Archaeological Investigations Associated with Security Upgrades at the Alamo (41BX6), San Antonio, Bexar County, Texas

by
Jose E. Zapata and Clinton M.M. McKenzie

with contributions by
Michelle Carpenter, Raymond Mauldin, and Peggy Wall

Texas Antiquities Permit No. 8714

REDACTED
Principal Investigator
Leonard Kemp

Prepared for:
Texas General Land Office
1700 Congress Avenue
Austin, Texas 78701

Prepared by:
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Archaeological Report, No. 487

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Abstract:

The University of Texas at San Antonio (UTSA) Center for Archaeological Research (CAR), in response to a request from the Texas General Land Office, conducted archaeological testing and monitoring for the Alamo security upgrades project in the Alamo Plaza complex, San Antonio, Bexar County, Texas.

Fieldwork for this project was completed between July 2019 and March 2020, and it consisted of testing and monitoring ahead of construction that had the potential to impact known or anticipated archaeological resources within the project area. These construction activities were associated with the installation of security bollards along the north, west, and south perimeters of Alamo Plaza, as well as ramps facilitating access. These nine spatially distinct impact areas within the Project Area cover approximately 0.58 ha (1.4 acres). The Project Area was located on a City of San Antonio (COSA) right-of-way on one side and State of Texas-owned property on the other. As public municipal property, undertakings that might affect archaeological or historical sites are subject to regulatory review. At the municipal level, the City-owned property falls under the COSA Unified Development Code (Article 6 35-630 to 35-634). The project also requires review by the Texas Historical Commission (THC) under the Antiquities Code of Texas, and it was completed under the Texas Antiquities Code, Permit No. 8714. José Zapata served as the Project Archaeologist. Leonard Kemp was the Principal Investigator of record for this project. He replaced Dr. Paul Shawn Marceaux, former CAR Director, who was the original Principal Investigator on permit 8714.

Mechanical excavations were monitored in all areas. In addition, 182 shovel tests and 14 test units were excavated. No new archaeological sites were recorded. Numerous artifacts were recovered, including chipped stone debitage and tools, fire-cracked rock, faunal bone, ceramics, glass, and assorted metal. These artifacts are noted in two chapters of this report. Four features were documented, with three of these (Features 1, 2, and 6) being part of the long history of the Mission San Antonio de Valero site (41BX6). Feature 1 is a semicircular cobble stone berm that may be part of the earthworks built at the south gate during the 1835-1836 siege of the Alamo. CAR's excavations into this feature were limited, and while both the State Antiquities Landmark (SAL) and National Register of Historic Places (NRHP) status of 41BX6 is well established, additional investigations are necessary to determine the extent, nature, integrity, and significance of Feature 1. CAR recommends that the eligibility status of Feature 1 be considered undetermined as a contributing factor with regard to the overall SAL and NRHP status of the site. Feature 2 is a wall footing. Although not directly related to Mission San Antonio de Valero, this post-1850 wall footing is within the site's footprint and was recorded as a revisit of site 41BX6. As such, CAR recommends that Feature 2 be considered not significant in that is not a contributing factor with regard to the overall SAL and NRHP status of 41BX6. Feature 6 is a north to south oriented wall footing. This feature was entered as a 41BX6 site revisit. CAR recommends that Feature 6 be considered as a significant, contributing component to 41BX6 with regard to the overall SAL and NRHP status of the site. It likely represents a section of a Spanish Colonial age footing. The section has good integrity and it is likely related to the Long Barrack at the Alamo. Finally, the fourth feature (Feature 5) is a segment of the San Antonio Streetcar System (41BX2163) dating to the late-nineteenth through early-twentieth centuries. CAR recommends that the feature is not significant with regard to the SAL and NRHP status of 41BX2163.

The bollard installation project was completed as planned and included two redesigns requested by the COSA Office of Historic Preservation and the THC in order to protect two of the four mentioned features. All project related material, including the final report, are permanently stored at the CAR facilities in accession file number 2294.

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Acknowledgements:

This project was completed through the cooperation and support of several individuals. Among these were Andrew Miller and Jeff Kauffmann of the Texas General Land Office, Kristi Nichols and Cristina Robertson of the Alamo Trust, Inc., and Sean Bradley and Brent Watson of Jerdon Enterprises, LP. Several CAR staff assisted in the completion of this project, among these were Clint McKenzie, Michelle Carpenter, Antonia Figueroa, Peggy Wall, Jason Perez, Matthew Degraffenried, David Burns, Mikaela Razo, Leonard Kemp, and Raymond Mauldin. Dr. Jessica Nowlin and Peggy Wall provided mapping and imaging support for the project. Dr. Raymond Mauldin and Dr. Kelly Harris edited the final draft of the report. José Zapata served as the Project Archaeologist, and Leonard Kemp was the Principal Investigator for this project. We are also grateful to Dr. Paul Shawn Marceaux, former CAR Director, who initially served as the Principal Investigator. Thanks to the project's tribal monitors, Brian Kleinkole and Arden Comanche of the Mescalero Apache Tribe. Our thanks also to Matthew Elverson and Dr. Shawn Marceaux of the City of San Antonio Office of Historic Preservation, Kay Hindes of the City of San Antonio Department of Transportation and Capital Improvements, Dr. Emily Dylla of the Texas Historical Commission, Andrew Miller and Jeff Kauffmann of the Texas General Land Office, and Kristi Nichols of the Alamo Trust for discussion and comments on an earlier draft of this manuscript.

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Chapter 1: Introduction

The Alamo (41BX6), a site that originally functioned as the third and final location of Mission San Antonio de Valero, is a State Antiquities Landmark (SAL), listed on the National Register of Historic Places (NRHP), and designated a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site (Figure 1-1). Any improvements to the facilities and surrounding complex that result in ground disturbing activities need to be evaluated to ensure they do not negatively impact significant cultural deposits and/or human remains.

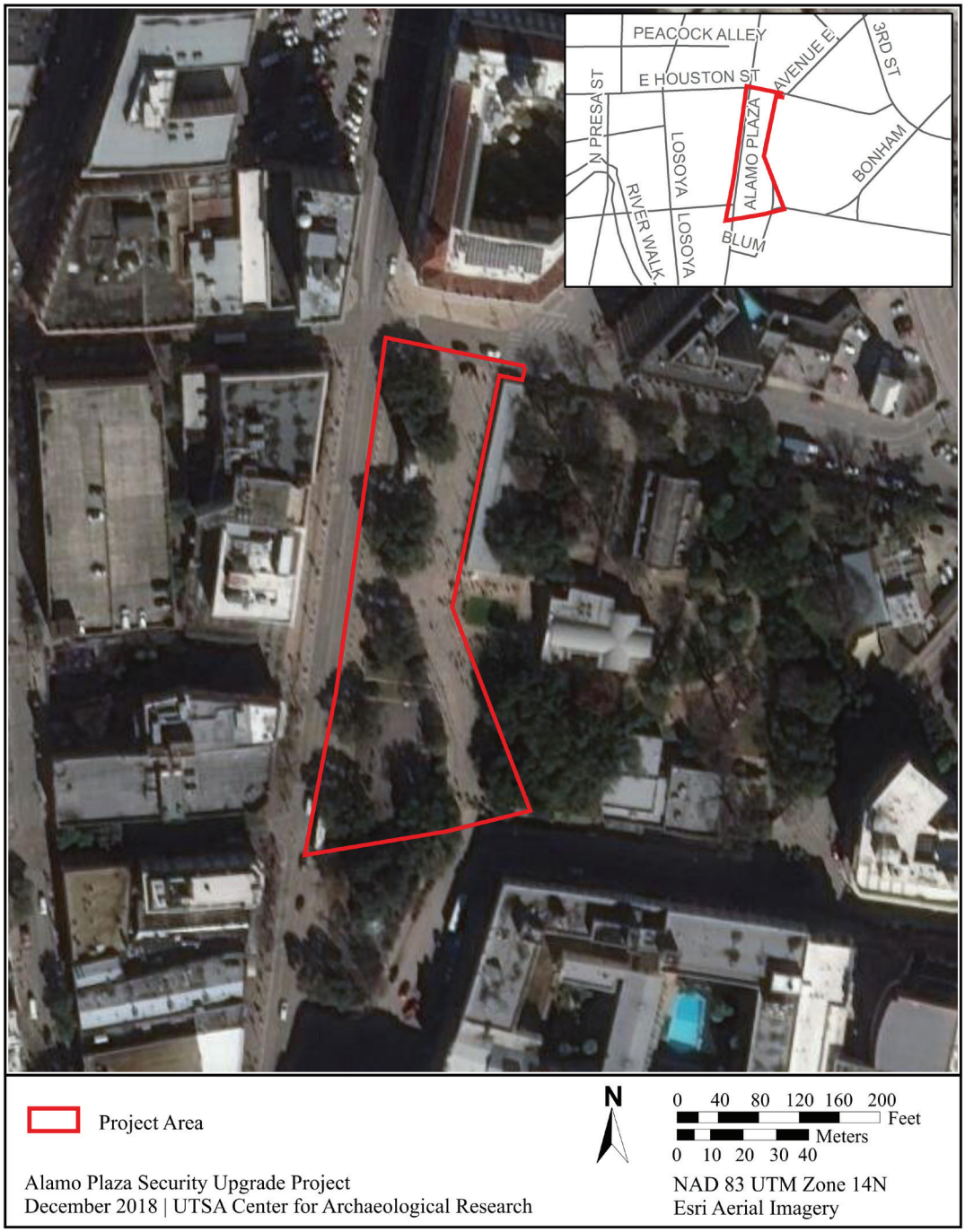


Figure 1-1. Location of the Project Area on Esri aerial imagery.

Project Description

The archaeological investigations included systematic testing in areas to be impacted by the security upgrades, namely the installation of bollards. The project was conducted under contract with the Texas General Land Office (TX-GLO). The objective was to sample the areas that were to be impacted by the construction and determine whether significant archaeological deposits and/or human remains were present. These initial excavations provided insight into stratigraphy, integrity of deposits, and the number of features present. The Scope of Work (SOW) included monitoring of construction-related excavations. Any additional work required by the regulatory review entailed a separate work authorization and was determined through consultation. The original January 2019 SOW was amended twice. The first amendment (August 2019) was a result of a reconfiguration of bollard locations to protect a feature. The second revision (October 2019) involved the addition of monitoring for the installation of a ramp that was designed to improve the visitor experience and reduce tripping hazards.

The Project Area encompasses location for the installation for bollards and accessible ramps. As shown in Figure 1-2, there are seven different areas, identified in yellow and labeled Area 1 through 7, with Area 3 having two locations (3a, 3b) and Area 7 having two locations which represent the accessible ramps. The overall area covered by the work is approximately 0.58 ha (1.4 acres; Figure 1-2). The impact areas are located on City of San Antonio (COSA) and TX-GLO property, as shown in Figure 1-3. Undertakings on State or City-owned property that might affect archaeological or historical sites are subject to regulatory review. At the municipal level, the property falls under COSA Unified Development Code (Article 6 35-630 to 35-634). The project also required review by the THC under the Antiquities Code of Texas. CAR request amendments to Texas Antiquities Permit No. 8714 prior to commencement of additional project-related archaeological investigation. Note that the project did not begin until the development and implementation of the Alamo's Human Remains Treatment Protocol. In consultation with the Alamo Mission Archaeological Advisory Committee, this protocol was followed throughout the project.

The plans for the security upgrades consisted of installing 84 fixed and removable security bollards in six locations around the perimeter of Alamo Plaza, designated Areas 1 through 6. Combined the six areas measured roughly 2 m (6.6 ft.) wide and 102 m (334.6 ft.) long. After archaeological testing identified a post-1835 feature, Area 3 had to be redesigned, with the original Area 3 designated Area 3a and protected from further impact. The redesign area was designated Area 3b. The depth of impact in each of the bollard install locations varied between 60 and 80 cm (23.6 and 31.5 in.) below the street surface. Each of the bollard locations was strategically placed around Alamo Plaza: at Alamo Plaza Street and E. Crockett Streets for Area 1; along S. Alamo Street for Areas 2, Area 3, and Area 4; E. Houston and S. Alamo Streets for Area 5; and Avenue E and E. Houston Street for Area 6.

In addition to the six bollard areas, Area 7 involved the installation of two ramps with handrails designed to reduce tripping hazards and enhance the visitor experience. These ramps and handrails were located along either side of Alamo Plaza, about 30 m (98.4 ft.) in front of the Alamo Chapel. The required work was limited to the grading of the existing curbs and pavement, and the subgrade was left undisturbed. Nonetheless, given the area's close proximity to the chapel, CAR staff conducted archaeological monitoring as a precautionary measure.

Project Results

Archaeological testing and monitoring within the Project Area resulted in locating six features, with two of these, Feature 3 and Feature 4, later discounted as features. Feature 1 is a semicircular cobble stone berm that may be part of the earthworks built at the south gate during the 1835-1836 siege of the Alamo. This feature was recorded as a site revisit to Mission San Antonio de Valero (41BX6). CAR's excavations into this feature were limited to those areas where the hardscape had been removed. Consequently, while the SAL and NRHP eligibility status of 41BX6 is well established, additional investigations are necessary to determine the extent, nature, integrity, and significance of Feature 1. At present, CAR recommends that the eligibility status of Feature 1 be considered undetermined as a contributing factor with regard to the overall SAL and NRHP status of the site. Feature 2 is a 1.3 m (4.3 ft.) wide wall footing, and although not directly related to Mission San Antonio de Valero, it was located within the site's footprint and was recorded as a revisit of site 41BX6. Based on the recovered artifacts, this wall footing likely relates to a post-1850 stone structure. As such, CAR recommends that Feature 2 be considered not significant in that it is not a contributing factor with regard to the overall SAL and NRHP status of 41BX6. Feature 5 is a remnant of the San Antonio Streetcar System and, as such, was recorded as a revisit to the previously established 41BX2163. CAR recommends that the feature is not significant with regard to the SAL and NRHP status of 41BX2163. Feature 6, a north to south oriented wall footing. This feature was entered as a 41BX6 site revisit. CAR recommends that Feature 6 be considered as a significant, contributing component to 41BX6 with regard to the overall SAL and NRHP status of the site. It likely represents a section of a Spanish Colonial age footing with good integrity that is directly related to the Long Barrack at the Alamo.

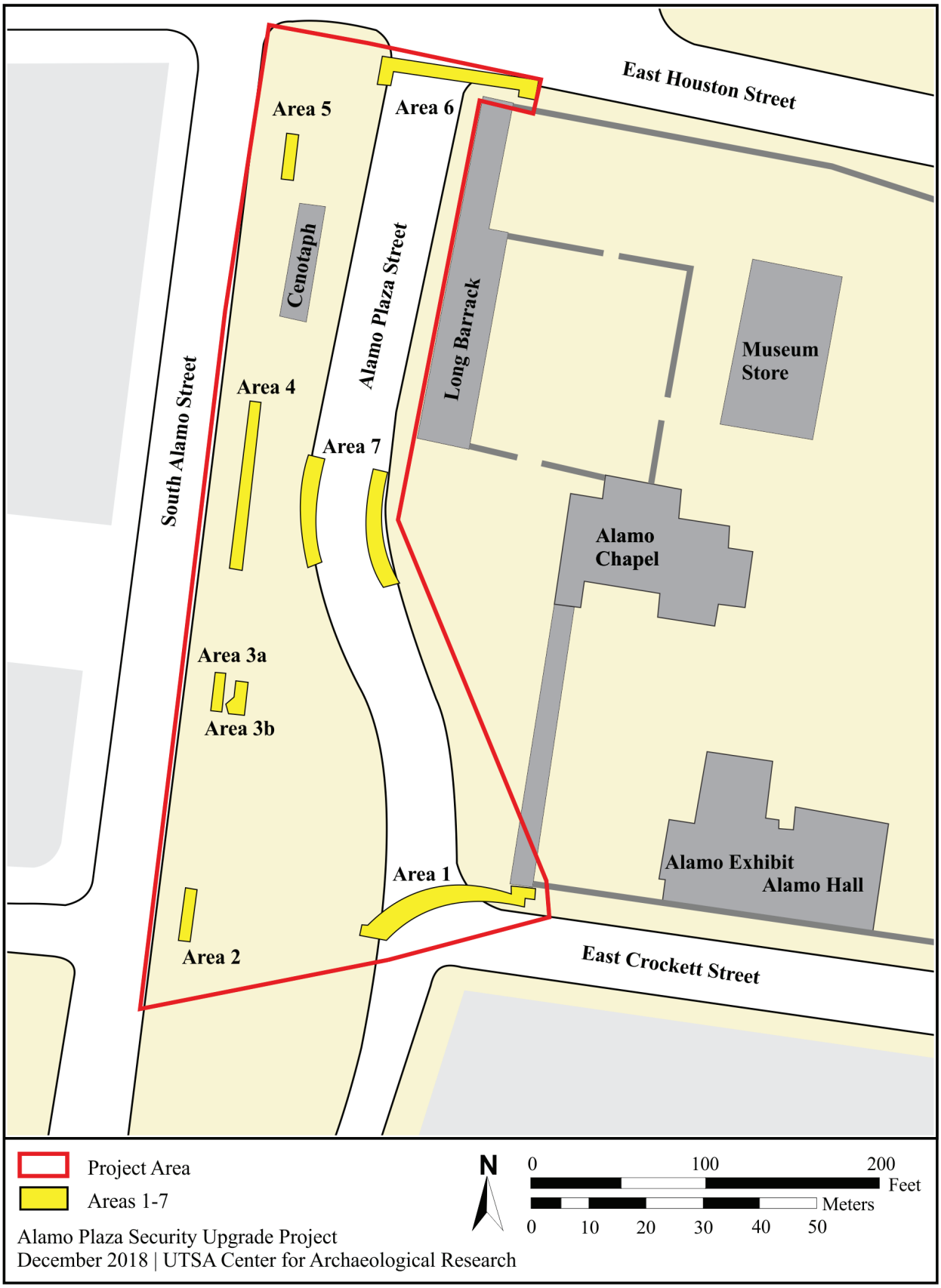


Figure 1-2. Location of Areas 1 through 7 within the Project Area.

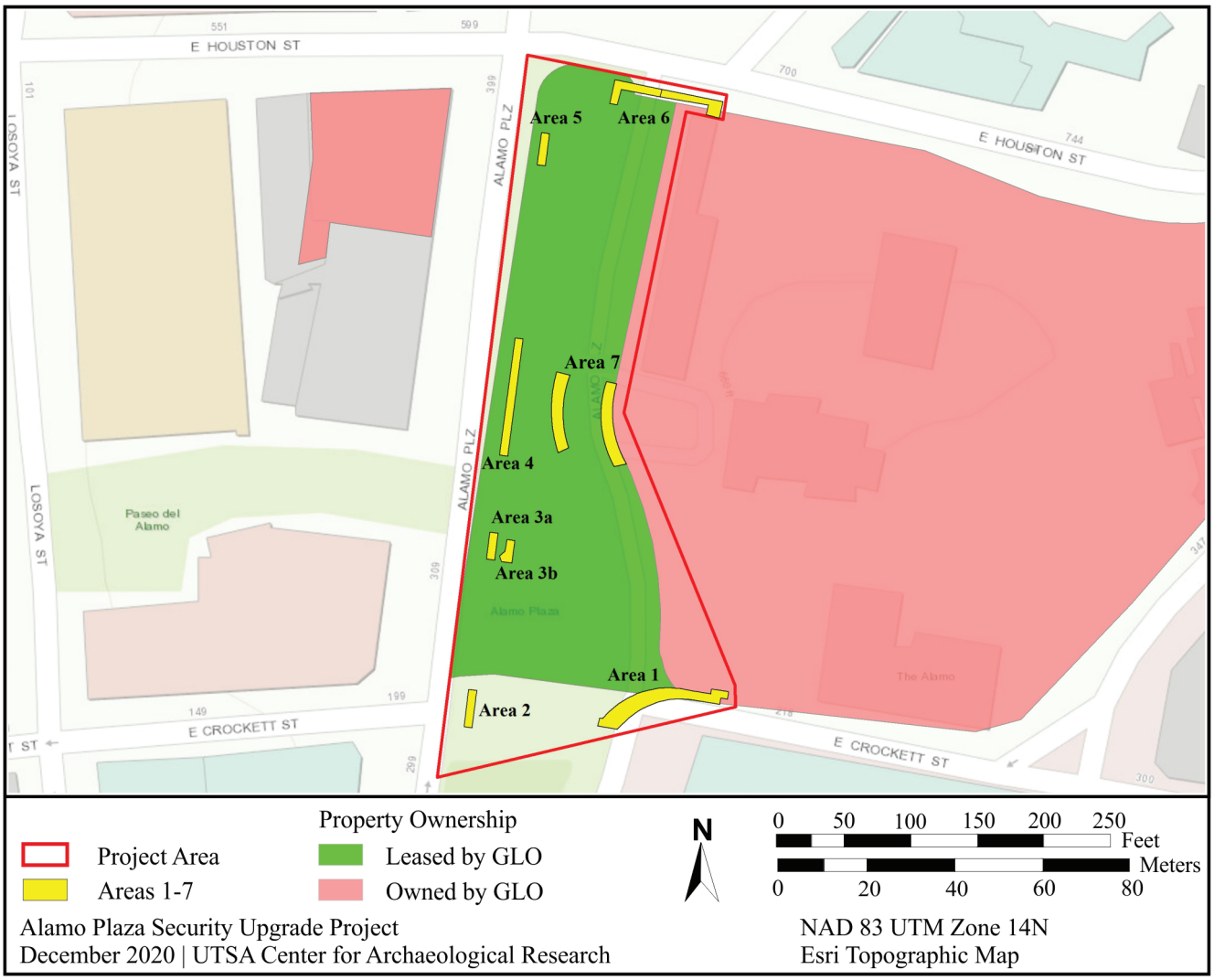


Figure 1-3. Property ownership status within the Project Area.

In adding to the features, close to 900 artifacts were collected, including lithic debitage, faunal bone, ceramics, glass, construction material, and assorted metal. The count is an approximation because fragments of metal, slag, and organic material was weighed rather than individually counted. In terms of the deposition of these artifacts, all were recovered from disturbed contexts. As will be detailed in Chapter 3, Archival and Historical Review of the Project Area, the late nineteenth to mid-twentieth-century enhancements to the plaza appears to have greatly impacted earlier intact deposits, resulting in considerable mixing and reduced integrity.

The required fieldwork was completed between July 2019 and March 2020, with José Zapata serving as the Project Archaeologist. Dr. Paul Shawn Marceaux served as the original Principal Investigator, with Leonard Kemp serving as the final Principal Investigator. All project related material, including the final report, are permanently stored at the CAR facilities in accession file number 2294.

Report Organization

This report is presented in eight chapters. Following this introduction, Chapter 2 provides the area's environmental setting, culture history, and a summary of previously recorded sites within 250 m (820.2 ft.) of site 41BX6, Mission San Antonio de Valero. Chapter 3 presents the long developmental history of the Alamo Plaza, which has gone through several transformations. Chapter 4 summarizes the various studies of site 41BX6, of which there have been 24 over the past 54 years, including the present study and another in progress. Chapter 5 presents the field and laboratory methods, and Chapter 6 provides the testing results. An analysis of the recovered ceramics, chipped stone, and faunal remains appears in Chapter 7. The summary, with an emphasis on the four recorded features, is presented in Chapter 8. Appendix A provides depths and levels for all positive shovel tests while Appendix B provides the same information for all test units.

Chapter 2: Project Setting

This chapter presents brief review of the environmental setting and a culture history of the project area. The emphasis of the culture history will be on the ever-evolving Alamo Plaza. The chapter concludes with an overview of archaeological sites within 250 m (820 ft.) of the Project Area.

Environmental Background

The San Antonio region is described as a moderate, subtropical, humid climate with generally cool winters and hot summers (Norwine 1995; Taylor et al. 1991). Between 1981 and 2010, monthly average temperatures in San Antonio varied between 52°F and 86°F. The average annual temperature in San Antonio for this period was 69.5°F (National Oceanic and Atmospheric Association [NOAA] 2018). The warmest months are July and August, with an average high temperature of 96°F. December and January are the coolest months, with an average low of 41°F. Yearly rainfall peaks in May and June (32.5 cm; 12.8 in.), with a smaller peak in the fall months of September and October. The driest period occurs from winter to early spring in the months of December, January, February, and March with an average of only 6.4 cm (2.5 in.) of precipitation each month (NOAA 2018). Mauldin (2003) gives a history of rainfall and drought patterns in the San Antonio area based on tree ring research using the Palmer Drought Severity Index values. He notes four long-term droughts in a 280-year stretch with three of the severe droughts occurring in the 1700s and the most severe occurring in the 1950s (Mauldin 2003).

The Project Area is situated 200 m (656 ft.) east of the San Antonio River. Soil in the project area is composed of Branyon clays (HtA). This soil series, with 0 to 1 percent slopes, typically forms on stream terraces (United States Department of Agriculture 2019). Historically, the San Pedro Creek and San Antonio River have been extremely important to the area's inhabitants. The San Pedro Creek, with its headwaters 2.8 km (1.7 mi.) north of downtown, meanders along the west side of downtown and empties into the San Antonio River, less than 1 km (0.62 mi.) east of Mission Concepción. The headwaters of the San Antonio River are located in the lower Olmos Basin, some 5 km (3.1 mi.) north of downtown. The river meanders through the heart of the city, courses another 386.24 km (240 mi.) to the southeast, and empties into the Gulf of Mexico at San Antonio Bay.

The area's abundant natural resources have attracted a multitude of people for thousands of years. This report focuses on the historical period, but Hester (2004:127-151) provides a comprehensive treatise of the prehistory of South Texas. Definitive evidence of prehistoric occupation by Native people in downtown San Antonio is ephemeral. Although no large multi-component sites have been identified in downtown San Antonio, prehistoric cultural materials, such as flaked stone debris and projectile points, have appeared in various contexts (Figueroa and Mauldin 2005:61; McKenzie 2014:16). Despite the lack of major sites in the downtown area, several are documented within 3-5 km (1.8-3.1 mi.) of Alamo Plaza, such as those recorded at the nearby San Pedro Springs (Houk 1999; Mauldin et al. 2015; Meissner 2000; Uecker and Molineau 2004), Brackenridge Park (Barile et al. 2002; Fox and Katz 1979; Miller et al. 1999), and at the Olmos Basin (Assad 1978, 1979; Fox 1975; Katz and Katz 2013; Kelly and Eaton 1979; Lukowski 1988).

Culture History

The San Antonio area has been occupied by various cultural groups for well over 10,000 years. Sites dating to the Paleoindian period (13,000-9000 years before present [BP]) have been recorded along the San Antonio River (Bousman et al. 2004:62). Locally and within the city's core, the best evidence for prehistoric occupations to date has been in the area of the headwaters of the San Antonio River (Fox 1975:7-8).

Paleoindian (13,000-9000 BP)

The Paleoindian period (13,000-9000 BP) is characterized by open campsites that are attributable to nomadic bands of hunter-gatherers. Such sites are typically heavily eroded and feature concentrations of lithic flakes and burned rock middens (Hester 2004:133-136). The Clovis and Folsom projectile points are commonly associated with this period. These projectile points are typically long, thin, and fluted, and they were used to hunt large game, such as mammoth and later bison. The later Paleoindian period in southern Texas is represented by a large number of projectile points, such as the Plainview, Golondrina, and Angustura (Hester 2004:134).

Archaic (9000-1200 BP)

Evidence for Archaic period (9000-1200 BP) occupation is common in the San Antonio area (see Cliff et al. 1990; Hester 1974; Pagoulatos 2008). The period is typically presented in three sequences or sub-periods: Early, Middle, and Late.

The Archaic period is marked by a growth in population, less mobility, and an increase in hunting and gathering of local resources. Burned rock middens are common during this period, as are cemeteries (Hester 2004:136-142).

Late Prehistoric (1200-350 BP)

Late Prehistoric sites date to between 1200 and 350 BP. This period is notable for the introduction of pottery and the bow and arrow, but these advancements did not occur simultaneously. The bow and arrow, which required the production of smaller and lighter projectiles, was the first innovation to make its way into Central Texas (Collins 2004:122). Pottery was introduced into this area late in the period (Collins 2004:122).

Historical Period (Late AD 1600s-ca. AD 1950)

The historical record attests to the presence of several Coahuiltecan groups, as well as the Apache, and Comanche in the area (Collins 2004:123-124). The Coahuiltecans were nomadic Native Americans grouped together on presumed linguistic affiliation, and secondarily on geographic range. Dr. T. N. Campbell documented these groups in Northern Mexico, the San Antonio Missions, as well as throughout South Texas from Spanish archival records (Campbell 1975; 1979; Campbell and Campbell 1981). Spanish and French records from the seventeenth and eighteenth centuries document them on the Nueces River in 1688, the Medina River in 1709, the Colorado River in 1717, and the lower San Antonio River in 1727 (Bridges and de Ville 1967; Campbell 1975:5; Tous 1930:4-5; Sevillano de Paredes 1727:49). The first European contact with these groups can be traced back to 1528, when Cabeza de Vaca and three companions, survivors of a shipwreck along the Texas Coast, spent several years with multiple Native groups (see Krieger 2002). The Apache and Comanche were both Athapaskan language speaking horse-mounted nomadic tribes that entered Texas from the northern plains beginning in the sixteenth century with a number of documented hostile encounters with the Spanish, French, existing Native American tribes and groups, as well as with each other (Bridges and de Ville 1967:240; La Vere 2004:84-85; Wade 2003). In 1716, during the Ramón Expedition, several Coahuiltecan bands, including the Payaya, were encountered at the Rancheria Grande at the junction of the Little River and the Brazos in Milam County where they had banded together for mutual defense from Apache attacks (Foik 1933; Tous 1930).

European settlement in the San Antonio area began in the early 1700s. Founding of the presidio of San Antonio de Béxar and the Mission San Antonio de Valero in 1718 was followed in 1731 with the founding of the Villa San Fernando de Béxar by Canary Islanders (Mauldin et al. 2015:19-21). These military, religious, and civil settlements struggled along during the eighteenth century, while early nineteenth-century events brought along significant challenges. Chief among these challenges was Mexico's fight for independence from Spain in 1821, and then Texas' fight for independence from Mexico in 1835-1836 (Ramos 2008:90-105). These major events were followed by the United States' annexation of Texas in 1845 and the war with Mexico (1845-1848).

In spite of the ongoing conflicts noted above, Texas continued to see immigration throughout the period. As a direct consequence, San Antonio's populations increased dramatically during the late 1840s (Valentine 2014:14-20). In 1850, the San Antonio population numbered 3,488 (Texas Almanac 2020). The arrival of the railroad in 1877 greatly stimulated the city's growth and prosperity (Cox 1997). By the 1880s, the city's growth expanded north of downtown, along San Pedro Avenue and Broadway Street (Caine et al. 2017). By 1880, San Antonio's population had soared to 20,550, and in 1900, the population numbered 53,321 (Texas Almanac 2020). While there was a slowing of growth associated with the Great Depression (1929-1939), the population within the city exceeded 400,000 by 1950 (Texas Almanac 2020).

San Antonio's urban growth accelerated during the post-World War II years. The city began to expand beyond the original 36-square-mile (93.2 km^2) grid by annexing areas within the north half of the city (Caine et al. 2017). By 1980, San Antonio had grown to 262 square miles (678.6 km^2) and had expanded to 465 square miles (1204.3 km^2) by 2017 (Miller 2018:133).

Previously Recorded Sites

There are six previously recorded sites within 250 m (820.2 ft.) of 41BX6, Mission San Antonio de Valero which are summarized in Chapter 4. One of these sites, 41BX438 was revisited in 2016 and is now included as part of site 41BX6 and is discussed in Chapter 4. The six original site locations are shown in Figure 2-1 and summarized in Table 2-1.

Figure 2-1. Previously recorded sites within 250 m (820.2 ft.) of the Project Area.

Table 2-1. Previously Recorded Sites within 250 m (820.2 ft.) of the Project Area

Trinomial	Site Name	Site Type	Site Description	Source
41BX436	Lopez-Losoya House	Historical	traces of foundation and artifact-bearing strata; located on the 200 block of S. Broadway Street; entire site was razed to make way for new construction (hotel basement)	Fox and Ivey 1979
41BX437	Ice Plant	Historical	floors and ditches; located on the 200 block of S. Broadway Street	Fox and Ivey 1979
41BX438	Radio Shack/ Alamo West Wall	Historical	remnants of an adobe wall; recovered 19th century artifacts from well, butchered bone, Battle of Alamo artifacts; site now buried beneath flagstone patio and flower beds	Fox and Ivey 1979
41BX507	Thielepape House	Historical	excavations of an area east of the Alamo Hall located the walls of an adobe structure; The home of former mayor Wilhelm Carl August Thielepape; remnants of a detached kitchen structure were also discovered	Nickels 1999
41BX829	San Antonio Riverbend	Middle Archaic to Historical	site encompasses all the horseshoe bend known as the River Bend or Riverwalk; recovered an assortment of stone tools and historical artifacts	*THC 2020
41BX1894	Water Well	Historical	well was discovered during construction of a parking garage; the well was approximately 1.2 m (4 ft.) in diameter and 3.7 m (12 ft.) deep	*THC 2020

*Site lacks an archaeological survey report; information from the THC Archaeological Sites Atlas

Chapter 3: Archival and Historical Review of the Project Area

by Clinton M. M. McKenzie

The Project Area consists of nine locations spread across seven different areas, predominantly within the confines of today's Alamo Plaza. The modern plaza footprint is a somewhat truncated version of the historical plaza. E. Houston Street and the Federal Courthouse form the northern edge, and the north side of the intersection of E. Commerce and S. Alamo form the southern edge. S. Alamo forms the alignment of the western edge and the Alamo complex of buildings, Menger Hotel complex, and the western extension of Rivercenter Mall, the eastern edge of the plaza. The locations investigated lie within these plaza boundaries. However, two areas within the Project Area corresponded with Spanish Colonial period architectural alignments rather than within the open space of the plaza(s). The first was along the expected alignment of the complex of structures that formed the southern wall of the fortified plaza and associated with Area 3, locations 3a and 3b (see Figure 1-2). The second was within/across the east wall alignment of the mission, north of the structures that formed the eastern wall of the plaza, and associated with Area 6.

This archival review is predominantly limited to discussion of the Project Area, with passing reference to the remainder of the Alamo Compound on an as needed basis. The review begins with a discussion of the land-use and assembly history of Alamo Plaza from 1724 to circa 1950. Following the discussion of land-use and assembly, the specific lot histories for each impact area, or groups of areas, are discussed in numerical order. Potential historical attributions for archaeological features identified in specific areas are noted, though in-depth discussion of the features is more specifically covered in Chapter 6, Project Results.

The archival and historical review used primary source documents or facsimiles where available. These included City of San Antonio Municipal Archives, Bexar County Deed Records, Bexar County Spanish Archives, and Bexar County Archives. Primary sources from the UTSA Special Collections Department Stewart Title Collection holdings including Sanborn-Perris and Sanborn Insurance Maps and Historical Digital Photographs, Daughters of the Republic of Texas (DRT) Library holdings; and historical newspaper articles and accounts were also used. Secondary sources included a broad literature and Cultural Resource Management literature review.

Mission Plaza, Plaza del Alamo, and Plaza de Valero

The area today known as Alamo Plaza is directly associated with the third and final site of Mission San Antonio de Valero, founded in San Antonio in May of 1718 and established at this location in 1724 (Castañeda 1938:93b; Habig 1968:43-44). Franciscan mission site plans typically included a church, a Friary (residence) for the Franciscan religious (*convento* in Spanish), granary, living quarters for neophytes, and other ancillary support structures arranged around a main plaza (Ivey 2018:8-9). Mission San Antonio de Valero and the four other missions of the Upper San Antonio River Valley all reflect this typical plan, while also incorporating adaptations for their specific local site conditions. Today's Alamo Plaza reflects a portion of the open plaza area of historical Mission San Antonio de Valero. It is important to distinguish that the mission plazas at all five San Antonio Missions began as open plazas and only subsequently became walled plazas by the 1760s as a defensive response to depredations from hostile Native Americans, particularly the Lipan Apache, Comanche, and their tribal allies (Ivey 2019:27-28).

The period of Mission Valero's active use on the current site was from 1724 until it was secularized in 1793. During the period of Franciscan administration, customary *visitas*, or inspections, of the mission were made by ecclesial inspectors sent from Mexico. As a result, the archival record contains detailed information of Valero's physical plans at various points during this period, including the years 1727, 1745, 1756, 1759, 1772, and 1793 (de los Dolores y Biana 1759; de Paredes 1727; Leuteneggar 1977; López 1793; Ortiz 1745; Vargas 1955). Ivey's synthesis of these reports, together with additional primary archival resources and review of archaeological investigations, are presented in his work *Of Various Magnificence* (2019). This synthesis permits the reconstruction of Valero's development, including the evolving use of the mission's plaza.

Mission Valero Plaza 1724-1759

Figure 3-1 shows the combined northern and southern plaza areas that comprised the original open plaza of Mission San Antonio de Valero, with the northern half designated as Plaza del Alamo and the southern as Plaza de Valero. The hard boundaries of Plaza del Alamo are the later defensive walls. While the figure has rectilinear hard boundaries for the open Plaza de Valero, it should be noted that the actual plaza edge was somewhat fluid as a result of its open character. Therefore, these hard boundaries are not definitive. The eastern edge of the Plaza de Valero was the alignment of the Acequia Madre de Valero, the San Antonio River could be considered the western edge; and as far south as Commerce Street the southern edge. This southern portion of the open

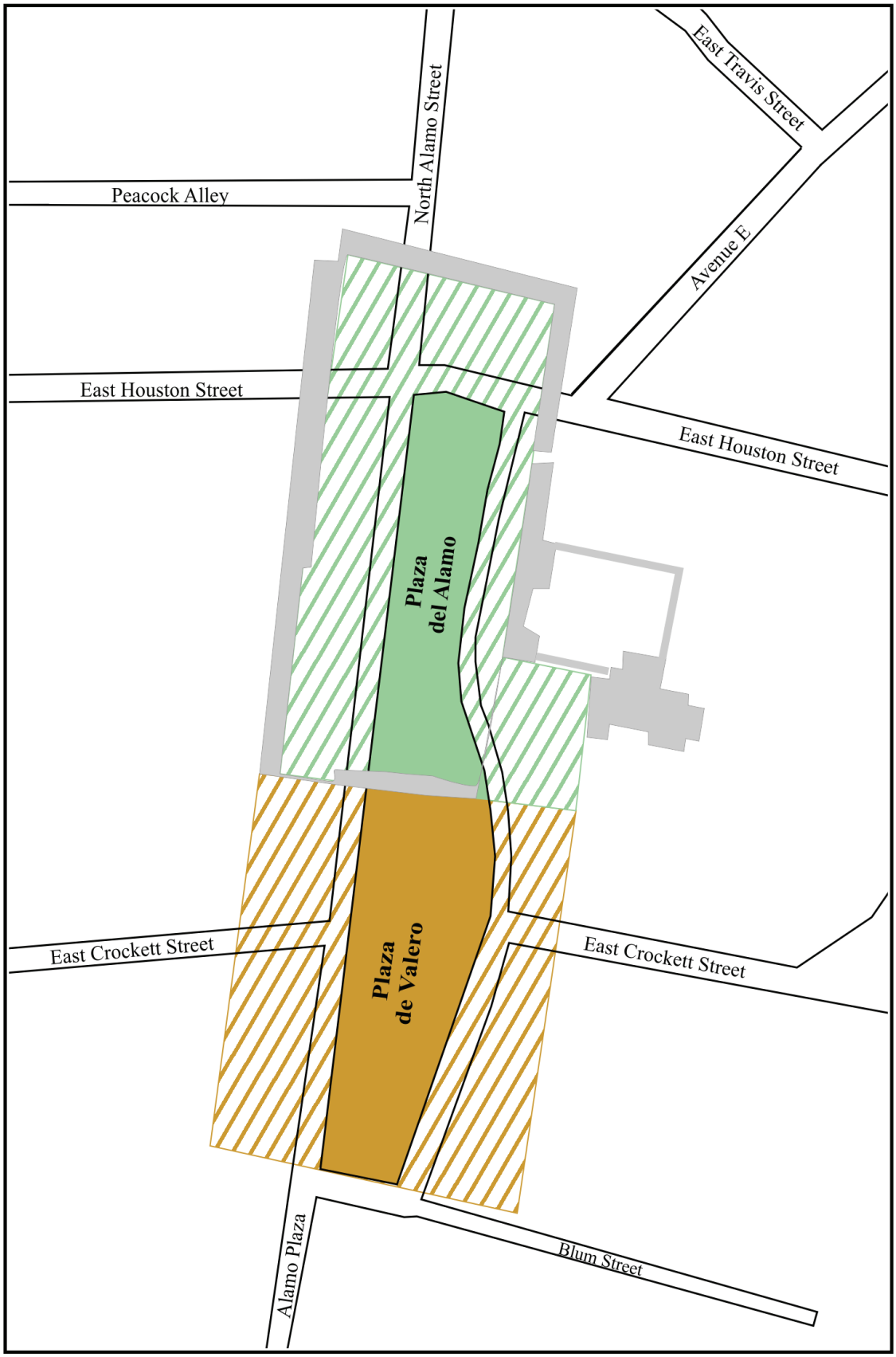


Figure 3-1. Schematic representation of Plaza del Alamo and Plaza de Valero.

Mission Plaza saw little active development in the early years of the Mission with the majority of construction and improvements in the area that was later to become the walled Plaza del Alamo.

The open mission plaza of Valero was initially bounded on the east by temporary *jacal* and/or *jacal* and adobe structures, with the Acequia Madre de Valero to their east. These ad hoc constructions were later replaced with stone and adobe. *Jacal* describes several possible types of residential structures with a typical form being one whose walls were formed by wood posts stuck upright into the ground and then packed with branches and mud. It also is used to describe houses with a combination of such construction with adobe or even stone portions. The stone and adobe mortar permanent building consisted of five rooms that formed the original portion of the *convento* that is now referred to as the Long Barrack (Ivey 2018:107). During this period, the Valero *acequia* (irrigation ditch) route traversed the plaza from north to south before making a turn to the west approximately halfway down the plaza and returning to the river. Native American neophyte *jacales* were oriented along both sides of the north-to-south *acequia* alignment.

Father Francisco Xavier Ortiz made *visitas* (ecclesial inspections) to Valero in 1745 and again in 1756. The 1745 report described the neophyte *jacales* as fronting on two streets with the *acequia* dividing them (Castañeda 1938b:111-112). The western row of neophyte quarters was located under what is now the Crockett Block buildings along the west side of S. Alamo Street and extending north across E. Houston Street to the Gibbs Building. The eastern quarters were adjacent to the north of the Convento building. Ortiz documented the beginning of the work on the church for Mission Valero.

The Ortiz *visita* report of 1756 documented the continued development of stone and stone and adobe buildings along the east side of the plaza. The report notes the relocation of the temporary neophyte quarters from the center of the plaza on both sides of the *acequia* to the permanent stone and adobe constructions along the western side of the plaza and the eastern side of the plaza north of the *convento*. Ortiz also noted a small number of remaining *jacales* along the south side of the open plaza (Habig 1968:55; Ortiz 1756).

Spanish Interaction with the Apache

Governor Alarcón's instructions in 1718 when founding the settlement that became San Antonio included specific warning of the Apache, and he was encouraged to make allies of the neighboring tribes (Alarcón 1718:11). The Apache attacked and harassed supply trains beginning in 1720, including those of the Aguayo *entrada* of 1721-1722, and these persisted until 1725 when an uneasy peace was reached through Spanish conciliation (Bolton 1918:203; Castañeda 1936:190; Dunn 1911:205, 223; Forrestal 1911:6-7). This first "peace" ended in 1731, coincidental with the relocation of three missions and the arrival of the Canary Islander families who founded the Villa de San Fernando that same year. The close geographic proximity of the missions and Villa to the Presidio was a direct result of fears of Apache attacks. In 1731 five attacks on San Antonio resulted in another Spanish reprisal and a second peace which lasted but one year (Castañeda 1938a: 35-37; Dunn 1911:227). The years 1733, 1734, 1736, 1737, and 1738 all record Apache attacks, memorialized in *Testimonio de Diligencias sobre Ynfidelidad de los Apaches* (Testimony of the Affairs concerning the Untrustworthiness of the Apache), a compendium of depositions and testimonies made for Governor Basterra to justify offensive measures (Basterra 1738:1-24). Apache attacks had a deleterious effect on the San Antonio Missions, for Presidio Captain Urrutia wrote to the Viceroy "… the greater part of the Indians … have deserted the missions… together with their wives and children…retiring towards the coast…" (Urrutia 1738, May 9). With military, civil, and ecclesiastical united in one voice, the Spanish carried war to the Apaches from 1739 to 1748. During that period, on June 30, 1745, the Apaches attacked San Antonio in the night and were only defeated after more than 100 Mission Valero converts came to their aid (Castañeda 1938a:48-49; Dunn 1911:252). A third peace was made in 1749, with the Spanish promising a mission for the Apache as they were so despised by other tribes that no tribes would share mission life with them (Morfi 1778). Mission San Saba, erected for the conversion of the Apache, was destroyed in 1758 by a confederacy of tribes incensed the Spanish were succoring their hated enemy (Bolton 1915:87; Castañeda 1938a:401-404). The Comanche participated in the massacre at San Saba, and so it was that the Spanish traded one implacable enemy for another (Chipman 1992:161-163).

Missions as Defensive Sites: The Division of the Mission Plaza into Two Plazas, 1759-1762

The effect of the hostilities of both the Apache and Comanche and their allied tribal confederates, and the complete destruction of Mission San Saba in 1758, brought about important changes to the missions of San Antonio. Between the years 1759 and 1762, Mission San Antonio de Valero erected defensive perimeter walls around the mission plaza (see Figure 3-1). The walls are specifically described in Father Dolores y Biana's report of 1762 (Turnazas 1961:250-251). The missionaries had constructed stone walls between the existing buildings that formed the east and west sides of the northern mission plaza. At Mission Valero, this included the construction of new walls across the north and south of

the plaza as well as an entry gate and tower on the south wall (Ivey 2019:125; Turanzas 1961:250-251). However, because the size of the original mission plaza was so large, the Franciscans chose only to wall the more developed northern half, creating the walled compound that persisted through to the Battle of the Alamo in 1836. The Mission Indian *jacales* within the south half of the original plaza remained, albeit outside the protection of the defensive perimeter walls (Ivey 2018:163-164). This division of the original mission plaza resulted in the creation of two separate and distinct spaces: the walled Plaza del Alamo on the north and the remaining section of the former open mission plaza on the south, referred to on historical maps as Plaza de Valero.

Northern Plaza, 1762-1793

The northern plaza extended further north than E. Houston Street with the original northern wall running through the Federal Building that now sits on that end of the plaza. The western wall ran through the fronts of the Gibbs Building, across E. Houston Street, through the Woolworth's Building and south through the Crockett Block to the area that now serves as access to the Paseo del Rio between the southern end of the Crockett Block that now houses the Alamo Trust, Inc. The eastern perimeter wall ran south parallel to the alignment of the western compound wall, across what is now East Houston Street where it met the Convento/Long Barrack building. This structure formed the remaining portion of the eastern perimeter before turning east and meeting the west face of the San Antonio de Valero church itself.

The northern plaza remained a part of the active mission until secularization in April of 1793. The *visita* reports from 1756 and 1762 document that there were some 20 houses in the northern portion of the plaza for the Native Americans with the majority composed of stone and adobe (Ivey 2018:157). The report of 1772 and the final report of 1793 record that these houses in the enclosed northern plaza were composed of adobe and stone, with 12 remaining as integral parts of the west wall in 1793 (Ivey 2018:186).

As a part of the secularization in 1793, the 39 remaining mission inhabitants were provided, on a per family basis, farming implements and grain. Thirteen parcels of farmland were also awarded to them out of the Labor de Abajo, or Lower Farm, south of the former mission pueblo (Castañeda 1942:41-42). The majority of the remaining Native Americans were Lipan Apaches. The Spanish Crown administration expected them to relocate to Mission San José, but the group refused to move from Mission Valero as they had always lived there and had family buried there. The governor acquiesced and left the Lipan Apache in possession of their homes at Valero (Castañeda 1942:44-46). Despite the knowledge that the Lipan Apace had prevailed in their request to remain in their homes at Valero, there are no documents to indicate which portions of the former mission belonged to any one individual or family. The history of mission property fractured from the Mission as a single managing owner into the hands of numerous property owners "…each of whom managed their portion of the structures according to their own needs" (Ivey 2018:191).

Secularization of Mission Valero and the other missions resulted in the quasi-continuation of the pueblos, changing from a Franciscan Mission Pueblo to a pueblo before becoming a suburban place-name. The archival record documents that the former Pueblo de Valero continued in some form beyond 1793, with a mayor and judge, as they are specifically referred to in period documents (Amador 1803 and 1808; Amangual 1809; Muñoz 1795). However, archival records after 1810 refer to Mission Valero as a suburb rather than a pueblo, and by 1818, grants of land were being petitioned directly to the governor and granted by him through the Procurator Sindico of the Villa of San Fernando (Arciñiega 1811; Martinez 1818). Church services continued at the old mission, however, the records of Mission Valero were transferred to the parish of San Fernando, and the parochial needs of the Valero community were met by the priests serving at San Fernando (Habig 1968:70; Lopez 1793).

Southern Plaza, 1762-1793

The northern edge of the Plaza de Valero was formed by the fortified perimeter wall and buildings completed circa 1762. The western and eastern borders of the plaza can be surmised by subsequent land transactions using their described lot-lines (assuming that their lots lines fronting on the plaza reflect the plaza edge). The western border of the lower plaza more-or-less continued the western line of the northern plaza with the San Antonio River to the west. The eastern border aligns with the front line of the Alamo Church rather with the eastern fortified wall line (the church building being set-back from that alignment). On the south, the east side of Plaza de Valero contracted somewhat towards the west on account of the alignment of the Acequia Madre de Valero. The southern plaza effectively terminated between modern Blum Street and E. Commerce Street.

The southern plaza continued to be inhabited and used during the last three decades of Franciscan administration of Valero, roughly the 1760s through 1790s. The same 1772 and 1793 reports that documented the structures in the northern half also mention residential and outbuilding *jacal* in the southern half of the original plaza (Ivey 2018:186). The Camino Real de los Tejas transited the southern plaza along the alignment of what is now E. Crockett Street. The Camino then turned northeast onto Nacogdoches Street (modern Bowie Street), so named because it ran to the settlement at Nacogdoches, Texas.

The presence of *jacal* constructions within the area of the southern half of the plaza is attested by the *visitas* of 1756, 1759, 1762, 1772, and the final inventory of 1793 (de los Dolores 1759, 1762; Lopez 1793; Vargas 1955). While lacking geographic specificity, it is clear that there were both houses and workshops and/or store rooms within the southern plaza, most likely on the northern end closer to the protecting walls of the mission and to the Camino Real (Ivey 2018:186). It is not certain if any of these structures represented the houses of the Lipanes who chose to remain at Mission Valero following the 1793 secularization as no deed records from 1793 documenting private ownership of any structures in this area remain extant.

Northern Plaza, 1794-1836

Beginning with the secularization in 1793, significant portions of the Valero lands were set aside and awarded to the displaced residents of the Presidio de los Adaes. In 1773, the Adaesaños had been forced to abandon the Presidio de los Adaes, in what is now the State of Louisiana, and relocate to San Antonio (O'Connor 1773). Between 1773 and 1793, many of the Adaesaños had returned to Louisiana or to the settlement of Bucareli, on the Trinity River, as no lands or water rights were granted to them at San Fernando, which forced them into sharecropping and day labor work at the various Franciscan Missions (de la Teja 1995:84).

The northern walled plaza underwent a series of changes beginning in 1803 with the arrival of the San Carlos de Parras Flying Regiment, which set up its quarters at Mission Valero (Habig 1968:70-71). The regiment was quartered at Valero from 1803 until 1830 and again from 1832 to 1835 (Nelson 1998:44-45). This mounted or "flying" regiment was also referred to as Alamo de Parras, as that was the town in Mexico that was their former garrison. The Alamo de Parras Company established a parish within the former mission church and sacristy for services (Habig 1968:70-71; Leal, trans. 1979:34). Over the period 1803 to 1835, the place name "Valero" for the Mission compound was replaced with "El Alamo," the name by which the site became known.

Like the troops who garrisoned the Presidio San Antonio de Bexar across the river, those stationed at the Alamo were considered an independent polity and maintained separate parochial records until 1825 (baptisms, marriages, and burials) and military administrative records until 1835 (garrison reports and census reports). The Alamo de Parras Company re-purposed and used significant portions, including the south wall gate complex and the aforementioned church and sacristy, of the northern plaza compound for housing, stores, as well as a pharmacy and hospital (Cordero 1807). The Alamo de Parras Company erected new structures as well as corrals for the company's horses. Early during the Mexican period, in 1823, the stationing of additional troops at San Antonio resulted in the construction of new barracks, which resulted in a request from the local Ayuntamiento (City Council) to sell the small houses along the original mission walls (Castañeda 1950:321; Fox et al. 1976:10).

In 1825, a directive to sell all remaining mission property included a proposal to reduce the Mission Valero compound by selling of all quarried stone. This was successfully opposed by Anastacio Bustamante, Captain General of the Provincias Internas, who wanted to retain the buildings as military quarters (Castañeda 1950:349). As a result of Bustamante's intervention, the mission buildings continued to be used as the quarters for the Alamo de Parras Company until they were assigned to Fort Tenoxtitlan during the period 1830 to 1832, before returning to Valero from 1832 to 1835 (Nelson 1998:45-46).

Bustamante's insistence on saving the mission buildings for military quarters provided General Perfecto de Cos with a fortifiable position for the Siege of Bexar in November and December of 1835, and they then served as the locus for the Siege and Battle of the Alamo in March of 1836 (Barr 1990:16; Green 1952:29). General Cos had fortified both the Main and Military Plazas on the west bank of the San Antonio River, east of the San Pedro Creek, as well as the former mission in his preparations for the Siege of Bexar (Barr 1990:13). Following Cos' formal surrender on December 11, the Mexican forces were allowed to retire under terms to Mexico. The existing buildings and the layout of the "Alamo" and the northern plaza were drawn by Green B. Jameson, Engineer of the Alamo, in a communication of February 16, 1836, to Governor Henry Smith (Jenkins 1973:352). Unfortunately, Jameson's original map is lost, but recreations are available for study.

During the Siege of the Alamo, a number of changes occurred within the northern plaza. These included the rerouting of the Acequia Madre de Valero so that water source could run through the plaza rather than around the outside perimeter. When this water source was cut-off by the Mexican forces north of the compound, a well was excavated within the plaza to provide water to the defenders (Lord 1961:116). The siege and battle resulted in severe damage to many of the buildings, but the May 22-24 demolition orders carried out by General Juan Andrade saw the remaining fortified compound walls of Valero leveled to the ground (de la Peña 1975:188; Huson, ed. 1949:44-45). By the end of May 1836, the Alamo compound began to take the form recognizable today, consisting of the former Convento (Long Barrack) and the church. The South Gate complex of buildings as well as room-block portions of the former west wall of the mission compound were still standing at this time.

Southern Plaza, 1794-1836

In addition to the use of the former mission buildings for the Alamo de Parras Company, members of the garrison petitioned for lands of the former mission, though these were predominantly either fronting on the un-walled southern portion of the former mission plaza or further south and east in the former farmlands of the mission (Amangual 1808; Arciñiega 1811; Casas 1805). Captain Francisco Amangual's 1808 petition is particularly instructive as he was the Commander of the Alamo de Parras Company and represented in his petition "That since December, 1805, he has been lodged in a dilapidated *jacal*…in the outer walls of Valero… containing one room of eight *varas* and a porch…the land was fifteen *varas* deep…this *jacal* and porch, formerly occupied by an Indian woman named Dolores" (Amangual 1808). A *vara* is the Spanish equivalent of the English yard, and is 33.333" inches or 0.845 meters in length. While Amangual's petition refers to the structure as *jacal*, the subsequent appraisement states that it was constructed of stone (Amador 1808a). From the property description in the award document of February 16, 1808, it is clear that the term "outer walls of Valero" describes the house as one of those along the original edges on the south side of the plaza before it was divided sometime between 1759 and 1762 (Amador 1808b).

Post-secularization (after 1793) the area around Valero grew as a result of the award of lands to the Adaesaños, soldiers of the Alamo de Parras Company, and others. As will be demonstrated in the specific lot history for Area 2, the properties fronting on the southern half of the former mission plaza, with access either on the river or on the *acequias*, were all in private hands by the early Mexican period, circa 1824. The expansion of settlement around the plaza helped to establish the perimeter of the modern configuration of Alamo Plaza.

Much their neighbors along the northern plaza, the inhabitants of the southern plaza abandoned the area during the Siege of Bexar in November and December of 1835 as well as the period leading up to and through the Siege and Battle of the Alamo between January and March of 1836. Houses outside the walls in the southern portion of the plaza were burned by the Texians on March 3, 1836 as they had provided cover for the advance of Mexican Infantry (Travis 1836). Texian William B.Travis described them in a letter simply as "…houses about 90 to 100 yards from our batteries" (Travis 1836).

Northern Plaza, 1837-1871

Following the Battle of the Alamo, many of the families that owned the damaged remaining buildings along the west and south walls moved back into the area, including the Losoya, Charlé, Castañeda, Treviño, and Romano families (Ivey and Fox 1997:6). Beginning in the late 1830s, Samuel A. Maverick began purchasing properties around the Alamo, in particular along the former western, northern, and eastern walls, including the properties of the Castañeda, Treviño, and Romano families, among others (BCDR A2:161-162, March 15, 1839; BCDR A2:238-240, December 16, 1839; BCDR A2:241-242, December 18, 1839; BCDR A2:415-416, April 28, 1841; BCDR A2:441-442, July 1, 1841; BCDR A2:470-471, September 24, 1841; BCDR C2:132-133, June 13, 1845). Maverick had immigrated to Texas in March of 1835 and was present in San Antonio during the Siege of Bexar and the siege leading up to the Battle of the Alamo, but left on March 3rd as a courier.

The arrival of the U.S. Army in 1846, following the accession of the Republic of Texas to the United States, had a significant impact for the former mission and plaza. The U.S. Army established a Quartermaster's Depot at the Alamo in the fall of 1846 that incorporated the former Convento/Long Barrack and the Church. An 1848 map drawn by Sergeant E. Everett of the Quartermaster Depot at the Alamo documented the layout and location the plaza (Figure 3-2):

1. The Army renovated and re-roofed the Long Barrack, Low Barrack, and Church buildings.

2. The Army constructed a blacksmith and a carpenter's shop, corrals, and fencing around their portion of the site.

3. Several of the houses in the remaining portions of the west wall were still occupied by Mexican Americans.

4. The alignments of the now missing original walls are shown in dashed lines.

5. The formerly enclosed northern portion of the plaza is cleared with the exception of the blacksmith and carpenter shops, and a line of trees had been planted parallel to the Long Barrack.

In 1849, Maverick platted a portion of his properties around the Alamo, including lands on the western, northern, and eastern sides. This plat, drawn by City Engineer François Giraud, re-created the original lines of the former mission compound (Figure 3-3). The map used in the figure is a 1914 copy of an 1885 copy of Giraud's original 1849 map, and the three versions are in agreement. The 1914 copy was chosen for illustration as it has greater legibility. The field notes that accompany the 1849 plat include the statement that "…said lot surrounding the Northern portion of the square or plaza of the aforesaid Mission…" indicating that in 1849 Giraud was aware that the original plaza of the mission was larger

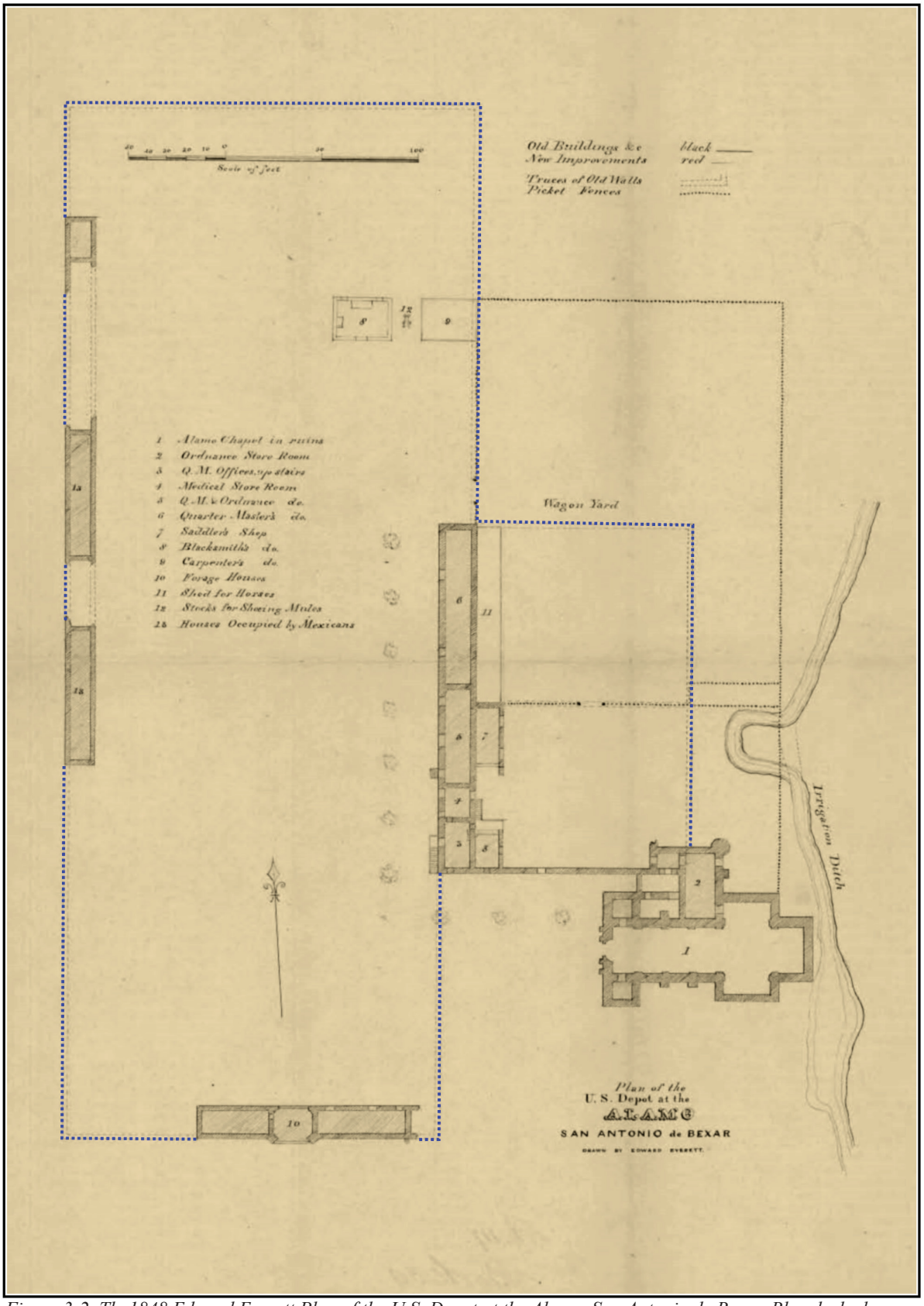


Figure 3-2. The1848 Edward Everett Plan of the U.S. Depot at the Alamo, San Antonio de Bexar. Blue dashed lines are superimposed on original dashed lines highlighting the alignments of the original walls.

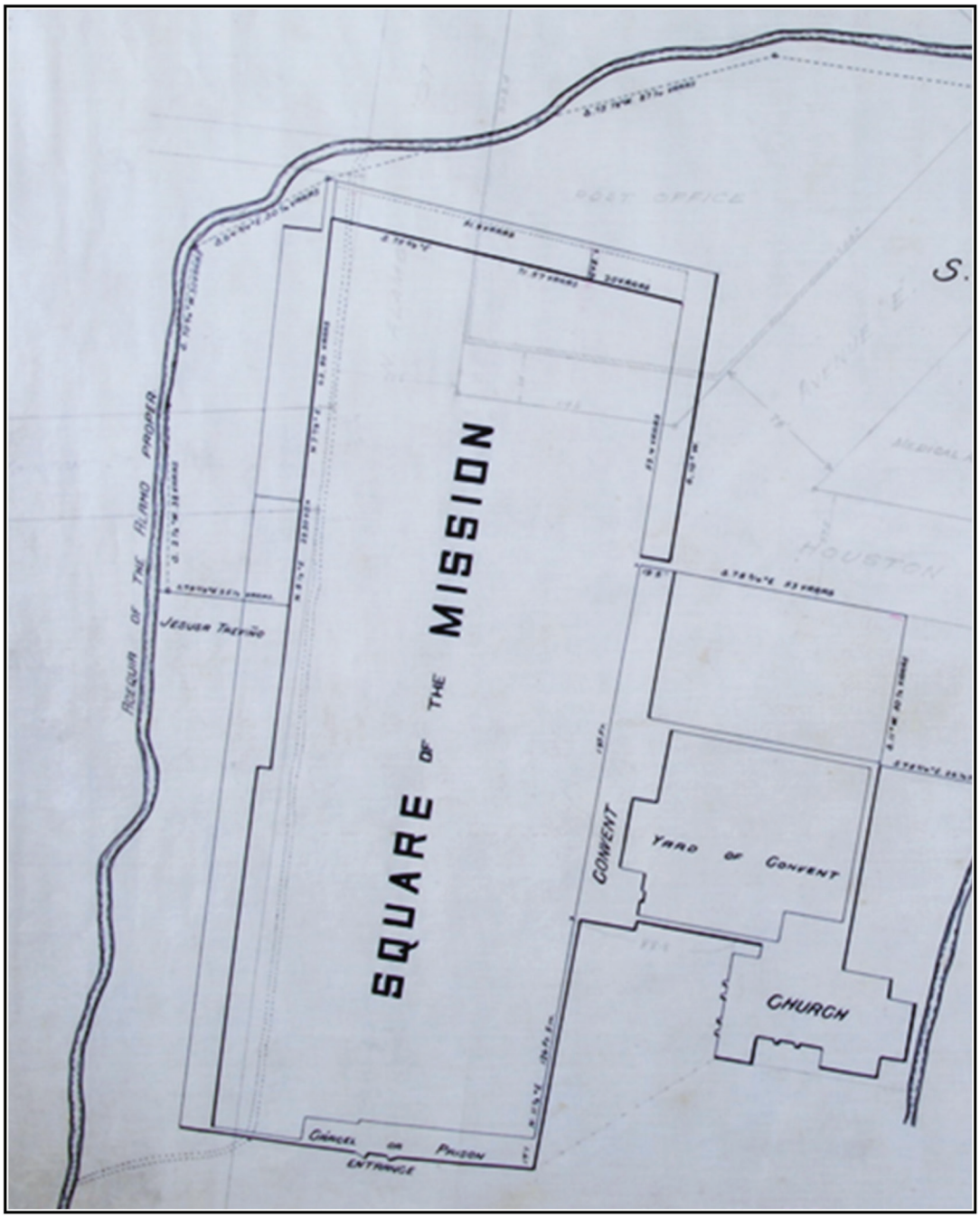


Figure 3-3. Close-up of 1914 City Engineer's Office copy of Matlock's 1885 copy of Giraud's 1849 Alamo Property Plat for Samuel A. Maverick.

and he distinguished the northern portion in the plat (Figure 3-3). The field notes also give the names of the previous homeowners, Jesusa Treviño (along the west wall) and Carmel de los Reyes (just outside the northeast corner of the old mission compound). Giraud's field notes provide specific dimensions for the Convento/Long Barrack as well as for the *muralla* (fortified gate) that formed the south gate structure.

During the period of the Texas Republic, the government restored ownership of the former missions to the Catholic Church in 1841, and the U.S. Army entered in a rental agreement for use of the properties. The flurry of military activity at and surrounding the former mission site in the 1840s prompted questions of ownership, with the City of San Antonio proffering a claim as well as the Catholic Church. The suit decided in the favor of Bishop Odin, and title to the buildings and grounds remained with the Catholic Church (Corner 1890:10-11). The U.S. Army rented the Alamo properties from 1845-1846 to 1876-1877 (with the Confederate States continuing operations from 1861 to 1865).

Plaza de Valero: Southern Plaza, 1837-1871

The southern half of the plaza was re-occupied following the Siege and Battle of the Alamo of 1835-1836. It is not entirely clear when the southern half of the plaza began to be referred to as Plaza de Valero. The first mentions of the plaza by that name in property records was when François Giraud referred to it by that name in his field notes and labeled it as such on a plat from April 13, 1848 (Figure 3-4). The lots in that plat were on the west side of the plaza, above Alameda Street and below the *callejon* (alley) that became E. Crockett Street. Giraud also refers to the Plaza de Valero in field notes from a survey of December 26, 1849, describing a corner lot on a *callejon* and Plaza de Valero that corresponds with E. Crockett Street and Alamo Plaza today (Giraud 1849b).

Giraud executed a plat for Juan Losoya in December of 1849 that provides direct evidence of both the Losoya and Charlé homes as well as their relative position to the remaining structure of the southern wall of the former mission compound (Figure 3-5). The plat also refers to the southern portion of the plaza as "Plaza de Valero" (Giraud 1849c).

The southern portion of the plaza during this period remained open below the south gate complex, and written and photographic depictions of the plaza during this period describe it as such or show it as featureless and somewhat bleak (Steinfeldt 1978:52). Edward Friedrich (February 20, 1860 to June 2, 1951) grew up on E. Crockett Street east of the Menger Hotel. He described the plaza after the Civil War as "…mud and dust. We boys used to trap wild pigeons and game on it, and …Two blocks from the site of the Menger Hotel you could shoot plenty of quail" (Friedrich in Woolford 1950:89-90). Following the Civil War, the City of San Antonio had a Market House erected on the western side of the southern plaza circa 1867-1868, just south of the intersection of E. Crockett Street (Steinfeldt 1978:52).

The south gate complex was converted into a granary by the U.S. Army. However, it was in such disrepair by the end of the Civil War that the U.S. Army conveyed it to the City in 1866, which began demolition of the structure (Nelson 1998:85). The Catholic Church intervened claiming that the building remained the property of the diocese. Eventually, the church sold the building to the City of San Antonio in 1871

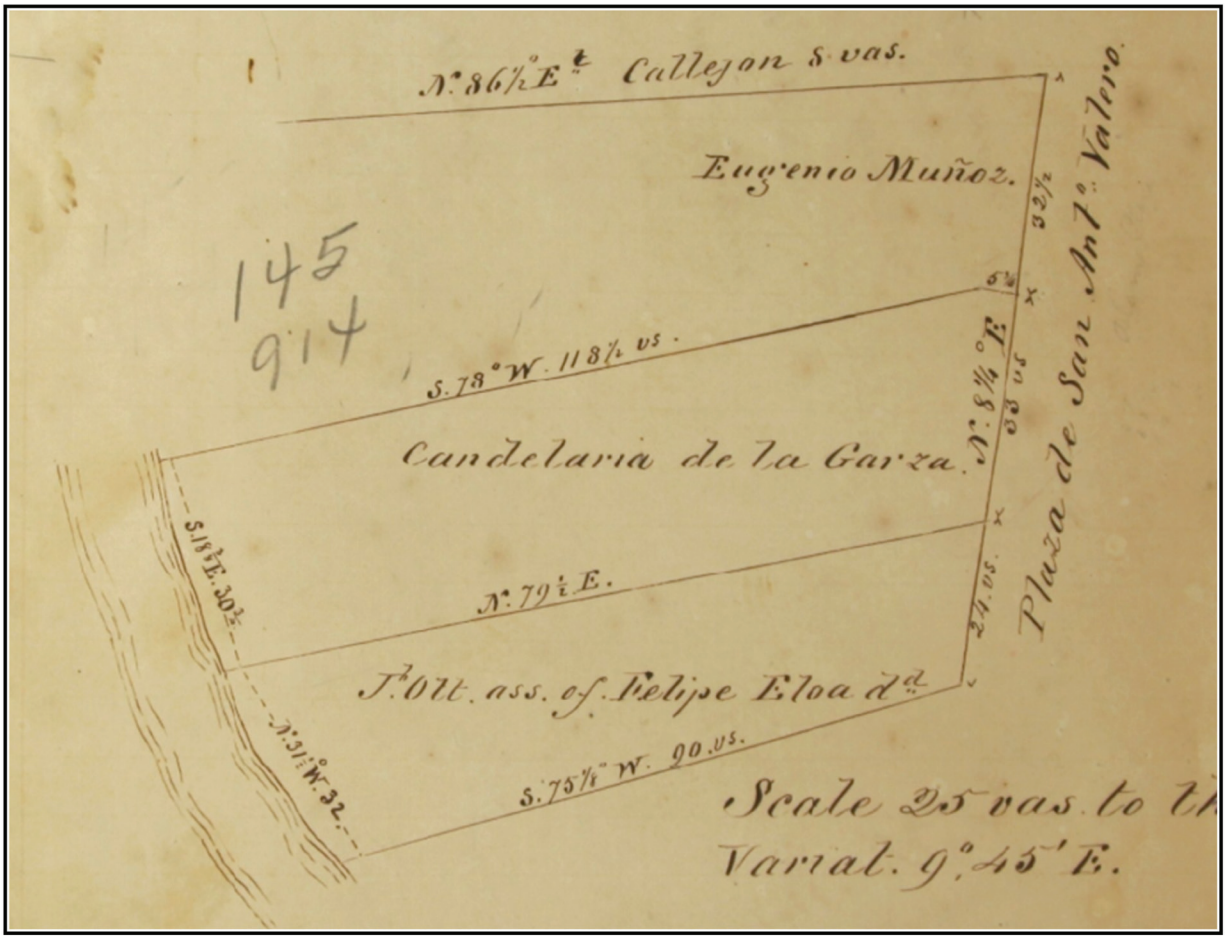


Figure 3-4. April 13, 1849. Plat and field notes by F. Giraud of lots situated on the west side of the Plaza de San Antonio de Valero (City Engineers Survey Book 1:18).

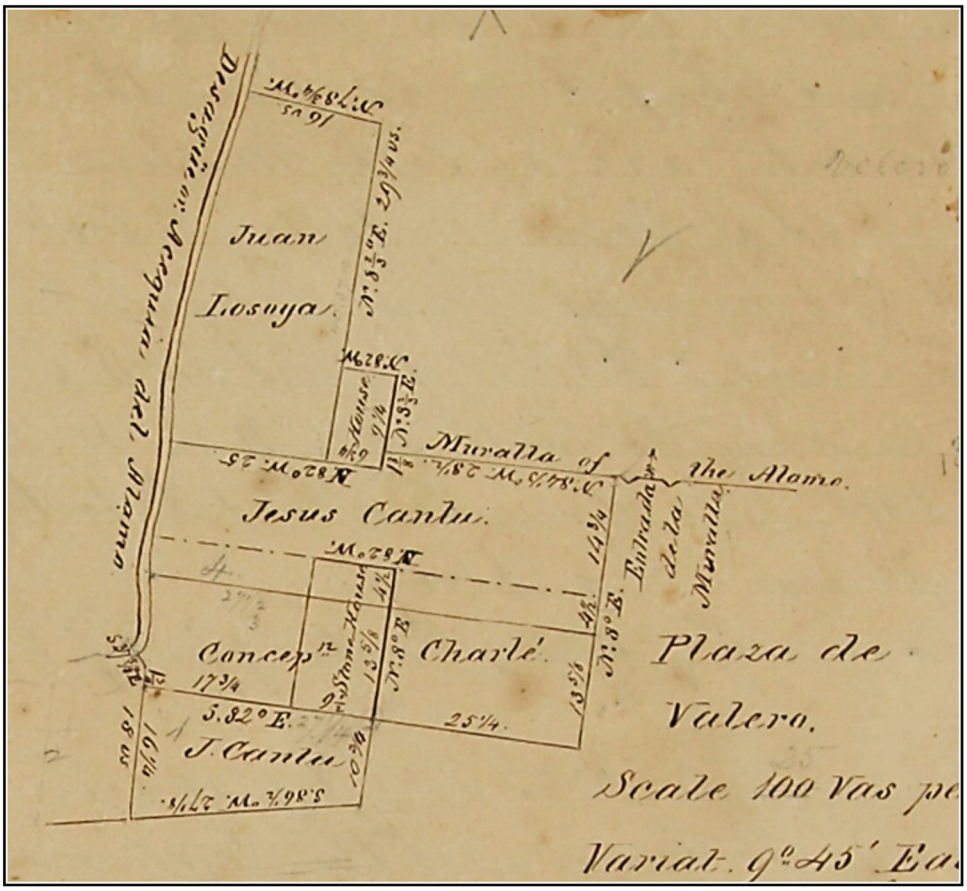


Figure 3-5. December 1849. Plat and field notes of F. Giraud of a lot situated on the west side of the Plaza de Valero in the Alamo Ward (City Engineer Survey Book 1:117-118).

for $2,500 (BCDR W1:237-238, June 2, 1871). The City finalized the demolition of the south gate complex in 1871.

Alamo Plaza, 1871-1912

With the removal of the south gate buildings, the northern and southern plaza were again unified. The 1870s and 1880s saw major changes around the Alamo Plaza. The U.S. Army vacated the Alamo for the Post at San Antonio (later Fort Sam Houston) in 1876. The Catholic Church then sold the Convento building to Honore Grenet in 1877 for $20,000, and the church to the State of Texas for the same amount in 1883 (BCDR 7:373-374, December 1, 1877; BCDR 31:265-266, March 16, 1883; Habig 1968:72). With these sales the Catholic Church no longer held title to any of the former buildings of Mission Valero or on the former Mission Plaza, having held title or interest in the property since 1724.

In the late nineteenth and early twentieth century, the transition of use to mercantile for the buildings fronting on Alamo Plaza resulted in impacts and modifications to the plaza itself. One of the largest impacts was the construction of the Richardsonian Romanesque United States Post Office on the north end of the plaza in 1891. These impacts were associated with beautification projects or with urban infrastructure. Beautification projects included the imposition of a formal garden in the southern half of the plaza sometime in the late 1880s to circa 1891. Change continued throughout the remainder of the nineteenth century and into the twentieth. William Corner mentions the rediscovery of the foundations of the structure when the City went to pave the plaza with mesquite blocks and the presence of a garden in the southern plaza below the old south gate complex in 1889 (Corner 1890:11). Figure 3-6 is a collage of the 1907 map of the Sanborn Map Company (Sanborn) with an 1893 photograph (Sanborn 1907:V2:106; UTSA Special Collections, General Photograph Collection, Image No. 076-0505). The photograph is taken from the south, facing north-northeast up the plaza, and shows the formal garden and walks that match the same layout as the 1907 Sanborn map.

Changes included the surfacing of the former dirt plaza with mesquite block pavers in 1889 (Corner 1890:11). These hexagonal mesquite block pavers are visible in the foreground of Figure 3-6. Mule-drawn and subsequently electric driven trolley tracks were laid north-south along Alamo Street in

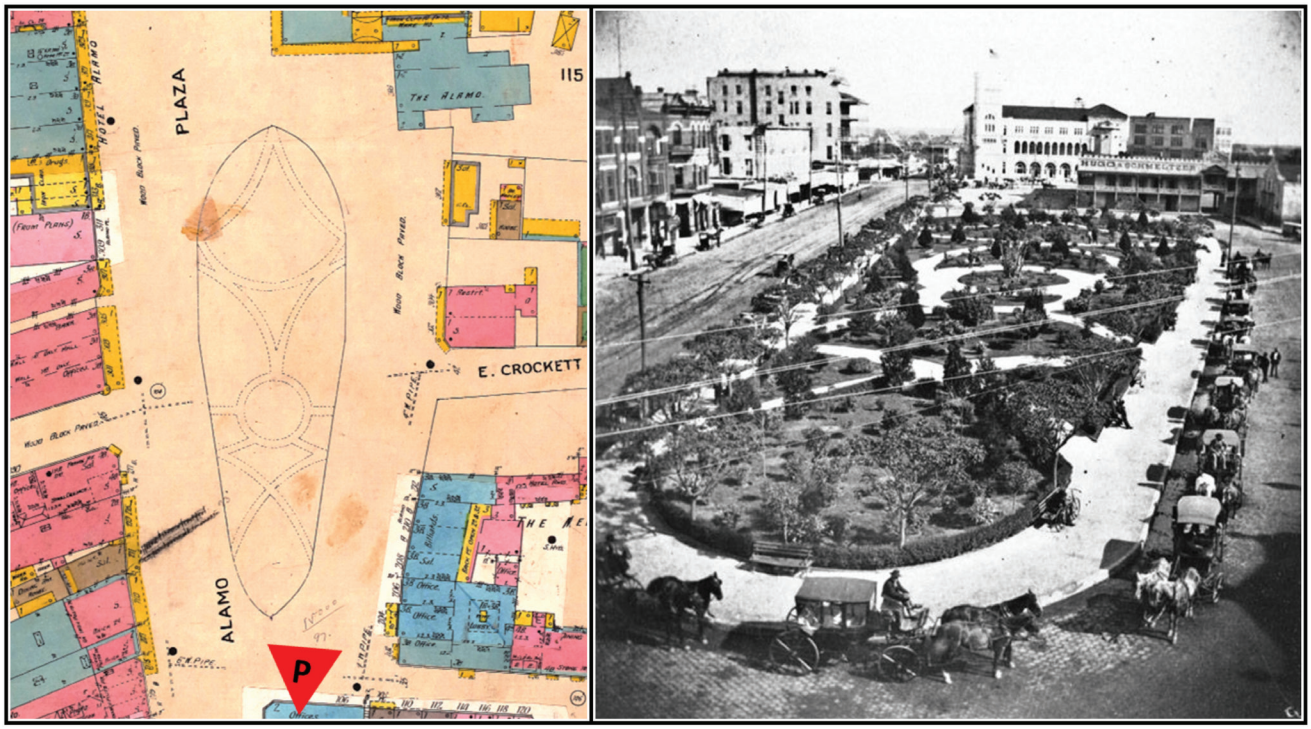


Figure 3-6. The 1907 Sanborn map (left) showing formal garden plan on Alamo Plaza. Red Triangle "P" shows location and visual orientation of photographer for image (right) of Alamo Plaza, looking north from atop the Gallagher Building, ca. 1893 (San Antonio Conservation Society, Lender. UTSA Special Collections, General Photograph Collection, Image No. 076-0505).

1878 and east-west down Houston Street by 1880 (Figure 3-6). Figure 3-7, in addition to showing the trolley tracks, also shows sidewalk improvements as well as the 1867-68 Market House near the intersection with E. Crockett Street (Smith 1881). In addition to surface changes to the plaza, subsurface impacts associated with providing water, sewer, gas, and electrical service to existing and new buildings disturbed architectural and archaeological materials. For example, investigations along Alamo Street and Houston Street for the Tri-Party Improvements Project in 1987 and 1998 documented major subsurface impacts associated with trolley/streetcar and utility infrastructure dating from the late nineteenth century and up to the 1970s (Cox 1992:26, 31, 35). Sanborn Fire Insurance Maps of 1888, 1892, and 1896 document the presence of 40.6 cm (16 in.), 35.6 cm (14 in.), and 15.2 cm (6 in.) water pipes transiting north to south down Alamo Street as well as 15.2 cm (6 in.) and 10.2 cm (4 in.) water pipes entering the plaza along Crocket and Houston Streets from both the east and the west (Sanborn 1888:2; 1892:15, 19; 1896:18). Reviews of City Engineer's Office Block Maps from October of 1900 show an 18" sanitary sewer line running the length of Alamo Street as it transits Alamo Plaza, and a 20.3 cm (8 in.) water line on Houston Street (Trueheart 1900a; 1900b).

Honor Grenet converted the U.S. Army Depot into a major mercantile store and ersatz Alamo museum, erecting porches on the first and second floors of the west and south façades of the two-story Convento. Grenet had three towers built across the top of the building, complete with faux cannons placed in the embrasures. Figure 3-8 is a photograph of Alamo Plaza from circa 1882 taken from Dreiss's Drug Store, which was just south of E. Crockett Street (UTSA Special Collections, General Photograph Collection, Image No. 081-0481). The photograph shows 1) Grenet's store but also shows the 2) trolley tracks, 3) City Meat Market House, and at the far right edge, 4) a portion of the building at the corner of E. Crockett Street and Alamo Plaza. Grenet operated his mercantile until selling the enterprise to the Hugo and Schmeltzer Company in 1884 (Nelson 1998:86). Hugo and Schmeltzer operated a grocery and mercantile business out of the building until they conveyed the property to Clara Driscoll of the DRT in 1905 (BCDR 238:363-366, August 21, 1905). Driscoll was reimbursed for the purchase of the property by the State of Texas, and the State provided the DRT with custodianship of the Alamo property and grounds.

Between 1905 and 1912, two opposing factions of the DRT, one led by Adina DeZavala and the other by Clara Driscoll, contended over the treatment of the former Convento (Long Barrack). The building consisted of the original two-stories, albeit with modifications from the period of the U.S. Army, Grenet, and Hugo and Schmeltzer's use. The DeZavala faction argued to retain the original second floor, and the Driscoll faction argued for its removal. In 1912, the Driscoll faction prevailed and the Spanish Colonial era Convento

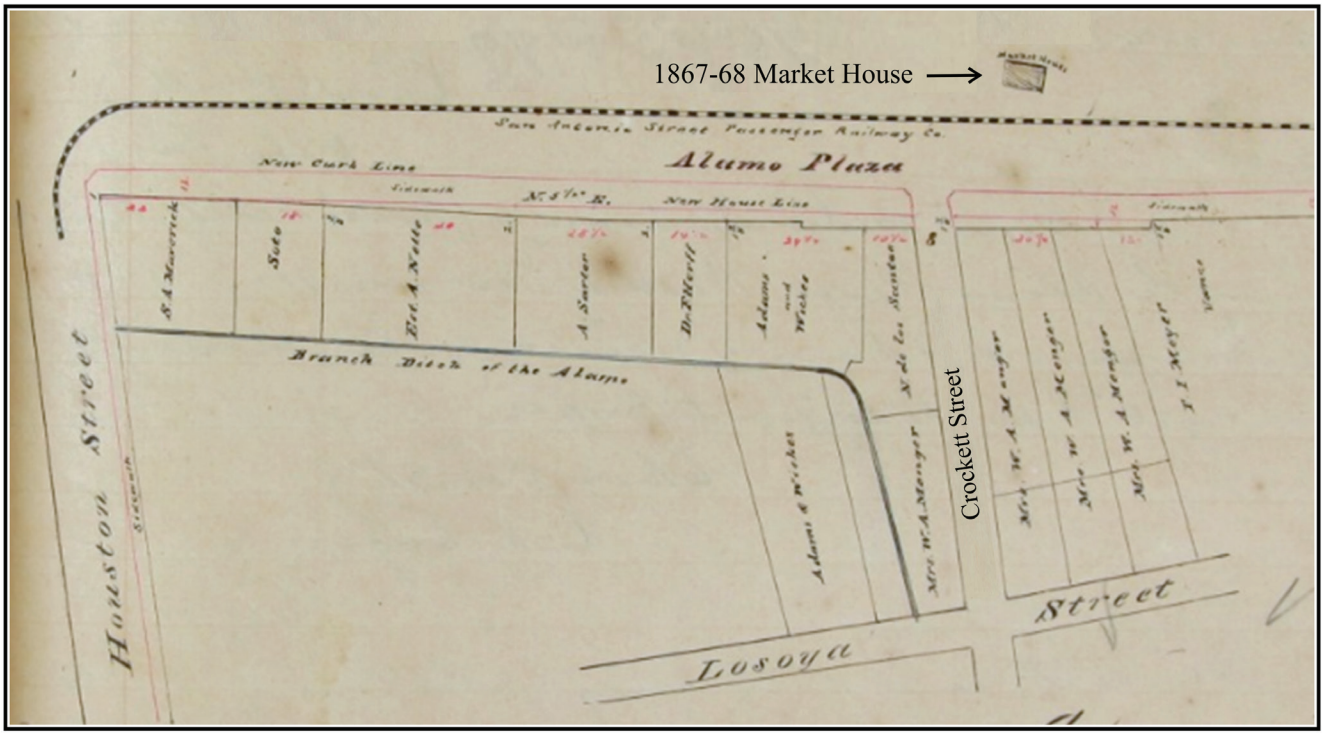


Figure 3-7. Section of a plat map showing trolley lines from July 16, 1881, drawn by Charles Smith, City Engineer, (Civil Engineer Survey Book 1:345). The black and white dashed line represents the streetcar tracks. Red lines represent proposed new sidewalks on the west side of the plaza.

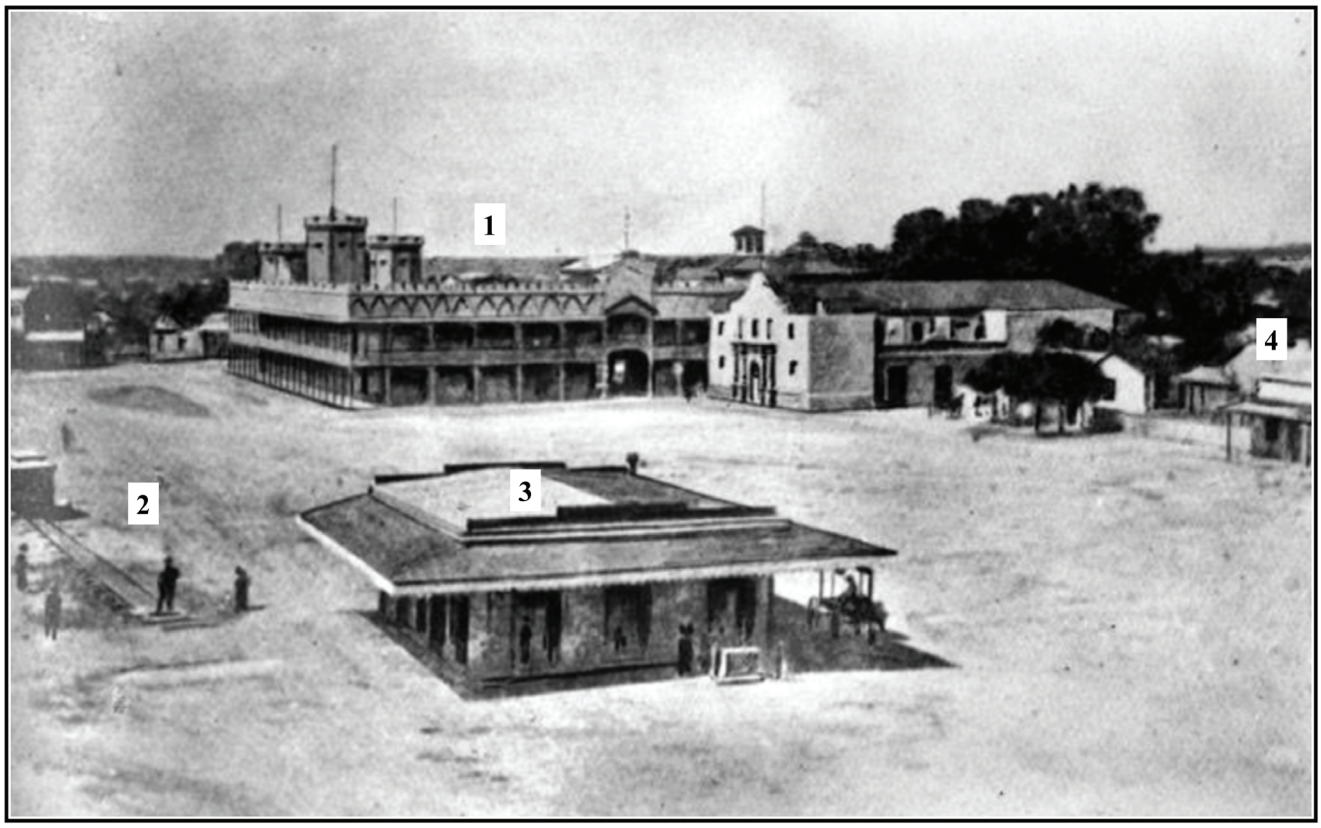


Figure 3-8. Alamo Plaza from the Dreiss's Alamo Drugstore, San Antonio, Texas, ca. 1882: 1) Grenet's store, 2) trolley tracks, 3) City Meat Market House, and 4) a portion of the building at the corner of E. Crockett Street and Alamo Plaza. View to the northeast (Thomas W. Cutrer, Lender. UTSA Special Collections, General Photograph Collection, Image No. 081-0481).

was entirely demolished with the exception of the western façade of the first floor. Figure 3-9 is a post card from 1912-1913 showing the demolition nearly complete with only the western façade still standing.

Alamo Plaza, 1913-1950

By 1916-1918, the plaza was surfaced with asphalt. Further, major construction projects on the perimeter of the plaza required the intrusion and/or expansion of utility services. These include the Medical Arts Building (now the Emily Morgan Hotel) that was constructed in the early 1920s on the corner at Avenue E and East Houston Street. In 1927, the City erected a two-story bandstand in the center of the plaza just north of the alignment of E. Crockett Street (Sanborn 1938:V2:117). A second post card from circa 1920-1925 provides a view through the plaza from the south (Figure 3-10). This post card shows the 1891 Post Office in the top center, the 1920 bandstand within the Alamo Plaza garden in the middle and foreground, and the Alamo Church is shown to the right.

Alamo Plaza saw a number of major changes in the 1930s. First was the 1935 demolition of the 1891 Post Office on the north end and its replacement with a new, larger, U. S. Post Office and Federal Buildings during the Works Progress Administration. Excavations in 1935 associated with the Post Office uncovered an estimated (at the time) 37 burials that subsequent analysis attributed to Native American ancestral affiliation (Glassman 1994). Further impacts were connected with the Texas Centennial Celebrations planned for 1936. Centennial impacts included the design, award, and construction of the Alamo Cenotaph, which occupies a position in the center of northern half of the plaza, opposite the Long Barrack (Commission of Control 1938:84-85). The placement of the Cenotaph deeply impacted the subsurface of the plaza beneath the plinth. At the same time as the erection of the Cenotaph, landscaping was placed around the marker that, together with the existing gardens and landscape in the southern half of the plaza, effectively divided the plaza in two, north-to-south, with Alamo Street transiting the west side of the plaza and an access drive crossing the east side of the plaza, in front of the Alamo Church and Long Barrack. Changes have been made to landscaping and street furniture, as well as closing the street access in front of the Long Barrack and Church, during the 70 years since 1950. However, the general layout of Alamo Plaza has remained substantially the same.

Lot Histories for Areas 1 through 6

The six areas investigated for this project fall into three geographic categories. First, there are those within or partially within the southern plaza, or Plaza de Valero: Areas 1 (partial), Area 2, and Area 3 (partial). Next, there are those

Figure 3-9. The Alamo and Fort and Menger Hotel, San Antonio, Tex. Unattributed post card from circa 1912-1913. Image on file, Center for Archaeological Research, San Antonio, Texas.

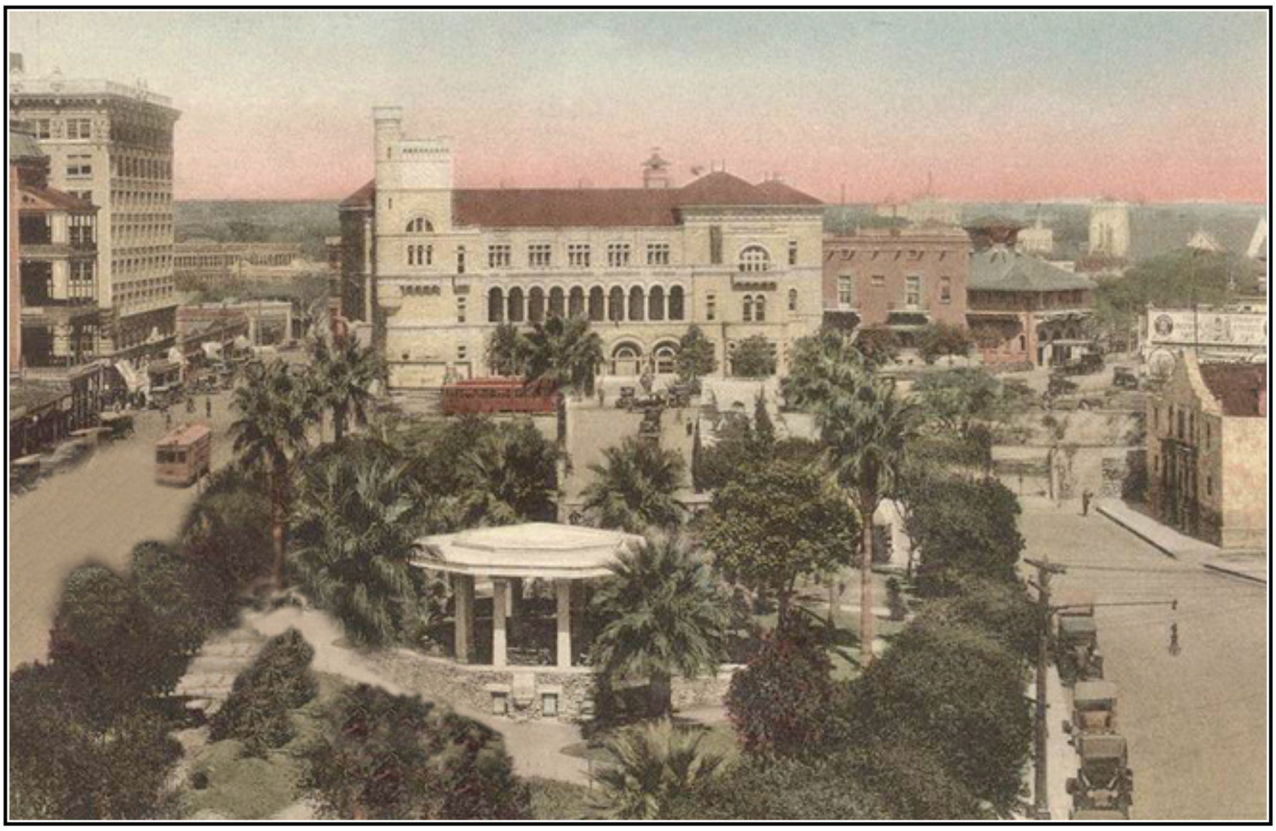


Figure 3-10. Post Card of Alamo Plaza circa 1920-1925, Unattributed. Image on file, Center for Archaeological Research, San Antonio, Texas.

that are within the open area of the northern plaza, or Plaza del Alamo: Area 4, Area 5, and Area 6 (partial). Finally, there are those that are part of, or directly associated with, either a Spanish Colonial or post-colonial construction: portions of Area 1, Area 3, and Area 6. These will be addressed by area number within their geographic association.

Area 1 (Eastern Part, Including Feature 2)

The eastern part of Area 1 lies along the eastern edge of the former mission plaza, just north of the alignment of the Nacogdoches Road (Camino Real de los Tejas). This property first appears in the deed records in 1825 when María Josefa Hernandez sold the property to Antonio Salazar (March 10, 1825 deed, recorded October 10, 1848, in BCDR G1:442-443). Salazar held title to the property until 1848 when he sold it to Johann C. Beckman for $202 (BCDR G1:444-445, October 14, 1848). The City Surveyor recorded a plat and field notes for the sale shown in Figure 3-11 (Giraud, February 22, 1848). The Giraud plat shows the subject property fronting 25 *varas* on the west on Plaza de San Antonio Valero and 76 *varas* south on Nacogdoches Road. The Acequia Madre de Valero runs through the middle of the property.

Beckman subdivided the lot and sold the larger eastern portion to Stephen Danenhauer in 1853 for $1,000, and the sale included a blacksmith shop and tools as well as the land (BCDR L1:561, November 4, 1853). Beckman sold the remaining portion at the corner in 1865 to Henry and Francsika Bitter for $3,700, and the price indicates that the two limestone structures on the property had likely been constructed by this time. The Bitters owned a large number of properties in San Antonio during the latter half of the nineteenth century, and it appears that the Alamo Plaza property was used for rental income during their period of ownership, which lasted until 1890. During the 25 years they owned the property, it is shown on the Sanborn maps as a boarding house and saloon (Sanborn and Perris 1885:2; 1888:2). Figure 3-12 is an 1881 photograph of the structures facing onto Alamo Plaza south of the Alamo Church to the corner at E. Crockett Street. The saloon is at the corner, and the limestone house adjoins it to the north.

W.W. King and B.F. Yoakum acquired the property from the Bitters by a Deed of Trust that they obtained a release from two years later (BCDR 91:154-155, March 19, 1890; BCDR 104:459-460, March 19, 1892). During the period of the Deed of Trust, 1890 to 1892, King and Yoakum executed a warranty deed for $40,000 to James H. Neagle with the property as surety. This transaction went to litigation in 1891 as it appears that Neagle wished to satisfy the terms of the deed and assume title to the property. The result of the litigation was for King and Yoakum to pay Neagle $4,000 and to cancel

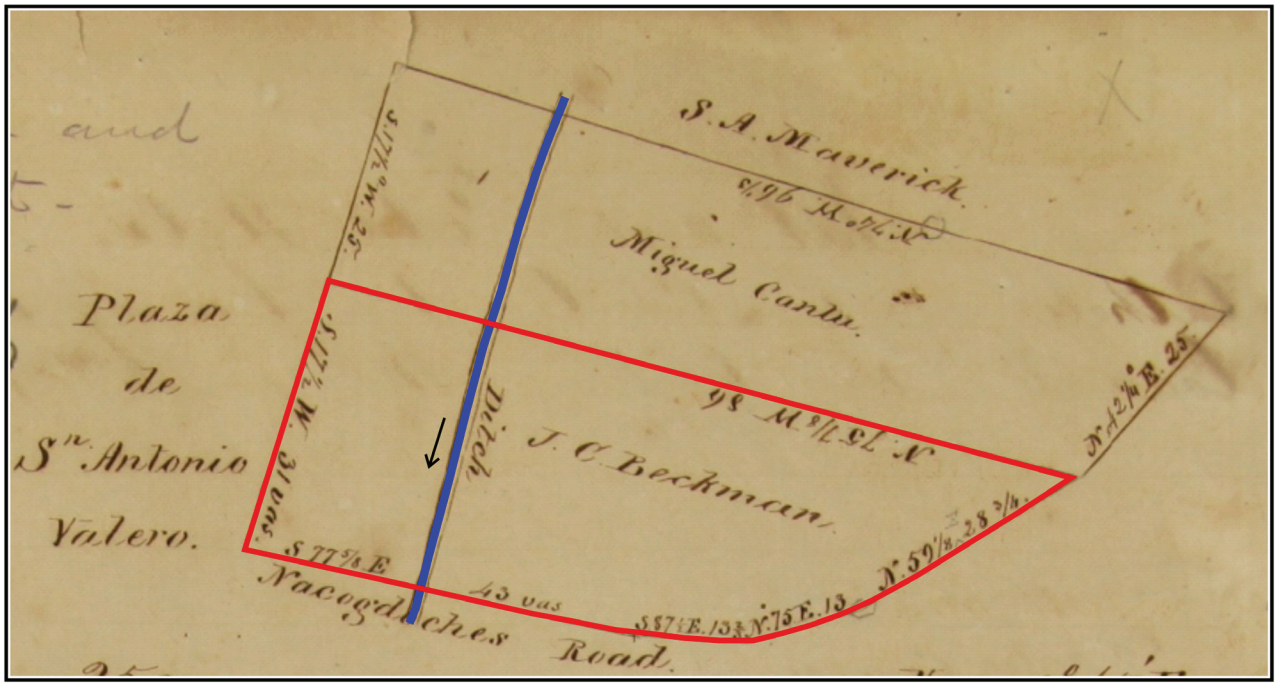


Figure 3-11. Plat and field notes of the survey of a town lot situated on the east side of the Plaza de San Antonio Valero, and on the north side of the Nacogdoches Road, made for J. C. Beckman. February 22, 1848. Red line shows the property boundary, and the blue line shows the Acequia Madre de Valero. Arrow indicates direction of flow.

Figure 3-12. An 1881 photograph of the west side of Alamo Plaza, below the Alamo Church and above E. Crockett Street. View is from the west-northwest looking east-southeast (Photograph from the Ernst Raba Collection, courtesy of the San Antonio Conservation Society).

his remaining promissory notes, after which he relinquished his claims to the property (BCDR 76:94-95, April 24, 1890; BCDR 97:527-532, March 25, 1891). King and Yoakum, like the Bitters, also rented the property, which they held until 1913. During this period, it continued in use as a saloon and a store (Sanborn 1896:18; Sanborn 1912:V2:117; Sanborn-Perris 1892:19). The 1905-1906 Jules Appler City Directory lists the Rotter Brothers' Saloon at the corner and Mrs. I. Garza living in the house to the north (Appler 1906:513). Figure 3-13 is a collage of the 1885 through 1896 Sanborn-Perris and Sanborn maps showing the corner property at E. Crockett Street and Alamo Plaza.

A review of the 1885 to 1896 collage indicates that modifications were made to the southern façade of the stone building between 1888 and 1892. Prior to 1892, the building was irregular in shape, with its southwest corner projecting along the line of E. Crockett Street. After 1892, the building's footprint is rectilinear, indicating that the south wall was rebuilt to accommodate the widening of E. Crockett Street. A published report in 1886 documents that the City of San Antonio had completed agreements with all the property owners on the north side of E. Crockett Street in preparation for the project to begin (San Antonio Daily Light, 25 May 1886:1).

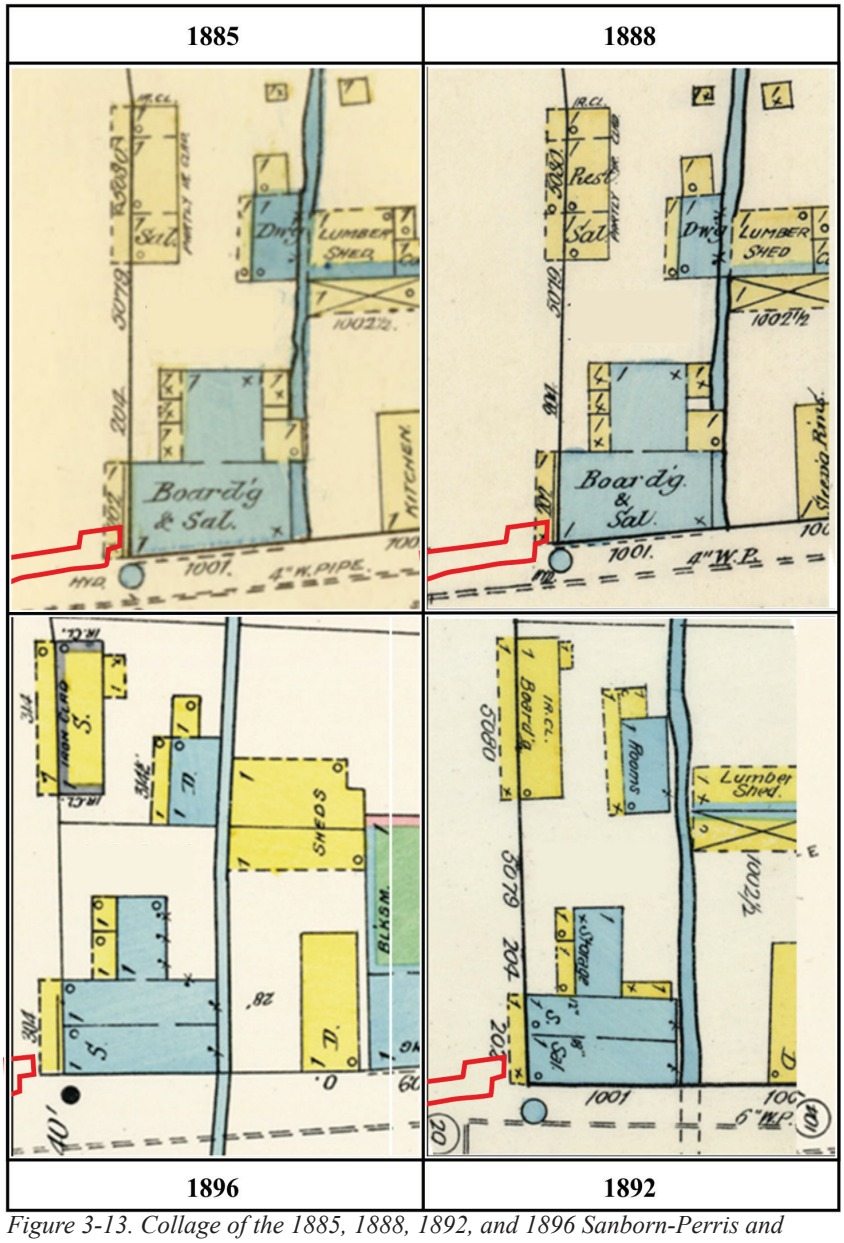


Figure 3-13. Collage of the 1885, 1888, 1892, and 1896 Sanborn-Perris and Sanborn Fire Insurance Maps showing the corner property at Alamo Plaza and E. Crockett Street. Approximate location of eastern portion of Area 1 is outlined in red.

B.F. Yoakum sold the property to Bessie Larkin in June of 1913 and she sold the property six months later to Joseph Courand (BCDR 420:84-85, June 11, 1913; BCDR 434:6-7, January 22, 1914). Courand demolished the limestone structure in late 1919 and erected a two-story, tile, block, and concrete garage set back from the corner as well as a two-story brick building adjacent to the north in early 1920 (Figure 3-14). During the excavations for the construction of the new garage, three skeletons were discovered that had been shallowly buried approximately 45.7 cm (18 in.) below the surface. The graves were left in place, and the bones were reburied (San Antonio Express, 15 February 1920:46).

During Joseph Courand's period of ownership in 1925, the City of San Antonio levied a special assessment against all the property owners along E. Crockett Street between Alamo Plaza and Nacogdoches Road to widen the street (BCDR 817:166-167, March 26, 1925). This second widening of E. Crockett Street removed a 106.9' by 13.5' portion of the property (City Engineer's Plat Book 6:94). Courand's estate sold the property in April 1926 to O.M. Farnsworth $70,000 (BCDR 887:272-274, April 30, 1926). Farnsworth held title for less than a year before selling to John B. Herff (BCDR 1161:520-521, January 5, 1930). Herff and his wife Florence sold the property to the State of Texas for $150,000 in December of 1931 (BCDR 1281:558-559, December 15, 1931).

The State's acquisition of the property occurred during the same time that the State was acquiring adjacent properties to accomplish the land assembly around the Alamo. The corner property at Alamo Plaza and E. Crockett Street went into the control of the DRT, with title retained by the State. The DRT cleared the buildings from the lots fronting on the plaza south of the church and erected a hall and library.

Area 1 (Western Part) and Area 2

The western part of Area 1 and all of Area 2 lie within the region of the southern portion of the original Mission de Valero plaza. These areas would have been a part of the open area of the plaza for the majority of the historical period, and there are no archival property transactions or title documents for these locations. The possibility exists

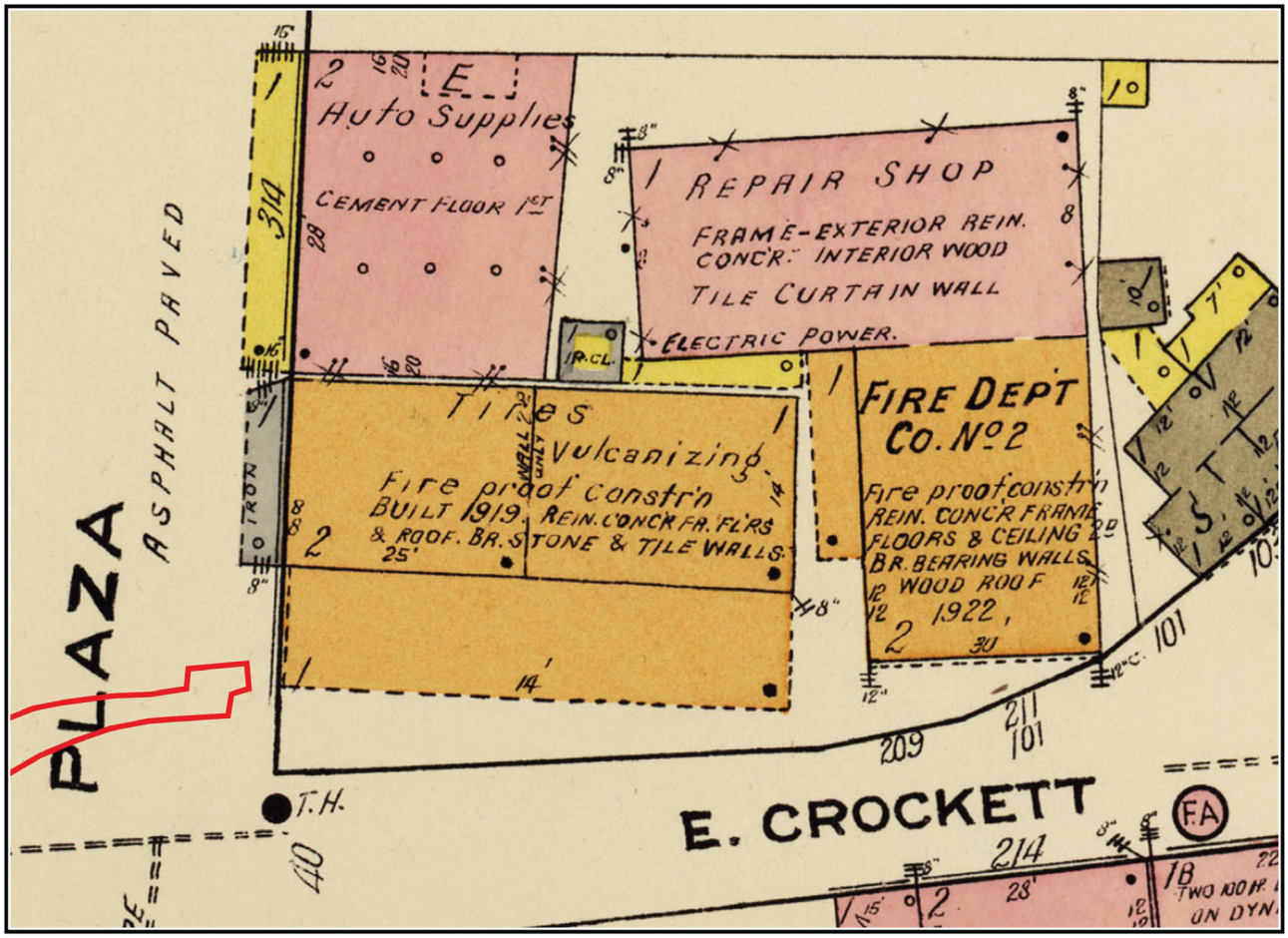


Figure 3-14. 1922 Sanborn map of the corner property at E. Crockett Street and Alamo Plaza. Approximate location of Area 1 is outlined in red.

that unknown and unaccounted for Spanish Colonial period structures could be archaeologically present anywhere within the original plaza footprint.

Area 3

Area 3 is in the south gate complex, near the projected gate into the mission compound. The portion of Area 3 south of the projected alignment of the former structure would fall on the exterior of the southern wall and/or along the alignment of the entry into the compound. The archival history for Area 3 is essentially the same as that provided in the general history of the southern portion of the former mission plaza. The particulars of the alignment of the southern row of buildings that formed the south wall of the compound are discernable in the archival record. The Edward Everett map of 1848, the Giraud Alamo plat of 1849, and the Giraud plat for Juan Losoya of 1849, all document the relative size and location of the structure (Figure 3-15). The three drawings generally agree as to the location of the gate through the south wall.

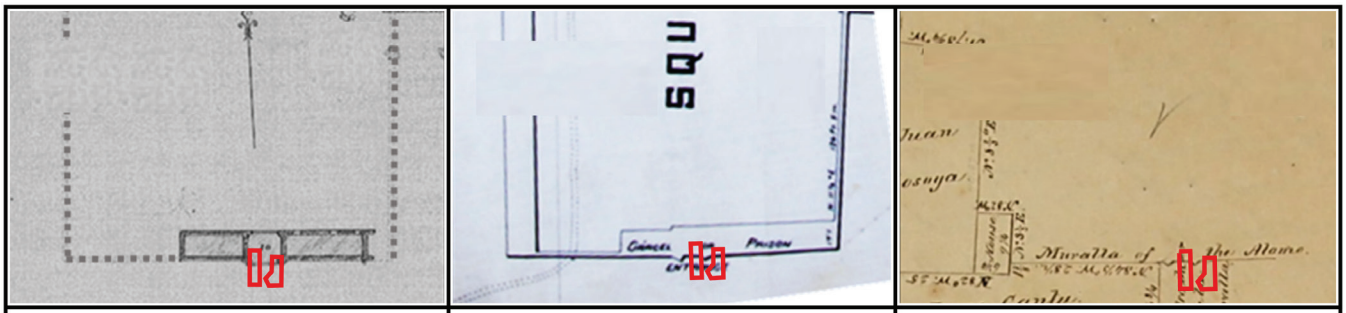
The foundations of the south gate complex rooms have not been archaeologically encountered despite excavations in the area in 1988 and again in 2016 (Anderson et al. 2017; Fox 1992). The destruction of the building by the City of San Antonio circa 1871 removed all surface traces of the south wall complex. Further, it may be that the remains of foundations were removed during the mesquite block paving of the plaza in 1889 that was referenced by Corner in 1890.

Area 4, Area 5, and Area 6 (Western Part)

Area 4, Area 5, and the western part of Area 6 lie within the northern, open area of the original mission plaza. Area 5 lies within the former right-of-way of E. Houston Street and is an area in which numerous infrastructural impacts have occurred throughout the last quarter of the nineteenth century and throughout the twentieth century. The streetcar/trolley tracks that travel east-west across the north of Alamo Plaza transited this area as shown in Figure 3-15 which is a copy of a 1907 Block Map (New City Block Red Tax Map Sheet 115, October 17, 1907). The purple triangles superimposed on Figure 3-15 are the plot of Feature 5 (streetcar/trolley track remains) identified during the current project. However, the alignment of the Feature 5 streetcar rails is perpendicular to the alignment shown in Figure 3-16, suggesting that they may represent a spur for turning the streetcars prior to redirecting them westbound on their return down Houston Street. As Alamo Plaza was a major terminus for the streetcar system, this seems highly plausible. In addition to the potential to encounter transportation infrastructure, utilities are also ubiquitous and range from nineteenth century water and sewer lines to modern fiber optic cable.

Area 6 (Eastern Part)

The eastern part of Area 6 corresponds with the alignment of the room blocks of the eastern perimeter of the northern compound of Mission Valero. This location represents an area that was demolished either by the Mexican Army in May of 1836 or was in so ruinous a state that it was not salvageable by the time of the arrival of the U.S. Army in 1846. Figure 3-17 is a collage of an earlier 1846 Map of the Alamo by Edward Everett, the 1914 copy of Giraud's 1849 Alamo Plat, and a base map from the 1907 Sanborn Fire Insurance Map. The 1907 Sanborn map shows the footprint of the Hugo and Schmeltzer Building, prior to its sale to the DRT in 1912 and the subsequent demolition and remodeling of the Convento. No Sanborn maps after 1907 show the Convento, and since the western façade alignment of the Hugo and Schmeltzer Building is the same as the Convento, 1907 Sanborn can be used as a proxy. The collage provides a full outline of the walled compound of former Mission Valero, together with a red square giving the approximate location of the eastern part of Area 6. The 1846 and 1849 panels show that this portion of Area 6 corresponds with the southern terminus of the northern third of the eastern wall room blocks adjacent to the Convento. The 1907 panel shows that this location is within the sidewalk and/or street right-of-way of E. Houston Street.



Everett 1848	Giraud-Alamo 1849	Giraud-Losoya 1849

Figure 3-15. Collage of Everett's 1848 map (left), Giraud's 1849 plat (center), and Giraud's 1849 Losoya plat (right). Approximate location of Area 3a and 3b are outlined in red.

Up until the Battle of the Alamo in 1836, there was a two *vara* (66.666" in. or 1.69 m) wide opening between the end of the Convento and the beginning of the north block of rooms on the eastern wall. The opening gave access to the eastern side of the mission compound, and there were various manufactories occupying this area according to inspection reports. For example, the 1745 report describes a textile shop consisting of an open gallery around an enclosed patio with weaving looms and tools with some 20 spinning wheels for converting mission farm cotton into clothing and blankets (Ortiz 1745).

The eastern part of Area 6 was used by the U.S. Army Quartermaster Depot, and there was an enclosed wagon

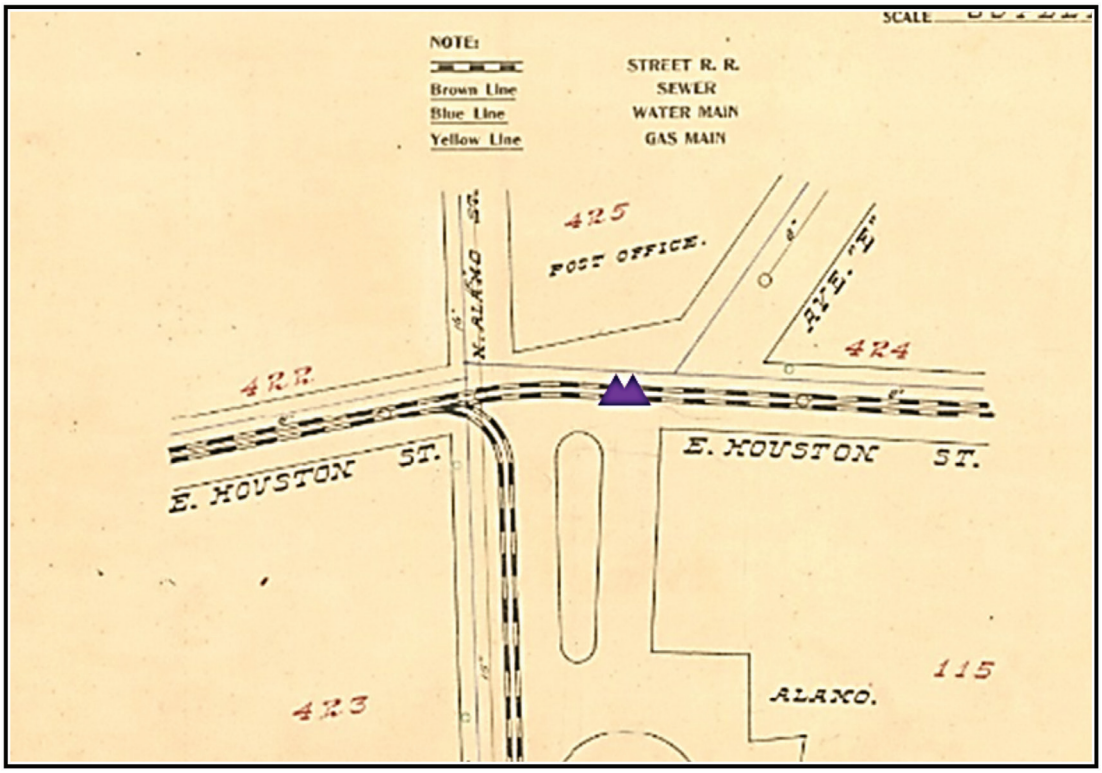
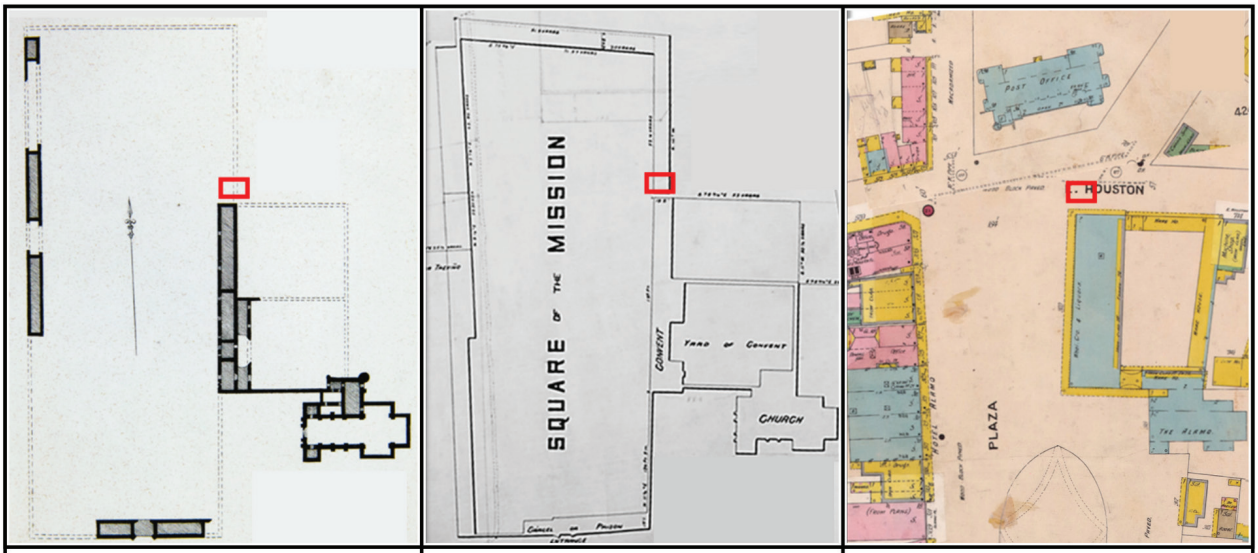


Figure 3-16. 1907 New City Block Red Tax Map Sheet 115 with location of Feature 5 super-imposed (purple triangles).



Everett 1846	Giraud 1849	Sanborn 1907

Figure 3-17. Montage of 1846 Everett map (left); 1849 Giraud Map of the Alamo (center) and 1907 Sanborn Map (right). Red square shows the approximate location of the eastern part of Area 6.

yard east of the former exterior mission compound wall. Considering that the wagon yard's western wall occupied the same alignment, it appears that the U.S. Army took advantage of the pre-existing alignment in laying out the yard (see Figure 3-18). Within the wagon yard itself, they erected a number of horse sheds as well as a hay yard for fodder (Everett 1849).

The construction of E. Houston Street across the northern span of the plaza occurred in 1851 (Huesinger 1951:25). This caused the U.S. Army to reconfigure their plans for the depot. The area adjacent to Area 6 has seen continued use of the former Convento by Grenet from 1877 to 1884, Hugo and Schmeltzer from 1884-1905, the DRT from 1905 to 2011, and the State of Texas from 2011 to the present. Between

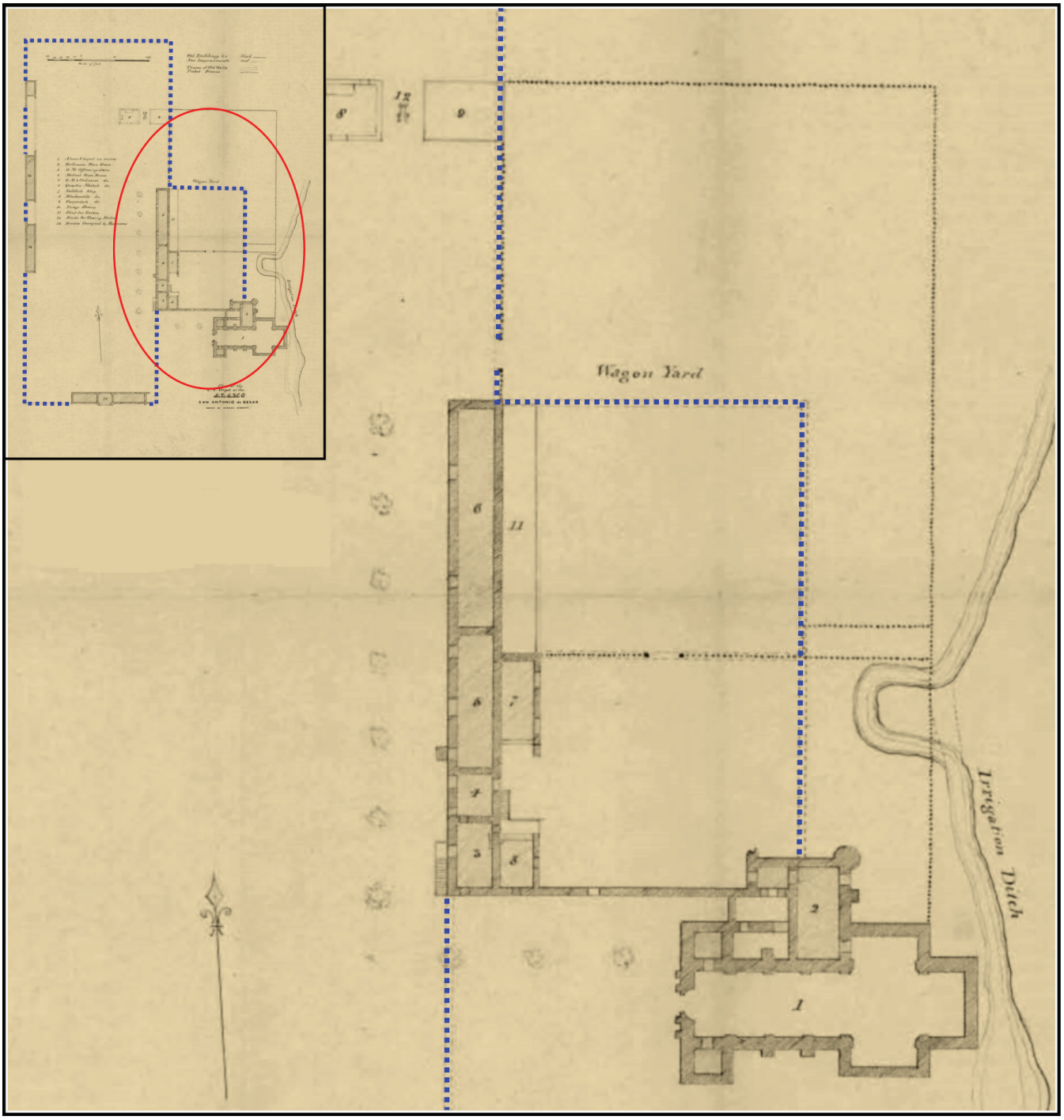


Figure 3-18. Close-up of wagon yard as shown on Edward Everett's 1848 map (see Figure 3-2 and inset red circle). The blue dashed lines show the former alignment of the mission compound walls.

1851 and the present, there have been numerous impacts to E. Houston Street as well as beneath the sidewalk right-of-way. These have disturbed and/or mixed intact archaeological deposits and features.

Summary

Only the area of Military Plaza, where the Presidio was moved in 1722, has a longer continuous occupational history than Alamo Plaza where Mission San Antonio de Valero was moved in 1724. Further, there are few places in Texas history more storied than the Alamo or so intrinsically part of the urban fabric of a modern city. The prominent location of Alamo Plaza and the Alamo compound have resulted in a long list of changes and impacts to the former Spanish Colonial Mission and its former walled compound. Although the majority of the walls and buildings that defined the northern plaza have ceased to exist for nearly 150 years, the property lines and street alignments still cohere with the basic outline of the original mission plaza. The plaza has seen numerous subsurface changes and impacts throughout the past 300 years. The Spanish Colonial period saw the imposition of the mission on the formerly unimproved east bank of the San Antonio River along with the construction of the mission irrigation system which traversed the plaza in the earlier period before being routed to the outside of the western wall in the latter half of the eighteenth century. The construction of fortified compound walls on the north end of the plaza in the 1750s-1760s for protection against the Apache were subsequently repurposed by the Spanish, Mexican, and Texian forces as a fort, ending with the Battle and Siege of 1836 and the destruction of much of the compound walls. The middle part of the nineteenth century saw the conversion of the remaining Alamo buildings and grounds into a quartermaster depot for the U.S. Army and the assembly of the former mission properties by private interests, chiefly Samuel A. Maverick. As the city grew, so did the area of Alamo Plaza and the plaza surface and subsurface attest to the numerous impacts from demolition, construction, paving, and the installation of street car lines, and countless utility trenches and impacts. Despite the ravages of time, both intact and mixed deposits dating from the middle eighteenth through to the twenty-first century have been and encountered during work on the plaza or adjacent properties. The wealth of archival documentation available for the majority of this time span facilitates the planning, excavation, and interpretation of archaeological deposits from this iconic and fundamentally important site.

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Chapter 4: Earlier Studies of Site 41BX6

This chapter summarizes the past studies of site 41BX6, Mission San Antonio de Valero, dating back to the mid-1960s. Since then, Mission San Antonio de Valero has been the subject of 24 studies, including two archival research projects (Hard, ed. 1994; Ivey and Fox 1997) and two monitoring projects (Cox 1992; Nichols 2014; Table 4-1). One of the more recent projects (Tomka et al. 2020) is not discussed in detail, as this study was ongoing at the time of this writing. The location of the areas excavated at site 41BX6 are shown in Figure 4-1.

Beginning in the mid-nineteenth century, the original 1724 footprint of Mission San Antonio de Valero has been heavily impacted by site development. The installation of infrastructure has been especially damaging to the original plaza. As a result, numerous historical features and artifacts have been destroyed, and very little documentary evidence of these early ground disturbances remains. Much of the cultural material has been displaced and mixed with modern material. The first formal excavation occurred in 1966, in response to the discovery of artifacts in the course of utility trenching in the Cavalry Courtyard (Table 4-1).

In June and July 1966, staff of the Witte Memorial Museum and the University of Texas at Austin, conducted the first professional archaeological study of Mission San Antonio de Valero (41BX6). Three separate reports were prepared and published by the Archeological Program of the State Building Commission. Report Number 1 covered the site's history with an emphasis on the mission period (Schuetz 1966). Schuetz relied heavily on a collection of secondary sources and noted that many of the primary sources had been lost or misplaced. Piecing together the site's history, Schuetz drew from several maps and historical drawings, and she transcribed and translated the few available Spanish documents (de los Dolores 1762; Ortiz 1745, 1756).

In the second report, Curtis Tunnell, State Archeologist, prepared a study of the Mexican *majolicas* (tin-enamel glazed) earthenware (Tunnell 1966). A total of 667 sherds were recovered from these early excavations. All but one of the sherds were wheel-thrown and kiln-fired (Tunnel 1966:3).

Report Number 3, by John Greer, focused on the excavations (Greer 1967). Employed by the University of Texas at Austin, Greer served as the supervising archaeologist on this first excavation and was responsible for preparing the third report, a description of the stratigraphy, features, and artifacts. Seven areas, totaling 34 units, were excavated: 16 units comprising four distinct areas were located in the Cavalry Courtyard, and 18 units comprised three additional areas in the Convento Courtyard. Over 14,000 artifacts were recovered, with 24 percent being an assortment of ceramics of primarily eighteenth- and nineteenth-century origin. A total of 24 features were recorded, the earliest of which were Features 7, 8, 9, and 10 in Area C and Features 13 and 14 in Area F. These features and associated artifacts represent small samples of distinct nineteenth-century occupations, including the 1836 Battle of the Alamo. Remnants of a large, circa 1740, adobe room (Feature 14) were located between 6.1 and 7.6 m (20-25 ft.) east of the well (Greer 1967:4-14).

The 1966 excavations were followed by those of the Texas Archeological Salvage Project. In 1970, an area outside the northwest corner of the DRT Library was excavated prior to the construction of a new library wing. Based on Figure 1 of the report (Sorrow 1972), the footprint of the new wing was approximately 113.81 m^2 (1,225 $ft.^2$). The area was gridded, and 18 units were excavated (Sorrow 1972). The most significant find was a 9.75 m (32 ft.) section of the Acequia Madre de Valero (41BX8). Remnants of the *acequia*'s east wall were exposed and photo documented; however, the west wall was missing. Based on the excavations and recovered artifacts, it was surmised that the *acequia* was originally an earthen ditch that was backfilled in the late 1800s. Sorrow (1972:18-19) concluded that additional *acequia* remnants may exist to the north of the study area and that the presence of an east-bound lateral and shallow trenches may indicate that this area, south of the church, was used for cultivation. Unfortunately, the recovered artifacts, which included bone, ceramics, metal, and stone, were not formally analyzed.

In 1973, the Witte Museum excavated a large area at the far north end of the Alamo compound. Schuetz (1973) located four mission period rooms along what would have been the original east wall of the Calvary Courtyard. Schuetz identified and recorded a packed caliche layer throughout the excavations. The layer, between 60 and 70 cm below the surface (cmbs; 18 and 22 in.), was thought to be a prepared surface dating to the U.S. Army Quartermaster's Depot occupation. These excavations noted that Spanish Colonial-period artifacts lay beneath the caliche layer (Schuetz 1973).

In October and November 1973, Richard Adams and Thomas Hester of the UTSA Department of Anthropology led an excavation in an area east of the Alamo Sales Museum and on either side of the reconstructed *acequia*. The bulk of the recovered artifacts were late nineteenth- and early twentieth-century ceramics and construction debris. They concluded

Table 4-1. Past Studies of 41BX6

Year	Summary of Studies	Source
1966	This was the first archaeological study of 41BX6. Three separate reports were prepared and published by the State Building Commission. The first report, by M.K. Schuetz, focused on the site history.	Schuetz 1966
1966	In the second report, Curtis Tunnell, State Archeologist, prepared a study of the Mexican majolicas (tin-enamel glazed) earthenware.	Tunnell 1966
1966	The third report, by John Greer, of UT Austin focused on the excavations; 34 units were excavated, in the Calvary Courtyard and Convento Courtyard.	Greer 1967
1970	Excavation at the northwest corner of the DRT Library; 18 units were excavated with the most significant find being a 9.75-m (32-ft.) section of the Acequia Madre (41BX8).	Sorrow 1972
1973	Excavation of a large area at the far north end of the Alamo compound; caliche layer at 60-70 cm (18-22 in.); noted Spanish Colonial artifacts beneath the caliche layer.	Schuetz 1973
1973	Excavation in an area east of the Alamo Sales Museum and on either side of the reconstructed acequia; area was heavily disturbed and further testing unwarranted.	Hester 1993
1975	Excavations found that earlier modifications to the plaza had disturbed the subsurface deposits; able to locate remnants of the original wall footings and related features.	Fox et al. 1976
1977	Testing in front of the Long Barrack; exposed the original wall footings; Spanish Colonial artifacts noted between 60.9 and 121.9 cm (24 and 48 in.) below the surface.	Fox 1977
1977	Testing in front of the church; excavated 12 units; substratum generally undisturbed; found succeeding layers of datable artifacts.	Eaton 1980
1977	CAR prepared a block history and recommendations for essential archaeology of an area west of Alamo Plaza.	Fox and Ivey 1979
1979 to 1980	Seven units excavated along the west end of the north wall; concluded that the area within the Calvary Courtyard may contain intact archaeological deposits.	Ivey and Fox 1997
1979	Testing of an area west of Alamo Plaza (Radio Shack building); located adobe building foundations, the west wall of the compound, and a section of acequia.	Ivey 1983
1980	Testing along the east side of Alamo Hall; located the wall foundations of the home and kitchen of former mayor, Wilhelm Carl August Thielepape.	Nickels 1999
1988 to 1989	CAR summer field schools of 1988 and 1989; test excavations of two areas on the Alamo Plaza; located 1835-1836 defensive fortifications at the south entrance.	Fox 1992
1988 to 1991	Multi-year archaeological monitoring of a 70-block area of downtown; work impacted several areas including the Alamo Plaza Historic District; impact was minimal.	Cox 1992
1991 to 1993	Test excavations around the Alamo Sales Museum; heavily disturbed; found the 1936-1937 WPA acequia reconstruction to be slightly east of its original channel.	Tomka et al. 2008
1994	CAR completed a historical overview of Alamo Plaza and campo santo; a thorough review of the literature of the history and archaeology of the plaza and cemetery.	Hard 1994
1995	Excavations of the church's south transept wall; stratigraphy at the interior relatively intact but found the exterior deposits to be heavily disturbed.	Meissner 1996
1995	Highly publicized “Alamo Well Project”; mechanical excavation to 4.57 m (15 ft.) below the surface; did not locate the original Alamo well and supposed treasure.	Uecker and Guderjan 1995
2006	CAR field school 2006; three areas were selected for testing; two features were located at the north wall, with no other features noted in the other two areas.	Zapata and McKenzie 2017
2014	Archaeological monitoring of ground disturbance of an arbor installation at the far northeast corner of the compound; no impacts to any probable archaeology in this area.	Nichols 2014
2016	Excavated areas along the south and west walls of the compound; indication that there are pockets of Spanish Colonial features and deposits in both areas.	Anderson et al. 2018
2019 to 2020	Alamo Security Upgrades; reported herein.	Zapata and McKenzie 2020
2019 to 2020	Testing at various walls within the compound; study was ongoing as of this writing.	Tomka et al. 2020

that the area was heavily disturbed and further testing in this area was unwarranted (Hester 1993:2).

Anne Fox and Feris Bass of the CAR directed test excavations in June and July of 1975 at the Alamo Plaza (Fox et al. 1976). These excavations were undertaken ahead of renovations associated with the planned American Bicentennial celebrations. The purpose of the project was to find the precise location of the Alamo's original south wall and to determine the extent of buried cultural resources in Alamo Plaza. Although Fox and Bass found that earlier modifications to the plaza had greatly disturbed the subsurface deposits, they were able to locate remnants of the original wall footings and related features. They concluded that the planned renovations would not impact any buried cultural deposits. However, the authors suggested that any future planned disturbances greater than 1 m (3.28 ft.) in depth be archaeologically monitored (Fox et al. 1976).

In January 1977, Anne Fox was afforded another opportunity to excavate at the Alamo, ahead of the replacement of flagstone pavers in front of the Long Barrack. On this occasion, Fox supervised the excavation of a trench in order to locate an *acequia* that Greer had observed during his 1966 excavations (Greer 1967). The 3.6 m (12 ft.) long and 1.5 m (5 ft.) deep trench was positioned in the street, near the southwest corner of the Long Barrack (Fox 1977). This north-south oriented trench failed to locate the *acequia*, so another shorter trench was excavated perpendicular to the Long Barrack. This east-west trench exposed the wall footings, allowing for an inspection of the barrack's wall foundation. Fox noted that the restored walls appeared to be positioned on the original wall footings. These same excavations exposed a thin caliche layer at a depth of about 55.8 cm (22 in.) that seemed to represent a resurfacing episode dating to the U.S. Army occupation of circa 1847-1877. Spanish Colonial artifacts were noted from between 60.9 and 121.9 cmbs (24 and 48 in.; Fox 1977).

In March 1977, Jack Eaton of the CAR conducted test excavations in advance of repaving in front of the Alamo Church. Eaton and staff excavated 12 1-x-1 m and 1.5-x-1.5 m (10.76-x-10.76 ft. and 16.15-x-16.15 ft.) units in an area between the front door of the church and its southwest corner (Eaton 1980). The purpose of this study was to excavate and sample the soil stratigraphy and to expose and examine the building foundation. Eaton concluded that the substratum in front of the church was practically undisturbed and revealed succeeding layers of datable artifacts. These excavations also located an 1836 palisade emplacement and associated battle-related artifacts. The wall foundation at the southwest corner was found to be in relatively good condition. This area was found to be fairly intact, suggesting a high probability that additional cultural remnants are present, so it was recommended that this area be protected from future disturbances (Eaton 1980:48).

In 1977, major plans for the development of the area west of Alamo Plaza were underway. The plans included the construction of a major hotel, a multi-story parking garage, and a pedestrian mall that would link Alamo Plaza with the San Antonio River. The Project Area was bordered by Houston Street to the north, E. Crockett Street to the south, Losoya Street to the west, and South Alamo Street to the east. The CAR was contracted in order to develop a history of the block and offer recommendations on essential archaeological excavations (Fox and Ivey 1979:1).

Plans to reconstruct the north wall of the courtyard compound spurred the next round of excavations (Ivey and Fox 1997:1-2). Five units were excavated in March 1979 (Phase I), and another two units were excavated in February 1980 (Phase II). Phase II of the project was carried out as an addendum due to changes to the initial plans. The units were excavated along the west end of the north wall in order to determine if there were any earlier walls and/or footings in this area and to expose and assess the condition of the existing wall footing (Ivey and Fox 1997). These excavations successfully provided the required architectural data as well as insight of the 1836 Battle of the Alamo. Ivey and Fox (1997:41) concluded that the area within the Cavalry Courtyard may contain intact archaeological deposits and that any additional disturbances require archaeological testing.

An extensive investigation of an area on the west side of Alamo Plaza was conducted between July 1979 and June 1980. Ivey (1983) of CAR supervised the archaeological project, working ahead of the planned demolition of a building to make way for a pedestrian mall that would link Alamo Plaza to the San Antonio River Walk. The Project Area was the southwest corner of the original Alamo compound, as shown in Figure 4-1. Ivey was able to locate and record the foundations of adobe buildings, the west wall of the Alamo compound, and the route of an *acequia* (Ivey 1983).

An area adjacent to Alamo Hall, at the southeast corner of the Alamo compound, was excavated by the CAR in January 1980. This was in response to the installation of a drainage system along the east side of Alamo Hall. Four units were excavated within a 16.67-x-21.67 m (50-x-65 ft.) area. These excavations located the wall foundations of the likely home and kitchen of former Reconstructionist (1867-1872) mayor, Wilhelm Carl August Thielepape, 1814-1904 (Albrecht 1976:16; Nickels 1999:6). Given the amount of mixing of eighteenth- through twentieth-century artifacts, the substratum in this area was found to be heavily disturbed (Nickels 1999:20).

Figure 4-1. Excavations at the Alamo.

During the summers of 1988 and 1989, CAR conducted successive field schools in the Alamo Plaza (Fox 1992). Fred Valdez and Joel Gunn directed test excavations of two areas on the Alamo Plaza, just west and southwest of the Alamo Church. These excavations located and mapped defensive fortifications at the south entrance to the compound and recovered a wealth of colonial artifacts. Results of these excavations suggest that intact archaeological deposits are extant within 25.4 to 50.8 cm (10 to 20 in.) below the modern surface in this area (Fox 1992:75). Fox recommended additional excavations at the southwest corner of the Alamo property, which would likely provide information regarding the 1836 Battle of the Alamo.

Between mid-1988 and early 1991, staff from CAR conducted archaeological monitoring for the Tri-Party Improvements Project in downtown San Antonio (Cox 1992). These improvements were meant to revitalize and beautify a 70-block area of downtown. The Project Area impacted the Main Plaza, Military Plaza, and La Villita Historic Districts, as well as the Alamo Plaza Historic District. These construction activities resulted in locating and documenting several segments of the San Pedro Acequia (41BX337), as well as several historic-period wall foundations. Trenching along South Alamo Street further exposed a defensive fortification that had been located during the 1989 UTSA-CAR Field School. In conclusion, this multi-year project did not adversely impact a significant number of buried cultural resources, owing to the fact that the amount of ground disturbance was minimal (Cox 1992:35)

Between July 1991 and April 1993, Lone Star Archaeological Services, under the direction of Alton Briggs, conducted test excavations and monitoring in advance of improvements to the Alamo Sales Museum. The areas tested proved to be heavily disturbed, most likely due to mid-to-late nineteenth-century construction of commercial interests. The study did note that the U.S. Army diverted a section of the *acequia* to an area east of the Convento (circa 1848) and that the 1936-1937 WPA reconstruction moved the *acequia* channel slightly to the east of its original channel (Tomka et al. 2008:71-72).

In April 1994, as part of the Alamo Plaza Study Committee, the San Antonio City Council contracted the CAR to undertake an "Historical Overview of Alamo Plaza and Campo Santo" (Hard, ed. 1994). As a result, the study offers a thorough review of the literature as it relates to the history and archaeology of the plaza and cemetery. Hard (ed. 1994:71-73), at the time, concluded that there was potential for a cemetery in front of the Alamo Church and that hand-dug excavations and/or augering would be the best way to confirm the location and determine the limits.

In January and February 1995, CAR (Meissner 1996) conducted limited excavations and monitoring along the interior and exterior south transept wall. These excavations were necessary in order to expose the wall foundations and attempt to remedy a serious rising damp problem. A 1.83 m (6 ft.) wide area was excavated along the entire length of the interior and exterior sides of the south transept wall. Meissner (1996:101-103) concluded the stratigraphy at the interior of the south transept to be relatively intact but found the exterior deposits to be heavily disturbed. Considering the potential for burials, excavations along the interior wall were kept to a minimum. Excavations along the exterior wall ceased at about 60.96 cm (24 in.) below the surface, after having exposed the top edge of the wall foundation. At this same level, a layer of hard-packed caliche was exposed but not excavated.

In 1995, Tom Guderjahn, PhD of St. Mary's University led the highly publicized "Alamo Well Project" (Uecker 1995). The fieldwork was directed by Herbert Uecker, and a 4.57-x-4.57 m (15-x-15 ft.) area was excavated on Alamo Plaza, west of the Alamo Church. Among the recovered artifacts were ceramic sherds and animal bone, dating to between the Spanish Colonial and early twentieth century. The sterile area beneath the extant cultural material was subsequently excavated with a backhoe to 4.57 m (15 ft.) below the surface, in a futile search for the original Alamo well and cache of "precious metals" dating to the 1836 battle (Uecker 1995:1). Nothing of note resulted from this deeper mechanical probe.

The CAR sponsored a third summer field school at the Alamo in 2006. The field school was directed by Kristi Nichols (Zapata and McKenzie 2017). This archaeological study was completed in support of a master plan that would outline the direction of future developments within the Alamo compound. Three areas were selected for study: Area 1 was located along the east end of the north wall; Area 2 was located at an interior corner along the south edge of the Long Barrack; and Area 3 was located along the east wall of the Convento Courtyard. The selected areas represented portions of the compound that were slated for impact, as identified within the Alamo Master Plan Report (Ford, Powell and Carson 2011). A total of 10 units were excavated, and only three of these had intact Spanish Colonial deposits. Two features were located and recorded at the north wall, and no features were noted in the other two areas. The two features were likely trash pits or middens and were found in association with Spanish Colonial deposits (Zapata and McKenzie 2016:41-43).

In late December 2014, Kristi Nichols conducted an archaeological monitoring project of ground disturbance related to the installation of electrical conduits and three postholes for an arbor installation at the far northeast corner of

the Alamo compound. The amount of subsurface disturbance related to the installation of electrical conduits was minimal, and the postholes were excavated to less than 60.96 cmbs (24 in.). The shallow nature of these excavations did not impact any probable archaeology in this area (Nichols 2014:17).

During the summer of 2016, a team of archaeologists from Pape-Dawson Engineers, Raba-Kistner Environmental Consultants (RKEI), and CAR excavated areas along the south and west walls of the Alamo compound in support of the Alamo Master Plan (Anderson et al. 2018). The work by Anderson and colleagues (2018:50-67) presents a comprehensive review of previous investigations. Building on the results of the earlier studies, the plan was to excavate an area at the west wall and south wall of the compound in order to determine the compound's boundaries and living surfaces at the southwest corner of the compound. Despite noted disturbances, the results of the testing indicated the existence of pockets of features and deposits dating to between the Spanish Colonial and nineteenth century (Anderson et al. 2018:204-205).

The CAR archaeological fieldwork reported in the current report was completed concurrently with another conducted by RKEI, but under separate Texas Antiquities Permits. While the CAR fieldwork involved areas along the compound's perimeters, the RKEI study was completed in order to respond to a series of comprehensive structural concerns involving the Long Barrack and the Alamo Church.

Chapter 5: Field and Laboratory Methods

The CAR was tasked with testing and monitoring multiple impact areas situated within the boundaries of Alamo Plaza. Originally these areas included six locations, designated Areas 1 through 6, along the outer perimeters of the site that were designed for security upgrades. One of these locations, Area 3, was redesigned to protect a feature, and was split into Area 3a and 3b sections. Two additional areas, related to the installation of handrails and ramps and designated Area 7, were located on either side of Alamo Plaza Street.

Field Methods

Given the site's extraordinarily high visitation, the TX-GLO and Alamo Trust coordinated with the contractor, Jerdon Enterprises, LP, and CAR in scheduling the required work. This allowed for the least amount of disruption to pedestrian access to the site. The locations were often worked concurrently and in segments, with the complement of CAR staff split between work locations.

One hundred and eighty two shovel tests and 14 test units were excavated. CAR staff used standard shovel test and unit level forms and maintained a daily log of activities. Location and attribute data were collected using a hand-held Trimble GPS unit. All activities observed were documented and supported by digital data, including photographs and photo log.

In Areas 1 through 6, CAR staff shovel tested to depths of between 60 and 80 cmbs (23.6 and 31.5 in.), with the surface being the adjoining hardscape. Shovel tests were about 30 cm (11.8 in.) in diameter and excavated in arbitrary 10 cm (3.9 in.) levels. In some cases, shovel tests stopped short of the planned terminal depth, if the excavation encountered utilities, large rocks, or concrete. Excavated soils were screened through one-quarter inch hardware cloth, and artifacts collected and returned to the CAR lab for further analysis.

The results of the shovel testing then determined the need for additional testing. Fourteen test units were excavated in an effort to determine the nature and extent of six features. As a result of the additional testing, two of the features were found to be non-features. While most of the test units were 1-x-1 m (3.3-x-3.3 ft.) in size, a few were smaller 50-x-50 cm (1.6-x-1.6 ft.) or 50-x-100 cm (1.6-x-3.3 ft.), and all were excavated in arbitrary 10 cm (3.9 in.) levels. All soils were screened through one-quarter inch hardware cloth, and artifacts collected and returned to the CAR lab for further analysis.

If the results of the shovel testing were negative, CAR then requested clearance from the OHP and the THC to allow the contractor to proceed with mechanical grading of a specific area. Once cleared by the OHP and the THC, CAR staff would then monitor the excavation and document any unforeseen features and, in a few cases, collect artifacts. As will be presented in the results section, Area 2, Area 3b, Area 4, and Area 5 did not require additional testing. Area 7 was less involved, since the removal of hardscape and subgrade was minimal; no more than 30.5 cm (12 in.) of hardscape were removed. Nonetheless, given this area's close proximity to the chapel, the construction work was monitored by CAR staff with negative results.

Laboratory Methods

All artifacts recovered from test units and shovel tests were collected. At the discretion of the Project Archaeologist, CAR screened some of the sediments generated during monitoring of construction excavations, and artifacts found in these sediments were collected. All collected material, with associated provenience information, was transported to the CAR laboratory for processing, analysis, and curation pursuant to requirements in the permit.

Human Remains

The potential for human remains is an issue throughout the Alamo Compound. CAR staff were instructed that should human remains be encountered during any portion of the fieldwork, CAR staff would immediately stop work in that area and notify the TX-GLO, COSA, and THC. Such a scenario would initiate discussions with these agencies on how to proceed. If isolated human remains unassociated with an intentional human burial were identified in the field or lab, then CAR would consult with the TX-GLO, COSA, and THC on how to proceed. All handling of human remains was to conform to conditions of the State Health and Safety Code (Chapter 711), and the agreed upon human remains protocol for this project. Consistent with that protocol, tribal monitors were present throughout the excavations. However, no human remains were found during this project.

Additional Lab Analysis and Curation Preparation

Throughout the project, the analysis and organization of records, artifacts, and daily logs was ongoing. All records generated during the project were prepared in accordance

with federal regulations 36 CFR Part 79 and THC requirements for State Held-in-Trust collections. Field forms were printed on acid-free paper and completed with pencil. Artifacts collected during the investigation were transported to the CAR laboratory, washed, air-dried, and stored in 4 mil zip-lock, archival-quality bags. Any materials needing extra support was double-bagged, and acid-free labels were placed in all artifact bags. Each laser printer generated label included provenience information and a corresponding lot number. Artifacts were separated by class and stored in acid-free boxes that were labeled with standard tags.

At the conclusion of the project, all field notes, forms, photographs, and drawings were placed in labeled archival folders. Digital photographs were printed on acid-free paper and placed in archival-quality page protectors. All records generated during the project were prepared in accordance with federal regulations 36 CFR Part 79 and THC requirements for State Held-in-Trust collections. All project related material, including the final report, are permanently stored at the CAR facilities in accession file number 2294.

Chapter 6: Project Results

As per THC requirements, installation of bollards included some level of archaeological testing in advance of construction to evaluate the areas for significant archaeological deposits and/or human remains. The bollard installation required excavations in several locations (Figure 6-1). Shovel testing of Areas 2, 4, and 5 was uneventful, while Areas 1, 3, and 6 required test units in order to mitigate probable features. Additional testing and documentation of Feature 2 in Area 1, and Features 5 and 6 in Area 6 allowed the bollard install to proceed. The results of additional testing of Feature 1 in Area 3, however, resulted in a redesign request from the OHP and the THC. A second area, designated 3b, was located about 2 m east; Area 3b was also shovel tested. Area 7 involved construction monitoring for the installation of ramps with handrails. As specified in the site plans, the work in Area 7 required a minimal amount of below-surface impact, but archaeological monitoring was conducted as a precautionary measure.

The following is a summary of the results related to each of the areas tested and/or monitored. The affected areas are presented sequentially, although not necessarily worked in this manner. Areas 1, 4 and 6 were segmented and worked in phases to minimize impacts on pedestrian traffic. Supporting provenience data for recovered artifacts are provided in appendices for shovel tests (Appendix A) and test units (Appendix B).

Area 1 Testing

Area 1 was an arc-shaped area located at the south end of the Project Area, off the corner of Alamo Plaza and E. Crockett Street (Figures 6-1 and 6-2). Area 1 was approximately 2 m (6.6 ft.) wide and 28 m (91.8 ft.) long. The contractor delineated the area and then saw-cut and removed about 20 cm (7.9 in.) of hardscape with CAR staff monitoring. The asphalt and concrete rubble were then hauled away. This manner of demolition was repeated in all seven areas.

Area 1 Shovel Testing

Having exposed the caliche subgrade, CAR staff marked the location of 44 shovel test, each 50 cm (19.7 in.) away from the north and south edges of the area and at 1 m (39.4 in.) intervals, from east to west. Some small areas at the east end were not tested due to exposed concrete duct banks. Most of the shovel tests in Area 1 were excavated to 60 cmbs (23.6 in.) of the adjacent street pavement. The shovel tests at the east end of Area 1 were excavated to 80 cmbs (31.5 in.) because this area was where the sidewalk had been and it was 20 cm (7.9 in.) higher than the adjoining street pavement. The excavated fill in this area consisted of a mix of caliche base, sand (marking utilities), and a clay and cobble fill. Several abandoned utility lines were located during shovel testing, with two active lines located at the far eastern end. Ten of the shovel tests stopped short of the desired depth, due to encountering utilities and/or large rocks. Of the 44 shovel tests, only six were positive (Figures 6-2 and 6-3; Table 6-1).

Area 1 Shovel Testing–Artifacts

The recovered artifacts from shovel testing in Area 1 amounted to a small number of lithic, organic, glass, and construction material. Two fragments of lithic debitage were recovered, as was 18.4 grams (0.65 oz.) of faunal bone. Also recovered were two fragments of ferrous, unidentifiable metal, an amber-colored glass shard from a bitters bottle, and 122.5 g (4.3 oz.) of construction material. The construction material consisted of charred slate, slag, brick and mortar fragments that was all recovered from disturbed contexts.

Having completed shovel testing, CAR staff requested clearance from the OHP and THC to allow the contractor to mechanically grade the east half of Area 1 to 60 cmbs (23.6 in.). Clearance was given, with CAR staff monitoring the excavation. CAR staff noted two possible features during monitoring, at which point work was stopped and OHP and the THC were alerted. The two probable features were designated Feature 2 and Feature 3.

Area 1–Feature 3, Test Units 5 and 7

Feature 3 was a dense mass of lime and sand slurry with large fist-size cobbles at its highest point. The feature was 1.8 m (6.0 ft.) from north to south and 2.4 m (8.0 ft.) from east to west. The feature was close to the surface, just below the removed hardscape at the north, and then lower and fanned outward to the southeast and southwest. Two test units (TUs 5 and 7) were excavated in an attempt to determine the nature and extent of the feature (Figure 6-4).

Feature 3 was swept, and the edges distinguished by varying color and soil textures of the feature were exposed. CAR staff then excavated TU 5 (50-x-50 cm; 19.7-x-19.7 in.) along the east edge of the feature and excavated the test unit in two levels. The first level began at 54 cmbs (21.3 in.) and extended to 70 cm (27.5 in.). Excavation was through a hard-packed silty clay with no artifacts. The second level was excavated to 80 cmbs (31.5 in.) within which a single lithic flake was

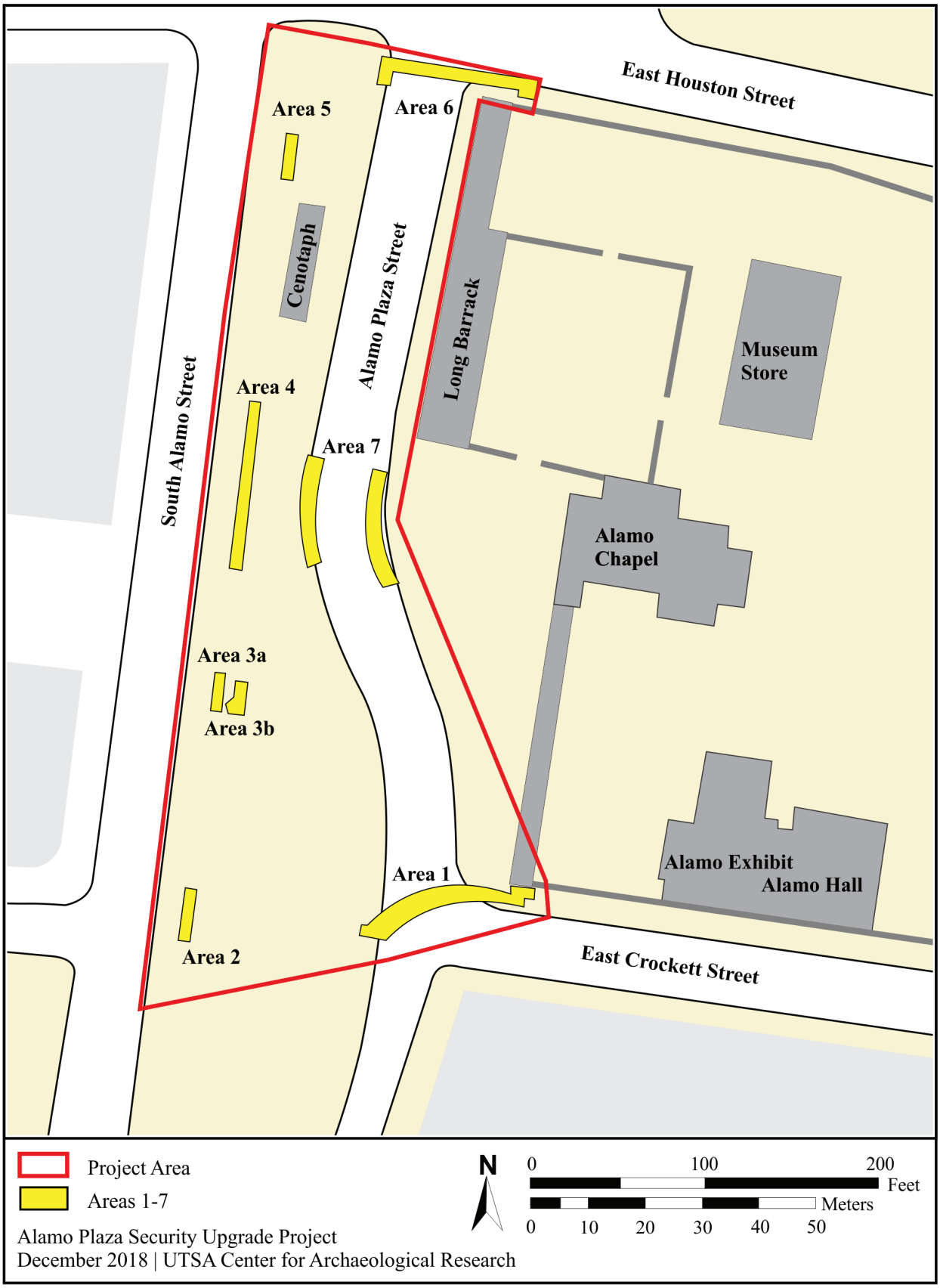

Figure 6-1. Location of Areas 1 through 7 within the Project Area.

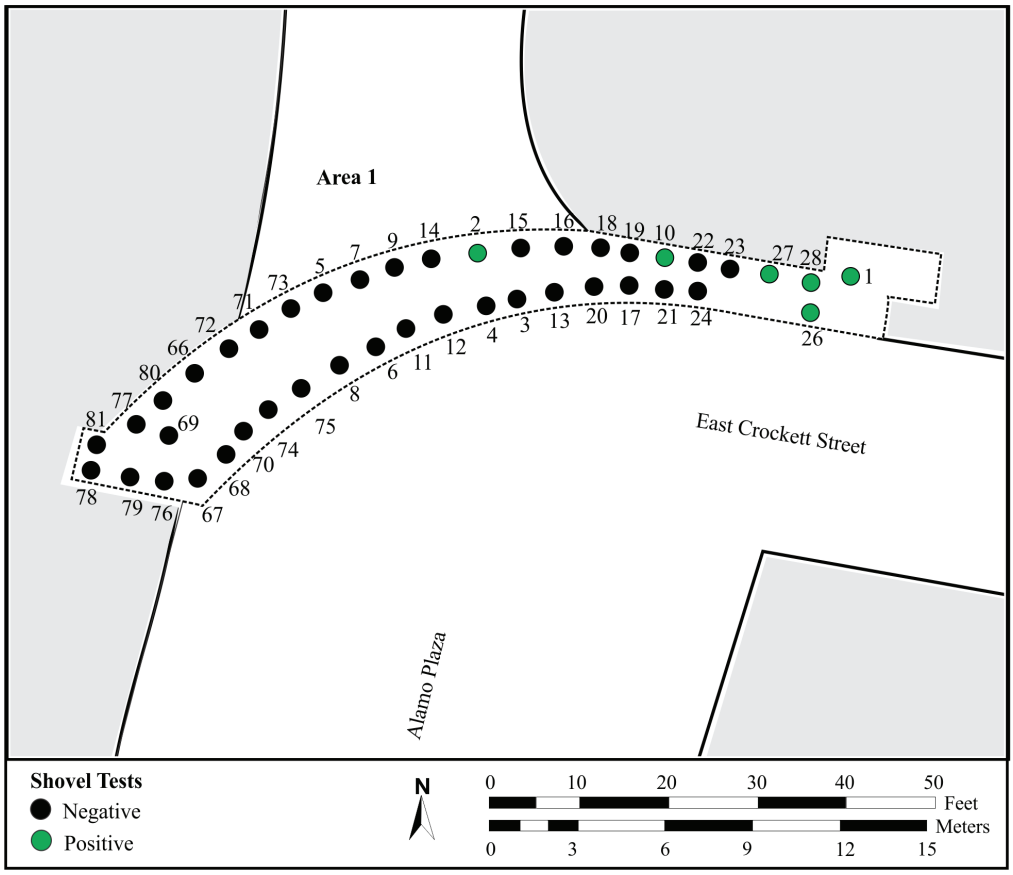

Figure 6-2. Shovel test locations in Area 1, noting positive and negative results.

Figure 6-3. Excavation at east end of Area 1, ST 23 and ST 27 in progress.

Table 6-1. Area 1 Positive Shovel Tests

Depth (cm)	ST 1	ST 2	ST 10	ST 26	ST 27	ST 28
0-10	-	-	-	-	-	-
10-20	-	Metal	-	-	-	-
20-30	Glass	Tile, Debitage	-	-	-	-
30-40	-	-	-	-	-	-
40-50	-	-	-	-	Brick, Slag, Metal, Faunal bone	-
50-60	-	-	-	-	Brick, Slag, Debitage, Faunal bone	Plaster
60-70	-	-	Slate	-	-	-
70-80	-	-	-	Faunal bone	-	-

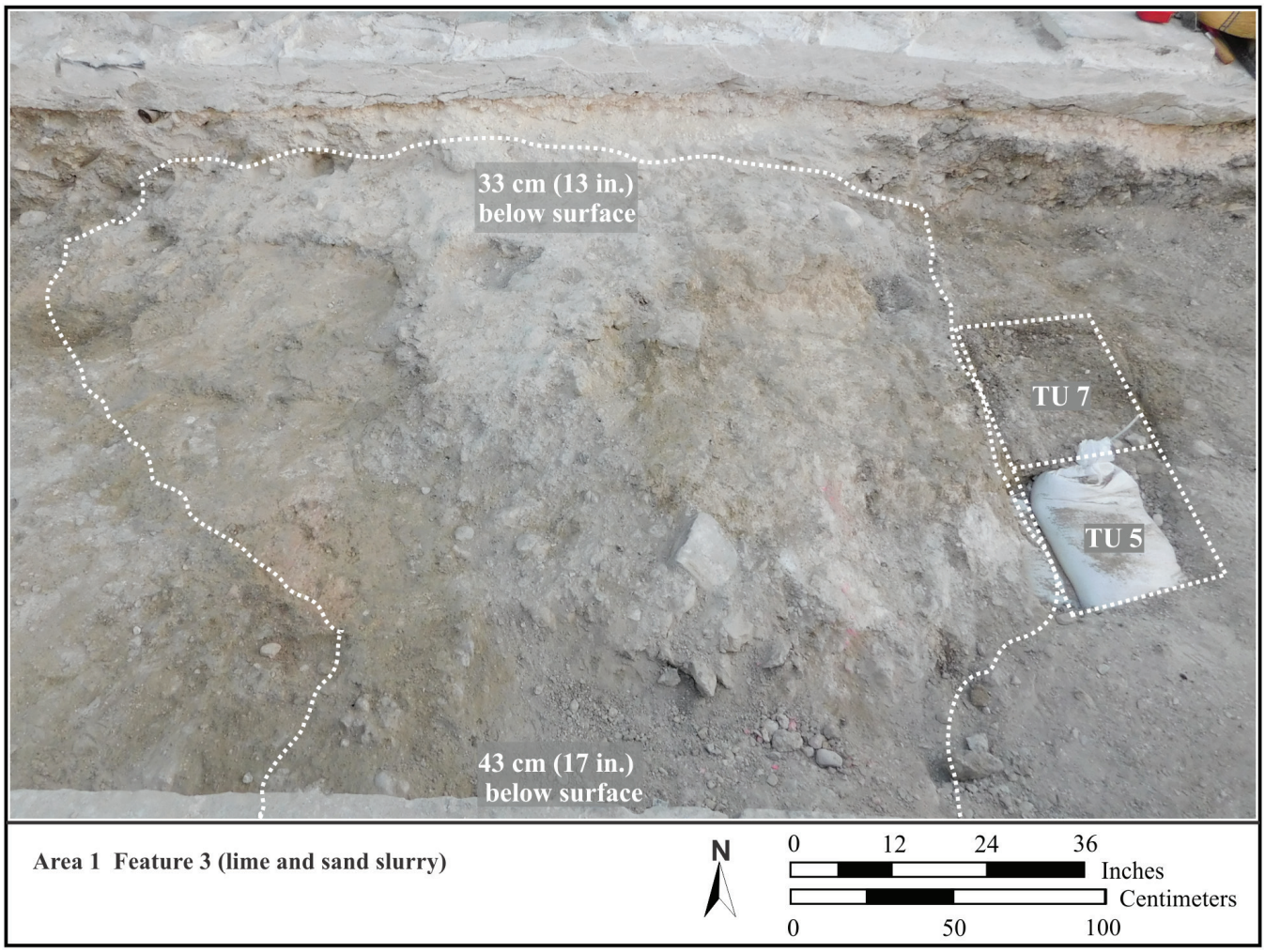

Figure 6-4. Feature 3 and location of TU 5 and TU 7 (facing north).

recovered. A 10 cm (3.9 in.) diameter auger was then used to probe to 155 cm (45.3 in.). A small fragment of red plastic was recovered from the sifted soil sample. The red plastic fragment was believed to be marking a utility line, so probing ceased. A second 50-x-50 cm (19.7-x-19.7 in.) test unit (TU 7) was excavated adjacent to and north of TU 5. Test Unit 7 was also excavated to 80 cm (31.5 in.) below datum. As in the case of TU 5, no artifacts were recovered from the first level of hard-packed silty clay, but the second level did produce a brick fragment and an unidentifiable metal fragment. After consulting with the OHP and the THC, the contractor was allowed to hand-excavate this area to the required depth of 80 cmbs (31.5 in.). CAR staff monitored the hand-excavation of Feature 3 with negative results. The area was leveled, and no additional features or artifacts were observed.

Area 1–Feature 2, Test Units 9, 10, and 11

A second feature in Area 1 was discovered at the east end, where two large limestone blocks were noted at 60 cmbs (23.6 in.). Once cleaned off, the nature and extent of Feature 2 remained unclear, although it was an alignment and most likely remnants of a wall footing. After consulting with the OHP and the THC, CAR staff were advised to excavate a series of test units in order to determine the extent of the feature. Test Unit 9 was placed above the stone feature in order to determine the width (Figure 6-5).

Two additional test units, TU 10 and TU 11, were added on either side of TU 9 in order to determine the width of the feature. An abandoned 2.5 cm (1 in.) water line was exposed at 45 cmbs (17.7 in.) in TU 9, and a 15.2 cm (6 in.) electrical conduit was located at 80 cmbs (31.5 in.) in TU 10. Excavation of the east half of TU 10 stopped at 60 cm (23.6 in.) since the feature did not extend into this area. The west half of TU 10 was then excavated to 80 cm (31.5 in.) in order to document the full extent of the feature (see Figure 6-6, 6-7, 6-8).

As seen in Figure 6-6 (TU 10 wall profile), the depth of the rubble-constructed wall footing is irregular. It is likely that

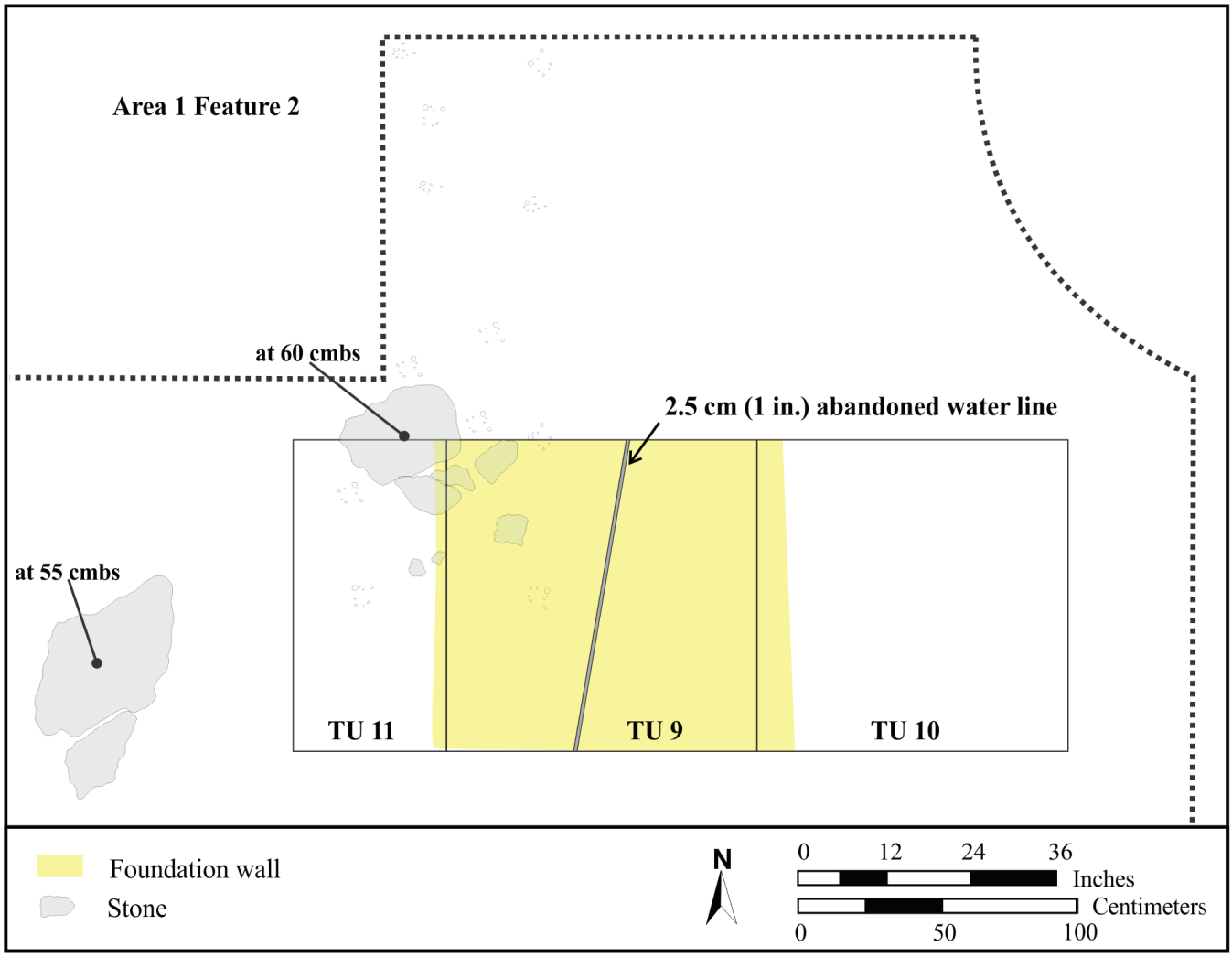

Figure 6-5. Feature 2, noting placement of TUs 9, 10, and 11.

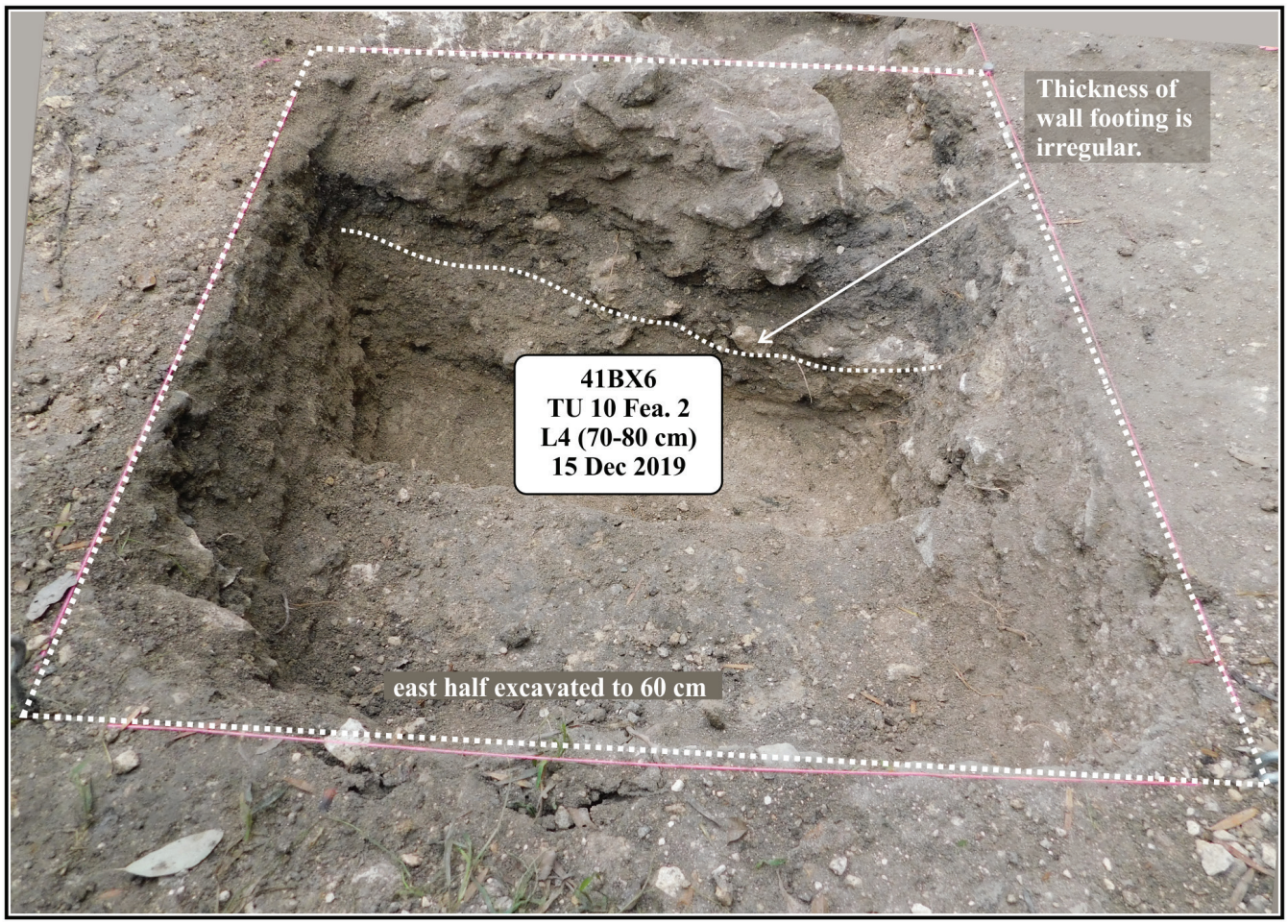

Figure 6-6. Area 1, Feature 2, west wall profile; note depth of footing is irregular (facing west).

the depth of the wall footing trench was uneven. Test Unit 11 was excavated along the west side of TU 9 in order to determine the width of the footing. Excavation of TU 11 did expose the west edge of the wall footing (Figure 6-7). The installation of the two utility lines that run diagonally through Feature 2 damaged the wall footing and strata. The exposed wall footing is roughly 1.1 m (3.6 ft.) wide, a width that would suggest the above grade construction may have been massive. However, the depth and irregularity of the wall footing suggests a less substantial construction. As discussed in Chapter 3, a review of historical period maps failed to locate a structure precisely in this area. The feature location was georeferenced and plotted on an 1885 Sanborn Fire Insurance Map, and the nearest building (wall) would have been 5 m (16.4 ft.) to the east.

Having fully excavated and documented Feature 2, and in consultation with the OHP and THC, the contractor was allowed to hand-excavate the area to 65 cm below the grade (street level) in order to prepare the area for the bollard installation. The stone rubble footing was removed, and no evidence of the feature remained intact.

Feature 2 Artifacts

Two fragments of faunal bone, amounting to 2.9 g (0.10 oz.), were recovered by CAR staff as the area around Feature 2 was being cleaned. The faunal bone, a deer vertebrae and an unidentifiable fragment, were found within 1 m (39.4 in.) of the feature and at a depth of 55-60 cm (21.7-23.6 in.) below grade. No other artifacts were observed in this area.

Testing of Feature 2 produced additional artifacts (Table 6-2). Excavation of TU 9 resulted in the recovery of one ceramic sherd, possibly Pearlware, and a small fragment of plaster, one cut nail, an unidentifiable metal fragment, and one fragment of faunal bone (1.5 g; 0.05 oz.). All of these were recovered from between 29 and 50 cm (11.4 and 19.7 in.) below datum in TU 9. Excavation of TU 9 stopped at 50 cm (19.7 in.). Excavation of Feature 2 was extended to the east of TU 9. The east half of TU 10 was excavated 60 cm (23.6 in.) below the datum and the west half to 80 cm (31.5 in.) below the datum, which resulted in the recovery of numerous artifacts. Ten ceramic sherds were recovered, as were five glass shards, five metal unidentifiable fragments,

and two pieces of lithic debitage. In addition, 184.4 g (6.5 oz.) of assorted construction material was collected, as was 150.8 g (5.3 oz.) of faunal bone. Most of the construction material consisted of 118.2 g (4.2 oz.) of concrete and asphalt fragments, recovered from between 50 and 70 cm (19.7 and 27.6 in.) below the datum.

One unique artifact recovered was from TU 10, 40-50 cm (15.7-19.7 in.) below the datum, which was a Redware, effigy pipe bowl fragment (Table 6-2; see Figure 7-6). The pipe bowl fragment is of a head, crowned with laurel. This is most likely a "President Pipe", with the likeness of Millard Fillmore embossed, which dates to between 1850 and 1853 (Pfeiffer et al. 2007:16-17). No artifacts were recovered from TU 11.

Area 2 Testing

Area 2 was located along the east side of S. Alamo Street, across from E. Crockett Street. The area was about 2 m (6.6 ft.) wide and 8 m (26.2 ft.) long. CAR staff monitored the removal of hardscape, which exposed a dark clay

Figure 6-7. Area 1, Feature 2, completed excavations of TUs 9, 10, and 11 (view north).

Table 6-2. Artifacts Recovered from Feature 2 (TU 9 and TU 10)

Superclass	Count	Weight (g)	Weight (oz.)
Construction	-	198.6	7.00
Metal	-	64.5	2.28
Glass	6	-	-
Ceramics	11	-	-
Faunal	30	147.36	5.2
Lithics	2	15.5	0.55

underlayment with patches of sand. The exposed surface was very uneven, with the starting depth being between 10 and 29 cmbs (3.9 and 11.4 in.).

Area 2 Shovel Testing

CAR staff marked the location of six shovel test, 1 m (39.4 in.) away from the west edge of the area and at 1 m (39.4 in.) intervals, from north to south (Figure 6-8). CAR staff had planned to excavate the shovel tests in Area 2 to 80 cmbs (31.5 in.), the level of the adjacent hardscape. Of the six shovel tests, three were excavated to 80 cm (31.5 in.), with the other three shovel tests stopping at between 60 and 70 cm (23.6 and 27.6 in.) due to the presence of utilities. Of the six shovel tests, only one (ST 34) was positive. An abandoned utility line (7.6 cm [3 in.] metal pipe) was located by the contractor along the length of Area 2 (Figure 6-9).

Area 2 Shovel Testing - Artifacts

Only one of the six shovel tests was positive. Shovel Test 34 produced a hand-blown, olive-colored glass shard from between 30 and 40 cmbs (11.8-15.7 in.). Given the negligible find in this area, CAR staff requested clearance to allow the contractor to mechanically grade the area to 60 cm (23.6 in.). Having secured clearance from the OHP and the THC, CAR staff then monitored grading of Area 2 and in the process recovered another olive-colored glass shard, a porcelain insulator fragment, and faunal bone. All of these artifacts were recovered from the southeast corner of Area 2. The subgrade in this area was extremely disturbed, likely a result of the installation hardscape, concrete steps, handrails, and utilities. No additional testing or monitoring was required in this area. However, as a result of a change in design plans for this part of the Alamo Plaza, the security

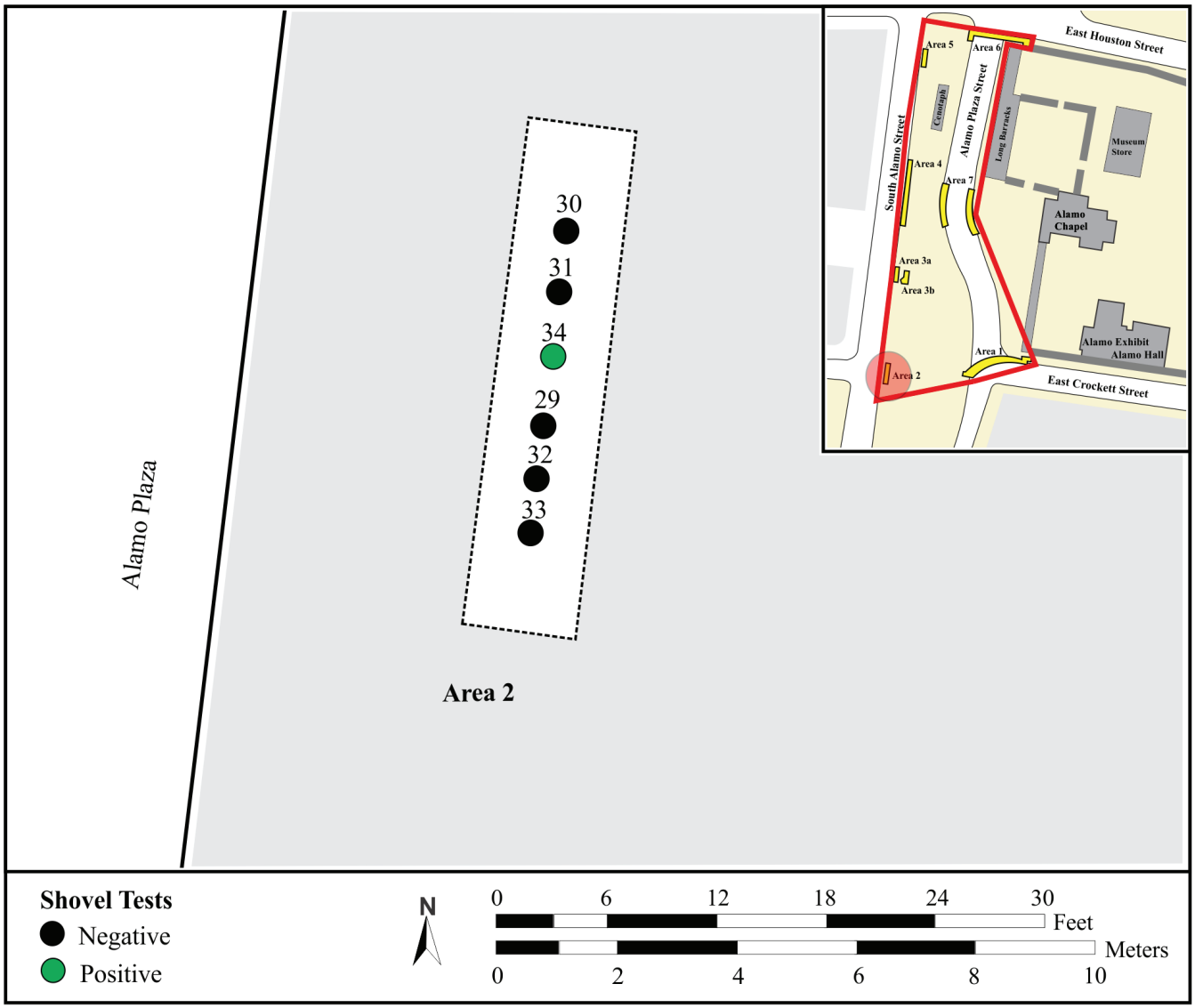

Figure 6-8. Area noting location of positive and negative shovel tests. Inset highlights general location (red circle) of Area 2.

Figure 6-9. Area 2, showing locations of three of the six shovel test.

bollards were not installed in Area 2. The area was then restored to its preconstruction condition.

Area 3a Testing

Area 3a was located along the east side of S. Alamo Street, about 30 m (98.4 ft.) north of Area 2. This area was about 2 m (6.6 ft.) wide and 4 m (13.1 ft.) long. CAR staff monitored mechanical removal of the hardscape, which exposed a hard-packed caliche base.

Area 3a Shovel Testing

CAR staff marked the location of each of the 6 shovel tests 1 m (39.4 in.) away from the east edge of the area and at 1 m (39.4 in.) intervals, from north to south (Figure 6-10). Five of the six stopped between 45 and 57 cm (17.7 and 22.4 in.), as a result of hitting a dense layer of rocks. After having broken through a dense layer of cobbles, ST 35 was excavated to 75 cm (29.5 in.). Of the six shovel tests, only one was positive. A small faunal bone fragment was recovered from ST 36.

Area 3a Test Units 1, 2, 3, 4, 6, and 8 at Features 1 and 4

CAR staff requested clearance from OHP and THC to excavate TU 1 to investigate the anomalies found during shovel testing in Area 3a. These anomalies included termination of five shovel tests at relatively the same depth, signaling a possible feature, and the presence of spoils which included limestone

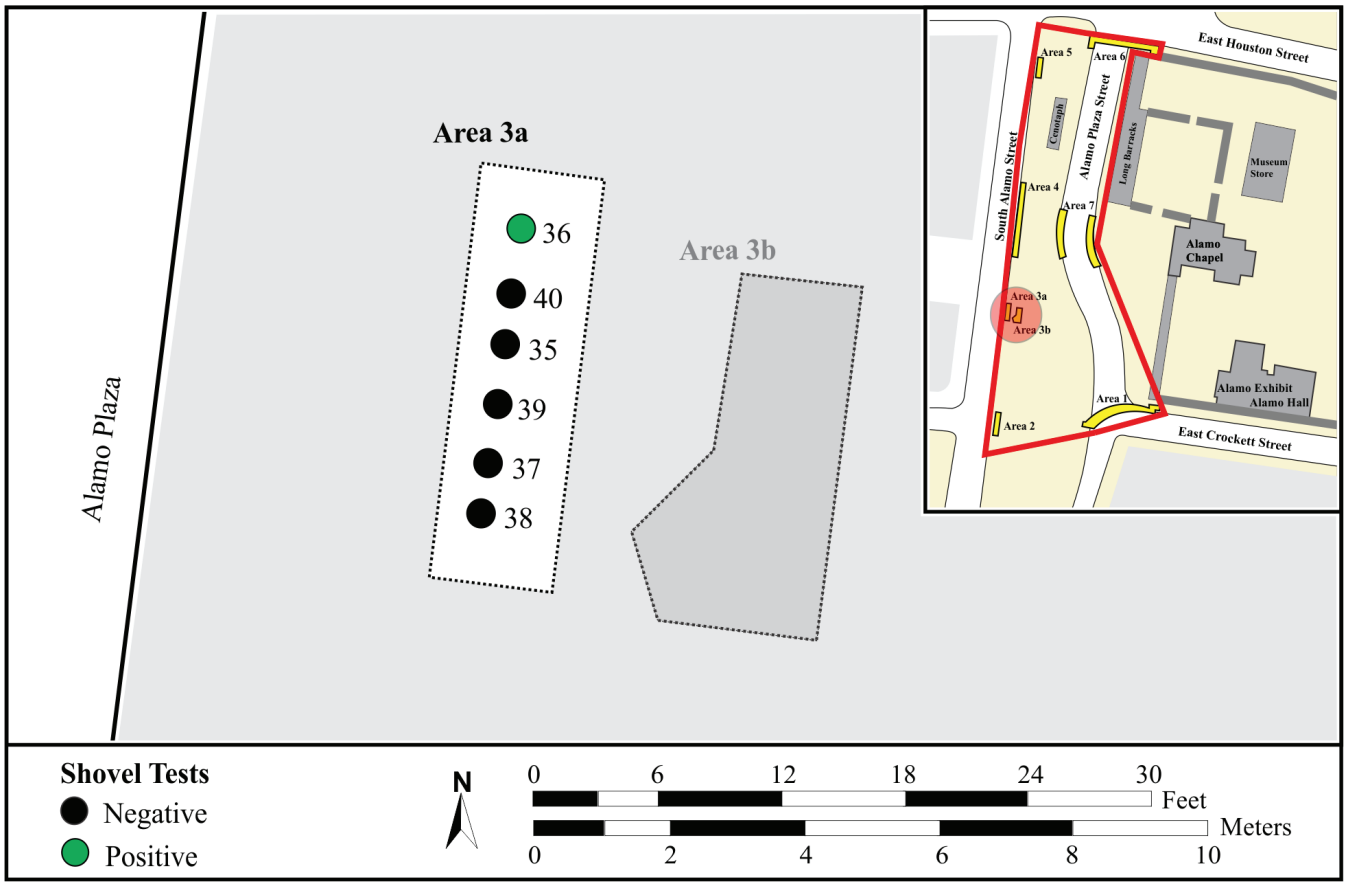

Figure 6-10. Area 3a noting location of positive and negative shovel tests. Inset shows location of Area 3 (red circle).

and chert cobbles. CAR staff initially believed that the anomalies related to the late nineteenth- to early twentieth-century plaza, due to an overlay of Area 3a onto a sidewalk on the 1912 Sanborn map. However, Area 3a is also located in the vicinity of Mission San Antonio de Valero's south wall gate and the fortified lunette (half-moon shape trench), which was constructed during the Siege of Bexar (Figure 6-11; see also Anderson et al. 2018: Figure 2).

Excavation of TU 1 did not reveal a sidewalk but a homogenous layer of what appeared to be lime mortar with limestone cobbles that was designated Feature 1. This excavation exposed the feature's irregular surface, between 30 and 43 cmbs (11.8 and 16.9 in.). To further expose and interpret Feature 1, a second unit (TU 2) was excavated adjacent to and east of TU 1.

Test Unit 2 was 50-x-100 cm (19.7-x-39.4 in.), and its size was constrained by width of Area 3a. Excavation of TU 2 was completed in four levels. The first level excavated was through a hard-packed clay and gravel fill, with only one wire nail recovered. The clay and gravel fill continued into the second level with an abrupt change to a hard, silty clay with about 25 percent gravels. A small assortment of construction material, glass, lithic, and faunal bone were recovered. Excavation through the very hard, silty clay matrix continued into the third level, which contained only about five percent gravels. This third level was excavated to 40 cm (15.7 in.) and resulted in the recovery of more construction material, glass, ceramics, lithic, and faunal bone. The fourth and final level excavated continued through the very hard, silty clay and stopped at an irregular cobble-lined surface, between 42-46 cmbs (16.5-18.1 in.). Additional artifacts were recovered consisting of more construction material, glass, ceramics, lithic, and faunal bone.

Given the presence of Spanish Colonial (1700-1821) artifacts and the expanding footprint of Feature 1, the OHP and THC recommended additional testing of Area 3. Two test units were excavated on either side of TU 1. Test Unit 3 was excavated south of TU 1, and TU 4 was excavated to the north of TU 1.

Test Unit 3 was excavated in six levels, exposing a very irregular surface between 47 and -60 cm (15.7-23.6 in.) at Level 6. The surface was high along the west wall profile and dipped considerably to the east. At one point, it was believed that a second feature had been located, and it was designated Feature 4. After further consideration, CAR staff concluded that this was an extension of Feature 1. The excavated soil matrix was similar to that of TU 2, as excavations proceeded

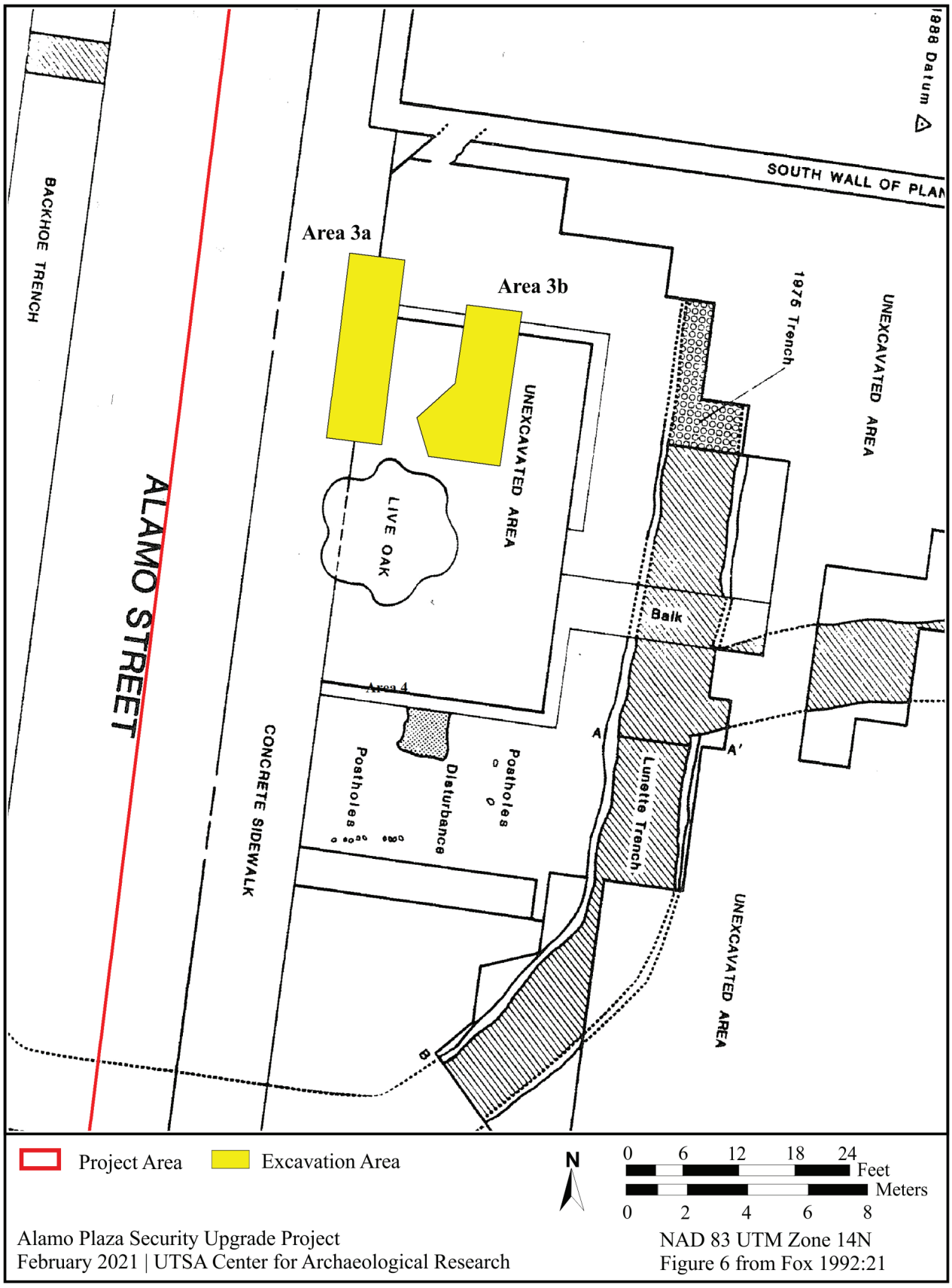

Figure 6-11. Location of Area 3a and 3b plotted on plan view taken from Fox (1992:21).

through very hard-packed silty clay with decreasing gravels at the lower levels. An assortment of artifacts was recovered from TU 3 and included construction material, ferrous metal, glass, ceramics, lithic, and faunal bone. However, a 1995 penny was recovered from Level 6, suggesting a recent disturbance.

Test Unit 4 was excavated just north of TU 1 and stopped at Level 4, between 43 and 48 cm (16.9 and 18.9 in.). The soil matrix noted along the west wall profile was a clay and cobble fill with traces of sand. The type of recovered artifacts was similar to previous material collected from Area 3a. There was a mix of construction, glass, metal, ceramics, lithic, and faunal bone, among the recovered artifacts. In an effort to explore the extent of Feature 1 to the north, two additional test units (TUs 6 and 8) were recommended by the OHP and THC.

Test Unit 6 was excavated adjacent to and north of TU 4. The cobble-lined floor of TU 6 was further excavated in order to determine the depth of Feature 1, with the excavation terminating at Level 6, 80 cmbs (31.5 in.). The cobble-lined floor was shallow, and the number of recovered artifacts dwindled considerably at about 65 cm (25.6 in.). The usual mix of construction, glass, metal, ceramics, lithic, and faunal bone, were among the recovered artifacts. Excavation of Level 6 (70-80 cmbs) was through a hard-packed layer of degraded limestone, and no artifacts were recovered.

Test Unit 8 was excavated adjacent to and north of TU 6. It was a 1-x-1 m (39.4-x-39.4 in.) unit and excavated to between 45 and 48 cm (17.7 and 18.9 in.). Excavation of the first 10 cm (3.9 in.) was through a very hard layer of sandy clay with about 80 percent gravels, followed by a layer of hard-packed silty clay and 70 percent gravels. The final level excavated was through a compact silty clay with only 25 percent gravels. The number of artifacts recovered from TU 8 was less abundant than those recovered from TU 6 and consisted of metal, glass, ceramics, and faunal bone. Wire nails were among the artifacts recovered from the final level excavated, which would indicate mixed deposits.

Having excavated six test units, and after consulting with the OHP and THC, it seemed likely that Feature 1 was related to the post-1835 construction of a lunette at the south gate. Given the extent of the cut into the area's hardscape, additional testing was not possible at this time; the width and length of the exposed area was tested to depth of the feature (Figure 6-12). Excavation of Area 3a noted that Feature 1, at its highest point, is only 30 cm (11.8 in.) below the hardscape surface (Figure 6-13). After some discussion between the CAR, the OHP, and THC, the TX-GLO was encouraged to consider a redesign of the bollard installation in this area. The redesign relocated the bollard installation about 2 m (6.7 ft.) to the east, and the new location was designated Area 3b.

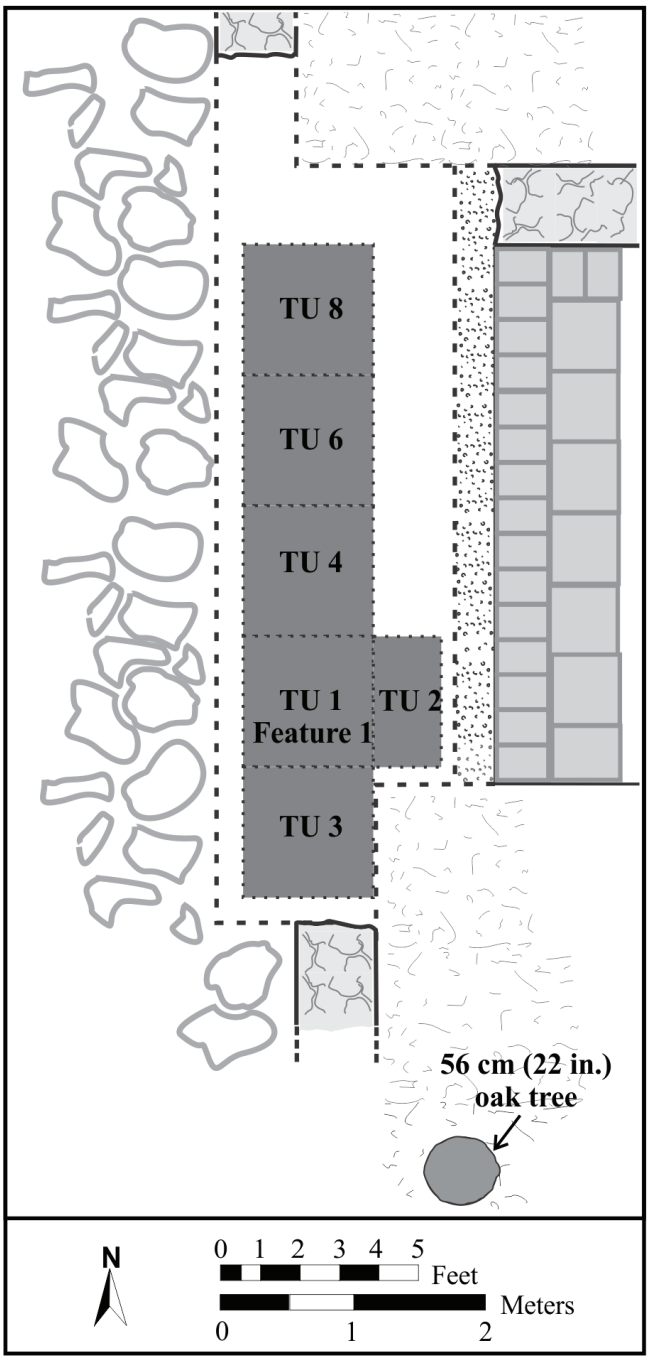

Figure 6-12. Plan view of Area 3, test units.

Feature 1-Artifacts

Numerous artifacts were recovered from Feature 1, and most were classified as construction material or metal (Table 6-3). Over 200 g (7.05 oz.) of construction material was recovered. This material consisted of fragments of asphalt, brick, mortar/plaster, and slag. The amount of metal recovered amounted to

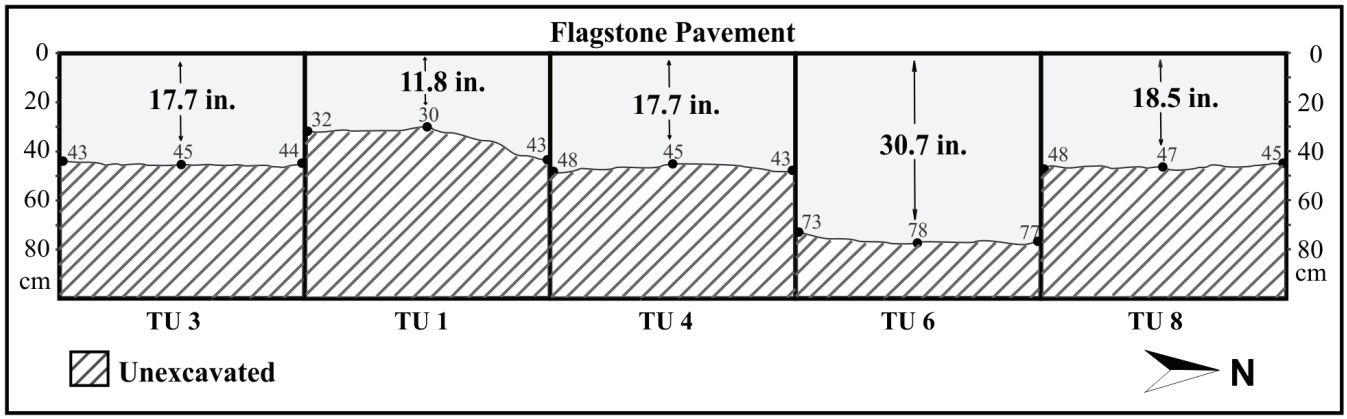

Figure 6-13. Area 3, west elevation; depth below pavement also shown in inches.

over 400 g (14.12 oz.) and consisted of nails, strap, wire, and unidentifiable ferrous metal.

One hundred and five shards of glass were recovered, with just under half being hurricane lamp glass (n=61). The personal items consisted of a fragmented ring (n=2) and one 1995 penny. A variety of ceramics (n=25) were recovered and included Native, Spanish, European, and other ceramics.

Feature 1-Protective Measures

Testing of Feature 1 suggests that this cobble-lined feature possibly relates to a post-1835 modification of the south gate. A better understanding of this feature would have required expanding the excavations to the north and east, but such expansion was not possible based on the SOW. Having secured a redesign of the installation of the bollards, the OHP and the THC required that the feature be safeguarded for future consideration.

CAR staff photo documented the area, obtained GPS readings, and produced field drawings of Area 3. Sandbags were placed inside the deeper test units to level the excavation areas. Two layers of commercial-grade geo-fabric were then placed over the excavation units. The area was leveled off with a 15.2-20.3 cm (6-8 in.) layer of sand, followed by a layer of caliche base (Figure 6-14), and then the hardscape was replaced.

Area 3b Testing

The bollard redesign for this area placed Area 3b about 2 m (6.6 ft.) east of Area 3a (Figure 6-15). This area was originally about 2 m (6.6 ft.) wide and 4 m (13.1 ft.) long. CAR staff monitored the mechanical removal of the hardscape, which exposed a hard-packed layer of sand. Believing that the sand might be covering an area excavated by Fox (1992), the OHP and THC suggested shovel testing to 80 cmbs (31.5 in.), rather than 60 cm (23.6 in.).

Initially, nine shovel tests were completed in Area 3b. CAR staff then marked the location of each shovel test 50 cm (19.7 in.) away from the west and east edge of the area and at 1 m (39.4 in.) intervals, from north to south. Of the nine shovel tests, two (STs 102 and 107) were positive. An additional 2-x-2.5 m (6.6-x-8.2 ft.) cut was added to the south, which required the excavation of two additional shovel tests (ST 110 and ST 111), and of the two shovel tests, ST 110 was positive.

Area 3b Shovel Testing-Artifacts

Artifacts were recovered from mixed deposits in ST 102, ST 107, and ST 110. The recovered material consisted of faunal bone, debitage, and artifacts related to construction (Table 6-4).

Table 6-3. Artifacts Recovered from Feature 1

Superclass	Count	Weight (g)	Weight (oz)
Construction	-	203.10	7.16
Metal	-	477.73	16.85
Glass	105	-	-
Personal	3	-	-
Ceramics	25	-	-
Faunal Bone	132	150.71	5.32
Lithics	37	-	-

Figure 6-14. Protective covering over Feature 1, Area 3: 1) sandbags in low spots, 2) two layers of geo-fabric, 3) 15.2-20.3 cm (6-8 in.) layer of sand, and 4) caliche base covering (images 1, 2, and 4, view to the south and image 3, view to the north).

Area 4 Testing

This area is located along S. Alamo Street, directly across from the Crockett Building. Area 4 was about 2 m (6.6 ft.) wide and 26 m (85.3 ft.) long. CAR staff monitored the removal of hardscape, which exposed a caliche underlayment. After having removed the hardscape, the exposed surface was uneven, with the starting depth being between 18-34 cmbs (7-13.4 in.). A 4.5 m (15 ft.) area at the north end and a 2 m (6.6 ft.) area at the south end could not be tested due to the presence of utilities.

Area 4 Shovel Testing

Thirty-one shovel tests were laid out in Area 4. CAR staff marked the location of each shovel test 50 cm (19.7 in.) away

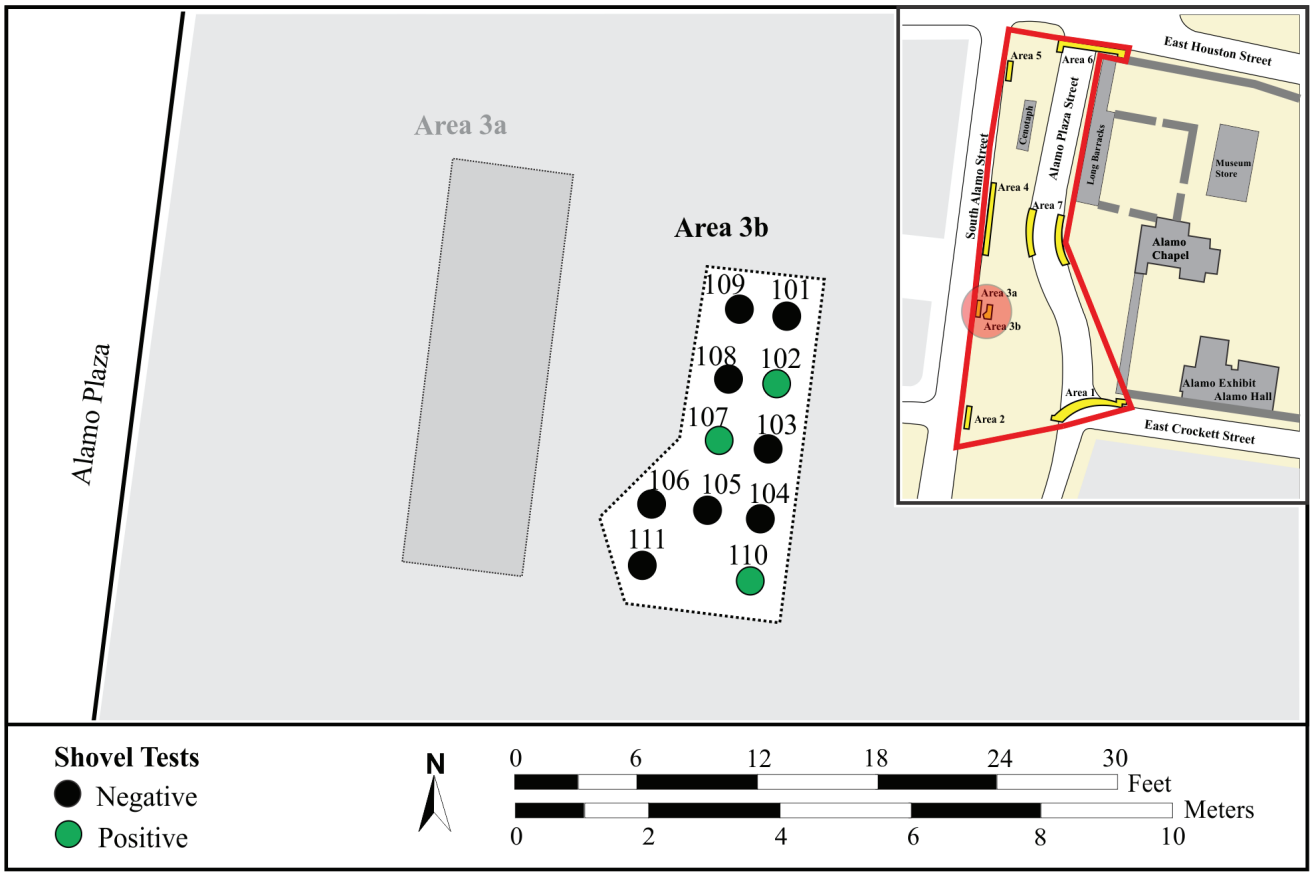

Figure 6-15. Area 3b noting location of positive and negative shovel tests. Inset shows location of Area 3 (red circle).

Table 6-4. Area 3b Shovel Test Results

Depth (cm)	ST 101	ST 102	ST 103	ST 104	ST 105	ST 106	ST 107	ST 108	ST 109	ST 110	ST 111
0-10	-	-	-	-	-	-	-	-	-	-	-
10-20	-	-	-	-	-	-	-	-	-	-	-
20-30	-	-	-	-	-	-	-	-	-	-	-
30-40	-	-	-	-	-	-	-	-	-	-	-
40-50	-	-	-	-	-	-	-	-	-	-	-
50-60	-	Debitage, Metal, Mortar, Plaster	-	-	-	-	Debitage, Faunal bone	-	-	-	-
60-70	-	-	-	-	-	-	-	-	-	-	-
70-80	-	-	-	-	-	-	-	-	-	Cut stone, Wire nail	-

from the west and east edge of the area and at 1 m (39.4 in.) intervals, from north to south (Figure 6-16). CAR planned to excavate all shovel tests in this area to 60 cm (23.6 in.) below the uneven surface. Five shovel tests were stopped before the desired depth after encountering rocks, and another two STs stopped due to utilities. Of the 31 shovel tests, only two were positive (STs 43 and 92; Table 6-5)

Area 4 Shovel Testing-Artifacts

Shovel Test 43 produced an amber-colored glass shard between 60 and 70 cm (23.6-27.6 in). A fragment of red plaster was recovered from ST 92 between 50 and 60 cm (19.7-23.6 in). Given that only two artifacts were recovered and the mixed deposits in Area 4, CAR staff requested

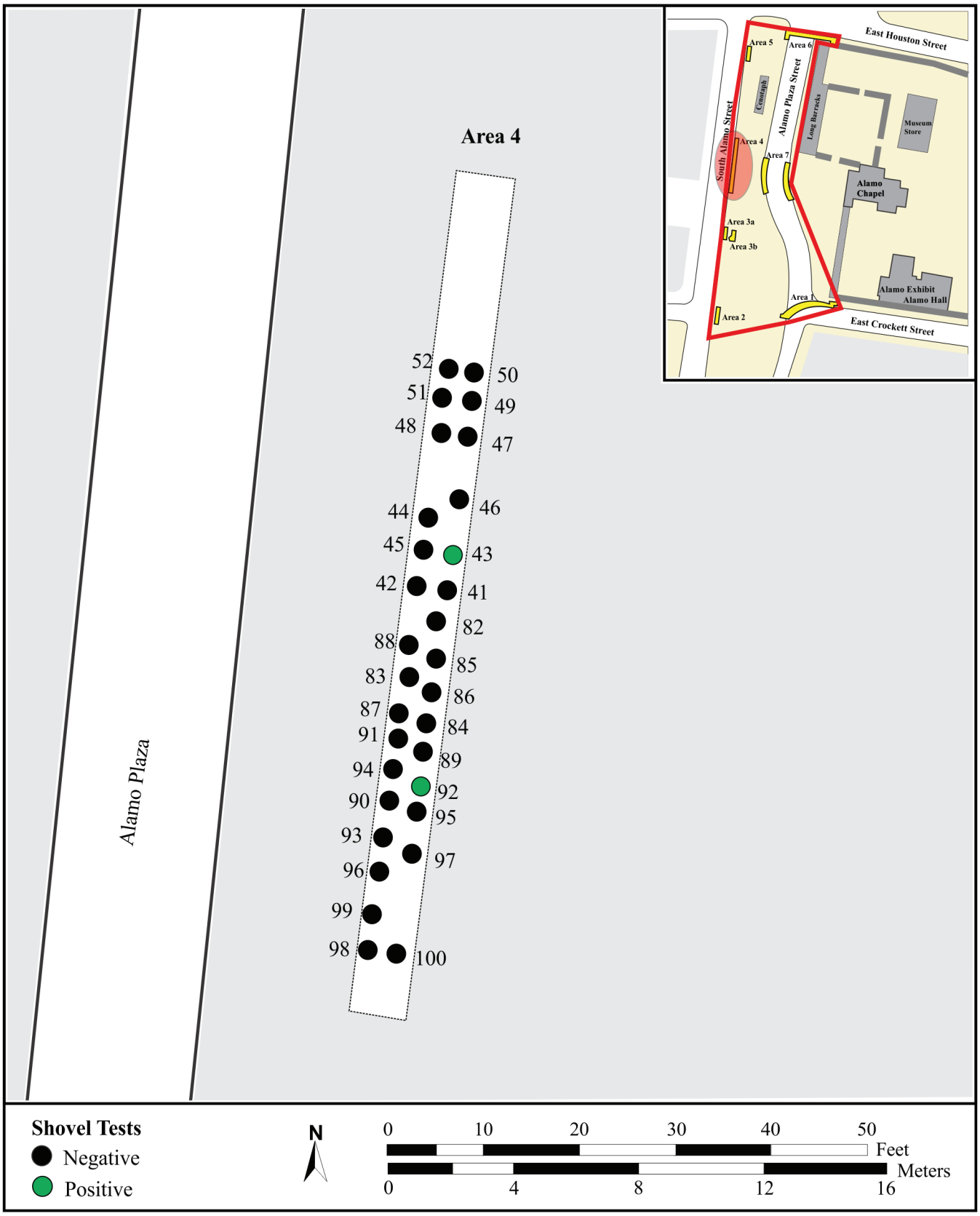

Figure 6-16. Area 4 noting location of shovel tests. Inset shows location of Area 4 in red circle.

Table 6-5. Area 4 Positive Shovel Tests

Depth (cm)	ST 43	ST 92
0-10	-	-
10-20	-	-
20-30	-	-
30-40	-	-
40-50	-	-
50-60	-	Plaster
60-70	Glass	-
70-80	-	-

clearance to allow the contractor to mechanically grade the area to 60 cmbd. The OHP and the THC agreed, and the grading proceeded with CAR staff monitoring. Monitoring of the area produced a circa 1950 chrome-plated bumper guard, recovered from the northeast corner of Area 4. The north and south ends of the area were heavily disturbed by the installation of irrigation lines and electrical conduit at either end of Area 4 (Figure 6-17). This long trench exposed a series of earlier asphalt, brick, and concrete pavement along the length of the east wall profile. Along the opposite side of this same excavation was a layer of concrete and caliche underlayment (Figure 6-18).

Area 5 Testing

Area 5 was located at the northwest corner of the Alamo Compound, off the southeast corner of South Alamo and E. Houston Streets (Figure 6-19). The area was 2 m (6.6 ft.) wide and 6 m (19.7 ft.) long. CAR staff monitored the removal of hardscape, which exposed a caliche underlayment. The exposed underlayment was irregular, and the starting depth varied between 36 and 50 cmbs (14.2 and 19.7 in.).

Area 5 Shovel Testing

Thirteen shovel tests were excavated in Area 5, with each shovel test positioned 50 cm (19.7 in.) away from the west and east edge of the area and at 1 m (39.4 in.) intervals, from north to south (Figure 6-19). All 13 shovel tests in this area were excavated to 60 cm (23.6 in.) below the uneven surface. There were no obstructions in this area, and all of the shovel tests were negative.

Area 5 Shovel Testing–Artifacts

Based on the negative results, CAR staff requested clearance from the OHP and the THC to allow the contractor to mechanically excavate this area to 65 cm (25.6 in.). The additional 5 cm (2 in.) was needed in order to install the bollards as per specifications. Having secured clearance from the OHP and the THC, the area was mechanically excavated with CAR staff monitoring. A few horseshoes (n=4) and nails (n=2) were collected from the final 3-4 cm (1.1-1.5 in.) during monitoring.

Figure 6-17. Area 4 note utility disturbance at the north (left) and south (right) ends.

Figure 6-18. Area 4 excavation profiles; opposite sides of same location.

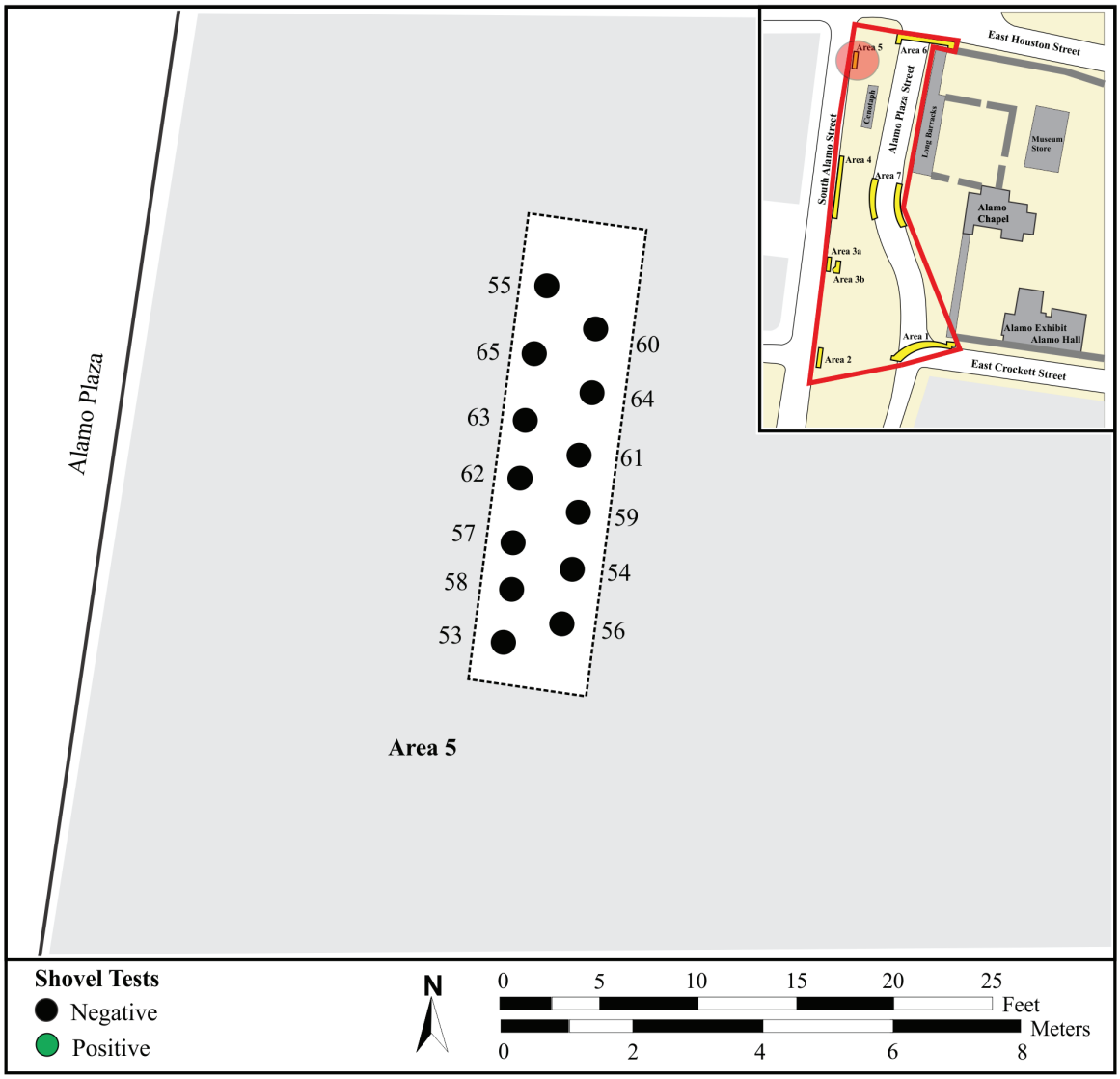

Figure 6-19. Area 5, noting location of shovel tests. Inset shows location of Area 5 (red circle).

Area 6 Testing

Area 6 was located at the north end of the Alamo Compound, at the corner of E. Houston and Alamo Plaza Streets. Area 6 was 2 m (6.6 ft.) wide and 30 m (98.4 ft.) long. Work in Area 6 was completed in two segments, with the west half (Figure 6-20) completed first, then the east half (6-21). CAR staff monitored the removal of hardscape in both areas, which exposed a hard-packed caliche underlayment. In the interest of clarity, testing and monitoring of this area is presented as Area 6, West and Area 6, East.

The underlayment was very irregular in both areas. Along the west half of Area 6, the depth of the caliche underlayment was between 25 and 37 cmbs (9.8 and 14.6 in.). The exposed caliche underlayment at the east half of Area 6 was very irregular, with the depth being between 19 and 45 cmbs (7.5 and 17.7 in.).

Area 6, West–Shovel Testing

CAR staff marked the location of the 28 shovel test in area 6 west, with each located 50 cm (19.7 in.) away from the north and south edge of the area and at 1 m (39.4 in.) intervals, from east to west. Three of the 28 were positive (see Figure 6-20; Table 6-6).

Area 6, West-Monitoring

Having completed shovel testing of the west half of Area 6, CAR staff requested clearance from the OHP and THC to allow the contractor to mechanically grade the area. Clearance was given, with CAR staff required to closely monitor the grading. The results of the monitoring noted a 20 cm (7.9 in.) wide strip of, possibly intact, dark soil along the north edge of Area 6 at 60 cmbs (23.6 in.). Two of the three

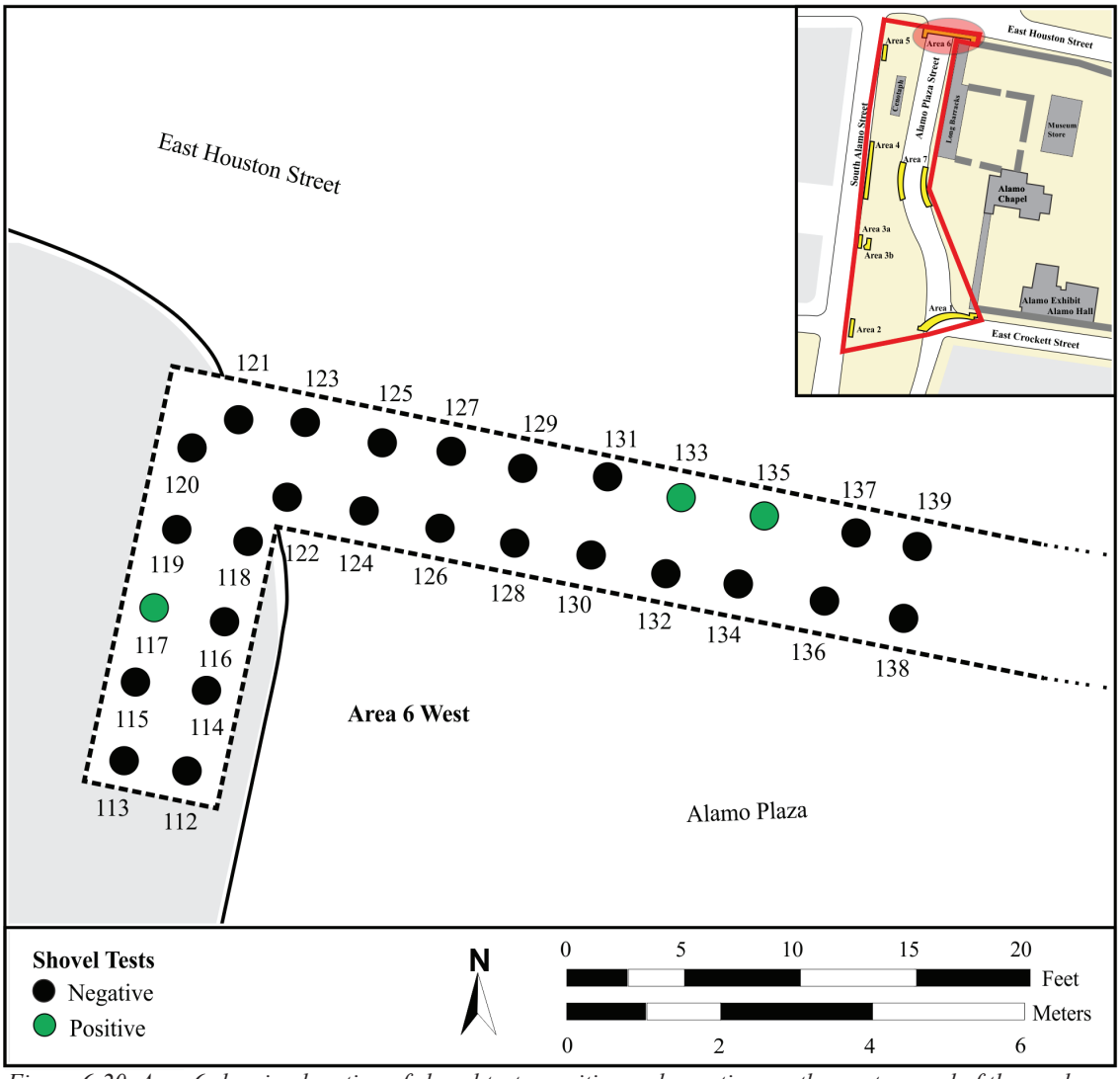

Figure 6-20. Area 6 showing location of shovel tests, positive and negative, on the western end of the work. Inset shows location of Area 6 (red circle).

Table 6-6. Area 6 Positive Shovel Tests

Depth (cm)	ST 117	ST 133	ST 135	ST 140	ST 141	ST 145	ST 146	ST 148	ST 150	ST 152	ST 153	ST 155	ST 157	ST 158
0-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-30	-	-	-	-	-	-	-	-	-	-	-	-	-	--
30-40	N	-	-	-	-	-	-	-	-	-	D	-	-	-
40-50	-	Um	D	-	Um	-	-	-	-	Fcr, Um	C14	-	-	P
50-60	-	-	C	-	-	P	G, N	Um	-	-	-	D, C14, Sl	P	N, S
60-70	-	-	-	D, G	-	W	-	-	D	-	-	-	-	-
70-80	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Depth (cm)	**ST 160**	**ST 164**	**ST 167**	**ST 168**	**ST 170**	**ST 172**	**ST 173**	**ST 174**	**ST 176**	**ST 177**	**ST 179**	**ST 180**	**ST 181**	**ST 182**
0-10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20-30	-	-	-	-	-	-	-	-	-	-	Co	Fb	C, Fb, G	C, Co, Fb, Fcr, Sl
30-40	-	-	-	-	-	-	-	-	-	-	Fb, Pl, Sl	-	-	-
40-50	Um	C14, D, N	-	A, Fcr, P	-	S	-	C, D	-	Cr, Co, Sl, Um	Sl, T	-	-	-
50-60	-	C14	C	C, Fb, Fcr, P	C	D, P	-	C, W	A, C, Um	Sl	-	-	-	-
60-70	-	-	-	-	-	P	-	-	-	-	-	N, Sl	-	-
70-80	-	-	-	-	-	-	A, B, Fcr	-	-	-	-	-	-	-

A = Asphalt; B = Brick; C = Ceramics; Co = Coal; Cr = Concrete; C14 = Charcoal; D = Debitage; Fb = Faunal Bone; Fcr = Fire-cracked Rock; G = Glass; N = Nail; P = Plaster; S = Shell; Sl = Slag; T = Tile; Um = Unidentifiable Metal; W = Wood

positive shovel tests (ST 133 and ST 135) were located along this north edge. The remainder of the 2 m (6.6 ft.) wide area was heavily disturbed and composed of a dark cobble and clay matrix. Installation of bollards along the west half of Area 6 moved forward, clearing the way for testing along the east half of Area 6.

Area 6, East–Shovel Testing

The location of shovel tests along the east half included additional shovel tests along the center. This increased the number of shovel tests in the east half, with a total of 43 shovel tests completed (Figure 6-21). Over half of the 43 shovel tests were positive (n=25).

Removal of the hardscape and rubble along the east half of Area 6 exposed a very irregular caliche base surface. Given this area's close proximity to the Long Barrack, shovel testing along the east half was to 80 cmbs (31.5 in.), rather than 60 cm (23.6 in.). Based on earlier studies (see Fox 1977; Ivey and Fox 1997), concerns in this area were centered on a strong potential for impacting wall remnants and human remains. The results of the shovel testing along the east half underscored these concerns, with half of the shovel tests being positive and the recovery of an abundance of historical artifacts in mixed deposits. The apparent mixing is attributable to the installation of utilities in this area, which had impacted previously intact soils.

Area 6 Shovel Testing-Artifacts

With the possible exception of the 20 cm strip noted above, no additional intact soils were discovered in Area 6, and the assortment of recovered artifacts is a mix of Spanish Colonial to twentieth century material. The recovered artifacts from the west half of Area 6 consisted of one wire nail (ST 117) and one unidentifiable metal fragment (ST 133). In addition, a lithic flake and a Spanish Colonial ceramic sherd were recovered from ST 135. These four artifacts were recovered from a disturbed context of clay and cobble fill.

The number of artifacts recovered from shovel testing along the east half of Area 6 was greater, but these were also recovered from disturbed contexts. A large mix of construction-related material (457.5 g; 16.1 oz.) was recovered and was comprised of fragments of asphalt, brick, and mortar/plaster. There was also glass (n=4), nails (n=6), and unidentifiable ferrous metal (105.7 g; 3.7 oz.). One Goliad ware (Native ware) sherd was recovered, as were nine Spanish Colonial sherds. Lithic material was also present (n=17), as was 29.35 g (1.0 oz.) of faunal bone, 36.5 g (1.9 oz.) of coal, and 18.9 g (0.7 oz.) of wood chips.

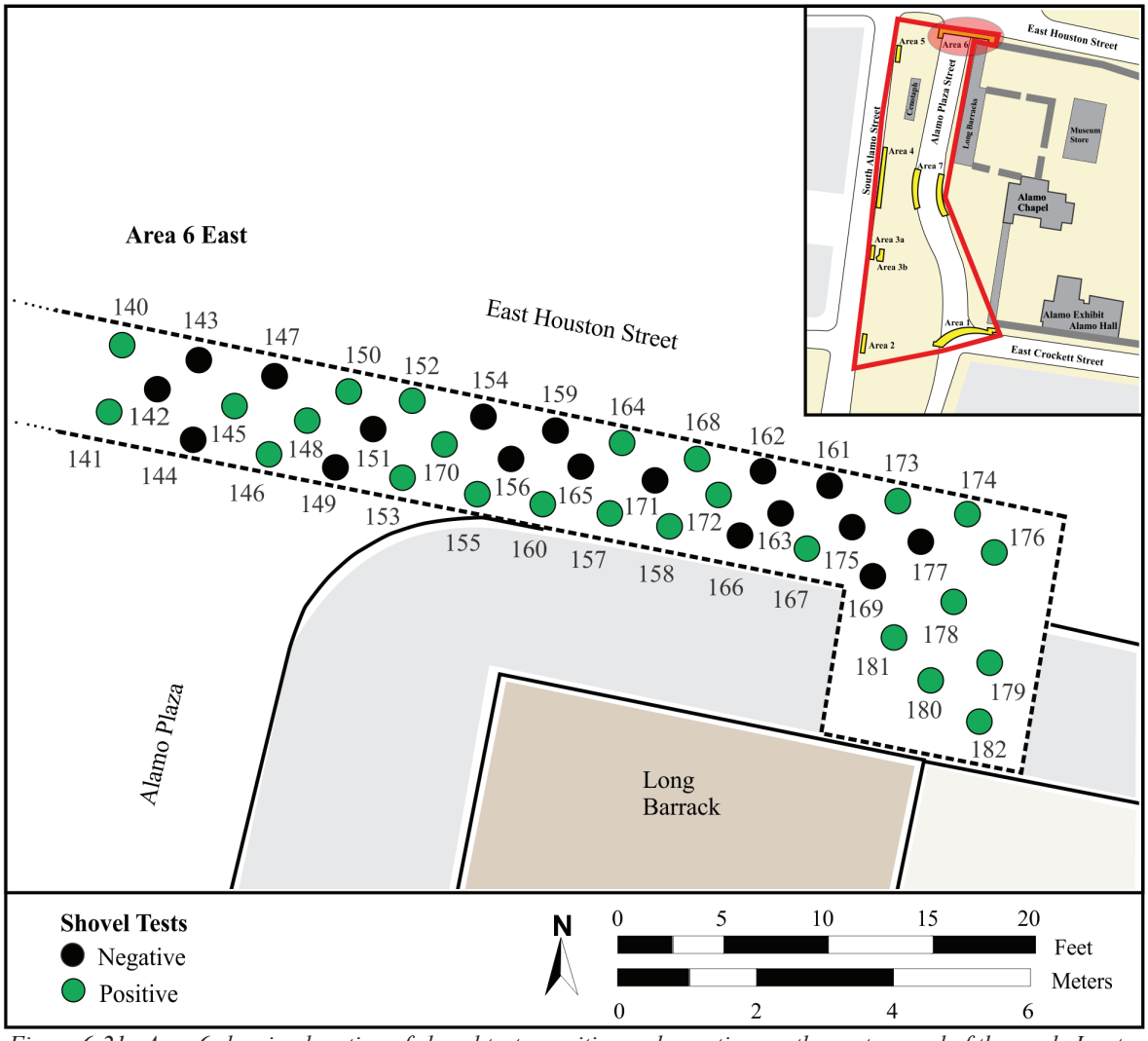

Figure 6-21. Area 6 showing location of shovel tests, positive and negative, on the eastern end of the work. Inset shows location of Area 6 (red circle).

Area 6 Test Units 12, 13, and 14

Based on the results of the shovel testing, three test units were excavated in Area 6. Test Unit 12 was a 50-x-100 cm (19.7-x-39.4 in.) and located in the area of ST 155. Although the results of this shovel test were negative, the area was of interest because ST 155 stopped at 47 cm (18.5 in.), after having hit rocks. The test unit could not be excavated the full 100 cm (39.4 in.) because of an adjoining concrete duct bank.

Excavation of TU 12 began at about 38 cmbs (15.0 in.), with a break in the caliche base at 43 cm (16.9 in.). The rocks that were encountered in ST 155 were exposed at 42 cmbs (16.5 in.). The exposed rock rubble, as it jutted out from the south wall of the unit, was only 20 cm (7.9 in.) wide. Excavation of the remaining 30-x-100 cm (11.8-x-39.4 in.) unit stopped at 80 cmbs (31.5 in.; Figure 6-22). CAR staff noted that the excavated silty clay matrix was disturbed, possibly during the installation of the nearby duct bank.

Test Units 12-Artifacts

An assortment of artifacts was recovered from the silty clay matrix. A ceramic sherd was recovered from between 60 and 70 cmbs (23.6 and 27.6 in.) and identified as a sherd of Galera lead glaze ware. Also recovered was 30.4 g (1.07 oz.) of construction material, including brick, mortar/plaster and tile, as was flat glass (n=2), fire-cracked rock (n=4), lithic debitage (n=2), nails (n=6), shell button (n=1), and faunal bone (n=3). The shell button, fire-cracked rock, tile fragment, and one nail were recovered from between 70 and 80 cmbs (27.6 and 31.5 in.).

Area 6 Test Units 13 and 14

Test Units 13 and 14 were each 1-x-1 m (3.3-x-3.3 ft.) and were located where STs 173, 174, and 175 had been excavated. These units were located in line with the east elevation wall of the Long Barrack. The results of the shovel tests in this area indicated the presence of stone rubble, signaling the potential for locating a wall remnant.

Excavation of TU 13 was through a hard clay matrix to 80 cmbs (31.5 in.) below surface. The presence of cobbles was greater between 37 and 60 cmbs (14.6-23.6 in.; 50 to 60 percent) and lesser between 60 and 80 cm (23.6-31.5 in.; 30 percent). The excavation of TU 14 noted a very similar hard clay matrix, which seemed more like construction fill. As in the case of TU 13, the presence of rocks was less at the lower levels of the excavation of TU 14. Although an assortment of artifacts was recovered, no intact soils or features were noted in either of the two test units.

Test Units 13 and 14–Artifacts

There was less of a variety of artifacts recovered from TU 13. The artifacts recovered from TU 13 consisted of construction material (120 g; 4.2 oz.), nails (n=3) ceramics (n=3), faunal

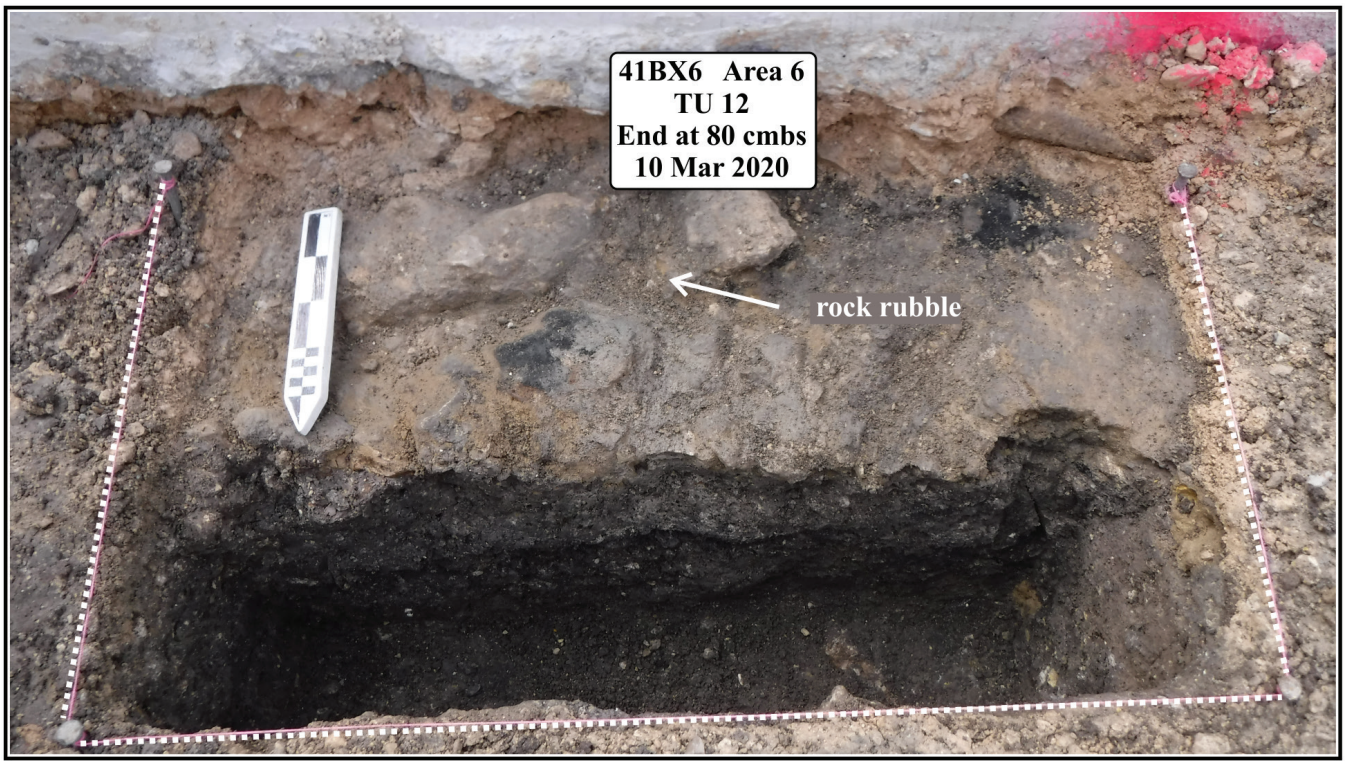

Figure 6-22. Test Unit 12 excavated to 80 cmbs (31.5 in.), with rock rubble intact.

bone (n=6), and lithic material (n=8). It seems that the amount of disturbance noted in TU 14 was more expansive than in TU 13, which resulted in a greater variety of artifacts. The artifacts from TU 14 consisted of construction material (63.8 g; 2.25 oz.), nail (n=1), faunal bone (n=6), lithic material (n=2), fire-cracked rock (n=3), glass (n=1), unidentifiable metal (9.2 g; 0.32 oz.), coal (n=1), and wood fragments (n=2). Among the earliest datable items recovered were one unusual lead glazed sherd and two Spanish Colonial sherds, a lead glazed and a tin glazed, recovered from TU 13.

Once testing of the east half of Area 6 was completed, CAR staff requested clearance from the OHP and THC to mechanically grade this area to 65 cmbs (25.6 in.). However, the north extension at the east end would have to be hand-excavated, due to its close proximity to the north perimeter wall.

Area 6, East-Monitoring

Monitoring of grading activities along the east half of Area 6 resulted in the discovery of two features. Both features were missed during shovel testing, because they both were tucked underneath the edge of the north and south walls of Area 6. Several duct banks, for electrical conduit, traversed Area 6. The conduits were buried between 40 and 60 cmbs (15.7 and 23.6 in.) and were encased in concrete. The concrete had to be broken off the conduits in order that they be re-routed. Light-duty demolition hammers were used to remove the concrete from the conduits, and the rubble was shoveled out, with CAR staff monitoring. This work resulted in the discovery of two features (Figure 6-23). Feature 5 is the remnant of a late nineteenth- to early twentieth-century streetcar rail system (Figure 6-24), and

Figure 6-23. Area 6 demolition work in progress; approximate location of Features 5 and 6 (view east).

Feature 6 is a wall footing likely associated with Mission San Antonio de Valero's early history (1724-1759; Figure 6-25).

No artifacts were recovered as a result of monitoring associated with the discovery of Feature 5 or Feature 6. There was an abundance of material collected during monitoring of the south extension of Area 6 (Figure 6-26). Hand-excavation of this area was through mixed deposits of clumpy to silty clay with inclusions of concrete and asphalt fragments, and post-1950 material, such as pieces of plastic plates and plastic cup lids (not collected). However, several classes of artifacts, listed in Table 6-7, were collected, including a concentration of faunal material.

Feature 5 and Feature 6–Protective Measures

No protective measures were necessary for Feature 5. The remnants of the Streetcar Rail System (41BX2163) were a pair of 4'-0" on-center narrow gauge rails consistent with the majority of San Antonio's streetcar infrastructure. These rails are perched above a purpose built cement and/or rock base that matches previously encountered streetcar line infrastructure both on Alamo Plaza as well as on Broadway between 3rd and 4th Street (Cox 1992:31). They are imbedded in concrete and below the bollard impact zone. Based on the security upgrades specifications, the top of Feature 6 was about 5 cm (1.97 in.) below the impact zone, and the bollard in this location would sit directly above Feature 6. The OHP and THC expressed concern and requested a redesign. The design engineer was consulted, and a new plan was drafted that set the bollards at 132 cm (52 in.) on-center, rather than 121.9 cm (48 in.). This new alignment shifted the bollards so that two of these bollards straddled Feature 6. In addition, the new plan allowed for a gap in the bollard concrete base, which served to buffer the feature and the electrical conduit above the feature.

A 20.3 cm (8 in.) high wooden form (45.7-x-91.4 cm; 18-x-36 in.) was constructed by the contractor to serve as a protective buffer over the 17.8 cm (7 in.) high and 83.8 cm (33 in.) wide wall feature. The form was centered over the 15.2 cm (6 in.) thick and 45.7-x-121.9 cm (18-x-48 in.) wide stacked sandbags that protect the feature. The 20.3 cm (8 in.) deep form was then filled with sand, so that there is a 35.6 cm (14 in.) cushion of sand over Feature 6 (Figure 6-27). CAR staff monitored the contractor located and aligned the bollards in Area 6 and ensured that Feature 6 was not impacted in the process.

Figure 6-24. Feature 5, remnant of the Streetcar Rail System (41BX2163), view north.

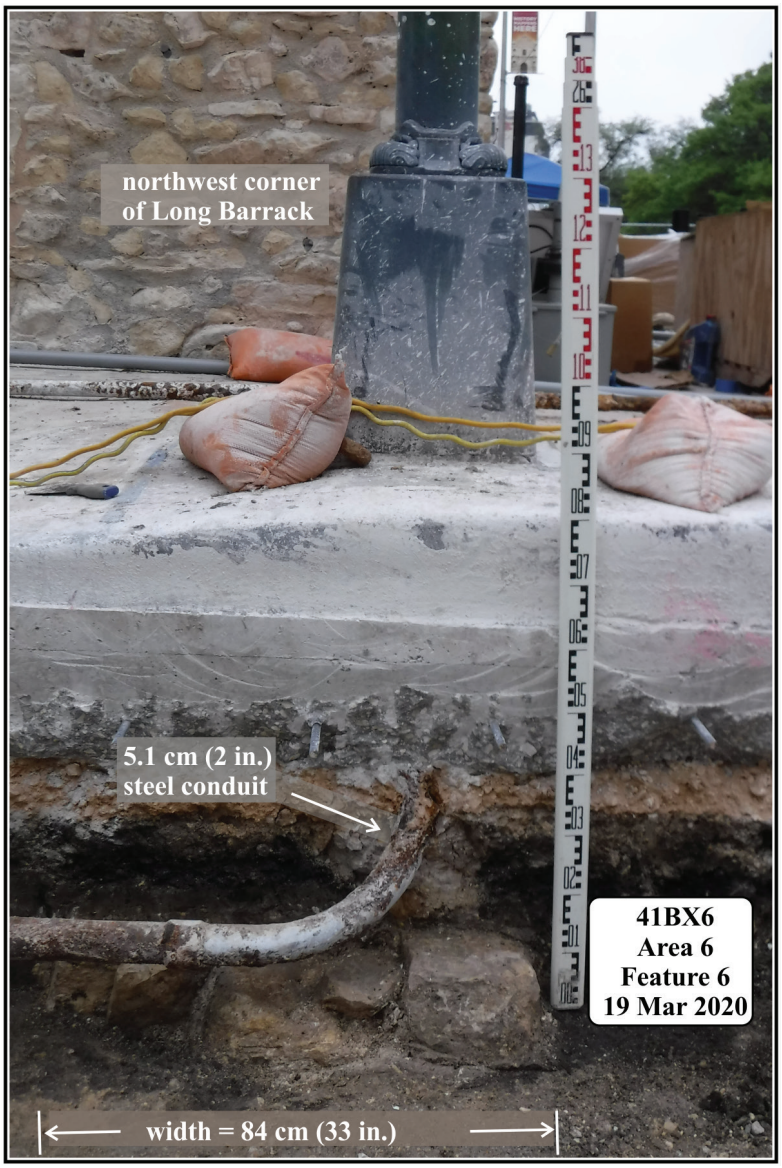

Figure 6-25. Feature 6, likely a Spanish Colonial wall footing (41BX6), view south.

Figure 6-26. Area 6, south extension after shovel testing (left) and after monitoring of hand-excavation (right), view east.

Table 6-7. Artifacts Recovered from Wall Extension

Superclass	Count	Weight (g)	Weight (oz.)
Lithic	1	- -	- -
Ceramics	15	- -	- -
Construction	- -	280.1	9.88
Metal	- -	10.9	0.38
Faunal Bone	257	2372.5	83.69

Figure 6-27. Measure taken to protect Feature 6 (view south).

Area 7–Handrails and Accessible Ramping

Area 7 was located in front of the Alamo Church and along Alamo Plaza Street (Figure 6-28). The work in Area 7 consisted of installing two ramps with handrails and transition areas between the ramps on each side of Alamo Plaza (an interior flagstone driveway between E. Crockett Street and E. Houston Street). Each of the two areas was about 2 m (6.6 ft.) wide and 20 m (65.6 ft.) long. As per the job specifications, removal of existing hardscape was not to extend into the existing subgrade. As a precautionary measure, CAR staff monitored the removal of hardscape. The work in this area was uneventful, and no features or artifacts were encountered.

Summary

Archaeological testing and monitoring within the Project Area resulted in locating four features. Feature 1 is a semicircular cobble stone berm that may be part of the earthworks built at the south gate during the 1835-1836 siege of the Alamo. The City of San Antonio, Office of Historic Preservation (OHP) and the Texas Historical Commission (THC), Archeology Division, recommended that security bollards not be installed in this location and that the feature be protected for future study. CAR staff covered the feature, documented the process, then tested and cleared a nearby area for bollard install.

Feature 2 was a post-1850 wall footing, not related to Mission San Antonio de Valero, but was located within the site's footprint.

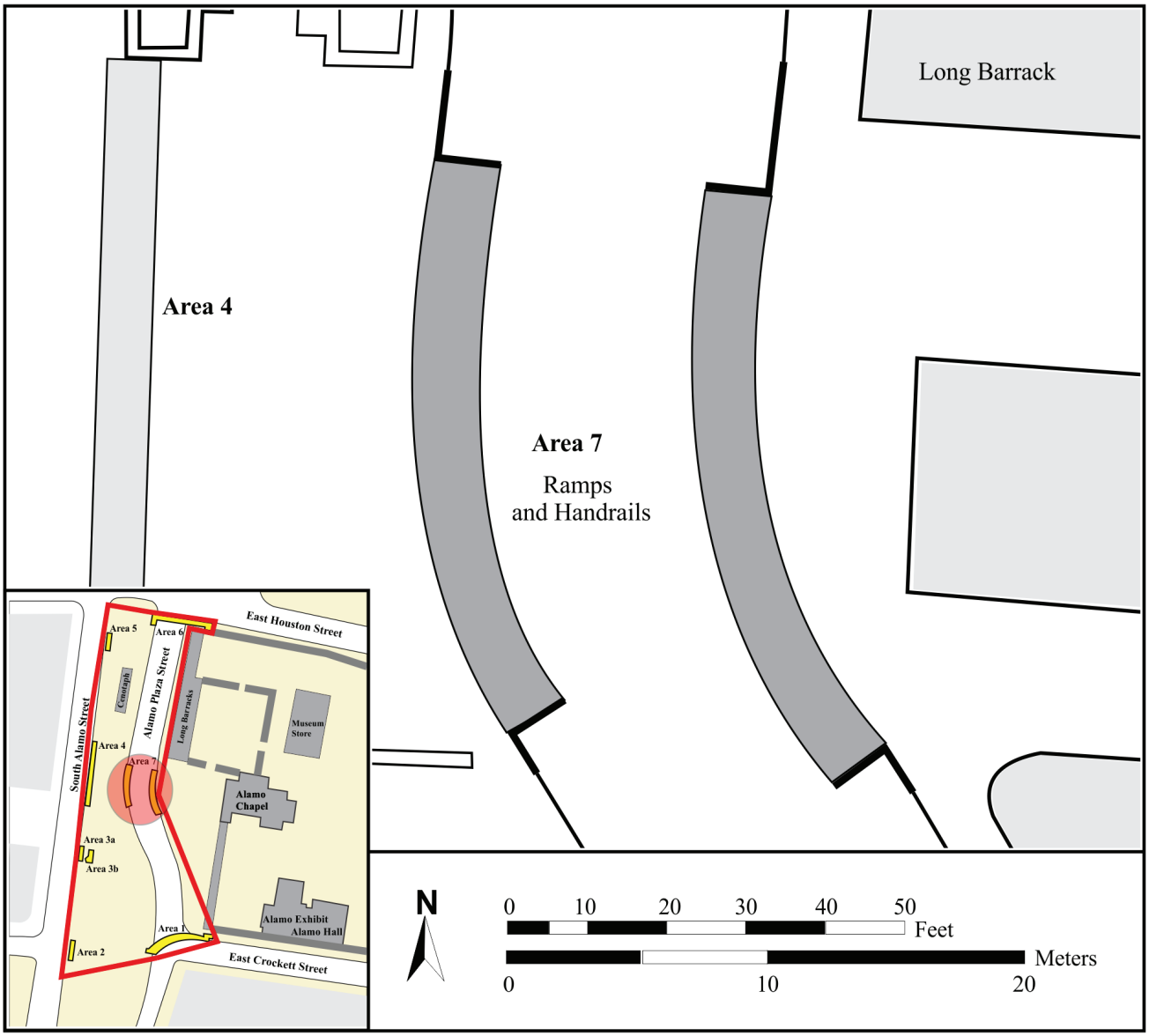

Figure 6-28. Area 7, noting location of required ramps and handrails.

Based on the recovered artifacts and georeferenced GPS data, this wall footing likely relates to a stone structure depicted in an 1885 Sanborn Fire Insurance Map. Feature 5 is a remnant of the San Antonio Streetcar System (41BX2163), segments of which have been previously located in downtown San Antonio.

Feature 6, is a north to south oriented wall footing, and is believed to be part of the original mission construction. The limestone block footing is a vara wide, and is in line with the north wall of the Long Barrack. CAR staff did not locate additional traces of this wall footing. A remnant of this wall footing was revealed when the construction crew broke away a concrete duct bank from beneath a related traffic light pole. The OHP and THC recommended that the bollard install be redesigned so as not to impact this wall footing. The bollard install plan for Area 6 was redesigned so that the bollards were shifted slightly east and away from the feature, creating a niche that serves as a buffer. CAR staff covered the feature with layers of geo-fabric and sand, and documented the process.

Finally, note that an assortment of artifacts were collected, including lithic debitage, faunal bone, ceramics, glass, construction material, and assorted metal. In terms of the deposition of these artifacts, all were recovered from disturbed contexts. As detailed in Chapter 3, recurring alterations of Alamo Plaza, as far back as the late 1800s, severely impacted earlier intact deposits.

Chapter 7: Artifacts

by Clinton McKenzie, Michelle Carpenter, Raymond Mauldin, and Peggy Wall

The bollard install areas were along the outer perimeter of the modern Alamo Plaza site. As detailed in the previous chapter, intact deposits in these areas have been mixed, primarily as a result of twentieth century alterations such as street improvements, landscaping, and installation of utilities. The lack of clear temporal association for areas limits the utility of any detailed analysis. Nevertheless, selected classes of artifacts are of interest as they are typical of the artifacts recovered from other portions of 41BX6, as well as from other San Antonio mission sites. Consequently, after providing a brief summary of artifacts recovered, a more detailed discussion of ceramics, glass, chipped stone, and faunal material is provided.

Artifact Distribution

As discussed in Chapter 6, deposits in all areas appear to be mixed, with plastic, concrete, and wood present in several areas. An extreme example of mixing is shown by the recovery of a 1995 US penny in Level 6 of Test Unit 3 in Area 3. Nevertheless, reference to Table 7-1, which presents counts or weights of several different artifact classes by the 6 areas, suggests that the assemblage from Area 6 may primarily reflect Spanish Colonial material. The area contains all of the Native American ceramics, as well as 74 percent of all Spanish Colonial sherds, 99 percent of the Colonial brick, large quantities of faunal remains, and is one of three areas with chipped stone and one of two areas with burned rock. While metal, glass, and other brick are present, in most cases they are represented by relatively low quantities. In addition, only a single stoneware sherd was recovered from CAR's work in Area 6. Area 3 also contains Spanish Colonial ceramics, but more recent materials clearly dominate the recovery in this Area.

Ceramics

This section provides a description of the 67 ceramic sherds recovered from CARs work. The section begins with discussion

Table 7-1. Distribution of Selected Artifact Classes

Artifact Class	Area					
	1	2	3	4	5	6
Ceramics (n)						
Earthenwares	10		16			1
Spanish Colonial			7			20
Native American						9
Other	1	1	2	1		
Lithics (n)						
Chipped Stone	5		39			21
Burned Rock			5			17
Construction g (oz.)						
Colonial Brick	0.4 (0.01)		0.2 (0.007)			130.4 (4.60)
Other Brick	99.1 (3.50)		56.9 (2.00)			12.0 (0.04)
Organic g (oz.)						
Faunal Bone	168.6 (5.90)	91.6 (3.23)	154.2 (5.44)			2428.2 (85.65)
Glass g (oz.)						
Chimney	0.2 (0.007)		37.9 (1.34)			
Container	41.4 (1.50)	56.4 (1.99)	52.5 (1.85)	0.2 (0.007)		12.6 (0.44)
Flat/Window	3.2 (0.11)		2.2 (0.78)			2.3 (0.08)
Metal g (oz.)						
Farm/Ranch				564.1 (19.9)	1897.3 (66.9)	
Nails	30.7 (1.08)		203.7 (7.18)		32.2 (1.14)	80.0 (2.80)
Other	188.7 (6.66)		320.2 (11.30)		186.1 (6.56)	239.6 (8.45)

by ceramic categories, then types, and then varieties. The typological discussion only addresses ceramics recovered and represented in the current collection, and it is not an exhaustive narrative of all types of the period. The typological discussion is followed by a specific focus on the ceramic assemblages associated with Features 1 and 6. The section ends with a general analysis and summary of ceramics for the project as a whole.

Typology of Recovered Ceramics

The typology is delineated by several broad categories. The Native American wares, Spanish Colonial wares, and Earthenware are subdivided into specific types and then varieties, while Stoneware, Porcelain, and French Colonial Faience are reported on together as their aggregate count totals four (4). The broad categories are referential to cultural and temporal associations but also geographic origin as well as production method. For example, Native American wares refer to ceramics produced by indigenous people during the period whether locally in Texas or from artisans in Mexico; however, it also refers to the clay fabric and the soft-paste of these ceramics from production in low temperature open fires (Fox and Ulrich 2008:28-29). Spanish Colonial wares refer to soft-paste ceramics originating, chiefly, from Mexico, which utilize Old World vessel forms and production methods that are then subdivided by type (e.g. majolica, lead glaze, unglazed, etc.) and then divided into specific varieties, (e.g., San Agustin Blue on White Majolica, Galera Lead Glaze, etc.). Like Native American wares, the Spanish Colonial category describes a tradition that can date to the colonial period and well into the nineteenth century. Earthenwares and Stonewares are referential to hard-paste ceramics, fired in high temperature kilns.

Native American Ceramics, n=9

While this category includes many potential types, only a single type, Goliad ware, was recovered during this project (Table 7-2). Goliad Ware is an eponymous name give for the site of Mission Espiritu Santo de la Bahia, in Goliad, Texas, where it was first described (Mounger 1959; Ivey and Fox 1981:31). Goliad Ware is recovered from Texas Spanish Colonial and Post-Colonial (circa 1720 to 1836) contexts (Labadie 1986:109; Nichols et al. 2016:67). The type is technologically a hold-over from a pre-contact indigenous earthenware referred to as Leon Plain (Collins 2004:122-123). Leon Plain is found in prehistoric contexts from Toyah Phase sites, dating from circa 1250 to 1650 AD (Hester 2004:146). Both Leon Plain and Goliad are hand-formed from clays tempered with ground bone and hardened in low-fired open fires. In Spanish Colonial sites the presence of Goliad Ware is seen as a continuation of indigenous ceramic technology and traditions, including the retention of non-Spanish vessel forms and/or functions (Campbell 1962:335; Fox and Ulrich 2008:26 Shafer 1989). Goliad Wares were typically utilitarian domestic pottery used for cooking with forms such as the cazuela and cacerola (stewpots) as well as jars and bean pots commonly encountered in archaeological assemblages. The examples recovered from this project were all from Area 6 and exhibited the normative suite of characteristics typical of Goliad Ware: bone tempered, low-fired, hand-formed earthenware vessels, in reddish brown and orange (Figure 7-1, a, b). Based on measurement of the individual refit sherds and curvature, the four sherds recovered from Area 6 E are from a small pot and exhibit distinctive signs of burning (see Figure 7-1, c through f).

Spanish Colonial Ceramics, n=25

Spanish Colonial is a descriptive term rather than narrowly temporal, and it describes ceramics types present in the period but also those with Spanish Colonial production method and design origins that continued to be produced in the Post-Colonial periods. While the majority of ceramic artifacts recovered from this project appear to date from the Spanish Colonial period, some are likely from the Mexican (1722-1835), Texas Republic (1836-1846), or reflect later periods. Within this category several common ceramic types are present, including majolicas (tin enameled earthenware), lead glazed earthenwares, and unglazed earthenwares. Table 7-3 lists the 25 ceramic sherds recovered and their proveniences within the Spanish Colonial category. These sherds are primarily recovered from Area 6 (n=18).

Spanish Colonial–Unglazed, n=5

Unglazed describes soft-paste earthenwares, usually exhibiting distinctive throw-lines from being formed on a potter's wheel rather than by hand. Vessels in this category are often common or utility wares for cooking and storage. Like their counterpart utilitarian Native American wares,

Table 7-2. Native American Ceramics

Area	Provenience	Level	Description	n
6	ST 174	2	Goliad body	1
6	South extension		Goliad, body	1
6 East	South extension		Goliad, body sherds, burned	4
6 East	South extension		Goliad body	2
6 East	South extension		Goliad body	1

Figure 7-1. Native American Goliad Ware recovered from Area 6: a-b) typical sherds and c-f) burned sherds.

Table 7-3. Spanish Colonial Ceramics

Area	Provenience	Level	Type	Description	n
3	TU 2	3	Lead Glazed	Green Glaze II body	1
3	TU 3	3	Lead Glazed	Galera - Orange glaze	1
3	TU 4	3	Tin Glazed	Untyped white body	1
3	TU 6	4	Tin Glazed	Puebla Blue on White II body	1
3	TU 8	2	Lead Glazed	Red Brown glaze body	1
3	TU 8	3	Tin Glazed	Huejotzingo Blue rim	1
3	TU 8	3	Unglazed	Wheel-thrown body	1
6	ST 135	3	Tin Glazed	Huejotzingo Wavy Blue rim	1
6	ST 167	2	Unglazed	Wheel-thrown body	1
6	ST 168	2	Unglazed	Wheel-thrown body	1
6	ST 170	2	Tin Glazed	Blue on White Majolica body	1
6	ST 176	2	Tin Glazed	Untyped white body	1
6	ST 181	2	Tin Glazed	Blue on White Majolica body	2
6	ST 182	1	Tin Glazed	Untyped white body	1
6 East	TU 12	3	Lead Glazed	Galera, red-brown body	1
6 East	TU 13	2	Tin Glazed	Untyped white body	1
6 East	TU 13	3	Lead Glazed	Green Glaze I rim	1
6 East	South extension		Lead Glazed	Green Glaze I (1) Rim and (1) body	2
6 East	South extension		Tin Glazed	San Agustin Majolica foot/body	1
6 East	South extension		Lead Glazed	Green Glaze I (1) Rim and (1) body	2
6 East	South extension		Unglazed	Wheel-thrown body	2

common forms include cazuela and cacerolas, as well as ollas (wide-mouthed jars) used for storage. Unglazed sherds are typically thick in cross section (5 mm to ≥10 mm) with a clay fabric or paste composed of clay with various additives, usually sand in greater/lesser amounts and in finer/coarser textures. This type of Spanish Colonial ceramic can be decorated or undecorated. Specific varieties are discriminated based on these differing characteristics and the presence or absence of decoration. The five unglazed sherds recovered were all undecorated and exhibited indications of being wheel thrown. The original parent vessels were most likely manufactured in Mexico and traded or imported into San Antonio. Figure 7-2 shows of all five of the recovered unglazed, wheel-thrown sherds from the project.

Spanish Colonial–Lead Glazed, n=10

Lead glazed ceramics are earthenwares, the majority of which were manufactured in Mexico, that exhibit a clear lead glaze on the exterior and/or interior of the vessel. Glazes are a means of sealing the otherwise porous surface of an unglazed ceramic. The lead glazed surface is impermeable to liquids, whether in the form of water or foods cooked in liquid. Lead glaze varieties are discriminated based on glaze color and texture; paste, to include clay fabric color and degree of sand temper; and wall thickness of the vessel. Those recovered in Texas fall into two broad types based on paste and production method: coarse sandy paste utility wares and fine-paste table service wares (Fox 1986:111).

Red Brown, n=2

Red Brown is so-named on account of the color of the glaze that is applied over an earthenware vessel with a fine red-brown paste (Fox and Ulrich 2008:52). Typical vessel forms include shallow plates, steep walled bowls, and jars. This type is recovered from numerous mission contexts, and it is found throughout the eighteenth century. A single outward curving (i.e., everted) rim sherd and a base sherd of this variety was recovered (Figure 7-3a, b).

Galera and Galera Polychrome, n=2

Galera wares are very thin with a fine sandy paste and usually have an orange, red-brown, or brown lead glaze covering their interior and exterior surfaces. When this surface is further overpainted, it is referred to as Galera Polychrome. These vessels take the form of chocoteras (chocolate pots), pitchers, and small jars that are often produced in molds, rather than being wheel-thrown. Galera is common across Spanish Colonial sites in Texas. Only two body sherds, from different vessels, were recovered during the current project (Figure 7-3, c and d).

Yellow, Green, and Yellow and Green Glaze I and II, n=4

The most common sandy paste variety is typified by wheel-thrown, thick walled, soft-paste vessels with coarse sand added to the paste and exhibiting either an orange-to-yellow and/or green glaze on the exterior and/or interior surface. These are referred to by the variety name of Yellow Glaze I, Green Glaze I, or Yellow and Green Glaze I, depending on the color(s). The second variety is Yellow Glaze II, Green Glaze II, or Yellow and Green Glaze II, with the substantive differences from the first variety being thinner vessel walls with finer sandy pastes (Fox and Ulrich 2008:46-49). The differing treatments between variety I and variety II are indicative of their use, with variety I vessels serving more utilitarian cooking or storage purposes and variety II being utilized for pitchers, serving bowls, and jars for storing liquids. Examples of Green Glaze I can be seen in the lower row of Figure 7-3 (e-h). These four sherds from Area 6, east. All are from the same small, shallow steep-walled bowl.

Spanish Colonial–Majolicas, n=11

Majolica is a term used to describe soft paste earthenwares that are coated in a thick, vitreous, tin-enamel glaze. This ceramic tradition was introduced into the Iberian Peninsula by the Arab Moors and passed from them into Spanish manufacture and from there to production in Mexico. There are many decorative schemes for majolica that are geographically and temporally distinct, making them an important diagnostic ceramic for Spanish Colonial sites. Four particular varieties of Mexican majolicas were identified in the 11 sherds recovered. Three further sherds were indefinable as part of the Blue on White tradition but lacked definitive characteristics to be ascribed to a particular variety. Two of the three mend together (Figure 7-4, d and e) and are from either a Puebla Blue on White I or San Elizario majolica bowl. The four remaining sherds were white or off white, lacking any decoration, and classified as majolica with no specific varietal attribution.

San Agustin Blue on White

This majolica variant is a part of the larger blue-on-white type majolica tradition centered in Puebla, Mexico. Its distinctive characteristics are related to the whiteness of the glaze and the dense patterning of the dark blue designs overpainted on the white with deep rimmed plates, bowls, and cups the common forms (Goggin 1968:187-188). San Agustin is

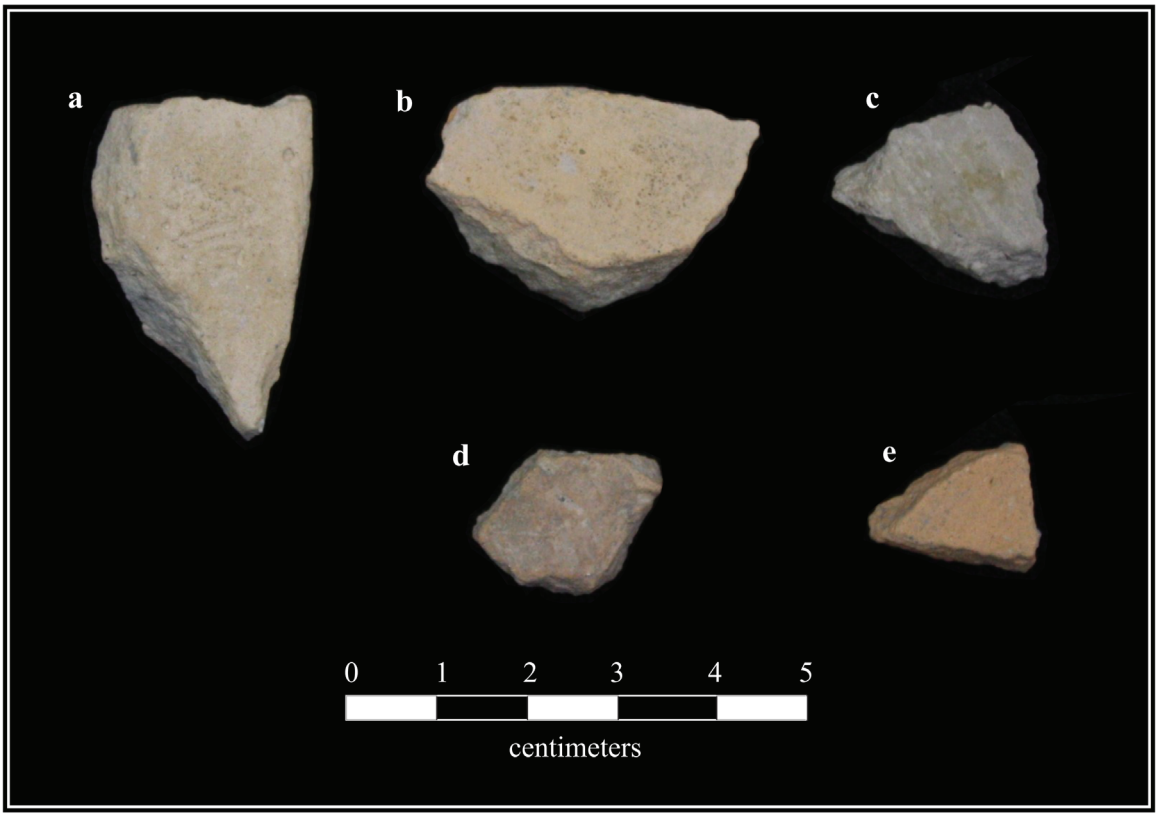

Figure 7-2. Spanish Colonial, unglazed, wheel-thrown sherds.

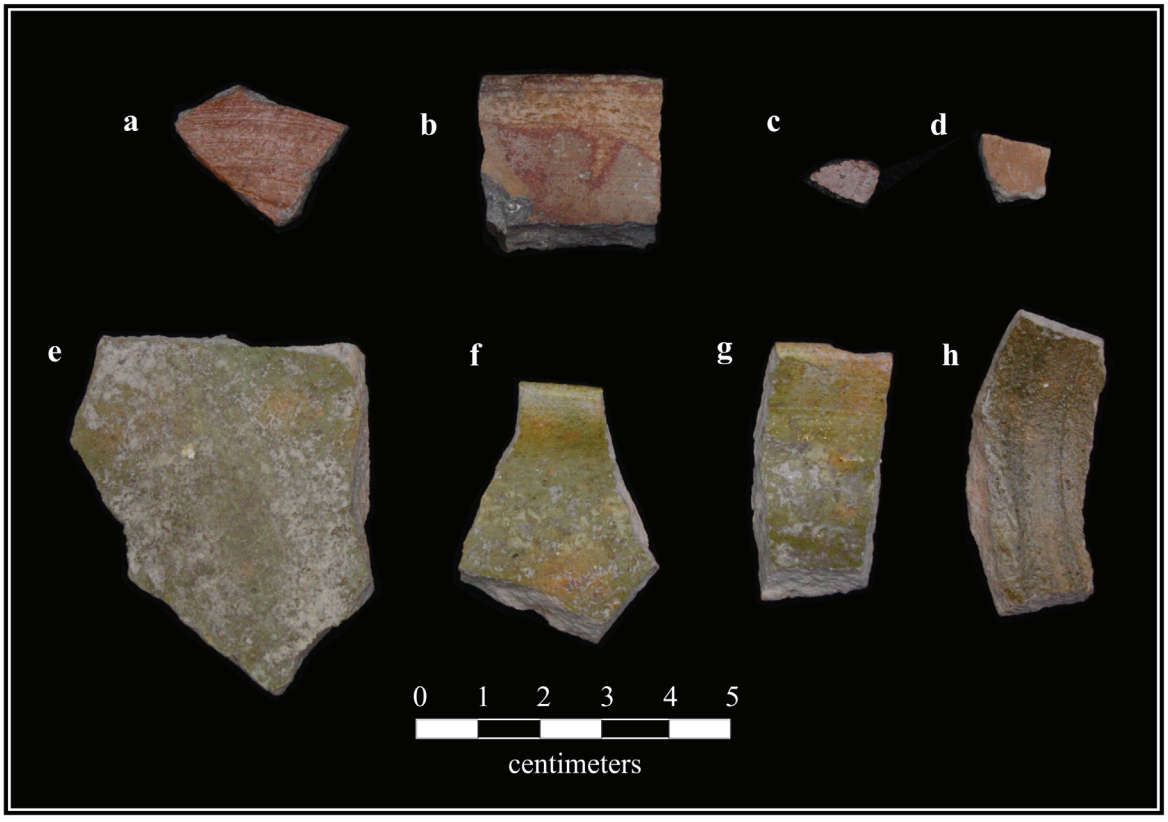

Figure 7-3. Spanish Colonial Lead glaze: a-b) Red Brown, c-d) Galera, and e-h) Yellow and Green Glaze I.

widely distributed within Texas, but it is also recovered from Spanish sites in Florida and California (Cohen-Williams and Williams 2004:23-25; Deagan 1987:82-83; Fox and Ulrich 2008:78). The sherd recovered on this project is a part of a basal foot ring with a portion of the bottom and sidewall of a small bowl or deep plate (Figure 7-4, a). The date range on San Agustin is strictly Spanish Colonial in age, circa 1700 to 1780 (Fox and Ulrich 2008:39).

Huejotzingo Blue Band and Huejotzingo Wavy Blue Band

Huejotzingo majolica varieties are found with blue on white and green on white decoration as well as with a straight band or a scalloped or "wavy" band of color along the rim. Common forms are plates, bowls, and cups (Fox and Ulrich 2008:82). A single sherd of straight, and a single sherd of wavy blue were recovered (Figure 7-4, c). These varieties are also from the Puebla area (Huejotzingo is a suburb of Puebla) and are common in archaeological assemblages throughout Mexico, the Caribbean, as well as in Arizona, New Mexico, Texas, and Florida (Deagan 1987:83; DiPeso 1953:219-220; Fox and Ulrich 2008:82-83; Goggin 1968:195-196). The straight blue band variety ranges from circa 1700 into the nineteenth century (Goggin 1968:195). The green color variant and wavy band pattern in blue and green variants appear to date to post 1780 with additional variants of the pattern persisting in manufacture to the present (May and Barnes 1972:33-34).

Puebla Blue on White II, n=1

As implied by the name, this blue on white majolica variant is attributed to Puebla, Mexico. The Texas type-variant name distinguishes it from the earlier Puebla Blue on White I (Fox and Ulrich 2008:98). In Florida this distinction is made by calling it Late Variant Blue on White (Deagan 1987:84-85). The type variant is distinguished by color, paste, profile, and limited vessel forms. The variant has pale blue bands with pendant dark blue floral or dot motifs, buff to off-white past, with 3 mm thick walls and narrow foot rings. Recovered forms consist of small tassos (drinking cups) and/or small footed bowls (Fox and Ulrich 2008:98). The date range on Puebla Blue on White II is not certain, but archaeological recovery from Texas sites with narrow occupation dates suggest a range of circa 1770 to 1800 (Ricklis et al 2000:110; T. Walter, personal communication 2020). A single sherd of this type variant was recovered (Figure 7-4, b).

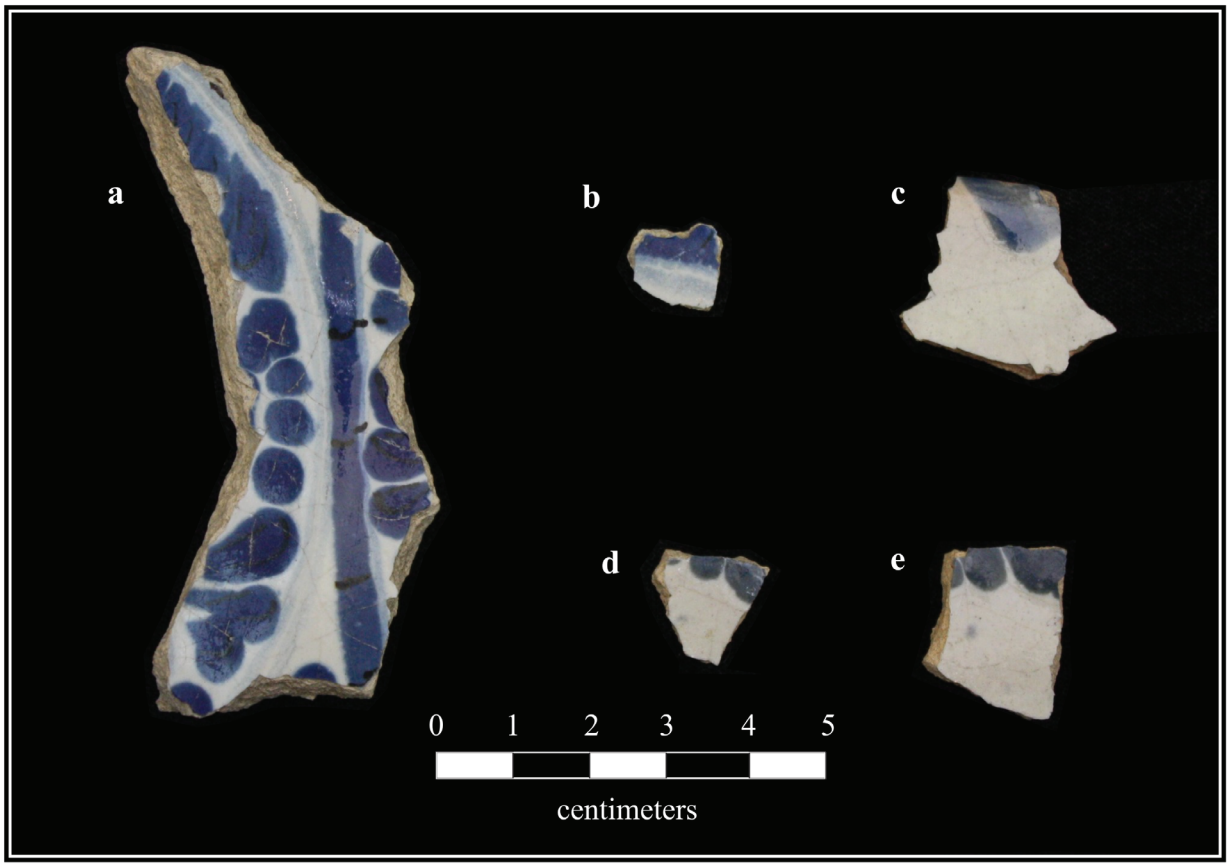

Figure 7-4. Mexican majolicas: a) San Agustin Blue on White, b) Puebla Blue on White II, c) Huejotzingo Wavy Blue Band, and d-e) Blue on White Puebla tradition.

Earthenwares, n=26

This category encompasses a wide array of types and variants. Those recovered from the current project fall into two types, refined earthenwares and redwares. Refined earthenwares and their type-variants will be discussed first, followed by the discussion on redware earthenwares.

Refined Earthenwares–Creamware, Pearlware, and Ironstone

Refined earthenwares are so-called because they are made from clay bodies that have been dried, fine-milled, and had additives introduced to improve firing, vitrification, and durability, beginning in the 1720s with the addition of calcined flint (Ormsbee 1959:15). These refined clays are reconstituted with water and then mold-formed, in most cases decorated, slipped or dusted in lead glaze, and then fired in high temperature purpose-built kilns (Ormsbee 1959:4-5). All varieties of refined earthenware could be further embellished with decoration by molded and painted embossing (blue feathered Edgeware), hand-painting under the glaze (Handpainted underglaze), or by the application of colored transfers (transferwares), to name but a few common types. England was the dominant place of manufacture from the late eighteenth century and continued to be until well into the nineteenth century, particularly in Staffordshire (Shaw 1829:2-3; Wedgewood and Ormsbee 1949:30). Refined earthenwares were mass produced in England for the export market, and all tableware forms are represented. American refined earthenware makers entered the market shortly after the Civil War (Kowalsky and Kowalsky 1999:14-15).

Besides the clay fabric differences between earthenware and refined earthenware, other distinctive attributes are white or off-white bodies coated in a clear, vitreous, lead glaze, which is often accompanied by some form(s) of decoration that allows for specific varietal attribution. Three of the most common refined White Ware (refined earthenwares) were recovered from the current project, including Creamware (n=2), Pearlware (n=8), and Ironstone (n=5), as well as refined earthenware sherds that could not be attributed (n=7) to a specific type-variant (see Table 7-4). Earthenwares are primarily concentrated in Area 3, and these ceramics are not represented in Area 6.

Creamware

Creamware is of the earliest varieties of refined earthenware with production dates spanning from the 1750s until it decreased in popularity in the 1840s when it was supplanted by Pearlwares and Ironstones. (Nichols 2016:169-170). Its name is referential to the off-white color of the body that has a slight yellowish cast similar to cream. The specific color of Creamware allows for it to be more readily identified as it stands out from Pearlwares and Ironstones, which are bright white. Only two Creamware body sherds without any decoration were recovered. The date range for Creamware makes it difficult to attribute them to a specific period at the Alamo as they are recovered in both Colonial and Post-Colonial contexts. The association of the recovered Creamware sherds is discussed in the Features section of this report.

Pearlware

Pearlware is an early refined white earthenware with production origins in England in the mid-to-late eighteenth century. It is distinguishable from Creamware and later Ironstone, particularly from whole vessels or large sherds, by the whiteness of its body and the slightly blueish to grayish tint of its glaze (Hume 1974:129-130). This blue-gray coloration is caused by the presence of elemental cobalt in the glaze, and this color is enhanced wherever it pools or puddles on a ceramic body, such as the crease around the foot-ring or on joins between handles and cup bodies. Five undecorated sherds of and three decorated sherds of Pearlware were recovered.

Handpainted Underglaze on a Pearlware Body, n=3

As the name implies, this describes any refined earthenware embellished with Handpainted decoration applied to the body of the ceramic and then protected by the application of the clear, vitreous, lead glaze. All three of the Handpainted Pearlware sherds recovered are blue-on-white (Figure 7-5, a-c). This decorative technique on Pearlware bodies was an early response by the industry to mimic limited and expensive blue on white Chinese porcelains for domestic and export markets. Other color variants, including numerous polychrome varieties, appear more commonly later in time, however, none of those types were encountered.

Ironstone

Ironstone is a refined earthenware that was first produced by Charles Mason in 1813 in Staffordshire, England (Majewski and O'Brien 1987:120-121; Nichols 2016:170). The name referential to the hardness and durability of the fired clay body. The durability of Ironstone made it extremely popular over time to the point that both Creamware and Pearlware became much less dominant and represented only a fraction of the earthenware market by the middle of the nineteenth century. Ironstone exhibits

Table 7-4. Earthenwares

Area	Provenience	Feature	Level	Description	n
3	TU 2		3	Untyped whiteware body	1
3	TU 2		4	Ironstone rim and body	2
3	TU 3		2	Handpainted Underglaze Pearlware body	1
3	TU 3		3	Pearlware Rim	1
3	TU 4		3	Untyped whiteware body	2
3	TU 3		4	Untyped whiteware body	1
3	TU 3		4	Creamware body	1
3	TU 3		5	Pearlware rim	1
3	TU 1		6	Handpainted Underglaze Pearlware body	1
3	TU 6		2	Ironstone rim	1
3	TU 6		4	Pearlware body	1
3	TU 8		2	Untyped whiteware rim	1
3	TU 8		3	Untyped whiteware body	1
1 East	TU 9	2	1	Untyped whiteware body	1
1 East	TU 10	2	1	Handpainted Blue on White Pearlware body	1
1 East	TU 10	2	1	Redware Pipe body	1
1 East	TU 10	2	1	Ironstone body	2
1 East	TU 10	2	1	Pearlware body	1
1 East	TU 10	2	2	Ironstone body	2
1 East	TU 10	2	2	Redware Pipe Bowl sherd	1
1 East	TU 10	2	3	Pearlware rim	1
1 East	TU 10	2	6	Creamware body	1

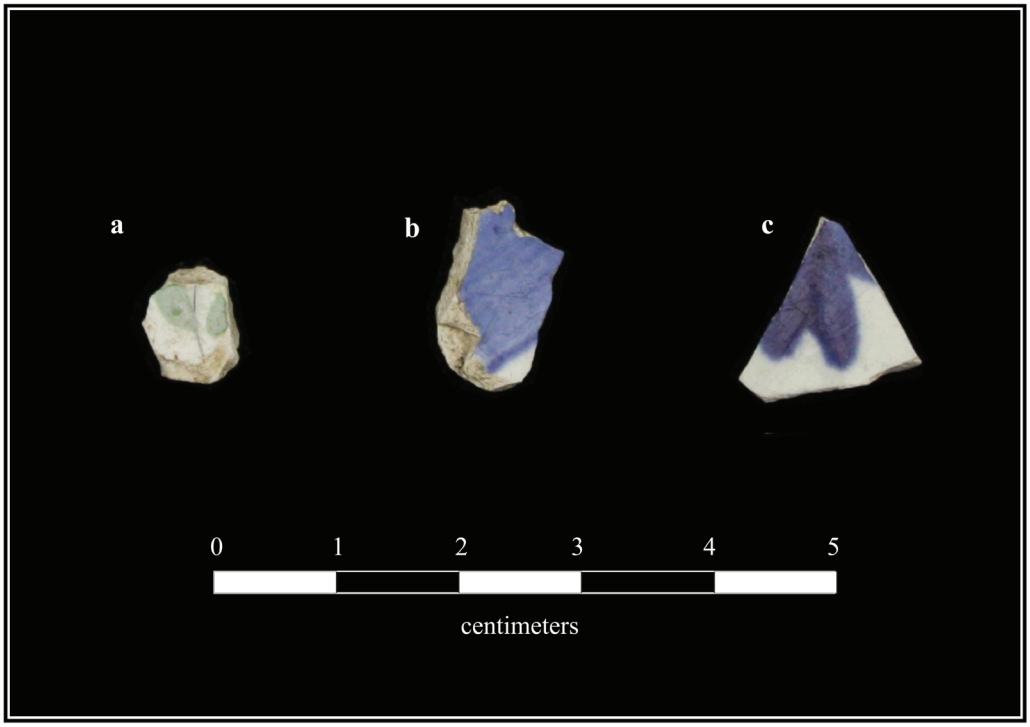

Figure 7-5. Handpainted White Wares.

a bright white body and an extremely hard white paste. A total of five undecorated Ironstone sherds were recovered, four of them being sherds of two different vessels that mended together.

Redware Earthenware

Redwares, as implied by their name, are reddish in color with terracotta reds (red-oranges and russet-reds) predominating. They are further characterized by fine red pastes. The term redware, from an archaeological perspective, describes both an earlier, seventeenth century variety that is a stoneware rather than an earthenware and a second type that is a true earthenware made from a fine red clay. On account of the impermeable nature and the strength and durability of the redware (stoneware), it was most often unglazed. No redware (stoneware) was recovered on this project. The second type of redware (earthenware) was usually mold-formed and often glazed with a clear lead glaze to seal the vessel and make it impermeable to liquid or for decorative purposes. Redware (earthenware) could also be embossed, painted in monochrome or polychrome, much like refined earthenware.

Two sherds of redware (earthenware) were recovered on this project, and both are fragments of a molded redware smoking pipe(s). The larger of the two is a portion of a Redware effigy pipe bowl. This effigy is a portion of a head crowned with laurel leaves and is a President Pipe variety produced in the towns of Uslar and Grossalmerode, Germany, for the American market in both red and white earthenware (Pfeiffer et al 2006:5). Pipes representing three campaigning or sitting American presidents attributed to Uslar and Grossalmerode have been archaeologically recovered in Texas: Zachary Taylor (1849-1850), Millard Fillmore (1850-1853), and Franklin Pierce (1853-1857) (Hudson et al. 1974:66, McKenzie 2019; Perttula et al. 2020). The recovered fragment is a partial rim and sidewall portion of the left side and posterior portion of either a Zachary Taylor (1848-150) or Millard Fillmore (1850-1853) presidential pipe based on design, clay color and glaze. Two other Uslar and Grossalmerode Presidential pipes of this period have been recovered from other archaeological contexts in Bexar County, Texas: a Lewis Cass campaign pipe from Walker Ranch, 41BX180, in San Antonio and a second example of a Millard Fillmore Presidential pipe from the Huebner Homestead, 41BX1429, in Leon Valley, Texas (Hudson et al. 1974:66, Figure 19; McKenzie 2019). Figure 7-6 is a comparison of the 41BX6 fragment and type examples in gray and white unglazed earthenware (Pfeiffer et al 2007: Figure 10a, Figure 12b) selected for heightened figure visibility. Since Fillmore only served the balance of President Taylor's term of office following Taylor's death in 1850, the presence of a Taylor or Fillmore presidential pipe narrows the temporal association to the period 1848-1855, or slightly later, and it coincides with the first period of the U.S. Army Quartermaster Depot occupation and operations at the Alamo (1846-1861).

All Other Categories

Five sherds of the 67 recovered are divided into three of the remaining categories: Stoneware, Porcelain, and French

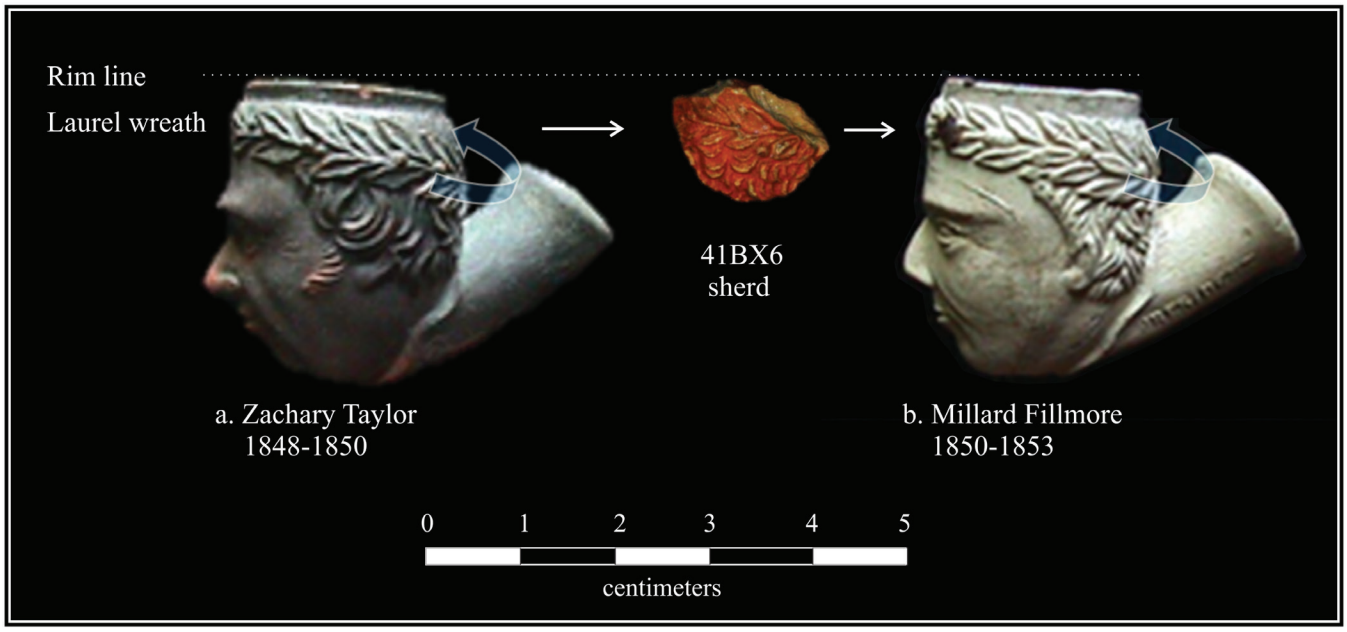

Figure 7-6. Type comparison of 41BX6 pipe fragment superimposed on a) Zachary Taylor type specimen and b) Millard Fillmore type specimen (b). (Type specimens from Pfeiffer et al. 2007:12, Figure 10a; 13, Figure 12b). Blue arrow denotes sherd position wraps from the side to the back of the pipe.

Colonial Faience. Since only a single or two representatives comprise each of these, these categories are briefly discussed in this section.

Stoneware, n=2

Stoneware is so named on account of its hardness and durability. Stonewares are made from clays that retain their shape at high temperature, which more thoroughly hardens and vitrifies the clay, just as in the case of Refined Earthenwares (Ormsbee 1959:2). Stonewares are impermeable, unlike earthenware, and were often used for storage as well as shipping (Greer 1981:15). Although impermeable, most stonewares were given a clear glaze through the addition of salt introduced into the kiln in the firing process (Greer 1981:17). Figure 7-7 shows a selection of stoneware found at 41BX6.

Porcelain, n=2

Porcelains are hard-paste ceramics made from extremely fine kaolinitic clays that at high temperature vitrify to such an extent as to change from an earthen mineral to a crystalline glass (Ormsbee 1959:2-3). Porcelain is highly prized for its hardness and durability, its impermeability, and its aesthetics. The sherd of porcelain shown in Figure 7-8 appears to come from a small, delicate, spatter-decorated cup or bowl. A second fragment of porcelain, not shown, is a fragment of an electrical or telegraph insulator. The

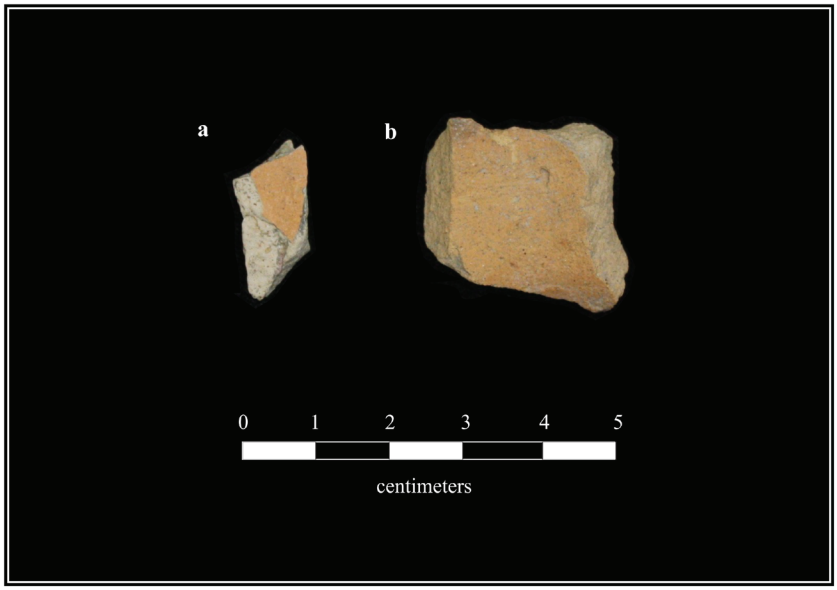

Figure 7-7. Stonewares

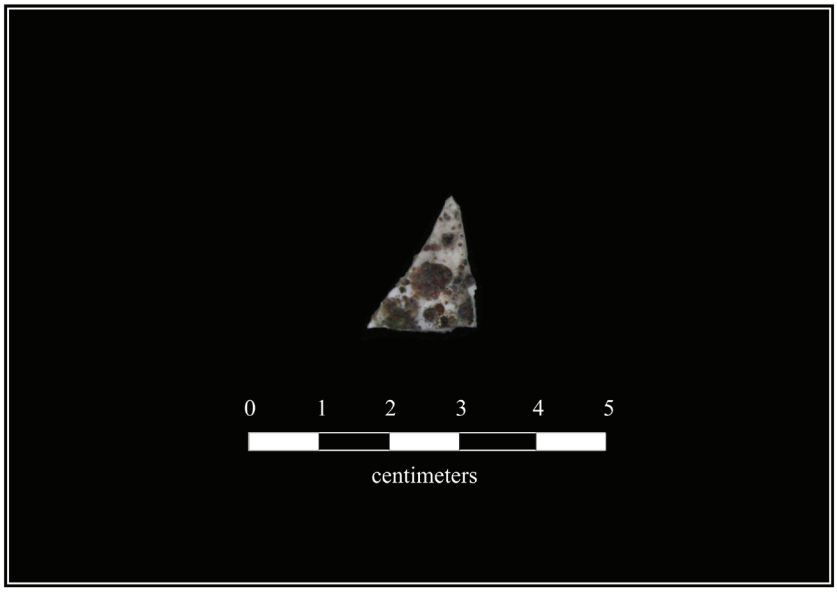

Figure 7-8. Sherd of porcelain with a spatter pattern.

durability and heat resistance of porcelain made it ideal for such industrial/commercial applications.

French Colonial Faience (Non-Spanish Colonial Tin Glazed), n=1

A single sherd of tin glazed earthenware was recovered that has attributes indicating possible French origin and lacking attributes that would indicate a Spanish Colonial origin (Figure 7-9). Tin glazed ceramics produced in France are referred to as faience, just as Mexican and Spanish tin glazed ceramics are referred to as majolica. The small sherd of potential faience exhibits characteristics of French faience: an extremely thick, tin enamel in bright white on the interior surface and a pastel green on the exterior surface. This particular color combination is similar to French cosmetic jars previously recovered in Spanish Colonial sites, primarily in East Texas (see Fox and Ulrich 2008:34, Figure 3-4).

Glass

One-hundred and twenty-two (122) artifacts of glass weighing 208.9 g were recovered during the project, and it was recovered from all locations except Area 5. Most glass was recovered from Area 3 (n=105, 92.6 g), with small quantities in Areas 1 (n=7, 44.8 g), 2 (n=2, 56.4 g), 4 (n=1, 0.2 g), and 6 (n=7, 14.9 g). While glass is time-diagnostic, it is less so than ceramics, as glass manufacturing methods generally have longer periods of production. Glass is reported here by form and then by description. When a specific temporal attribution can be made, it will be included in the description or, in the case of unique or particular artifacts, by direct reference.

Containers/Vessels, n=52

This class describes glass derived from bottles, jars, decanters, and the like. Container glass comprised 42.6 percent of all recovered glass, and it was the second most common class collected. Container glass was recovered from Areas 1 through 6, with the exception of Area 5. Container glass has other distinguishing attributes including color, manufacturing marks, and embossing. Despite these numerous attributes, the glass from this project can only be broadly described as no partial or intact bottles were recovered and the average size of glass artifacts was small, usually 1 cm (0.4 in.) in maximum diameter.

Based on color and lack of uniformity in thickness, the nine fragments of light olive to dark olive glass are from mouth blown bottles and broadly date to the nineteenth century. The seven shards of dark brown glass and 17 of aqua colored glass shards are likely of late nineteenth-century origin or the early part of the twentieth century when clear glass and brown glass became dominant colors (Lindsey 2014). One shard of the dark brown glass and a single shard of the aqua glass exhibited embossing, but attribution was not possible as only a letter or partial single letter was present. The remaining 20 shards were of clear glass containers, most likely from the early to mid-twentieth century, and lacked any other distinguishing characteristics.

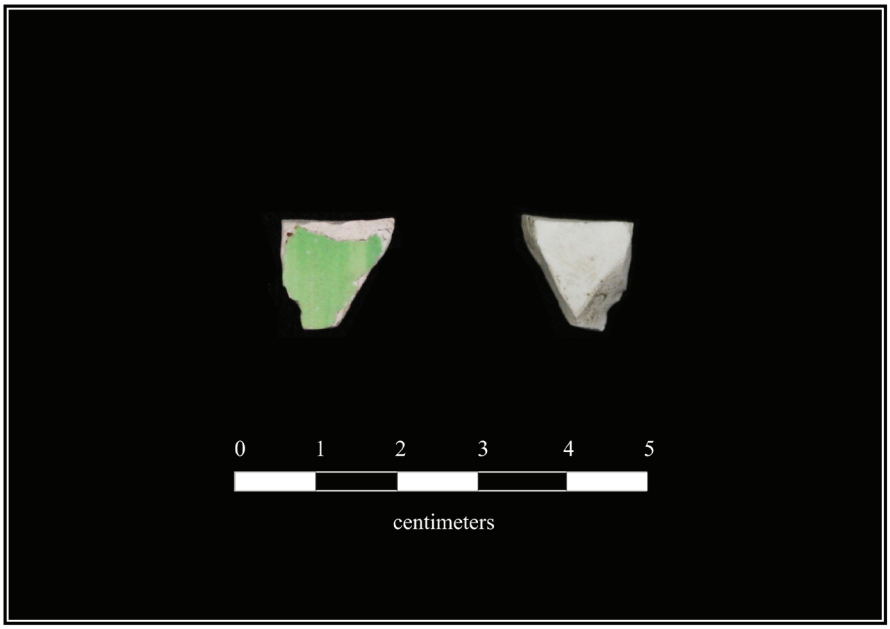

Figure 7-9. French Faience green and white tin-enameled sherd, obverse and reverse.

Chimney Glass, n=62

This class describes glass derived chiefly from kerosene and oil lamp chimneys, and it is also known as hurricane glass. Chimney glass was the largest class of glass artifacts and comprised 50.8% of all recovered specimens. This class is typified by thin (< 2.5 mm thickness), clear glass, usually with curvature if from the body or rim (when not further adorned) of the chimney. The base of the chimney is thicker where the chimney pressure fits into the kerosene/oil burner. The rims of chimneys can have embellishment, such as scalloping or beading. Of the (62) shards recovered, there were three base shards, one rim shard, and 58 body shards. All were made from clear, colorless glass. The majority of all recovered chimney glass was found in Area 3.

Flat/Window Glass, n=8

This class describes glass produced for windows, either panes or whole sheets/panels. It was the smallest class of glass artifacts recovered, accounting for only 6.6 percent of the total. Flat glass is ascribed to windows and, occasionally, to mirrors.

Common window glass in the nineteenth century was manufactured using several different processes, resulting in differing characteristics. These processes were the crown method and the cylinder method, both of which are blown glass (Roenke 1978:5-9; Wilson 1972: 44-56). The crown method utilizes blowpipe to form a large puddle of glass from which the pontil scar is removed by grinding. Panes of glass can then be cut from the crown and finished. Glass produced by this method is often called "bull's eye" glass from the rippled effects of the puddling as it radiates away from the pontil scar at the center. Cylinder glass was also produced using a blowpipe, but the bottom and top of the blown cylinder were removed, the cylinder itself cut open along a seam, and the resulting glass laid out flat to cool. Panes of glass could then be cut from the flattened cylinder (Lorraine 1968:37). Glass produced by this method has an uneven surface as a result of both being flattened as well as from being blown (Jones and Sullivan 1989:171). A third, less common process was the production of plate glass that puddled glass onto steel tables, and after cooling, it was polished for uniformity. This was a labor-intensive process and as a result plate glass was an expensive type of glass. It is distinguishable from crown or cylinder glass by its uniform thickness (Jones and Sullivan 1989:171). In the twentieth century, new glass production and process methods reduced the manufacturing costs of plate glass, and it came to dominate the market.

The identification of flat glass characteristics generally requires a large enough shard of glass to be able to differentiate between crown, cylinder, or plate window glass. Only two of the eight recovered artifacts in this class exhibit any defining characteristics to allow for attribution: a single shard of glass exhibits characteristics of plate glass and a shard of plate glass that was subsequently etched.

Chipped Stone

CAR recovered 65 pieces of chipped stone during this project, with most of the material coming from Areas 3 (n=39) and 6 (n=21). There were also five specimens from Area 1. This section provides a brief description of the recovered material that focuses on chipped stone form (e.g., tools, cores, debitage), summarizes raw materials, and provides a general discussion of assemblage debitage characteristics. The small sample sizes render all interpretations as tentative. Nevertheless, the assemblage has few formal tools, with debitage patterns that seem to reflect early reduction and/or a focus on core reduction, rather than extensive bifacial work. Comparisons between excavation Areas 3 and 6 are also conducted that highlight within site differences.

Assemblage forms and characteristics

The 65 items were classified as 56 pieces of debitage, eight tools, and a single core. Other than a single gunflint, no temporally diagnostic items were recovered. Chert was the dominant raw material, accounting for 63 items. The two remaining specimens were limestone. The material tended to have cortex present, with the single core, six of the eight tools, and 32 of the 56 pieces of debitage having at least some cortical cover. The assemblage had few formal, finished tools, and the recovered debitage was dominated by larger, thicker items. Overall, the cortical coverage, tool forms, and size characteristics suggests an assemblage generated by early reduction and/or core reduction.

Tools and Cores

Tools recovered consisted of three bifaces, two unifaces, and three edge modified flakes. All tools are made on chert. Two of the three bifaces, shown in Figure 7-10, likely represent early reduction. Both have cortex present, and both have maximum width to thickness ratios of 1.98 (75.7 mm/ 37.8 mm) and 1.91 (65.14 mm/ 33.66 mm). Ratios in this rage are consistent with what Callahan (1979:10) has termed initial edging, essentially the beginning stages in bifacial reduction. These specimens could, in fact, have served as cores for the production of flakes (see Kelly 1988), rather than as reflecting a bifacial reduction trajectory as such. The third biface (not pictured) is a small fragment, without cortex. It appears to be the end of a larger tool. Bifaces have been reported in most summaries of Mission assembles in the San Antonio area, including work by Tomka

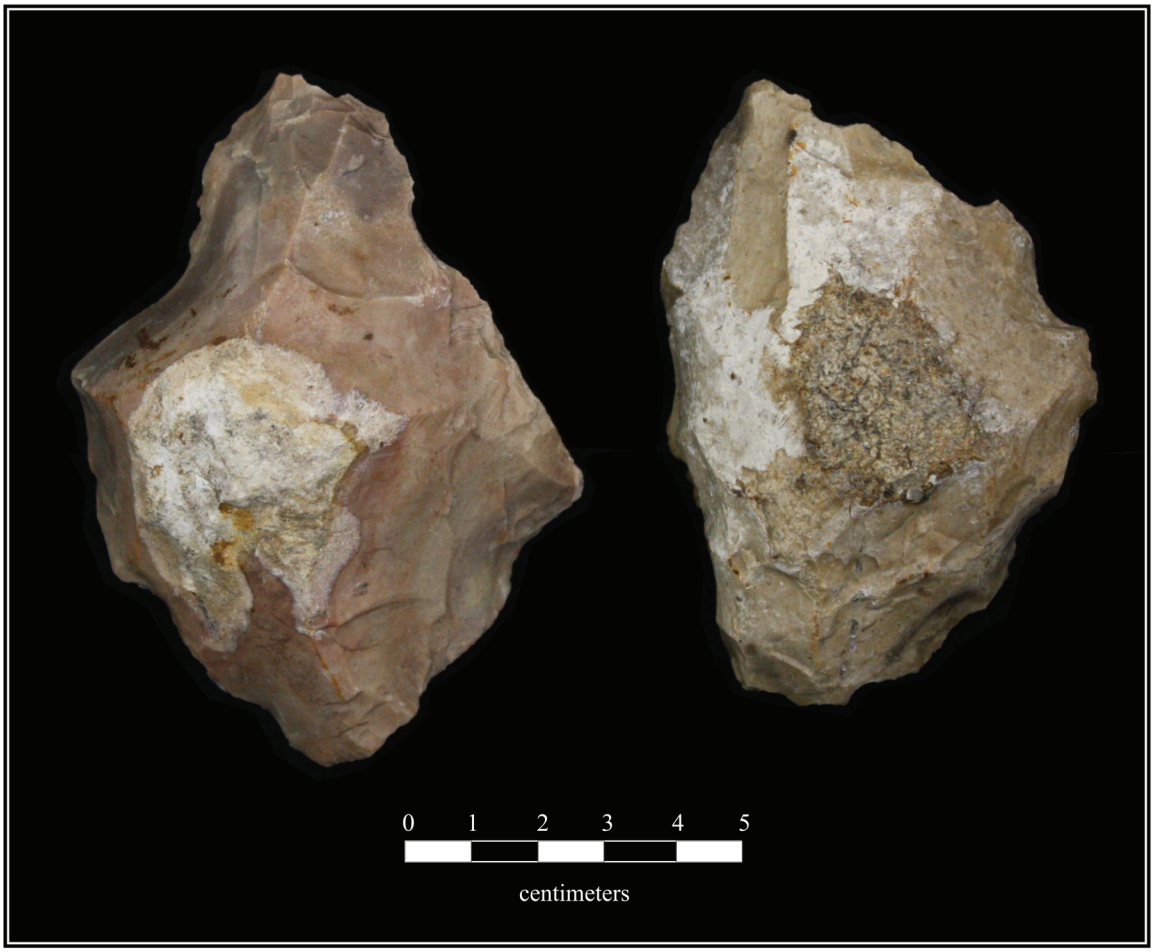

Figure 7-10. Large bifacially retouched items from Area 3.

(1999), Fox (1979), and Lohse (1999). Functionally, both projectile points as well as gunflints have been identified in discussions of bifacial work by these researchers.

The two unifacially retouched items, shown in Figure 7-11, have small amounts of cortex. The specimen on the left in the figure likely represents a gunflint (see Villalobos 2003). The function of the one on the right is not as clear, although it may also have been used as a gunflint. Gunflints and scrapers are common tool forms associated with unifaces in the region (see Anderson et al. 2018; Tomka 1999; Villalobos 2003).

The edge modified specimens all show signs indicative of retouched edges. Figure 7-12 shows two of the three. These are both broken fragments, with retouch present along on both faces along an edge. The third specimen is a cobble with removals along one section of one face.

Also recovered was a single core. The specimen was a small (64.4 x 48.2 x 46.2 mm) chert cobble that had one primary removal and several battered edges. Cortex dominated the item.

Debitage

On each of the 56 pieces of debitage, CAR personnel recorded several variables related to levels of reduction in the assemblage. These included the maximum size and the midpoint thickness of an item, recorded in millimeters (mm), and an estimate of the overall amount of cortex covering the dorsal surface, including the platform, if a platform was present. While a variety of factors, including raw material characteristics, hammer type, original core size and shape, knapper strategy, and post-depositional conditions likely impact patterns of debitage size and cortical coverage (see Amick et al. 1988; Andrefsky 19985; Mauldin and Amick 1989; Tomka 1989), it is generally the case that debitage produced early in a reduction are larger and have more cortex than debitage produced later in time (e.g., Mauldin and Amick 1989; Stahle and Dunn 1982). In addition, reduction focused on bifacial production will produce smaller, thinner items relative to reduction focused on using cores to produce flakes that can then be used in other activities. The cortical coverage and measures of debitage size can, then, provide a general, relative assessment of what can be thought of as reduction intensity. Cases with high frequencies of cortex, larger items, and/or thicker items reflect a low reduction intensity. These are likely dominated by early

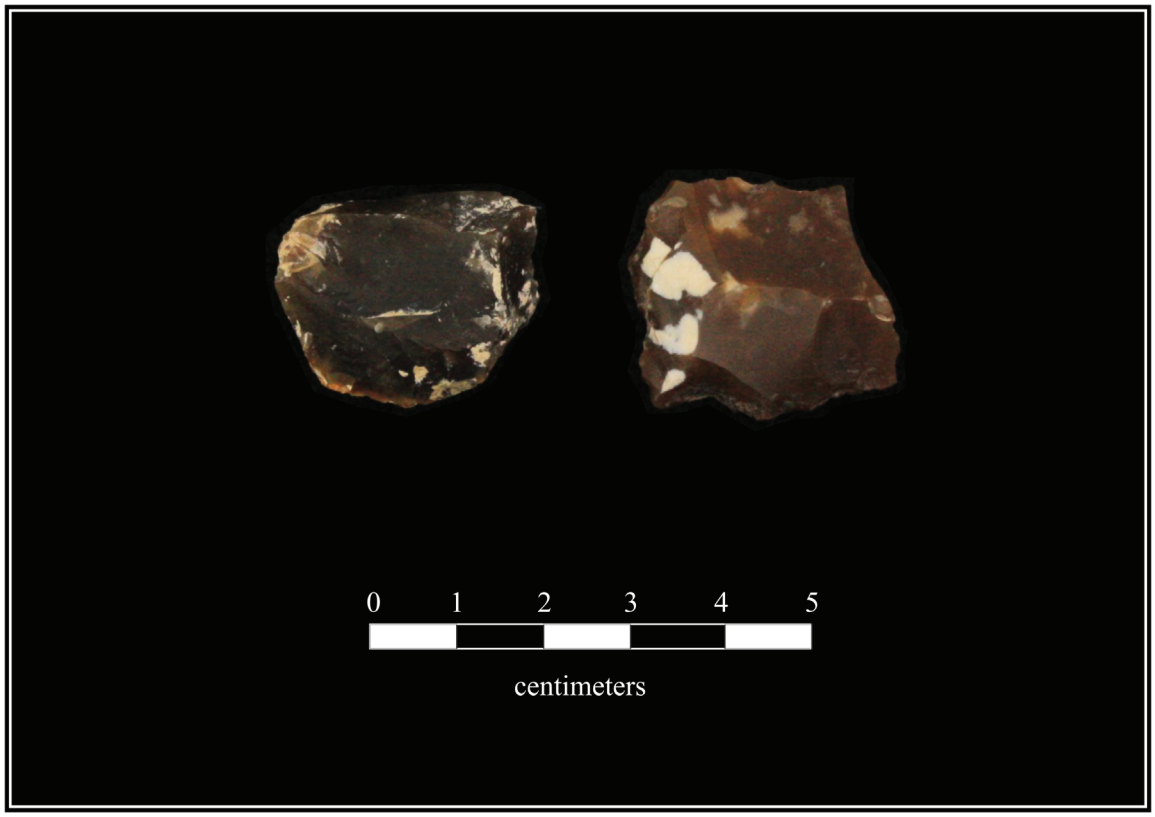

Figure 7-11. Unifacially retouched tools. The specimen on the left is from Area 6. The one on the right is from Area 3.

Figure 7-12. Edge modified flakes. All edge modified flakes were from Area 6.

reduction, or reduction focused on flake production. In contrast, those with little cortex, smaller size, and thinner midpoints can be characterized as reflecting high reduction intensity. These are likely dominated by late reduction, or reduction focused on more specialized, formal tools often associated with bifacial work.

Cortical coverage estimates were grouped into five ordinal categories. These were 1) items with no cortex, 2) those with 1 to 25% coverage, 3) those with 26 to 50%, 4) items with 51 to 75%, and 5) those items with more than 75% cortical cover. Patterns in cortical coverage for the 56 pieces of debitage show that the majority of cases have cortex present. There are only 24 non-cortical items, 42.9% of the total. There are 11 cases (19.6%) that have from 1 to 25% cortex coverage, with 26 to 50% and 51 to 75% categories having 6 cases, 10.7%, each. Cortex covers more than 75% of the dorsal surfaces on the remaining 9 cases (16%). Flakes with cortex account for 57% of the Alamo debitage considered here. In a review of cortex patterning presented in 41 different prehistoric report focused on north, central, and south Texas, Mauldin and Figueroa (2006:85) found no instances where more than 48% of the assemblage had cortex, with most instances having assemblages with less than 30%. However, the dominance of cortical flakes appears to be common in Mission assemblages with non-cortical percentages frequently near 50% of an assemblage (see Fox 1979; Lohse 1999; Tomka 1999). These patterns suggest more core reduction relative to bifacial reduction, and possibly the use of smaller initial nodules as cores.

The mean maximum size of the Alamo debitage sample is 25.63 mm, with flakes ranging from 8.67 to 64.7 mm. The mean size of the midpoint measurement is 5.81, with a minimum thickness of 1.2 mm and a maximum thickness of 20.45 mm. No comparable thickness data could be located in the regional mission literature, and with the exception of Tomka's 1999 study of an assemblage from Mission San Jose, length data is not reported. Tomka (1999) does not report mean size, but using percentages, counts, and size ranges (Tomka 1999:253, Figure 4), the 601 items have an average estimated mean size of around 24.2 mm, slightly smaller than the Alamo material reported here. Tomka (1999: 253) presents size data as a histogram which clearly shows that his San Jose debitage data are not normally distributed. As shown in Figure 7-13 (top), the maximum length data in the Alamo data set is also

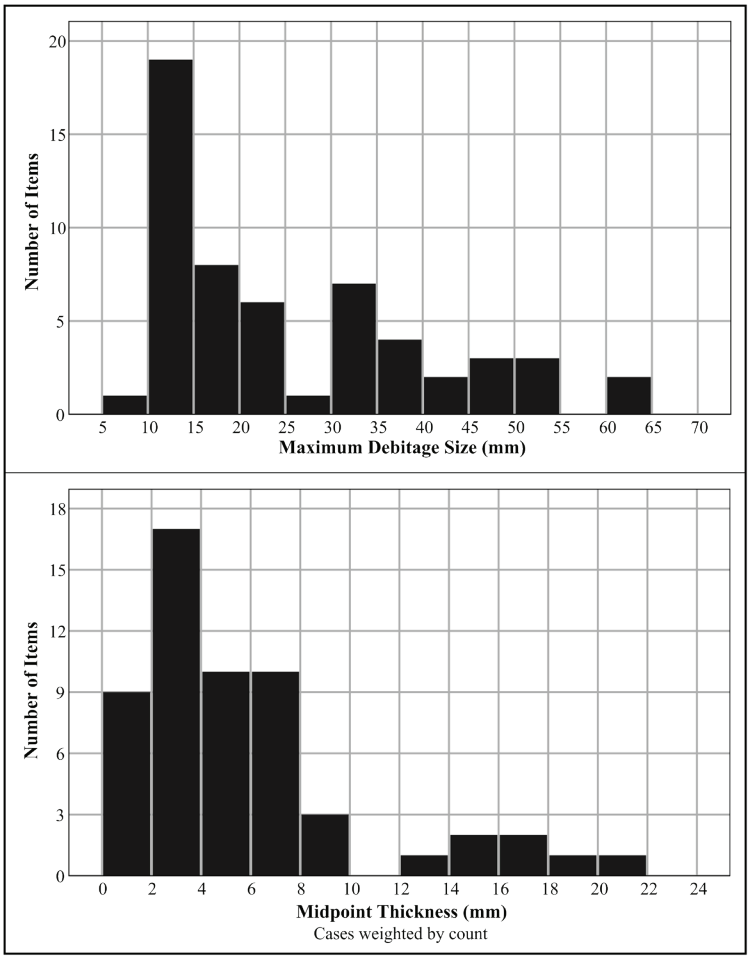

Figure 7-13. Distribution of Alamo debitage size (top) and midpoint thickness (bottom).

skewed, as is the midpoint data (Figure 7-13, bottom). While skewness is common in debitage distributions (see Patterson 1990; Stahle and Dunn 1982), both Alamo distributions also show a bimodal pattern. Figure 7-14 presents these same data in a bivariate plot. The plot strongly suggests that at least two, and possibly three, different size groups may be present in these data.

To explore these debitage size patterns, as well as consider possible within-site differences, we contrasted Area 3 (n=34 items) with Area 6 (n=16). While this further dilutes the already small sample sizes, the comparisons hint at within site differences. As can be seen in Figure 7-15, box plots of size (top) and midpoint thickness (bottom) show that while there is some overlap, Area 3 debitage is generally much smaller and thinner than debitage in Area 6. Table 7-5 is a cross-tabulation of debitage counts using the three size groups identified in Figure 7-14 relative to the two areas. The table also provides expected counts, based on row and column totals, as well as adjusted residual scores. As discussed by several authors (see Everitt 1977; Haberman 1973), adjusted residuals provide a measure of the contribution of a given cell in a table to the overall chi-square statistic. They are analogous to Z-scores in a normal distribution in that adjusted residual scores that exceed an absolute value of 1.96 are statistically significant at a probability beyond the .05 level. Significant values in Table 7-5 are identified in bold. The number of items in Group 1 are, then, significantly overrepresented in Area 3 and/or underrepresented in Area 6, while the number of items in Group 3 are significantly underrepresented in Area 3, and/or overrepresented in Area 6. In addition, note that 18 of the 34 items in Area 3 lack cortex (53%), while there are only 5 non-cortical items among the 16 pieces of debitage collected from Area 6. These patterns suggest that the debitage in Area 3 likely reflect a higher frequency of bifacial reduction, and/or later reduction, relative to Area 6.

Faunal Bone

Numbers given in this summary reflect the number of individual bones attributed to a specific taxa. The identification of taxa was conservative. If an item could not be diagnostically attributed to a specific taxa, it was classified as indeterminate. Identification of faunal remains was aided by the comparative collection at CAR. Four hundred and sixty nine individual pieces of bone weighing 2,847 g (100.4 oz.) were examined. Faunal remains were recovered from Areas 1 (n=37), 2 (n=15), 3 (n=126), and 6 (n=291).

Overall, the condition of the assemblage was fragmented, with unidentified items accounting for 67.8 percent (n=318) by count. Not surprisingly these items tended to be small, as the unidentified taxa made up only 26.9 percent (n=765.5 g; 27 oz.) by weight. Post-depositional processes, in the form of natural weathering, trampling, breakage from construction

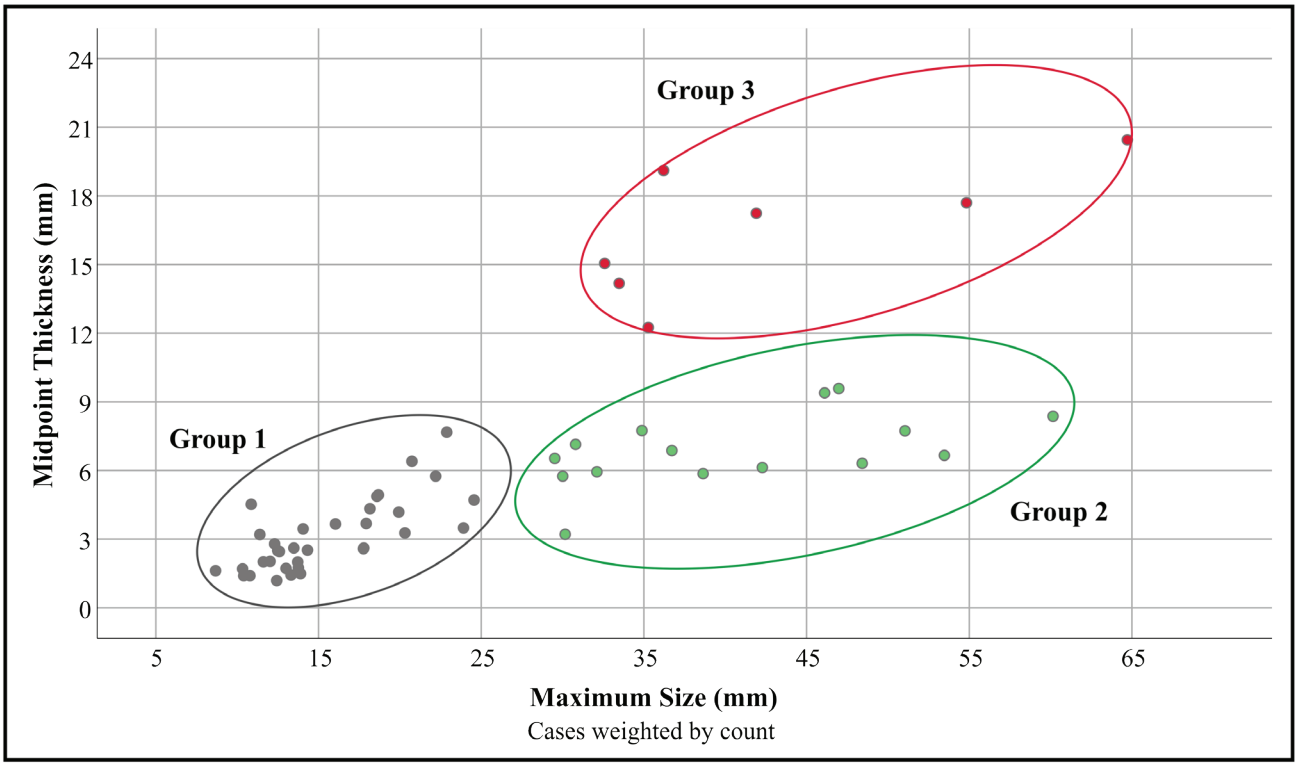

Figure 7-14. Bivariate plot of midpoint thickness and maximum size with three size groups identified.

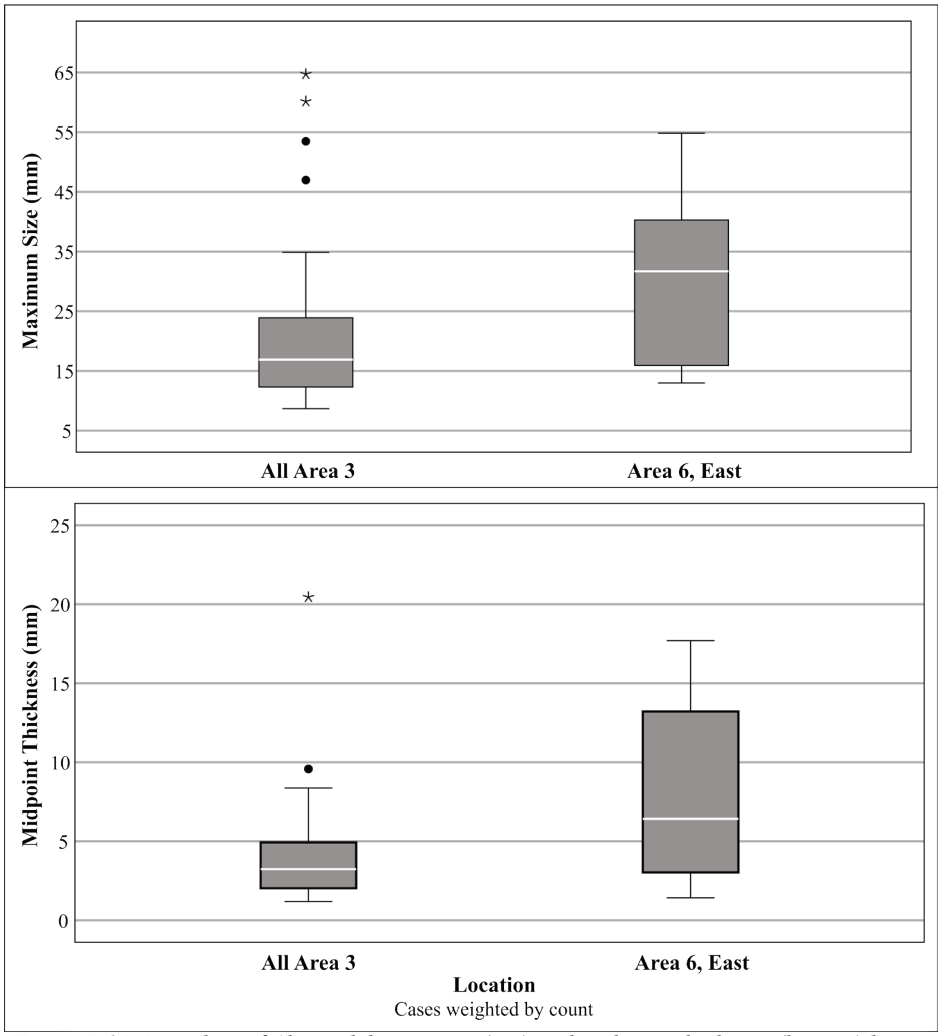

Figure 7-15. Box plots of Alamo debitage size (top) and midpoint thickness (bottom) by location.

Table 7-5. Debitage Size and Midpoint Thickness Groups by Location

Location	Size and Midpoint Thickness Groups			Total Count
	1	2	3	
Area 3				
Actual Count	27	6	1	34
Expected Count	22.44	7.48	4.08	34
Adjusted Residual	**2.92**	-1.08	**-2.87**	
Area 6				
Actual Count	6	5	5	16
Expected Count	10.56	3.52	1.92	16
Adjusted Residual	**-2.92**	1.08	**2.87**	
Total Count	33	11	6	50

related activities, and a small amount of rodent damage (n=2) contributed to the fragmentary nature of the bone. Some intentional human modification in the form of cut marks (n=60), machine cuts (n=7), and burning (n=6) was also noted. The items that were machine cut were all recovered from Areas 1 and 2.

In the 151 items that were of sufficient size and completeness to allow identification, 11 different taxa were represented (Table 7-6). While no sheep or goat were identified, two of these taxa, bos Taurus (cattle) and sus scofa (pig), reflect domesticates. Galliforms may contain a third domesticate, chicken, but other wild taxa may be reflected in this group as well. Cattle is the most commonly identified taxa, accounting for 88 percent (n=133) by count. Non-domesticates include small amounts of white-tailed deer, rabbit, birds, turtle, and fish.

Within the identified taxa, cut marks were identified on 32 items, all of which were cattle (Table 7-6). In the assemblage as a whole (n=469), 67 items had cut marks, with only seven likely reflecting machine/saw cuts.

Table 7-7 focuses on the collected material from Area 6 east that had a large quantity of bone recovered during monitoring. Though mixed, the bone from this area likely dates primarily to the Spanish Colonial period. The table includes fragments that could only be assigned to a larger/medium size group. As this area accounts for most of bone recovered, there is

Table 7-6. Identification of Assemblage to Genus level

Taxa	Common Name	Count (Each)	Weight g (oz.)	Bone with Cut Marks	Burned Bone	Bone with Signs of Rodent Activity
Anseriformes	duck, geese	1	0.14 (0.005)			
Galliformes	chicken, pheasant, or turkey	2	0.70 (0.024)			
Aves	bird	3	1.40 (0.049)			
Class Aves Total		**6**	**2.20 (0.078)**			
Bos taurus	cattle	133	1993.80 (70.330)	32	1	1
Odocoileus virginianus	white-tailed deer	4	33.80 (1.190)			
Cervidae	deer	3	42.30 (1.490)			1
Sylvilagus spp	cottontail rabbit	1	0.20 (0.007)			
Sus scrofa	pig	1	5.10 (0.180)			
Class Mammalia Total		**142**	**2075.20 (73.200)**	**32**	**1**	**2**
Testudines	turtle	1	3.50 (0.120)			
Class Reptilia Total		**1**	**3.50 (0.120)**			
Osteichthyes	bony fish	1	0.06 (0.002)			
Siluriformes	catfish	1	0.80 (0.028)			
Class Osteichthyes Total		**2**	**0.86 (0.030)**			

considerable overlap in the taxa represented here with Table 7-6. Cattle dominate the assemblage in terms of both count and weight, and probably account for a large percentage of the unidentified category (Table 7-7).

Figure 7-16 focuses exclusively on cattle and looks at bone weight of elements that could be identified in the Area 6 assemblage. The figure reflects 65 items and just over 1,267g (44.7 oz.) of bone. Elements identified include

Table 7-7. Identification of Assemblage from Area 6

Taxa	Common Name	Count (Each)	Weight g (oz.)	Bone with Cut Marks	Burned Bone	Bone with Signs of Rodent Activity
Bos taurus	cattle	132	1879.4 (66.300)	31	1	1
Odocoileus virginianus	white-tailed deer	3	31.6 (1.110)			
Cervidae	deer	1	20.5 (0.720)			
Unidentified large/ medium mammal	cattle, deer, goat, sheep, etc.	119	437.3 (15.430)	15	1	2
Class Mammalia Total		**255**	**2368.8 (83.560)**	**46**	**2**	**3**
Siluriformes	catfish	1	0.8 (0.028)			
Class Osteichthyes Total		**1**	**0.8 (0.028)**			
Testudines	turtle	1	3.5 (0.120)			
Class Reptilia Total		**1**	**3.5 (0.120)**			

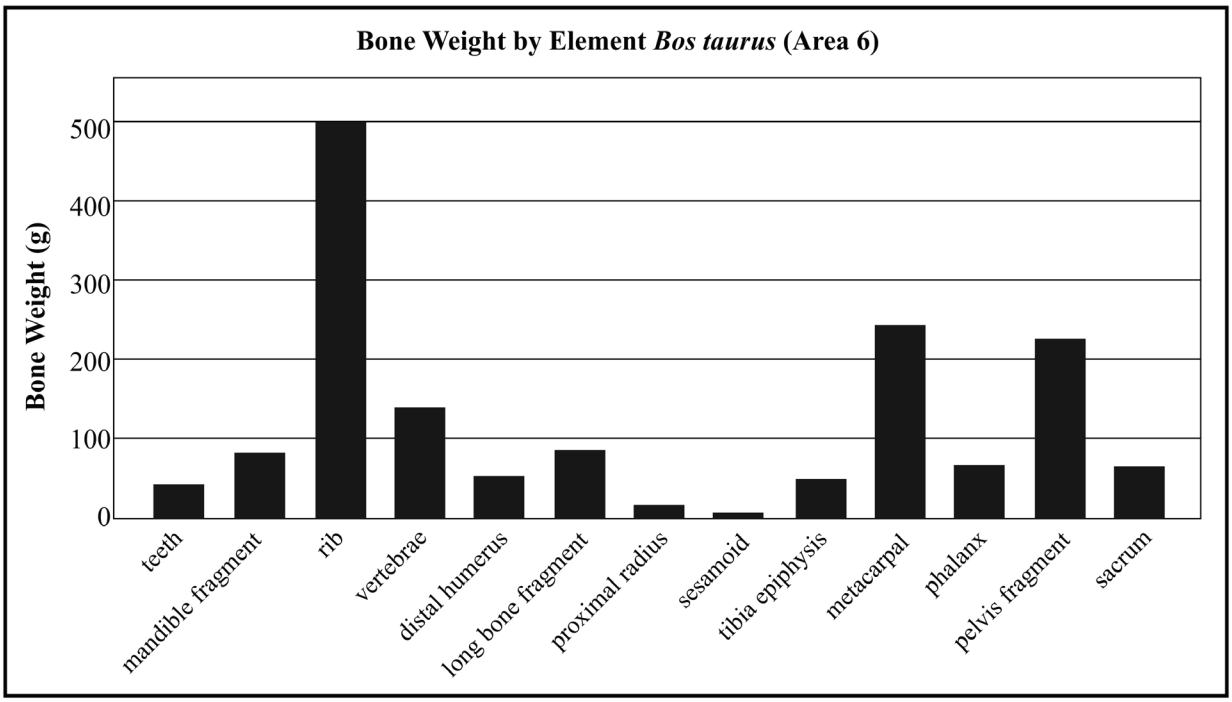

Figure 7-16. Bone weight by element for Bos taurus from Area 6.

those associated with the axial (mandible, teeth, vertebral column and ribs, pelvic region) and appendicular (upper and lower limbs, metacarpals, phalanx) portions of the skeleton. Ribs dominate the assemblage, with the 31 identified elements accounting for just over 500 grams (17.6 oz.; 32%) of the identified bone. Note also that cut marks are common on ribs in this sample being recorded on 12 of the 31 elements.

Chapter 8: Summary and Discussion

Mission San Antonio de Valero (41BX6) is a State Antiquities Landmark, listed on the National Register of Historic Places, and designated a UNESCO World Heritage Site. Consequently, any improvements to the facilities and surrounding complex that result in ground disturbing impacts requires some level of archaeological study to ensure that such projects do not negatively impact significant cultural deposits and/or human remains.

Consistent with the status and significance of the site, the Center for Archaeological Research conducted archaeological monitoring for the Alamo Security Upgrades project. Seven separate areas, designated Areas 1 through 7, were identified as potentially impacted by the work. With the exception of Area 7, which was only minimally affected, the six areas were located along the margins of the Alamo Plaza. As such, they have been severely impacted by recurring site developments. Nonetheless, CAR staff were able to identify and record four features. No features or intact deposits were located in Areas 2, Area 3b, Area 4, and Area 5. Nothing of note is reported for Area 7, since the installation of ramps and handrails did not affect any subsurface deposits. Conversely, CAR staff located and recorded features in Area 1, Area 3a, and Area 6. A summary is provided below.

Area 1, Feature 2–Post 1835 Wall Footing

Test excavations and archival research of the area associated with Feature 2, suggest that the remnants of this wall footing are associated with a post-1850 building construction. Test excavations of Feature 2 noted extensive damage to the wall footing, as a result of the installation of utilities. After discussions with the OHP and the THC, it was decided to fully document the feature and allow the security bollards install to proceed as planned.

The feature is within the site boundary of 41BX6 and was not previously recorded. As such, Feature 2 was recorded as a site revisit of Mission San Antonio de Valero (41BX6). Given the condition of the feature, and the post- 1850 age assignment based on the recovered artifacts, CAR recommends that Feature 2 be considered not significant in that it is not a contributing factor with regard to the overall SAL and NRHP status of 41BX6.

Area 3a, Feature 1–Cobble-lined Floor

This cobble-lined berm feature is located just outside the Mission's south gate. The semicircular berm may be part of the earthworks built at the south gate during the 1835-1836 siege of the Alamo. The artifacts recovered from the shovel testing and test excavations were in mixed deposits, overlaying the noted cobbles. It would seem that these artifacts were displaced from intact soils during recurring excavation events associated with street improvements and/or landscaping. Although the feature appeared to extend to the east, and possibly to the south, CAR's test excavation were limited to the area where the hardscape had been removed.

As suggested by the OHP and the THC, future testing of this area should allow subsequent archaeology to determine the extent, nature, and integrity of Feature 1. The portions of Feature 1 exposed were fully documented and protected from additional impacts, and recorded as a site revisit of Mission San Antonio de Valero (41BX6). At the present time, CAR recommends that the eligibility status of Feature 1 be considered undetermined with regard to the feature's contribution to the overall SAL and NRHP status of the site.

Area 6, Feature 5–Streetcar Rail System (41BX2163)

San Antonio's streetcar rail system was in service between 1878 and 1933. Feature 5 is related to the east to west segment of the Houston Street line. The streetcar rail ties that comprise Feature 5 are extant only because they are imbedded in an existing City Public Service concrete electrical vault. Feature 5 is thus well-protected and was not affected by the security bollard install.

Although the feature is within the margins of site 41BX6, the feature is clearly part of the Streetcar Rail System which was previously assigned site 41BX2163. It was recorded as a site revisit to 41BX2163. CAR recommends that the feature is not significant with regard to the SAL and NRHP status of 41BX2163.

Area 6, Feature 6–Colonial Wall Footing

Feature 6 is likely a Spanish Colonial wall footing that survived recurrent improvements to this area. It was found imbedded in a concrete conduit duct bank associated with an adjoining traffic signal. The limestone footer is exactly one vara wide, and is in line with the Long Barrack

walls. Feature 6 is likely to be part of the original mission construction. It was recorded as a site revisit of Mission San Antonio de Valero (41BX6).

CAR recommends that Feature 6 be considered as a significant, contributing component to 41BX6 with regard to the overall SAL and NRHP status of the site. It likely represents a section of a Spanish Colonial age footing with good integrity that is directly related to the Long Barrack at the Alamo.

Discussion

The multiple areas investigated on this project were widely dispersed and focused on the periphery of the present day Alamo Complex. The excavations themselves were limited in extent to that necessary for the installation of security bollards. In addition, most of the areas investigated were extensively disturbed. While CAR was able to identify and record the four features summarized previously, and collect a variety of Spanish Colonial and later artifacts discussed in Chapter 7, the large amount of depositional mixing exposed by the excavations precluded any definitive attribution of any of the artifacts to the features. The level of disturbance was disappointing and limits any conclusions. The disturbance is, however, not surprising. As demonstrated in Chapter 3, Alamo Plaza has been continuously occupied, at least since 1724 when Mission San Antonio de Valero was moved to the location. Over the centuries, the location has been subjected to a variety of diverse impacts, alterations, demolitions, and refurbishing. Uses of the Mission compound included the development of fortifications to protect, among others, the Mission Pueblo from the Apache, the Spanish from the Rebels, the Rebels from the Spanish, the Mexicans from the Texicans, and the Texicans from the Mexicans. Most of these, but especially the last one in March of 1836, ended badly for the fort occupants as well as for many of the formerly standing buildings and walls. These violent uses were followed by a variety of other uses of the grounds, including by the U.S. Army Quartermaster Corp and a variety of private interests, before the location was absorbed into the public sector. As detailed in Chapter 4, the area also has been subjected to an impressive number of archaeological investigations. Consistent with the archaeological work reported here, those earlier projects have demonstrated that much of the Alamo landscape has been extensively altered over time. While temporal assignment to individual gunflints or ceramic sherds can be made, these artifacts, without context and integrity, are of little archaeological value, at least at the scale of the site. Similar statements apply with regards to patterns in debitage and faunal material discussed in Chapter 7. There does, however, appear to be architectural features, such as Feature 6 and possibly the Feature 1 area identified here, that likely remained intact, and previous investigations, such as those of Ivey (1983), have identified other areas of intact Spanish Colonial deposits at the Alamo. While future research and construction planners should certainly rely on the archival record as a guide, these investigations and discoveries suggest that 41BX6 holds additional, intact deposits that should be anticipated in future work.

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Year	Mo. Day	Instrument	Volume & Page	Grantor	Grantee
1829	Apr. 20	Grant	F2:206-208	Spanish Govt.	A. Treviño
1839	Mar. 15	Deed	A2:161-162	M. Tarin	S. A. Maverick
1839	Dec. 16	Deed	A2:238-240	R. de la Garza	S. A. Maverick
1839	Dec. 18	Deed	A2:241-242	F. Castañeda	S. A. Maverick
1841	Apr. 28	Deed	A2:415-416	M. Ximenes y Castañeda	S. A. Maverick
1841	Jul. 1	Deed	A2:441-442	J. de Tarin, Estate	S. A. Maverick
1841	Sept. 24	Deed	A2:470-471	M. Romano	S. A. Maverick
1845	Jun. 13	Deed	C2:132-133	C. Charlé	S. A. Maverick
1848	Oct. 14	Deed	G2:442-443	M. J. Hernandez	A. Salazar
1848	Oct. 14	Deed	G1:444-445	A. Salazar	J. C. Beckamn
1853	Nov. 4	W. Deed	L1:561+562	J. C. Beckman	S. Danenhauer
1855	Nov. 6	W. Deed	N1:460-461	J. C. Beckman	S. Danenhauer
1865	Nov. 16	Deed	T2:202-203	J. C. Beckman	H. W. & F. Bitter
1877	Dec. 1	Deed	7:373-374	Catholic Church	Honore Grenet
1883	Mar. 16	Deed	31:265-266	Catholic Church	State of Texas
1890	Mar. 19	D of T	91:154-155	H. W. & F. Bitter	Yoakum & King
1890	Mar. 19	W. Deed	104:459-460	Yoakum & King	J. H. Neagle
1891	Mar. 25	Deed	97:527-532	J. H. Neagle	Yoakum & King
1892	Apr. 26	Release	104:459-460	H. W. & F. Bitter	Yoakum & King
1913	Jun. 11	Deed	420:84-85	B. F. Yoakum	B. Y. Larkin
1914	Jan. 22	Deed	434:6-7	B. G. Larkin	J. Courand
1925	Mar. 26	Deed	817:166-167	J. Courand	City of San Antonio
1926	Apr. 30	Deed	887:272-274	J. Courand, Estate	O. M. Farnsworth
1930	Jan. 5	Deed	1161:520-521	O. M. Farnsworth	J. B. & F. Herff
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Appendix A: Shovel Tests with Recovery

FS #	Area	Provenience	Shovel Test	Level	Depth (cmbs)
1	1	Shovel Test 1	1	3	20-30
2	1	Shovel Test 2	2	2	10-20
3	1	Shovel Test 2	2	3	20-30
4	1	Shovel Test 10	10	2	60-70
5	1	Shovel Test 26	26	6	70-80
6	1	Shovel Test 27	27	3	40-50
7	1	Shovel Test 27	27	4	50-60
8	1	Shovel Test 28	28	3	50-60
9	2	Shovel Test 34	34	2	30-40
10	3	Shovel Test 36	36	2	30-40
21	4N	Shovel Test 43	43	5	60-70
48	4S	Shovel Test 92	92	4	50-60
49	3b	Shovel Test 102	102	1	45-60
50	3b	Shovel Test 107	107	1	44-60
52	3b	Shovel Test 110	110	4	70-80
60	6W	Shovel Test 117	117	1	30-40
64	6W	Shovel Test 133	133	2	40-50
62	6W	Shovel Test 135	135	2	40-50
63	6W	Shovel Test 135	135	3	50-60
65	6E	Shovel Test 140	140	4	60-65
66	6E	Shovel Test 141	141	2	40-50
67	6E	Shovel Test 145	145	3	50-60
68	6E	Shovel Test 145	145	4	60-65
69	6E	Shovel Test 146	146	3	50-60
70	6E	Shovel Test 146	146	4	60-65
71	6E	Shovel Test 148	148	3	50-60
72	6E	Shovel Test 150	150	4	60-65
73	6E	Shovel Test 152	152	2	40-50
74	6E	Shovel Test 152	152	4	60-65
76	6E	Shovel Test 153	153	1	35-45
77	6E	Shovel Test 153	153	2	45-55
79	6E	Shovel Test 155	155	2	45-55
80	6E	Shovel Test 157	157	1	44-55
84	6E	Shovel Test 158	158	1	38-45
86	6E	Shovel Test 158	158	3	55-65
78	6E	Shovel Test 160	160	1	40-50
81	6E	Shovel Test 164	164	1	37-50
82	6E	Shovel Test 164	164	2	50-60

FS #	Area	Provenience	Shovel Test	Level	Depth (cmbs)
83	6E	Shovel Test 167	167	2	50-60
87	6E	Shovel Test 168	168	1	38-50
88	6E	Shovel Test 168	168	2	50-60
89	6E	Shovel Test 170	170	2	50-60
90	6E	Shovel Test 172	172	1	37-45
91	6E	Shovel Test 172	172	2	45-55
92	6E	Shovel Test 172	172	3	55-65
93	6E	Shovel Test 173	173	4	70-80
94	6E	Shovel Test 174	174	1	40-50
95	6E	Shovel Test 174	174	2	50-60
97	6E	Shovel Test 176	176	2	50-60
99	6E	Shovel Test 177	177	1	44-50
100	6E	Shovel Test 177	177	2	50-60
102	6E	Shovel Test 179	179	1	25-30
103	6E	Shovel Test 179	179	2	30-40
104	6E	Shovel Test 179	179	3	40-50
101	6E	Shovel Test 180	180	1	20-30
105	6E	Shovel Test 180	180	5	60-65
98	6E	Shovel Test 181	181	2	20-30
106	6E	Shovel Test 182	182	1	17-28

Appendix B: Test Units with Recovery

FS #	Area	Feature	Provenience	TU	Level	Depth (cmbd)	Depth (cmbs)
11	3	1	Test Unit 1	1	2	19-30	
12	3	1	Test Unit 1	1	3	30-40	
13	3	1	Test Unit 2	2	1	13-20	
14	3	1	Test Unit 2	2	2	20-30	
15	3	1	Test Unit 2	2	3	30-40	
16	3	1	Test Unit 2	2	4	40-50	
17	3	1	Test Unit 3	3	2	20-30	
18	3	1	Test Unit 3	3	3	30-40	
28	3		Test Unit 3	3	4	35-40	
29	3		Test Unit 3	3	5	40-50	
30	3		Test Unit 3	3	6	50-60	
19	3	1	Test Unit 4	4	2	20-30	
20	3	1	Test Unit 4	4	3	30-40	
33/41	3		Test Unit 4	4	4	40-50	
23	1		Test Unit 5	5	2	70-80	
26	1		Test Unit 5, west wall	5	n/a	54-80	
27	1		Test Unit 5, west wall	5	n/a	54-80	
38	1		Test Unit 5 Auger	5	n/a	70-85	
39	1		Test Unit 5 Auger	5	n/a	85-100	
40	1		Test Unit 5 Auger	5	n/a	100-105	
32	3		Test Unit 6	6	2	30-40	
34	3		Test Unit 6	6	3	40-50	
42	3		Test Unit 6	6	4	50-60	
43	3		Test Unit 6	6	5	60-70	
37	1		Test Unit 7	7	2	70-80	
44	3		Test Unit 8	8	2	30-40	
45	3		Test Unit 8	8	3	40-50	
53	1E	2	Test Unit 9	9	1	-	29-50
54	1E	2	Test Unit 10	10	1	-	28-40
55	1E	2	Test Unit 10	10	2	-	40-50
56	1E	2	Test Unit 10	10	3	-	50-60
57	1E	2	Test Unit 10	10	4	-	60-70
58	1E	2	Test Unit 10	10	5	-	70-80
59	1E	2	Test Unit 10	10	6	-	80-90

FS #	Area	Feature	Provenience	TU	Level	Depth (cmbd)	Depth (cmbs)
107	6E		Test Unit 12	12	1	36-50	
108	6E		Test Unit 12	12	2	50-60	
109	6E		Test Unit 12	12	3	60-70	
110	6E		Test Unit 12	12	4	70-80	
111	6E		Test Unit 13	13	1	37-50	
112	6E		Test Unit 13	13	2	50-60	
114	6E		Test Unit 13	13	3	60-70	
116	6E		Test Unit 13	13	4	70-80	
113	6E		Test Unit 14	14	2	50-60	
115	6E		Test Unit 14	14	3	60-70	