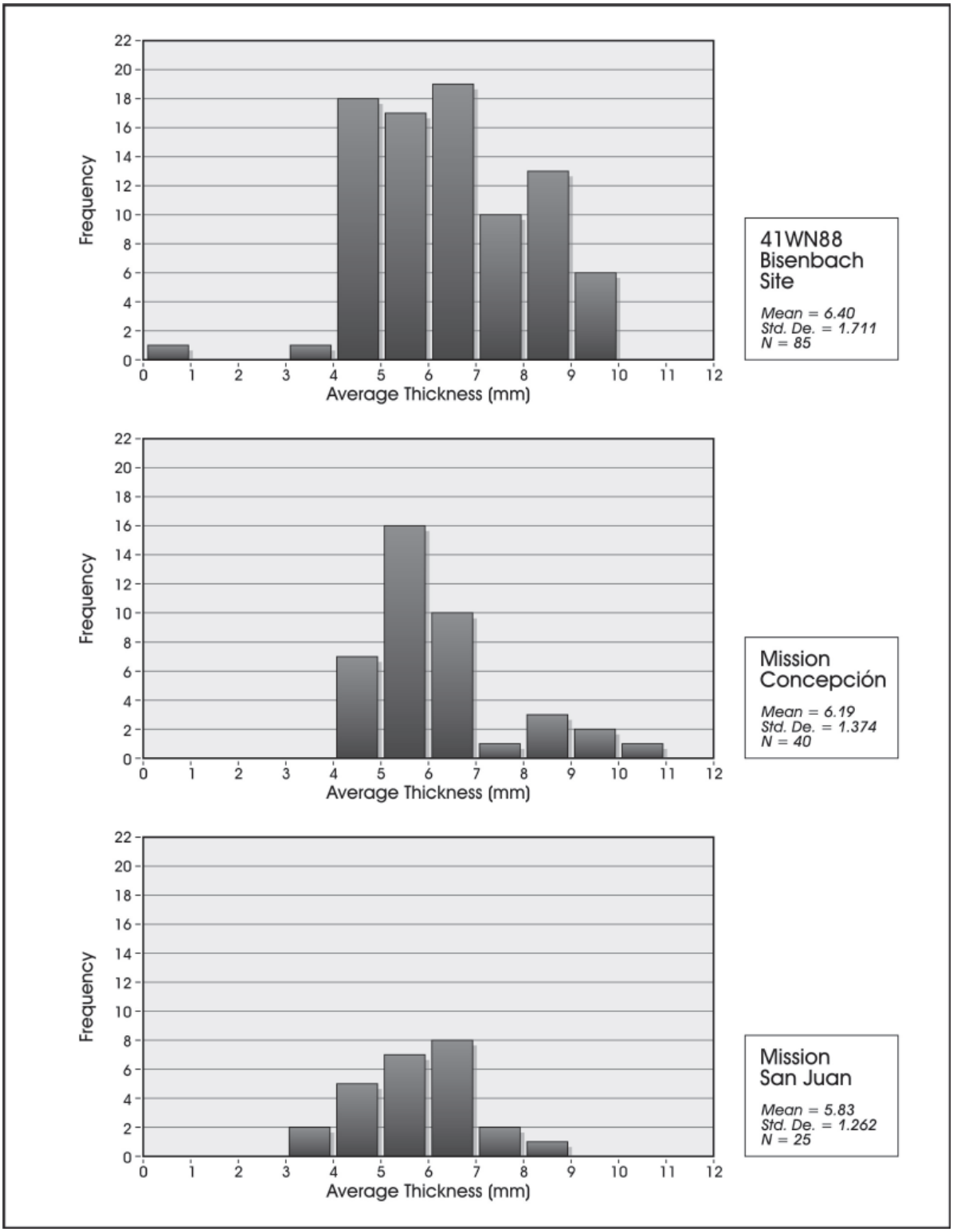

Figure B-8. *Thickness of sherds with two finished surfaces.*

As verified in other Goliad analyses, the presence of blackened and light colored cores supports the idea that the ware was fired in an open bonfire. The absence of ceramic kilns in the archaeological record and in the ethno-historic record also supports this assumption.

This analysis also made inferences about vessel form from surface treatment and thickness. Sherds polished on both interior and exterior surfaces tend to be thinner than non polished sherds, and have a higher probability of representing bowls. Thicker, unpolished sherds are more likely to represent jars. If issues of vessel form can be resolved considerations about function can begin to be made. Future analyses might consider temper coarseness and size in determining vessel function (Pratt 1999; Steponaitis 1984).

Although the variation apparent in Goliad ware is related to differences in vessel form and function, the variation may also result from changes within the ware over time. As Spanish wares, including the introduction of metal vessels, became increasingly common, we would expect Native potters to emphasize different aspects of Goliad vessels. Currently, however, we lack sufficiently large samples, as well as the temporal resolution, to segregate and analyze early Mission period Goliad ware from late Mission period Goliad ware. Nevertheless, comparative analysis of Goliad and Leon Plain, such as the preliminary analysis preformed here, may eventually shed light on how Spanish Colonialism impacted components of Native adaptations.

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