

# Archaeological Monitoring for Enlargement of a Drainage Swale at Mission San Francisco de la Espada, San Antonio, Bexar County, Texas

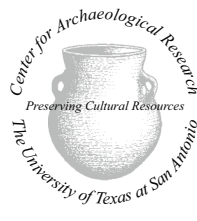


*by*  
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Texas Antiquities Permit No. 7635

Principal Investigator  
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Technical Report, No. 65

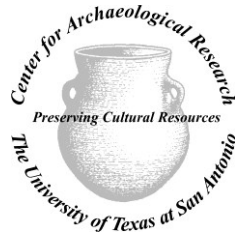


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## **Abstract:**

On May 2, 2016, the Center for Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) monitored the enlargement of a drainage swale at Mission San Francisco de la Espada, San Antonio, Bexar County, Texas. Mission Espada is a State Antiquities Landmark (SAL) and is listed on the National Register of Historic Places (NRHP). Project Archaeologist Stephen Smith monitored excavations for the enlargement, and Dr. Paul Shawn Marceaux served as the Principal Investigator.

CAR recommends to the project sponsor and Archeology Division of the Texas Historical Commission (THC) no further archaeological investigation of the project area. This recommendation is based on CAR's negative findings during the monitoring and because the project sponsor plans no additional ground disturbances. Though no further work is recommended at this time, it is known that Mission Espada and the surrounding area contains important archaeological resources. Therefore, archaeological monitoring and/or investigation should precede any future ground-disturbing activities in the area.

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## **Acknowledgements:**

Project Archaeologist Stephen Smith conducted the archaeological monitoring discussed in this Technical Report. Dr. Paul Shawn Marceaux acted as Principal Investigator. Katherine Smyth prepared the figures, and Kelly Harris edited the manuscript. A special thanks to Pugh Constructors Inc., the Archdiocese of San Antonio, Ford, Powell and Carson, Inc., and the National Park Service for their help with the project.

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# **Chapter 1: Introduction and Project History**

## **Introduction**

Pugh Constructors, Inc. requested the Center for Archaeological Research (CAR) at The University of Texas San Antonio (UTSA) monitor drainage improvements to Mission San Francisco de la Espada in San Antonio, Bexar County, Texas. The Archdiocese of San Antonio, the National Parks Service (NPS), and the Texas Historical Commission (THC) are all involved in overseeing the mission. On May 2, 2016, the CAR monitored the drainage improvements under Texas Antiquities Permit No. 7635. Dr. Paul Shawn Marceaux acted as Principal Investigator. Project Archaeologist (PA) Stephen Smith monitored the excavations.

## **Area of Potential Effect (APE) and Project History**

Mission Espada is located in southern Bexar County on the Southton 7.5-minute series USGS quadrangle map (Figure 1-1). The Mission is a State Antiquities Landmark (SAL) and is listed on the National Register of Historic Places (NRHP). The Area of Potential Effect (APE) is shown in Figure 1-2. The drainage work involved widening an existing drainage swale (Figure 1-3). The swale drained from the parking area to a low spot northeast of the lot. In late 2014, CAR archaeologists monitored hand digging of the drainage trench that was excavated 4-5 in. (10.2-12.7 cm) deep and 10-12 in. (25.4-30.5 cm) wide (Figueroa and Kemp 2016:32). The swale has proven inadequate to drain the parking lot, which led the project sponsor to propose widening and deepening it.

## **Report Overview**

The report has five chapters. This introductory chapter is followed by Chapter 2, which provides the environmental setting and cultural history. Chapter 3 offers a brief history of Mission Espada and presents a review of the previous archaeology in the area. The subsequent chapter describes the field and lab methods. Chapter 5 provides a summary and recommendations.

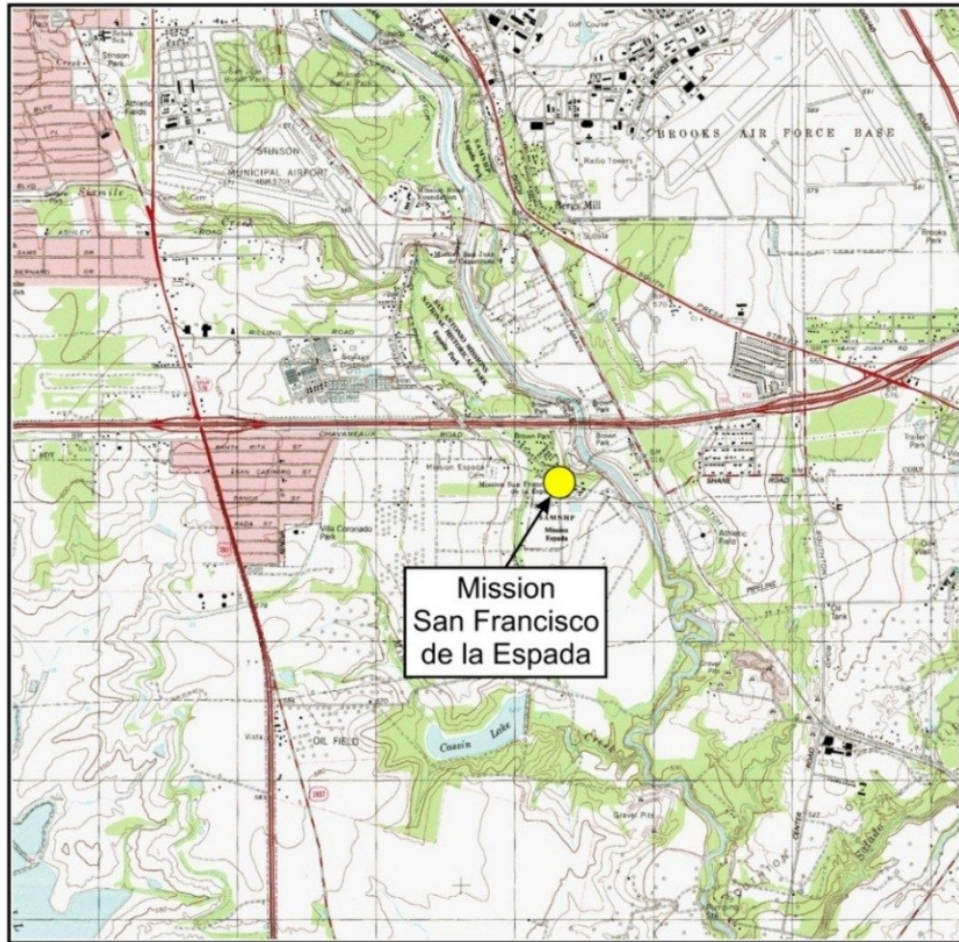


Figure 1-1. Location of APE on the Southton 7.5-minute USGS quadrangle map.

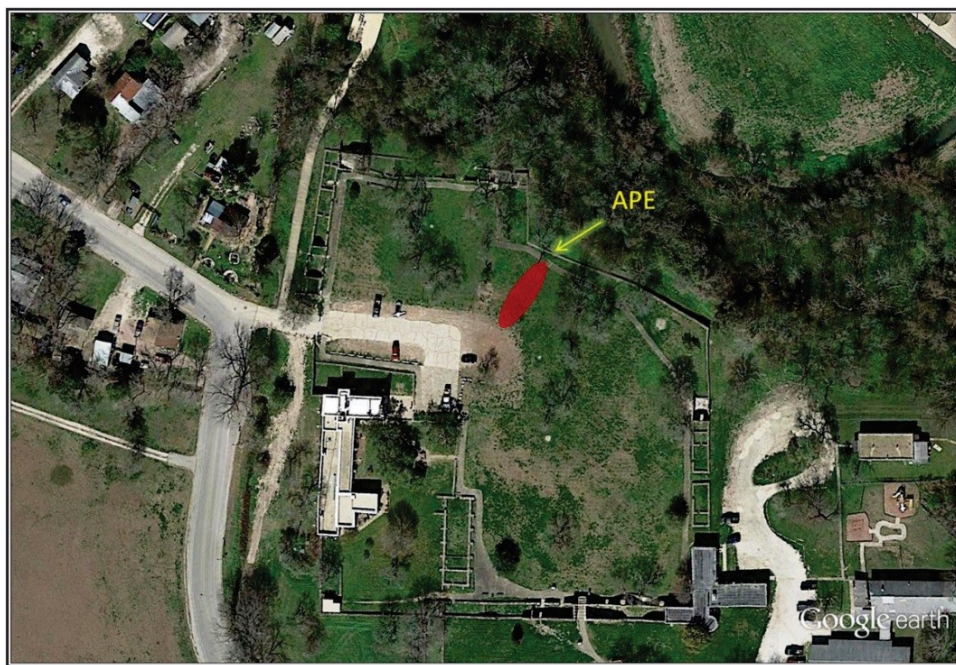
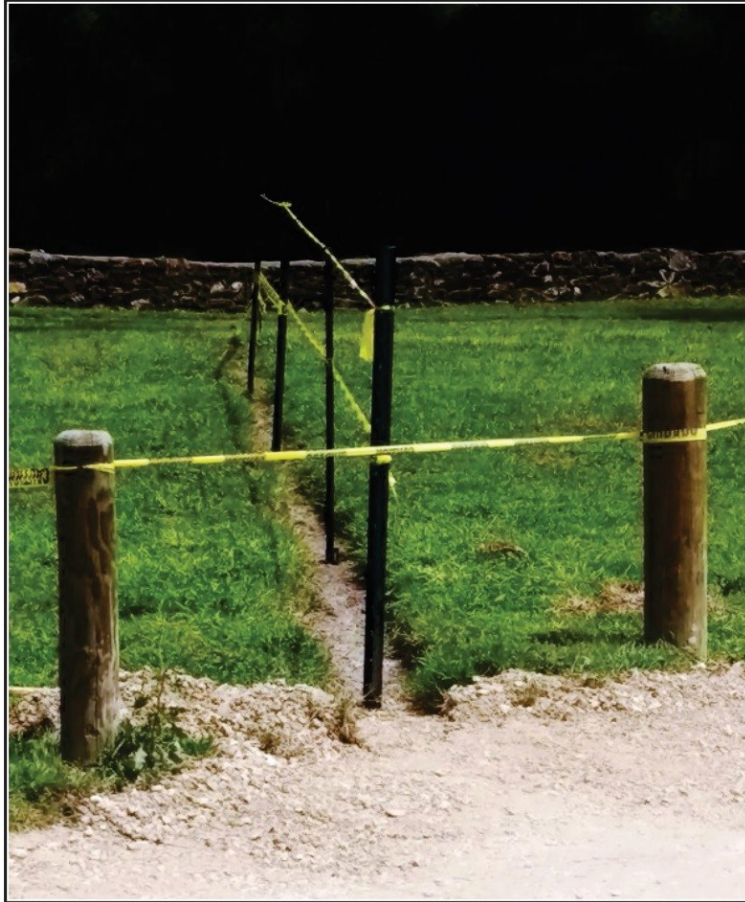


Figure 1-2. The Area of Potential Effect (APE) shown in red.





*Figure 1-3. Existing drainage area.*

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## Chapter 2: Environmental Setting and Cultural History

### Environmental Setting

Mission San Francisco de la Espada is 9 mi. (14.5 km) from downtown San Antonio. The elevation is 534-567 ft. (163-173 m.) above mean sea level (amsl). Temperatures for San Antonio averaged 67.9° F in the 1880s and 70° F in the 2000s (NWS 2014a). Average precipitation for San Antonio was 22.79 in. (57.9 cm) in 1871 when records began being kept. Average precipitation was 39.40 in. (100 cm) in 2013 (NWS 2014b). Bexar County is located at the juncture of three major physiographic regions: the Edwards Plateau in the north and northwest parts of the county; the Blackland Prairie in the east-central; and the Gulf Coastal Plain in the south (Presley 2003). The project is located within the Gulf Coastal Plain that is associated with the Tamaulipan Biotic Province. Biotic provinces consider floral and faunal associations, physiography, and soil type, as well as climate (Presley 2003). Soil associated with the APE are Loire (Fr) clay loam with 0-2 percent slopes that are associated with flood plains (NRCS 2014). However, grading and construction have modified the APE making these soil associations less meaningful.

Three plant communities exist in the mission's ecological setting (NRCS 2014). These plant communities are tallgrass savannah, midgrass savannah, and dense woodland. Tallgrass savannah is a hardwood savannah of 20 percent tree and shrub canopy cover (NRCS 2014). During Spanish Colonial times, the area was believed to have been heavily wooded. The current state is due to human induced fire. A variety of grasses in this ecological community make up 75 percent of the ecological setting. Dominate grasses include big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), little bluestem (*Schizachyrium scoparium*), Indiangrass (*Sorghastrum nutans*), and eastern gamagrass (*Tripsacum dactyloides*). Tallgrass savannah comprise 20 percent, while the remaining five percent are forb species (NRCS 2014). Shrubs, vines, and trees are pecan (*Carya illinoensis*), hackberry (*Celtis*), and oak (*Quercus*). Texan great ragweed (*Ambrosia trifida*), tickclover (*Desmodium*), and wildbean (*Strophostyles*) are examples of forbs in this plant community (NRCS 2014).

The midgrass savannah ecological setting is a result of improper grazing and lack of brush control in a tallgrass savannah setting (NRCS 2014). Canopy ranges between 30 and 50 percent. Sixty percent of this setting consists of grasses, such as big bluestem (*Andropogon gerardii*) and broomsedge bluestem (*Andropogon virginicus*). Shrubs and vines are 30 percent of the community, while forbs are only 10 percent (NRCS 2014).

The dense woodland community is a result of native shrubs taking over a savannah setting (NRCS 2014). Plant canopy in this community is over 50 percent and consists mostly of hardwoods, such as pecan and oak species. Eighty percent of this community consists of shrubs, vines, and trees. Examples of forbs (10 percent) in the community are western ragweed (*Ambrosia psilostachya*) and blood ragweed (*Ambrosia trifida*). Grasses comprise 10 percent of the dense woodland community, including bristlegass (*Setaria*) and flatsedge (*Cyperus*).

## **Cultural History**

The following section of the report offers a cursory account of the prehistoric and historic cultural history of south and central Texas. Researchers generally discuss the prehistory of south and central Texas in terms of three broad periods, the Paleoindian, Archaic, and Late Prehistoric. Distinctions within the prehistoric periods are primarily based on projectile point classifications that have both temporal (Bousman et al. 2004) and cultural (Collins 2004) features. The historic period began when Europeans arrived in the area.

## **Prehistoric History**

### **Paleoindian Period (11,500-9000 BP)**

This period dates to the end of the last Ice Age during the Pleistocene and beginnings of the Holocene. A period of great climate change, subsistence practices altered dramatically. In the early part of the period, focus was on large “megafauna,” but as these resources became extinct diet shifted to bison, deer, and plants (Collins 2004).

### **Archaic Period (9000-1200 BP)**

Compared to the Paleoindian Period, the 7,800-year Archaic period reflected increased population, an intensification of hunting and gathering, lower mobility, and an associated focus on the use of increasingly local resources. In Central Texas, a variety of technological changes, some of which are clearly related to subsistence and a shifting resource structure, appeared during this period.

### **Early Archaic**

In the Early Archaic, spanning from 9000 through 6800 BP, there was a shift in subsistence from large game hunting to plant foods and medium and small species of game (Collins 2004). New projectile point types include Early Split Stem/Early Triangular, Gower, Martindale, and Uvalde. Specialized, task-specific tools, including Clear Fork gouges and Guadalupe bifaces, also appeared during this time.

## **Middle Archaic**

The Middle Archaic spans from 6800 to 4200 BP. Diagnostic projectile points from this period include Andice, Bell, Calf Creek, Nolan, Taylor, and Travis. Some disagreement exists over the presence and/or absence of bison during this time sub-period (Dillehay 1974; Collins 2004; Munoz and Mauldin 2011). Many researchers agree that human populations in the region increased during the Middle Archaic (Weir 1976; Story 1985)

## **Late Archaic**

This last sub-period spans 4200 to 1200 BP. Dart point diagnostics of the Late Archaic are triangular points with corner notches that include Ensor and Ellis (Turner et al. 2011). Other Late Archaic dart point types are Bulverde, Castroville, Marcos, Marshall, and Pedernales (Collins 2004). Changes in mobility and organization including the founding of large cemeteries and more restricted spatial distribution of point types may signal the development of territories during this period (Black and McGraw 1985).

## **Late Prehistoric Period (1200-350 BP)**

This period has been divided into two phases: Austin (ca. 1200 to ca. 700 BP) and Toyah (ca. 700 to 350 BP). Technological change distinguishes the phases. In the Austin phase, bow and arrows replaced a 9,000-year-old dart and spear technology. During the Toyah phase, bone tempered ceramics appeared.

## **Historic Period**

The Historic period is divided into the Proto-historic (AD 1528-1700), the Colonial/Mission period (1700-1821), the Mexican period (1821-1836), and the Republic of Texas/Early State Period (1836-1900). Readers interested in a more thorough review of this period should refer to McKenzie et al. (2016).

### **Proto-historic (1528-1700)**

The Proto-historic period commenced with the Spanish arrival in 1528 and terminated when European settlements were established around AD 1700 (see Chipman and Joseph 2010; Weddle 1968). Archaeological evidence of Native American and European contact is scant (see Thoms and Ahr 1995). Therefore, most of what is known about the period comes from European accounts.

### **The Colonial/Mission Period (1700-1821)**

This period commenced with the founding of permanent missions in south and central Texas. In San Antonio, the *Villa de Bexar* and Mission Valero were founded in 1718. Three additional missions were relocated to San Antonio from East Texas in 1731. The permanent Spanish presence in Central Texas was

solidified over the next few years as the Spanish responded to the perceived threat of the French. However, missions in San Antonio were on the decline by the close of the 1700s. Falling population totals and several epidemics, including small pox and measles, hastened this decline (Ewers 1973).

A decree issued in 1794 called for secularization of the San Antonio missions, and several missions were essentially abandoned (Cox 1997, 2005b). Missions in the area were secularized by 1824 (Carlson 1994; Cox 1997). Tensions at the close of the eighteenth century between Spain and its colonies in Texas and Mexico increased, and in 1810, several groups rebelled against Spanish control. The rebels were eventually successful, and in 1821, Mexico became independent, essentially ending Spanish Colonial rule (Henderson 2009).

### **The Mexican Period (1821-1835)**

In 1821, Texas was underpopulated and in economic chaos. To remedy this situation, Mexico adopted laws and constitutional changes that allowed heads of households to claim land in Mexico. A significant number of settlers moved to Mexico from the United States (Cox 1997), but tensions between settlers and the nation of Mexico soon erupted. When Santa Anna took control of the Mexican government in 1834, he dissolved the legislature and began rescinding the laws and constitution and dispatching troops under Martin Perfecto de Cos to deal with unrest. Insurrection brought Cos to San Antonio, and he occupied the town in October of 1835. Eventually, Cos was defeated, and he was forced to surrender and withdraw his forces to the south (Cox 1997; Marley 2014).

Santa Anna recaptured San Antonio in the winter of 1836 after a short siege at Mission Valero. Following the victory, Santa Anna dispatched forces to crush the remaining resistance. Santa Anna was defeated in late April at the battle of San Jacinto ending Mexican rule of Texas (Cox 1997; Davis 2004).

### **The Republic of Texas and Early Texas State (1836-1900)**

The new Republic of Texas was established in March of 1836. Boundary disputes continued with Mexico until June 1843 when an armistice was reached (Cox 1997). The Republic offered cheap land to encourage immigrants who came from the United States and Europe including many Germans (Meinig 1969). In 1845, the United States Congress and the Texas Republic agreed to annexation terms, and Texas was admitted as the 28th state on December 29, 1845 (Neu 2013; Texas State Library and Archivist Commission [TSLAC] 2014). Texas statehood led to war between the United States and Mexico in May 1846. The Treaty of Guadalupe-Hidalgo, signed February of 1848, ended the dispute and established the Rio Grande as the southern boundary between the United States and Mexico.

Following the war, Texas experienced rapid population growth. People came from the southern states and from Europe with German, Czech, and Polish immigrants arriving in large numbers. By 1860, population totals exceeded 600,000, which was a significant increase from 1847 when the population had been recorded as 142,000 (Campbell 2003). Much of this growth was tied to the availability of farmland. Cotton, often supported by slave labor, was the dominant crop in East Texas. Roughly 30,000 black slaves were present in the state in 1847 (Campbell 1989; Cox 1997), and this number increased to over 180,000 by 1860 (Campbell 1989, 2003; Meinig 1969).

Texas sided with the Confederacy and seceded from the United States in February 1861. The next month, Texas joined the Confederate States of America. Few major battles occurred within the state (Campbell 2003). Following the defeat of the Confederacy, Texas was readmitted to the United States in 1870.

Throughout the late 1800s, the state's population increased. In the early 1870s, the population surpassed one million, and by the turn of the century, the number had grown to over three million (Meinig 1969). Relative to southern states, Texas had suffered little damage during the Civil War and possessed cheap land. Farming in eastern Texas and cattle ranching in the south, west, and the plains/panhandle areas were the major economic activities during this period (Campbell 2003; Meinig 1969; Sonnichsen 1950). Railroads expanded into Texas, and by 1900, the state was crisscrossed by an extensive network of rail lines connecting Texas with the rest of the United States (Meinig 1969; Reed 1941). As a result, commercial development increased throughout the twentieth century.

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## Chapter 3: Previous Investigations

### Brief History of Mission San Francisco de la Espada

Mission San Francisco de la Espada was established in 1690 and located about 7 mi. (11 km) west of the Neches River on San Pedro Creek in modern-day Houston County (Habig 1968:192). Abandoned in 1693, the mission was reestablished in 1716 as Nuestro Padre San Francisco de los Tejas in Cherokee County (Habig 1968:195); however, this mission failed in 1719 after the French invaded East Texas. The mission was reestablished in East Texas in 1721 before being moved to its present spot in 1731 and renamed San Francisco de la Espada (Habig 1968:202-204).

By 1745, the mission included a small village with *jacales* (thatched-roofed huts) along the northwestern margin of the compound used for Indian quarters (Ivey et al. 1990:201). A stone wall enclosed the compound as a bulwark against attacks in 1756. Stone houses were also present (Habig 1968). By 1762, Indian residents were no longer living in *jacales* but in stone and mortar houses built in three rows around the square (Habig 1968:213). Because the church was never finished, worshippers used the sacristy as the chapel, a practice still in effect today (Cargill et al. 2004; Ivey et al. 1990).

Secularization of the Missions began in 1794, and by 1824, Mission Espada was fully secularized. During secularization, populations at the missions decreased, while private ownership of mission structures increased (Almaraz 1982). By 1824, the structures were dilapidated, and Espada, like other missions became a source of stone for construction. Fr. Francis Bouchu bought the property in 1868 where the church and convento stand (Ivey et al. 1990:313; Smith 1980a, 1980b). Fr. Bouchu became primarily responsible for the rebirth of the mission, and when he died in 1907, the mission fell into disrepair (Cargill et al. 2004; Smith 1980a, 1980b). Around 1916, the archdiocese gave responsibility for the missions to William Hume, who reconstructed the chapel (Thurber et al. 1993). Mission San Francisco de la Espada became part of the San Antonio Missions National Historical Park system in 1983, and today is administered by the NPS (Cruz 1983).

### Previous Archaeology at Mission Espada (41BX4)

Most information about Mission Espada architecture came from drawings of subsurface features made by Harvey P. Smith in 1933 (Ivey et al. 1990). However, the earliest archeological study of Mission Espada occurred in May 1976, when CAR excavated three 3.3-x-3.3 ft. (1-x-1 m) units along the exterior and interior walls of the bastion (Fox and Hester 1976). This work was done to aide in stabilization of the bastion. Fox and Hester put two units along the exterior east and west walls of the bastion, and the third

unit at the interior south wall. Their investigation found the wall footings were constructed of “50 cm of rubble set in soil, packed into a trench the same thickness as the wall” (Fox and Hester 1976:22). They described the wall as “constructed of roughly shaped local stone, set in a sand and lime mortar” (Fox and Hester 1976:22). Fox and Hester were unsuccessful in determining a construction date for the bastion, but historical documents refer to it as early as 1772 (Cargill et al. 2004:13).

In March 1977, Killen and Scurlock (1977) excavated four kilns located immediately north-northeast of the compound. They only excavated the interior of the kiln features and recovered Spanish Colonial and post-Spanish Colonial age artifacts. The features are Spanish Colonial in date and thought to be lime kilns. Killen and Scurlock had time to excavate only one kiln, leaving uninvestigated areas adjacent to the kilns. Following the work, they backfilled the features and capped them with corrugated metal sheets (Killen and Scurlock 1977).

In 1981, CAR conducted archeological investigations in two areas in the mission (Area A and Area B). CAR excavated three units immediately north of the chapel (Area A, Units 1, 2 and 5; Fox 1981). In Area A, CAR tested features and cultural deposits before construction of a caliche parking lot. In Area B, CAR documented an early-twentieth-century building. The building is referred to as either the Oaks House or the Old Convent. Area B is outside of the eastern wall of the compound. Fox concluded that constructing the caliche parking area would not harm cultural resources. She suggested future improvements in Area A be limited to raising the present grade of the parking lot (Fox 1981:7). Fox concluded that future developments in Area B would not impact the cultural resources of the mission (Fox 1981:7).

In 1983, CAR conducted coring and limited test excavation prior to NPS stabilization of wall stabilization (Fox 1999). They drilled five cores within the vicinity of the *convento*, and placed a sixth at the northwest corner of the mission compound. Coring returned dark loamy and clayey soils down to 9.8 ft. (3 m), caliche to about 20 ft. (6.1 m), and water below that. They trenched along the west perimeter wall of the compound, south of the chapel. The excavation located the bottom of the wall at about 3.9 ft. (1.2 m) below the surface. The wall footer extended between 3.9 ft. (1.2 m) and 5.3 ft. (1.6 m) below the surface. The excavation also noted some wall collapse and rebuilding (Fox 1999).

Before wall stabilization, NPS excavated two rooms near the bastion, did archival research, and made a property abstract (Escobedo 1984). Escobedo excavated one trench and six test pits in the interior of the North Room (Casanova Room), and he excavated one test pit inside the West Room (Diaz Room). His most significant find was flagstone paving in the West Room that he presumed to be Spanish Colonial. Escobedo concluded that the rooms were constructed ca. 1785. He also determined that the bastion was constructed

ca. mid-1820s. Escobedo suggested that the mission was constructed in phases and that the southeast section represented the last construction phase.

In October 1990, CAR excavated three units within the southeast corner of the compound (Meskill 1992). Meskill excavated two units beside walls to examine foundations and to assess how much Spanish Colonial era fill surrounded each foundations. She exposed a twentieth-century concrete foundation beneath the east wall and a Spanish Colonial stone-rubble foundation against the south wall. Meskill concluded that the east wall had been modified ca. 1930. She concluded that the south wall footer extended about 19.7 in. (50 cm) below the wall. Meskill excavated the third unit away from walls. There, Meskill located a loose stone alignment that had gone unrecorded and concluded that it was an unknown low-lying wall. Meskill cautioned against conducting below-grade disturbances in this area of the compound.

In October 1996, CAR shovel tested an area known as the New Plaza in anticipation of construction of a proposed movie set (Gross 1997). CAR excavated 26 shovel tests in 50-ft. (15.2-m) intervals within a 200-x-300 ft. (61-x-91.4 m) area. CAR concluded that pre-1780 trash pits may have existed north of the compound outside of the east gate of the original compound (Gross 1997:10). CAR also concluded that a concentration of post-Colonial ceramics in the southern portion of the plaza area may reflect habitation sites along the south wall that existed throughout the nineteenth and early twentieth centuries (Gross 1997:11). And finally, CAR concluded that the northern portion of the New Plaza may contain intact Spanish Colonial deposits (Gross 1997:11). CAR recommended that the northern area of the mission be avoided until it is covered with 6-12 in. (15.2-30.5 cm) of fill (Gross 1997:11).

In April 1998, CAR monitored the hand-excavation of a 10-in (25.4-cm)-wide, 18-in. (45.7-cm) deep electrical conduit trench. The trench ran outside the west wall and along the south end of the Priest Quarters and parish office (Meissner 1998). Meissner collected a small sample of diagnostic artifacts, and recorded other artifacts encountered. She also recorded a wall foundation. This wall foundation was near the reconstructed north-south perimeter wall. Near the wall foundation, Meissner found a large concentration of Spanish Colonial ceramics. In light of her findings, Meissner cautioned against excavating in this area (Meissner 1998).

In another 1998 project, CAR excavated in the *convento* of the mission prior to the installation of electrical lines. CAR excavated a 3.3-x-6.6 ft. (1-x-2 m) unit along the southwest corner of the Priest Quarters where Meissner (1998) monitored earlier that year. Results of this work were reported in Zapata et al. (2000).

Still in the year 1998, the City of San Antonio contracted CAR to assess damage from unmonitored construction around the mission (Cargill et al. 2004). Between December 1998 and April 1999, CAR did

their assessments excavating forty-nine units at the Northwest Gateway, the Hike-and-Bike Trail, and Drainage System A. In addition, CAR monitored construction excavations in Drainage Systems A and B and pipe replacement in the Espada *Acequia*. CAR excavated two backhoe trenches in Drainage System A and seven more in Drainage System B. Sixteen test units revealed a limestone foundation wall believed to be a portion of the west wall built around 1756. These units contained limestone paving. CAR found evidence at the Northwest Gateway that the area had been disturbed many times, beginning in the Spanish Colonial period and continuing to the present. CAR found a large number of Spanish Colonial artifacts, despite disturbances, and evidence of the unreconstructed southern gate room. Twenty-six units were excavated in the Hike-and-Bike Trail, some having intact Spanish Colonial deposits near the surface. CAR excavated seven test units and two backhoe trenches in Drainage System A where they encountered a Spanish Colonial-period pottery kiln and a pit feature that may have been a borrow pit for clay. Archaeologist identified no significant cultural deposits during the monitoring of the replacement of pipes in the Espada *Acequia* and the excavation of the seven backhoe trenches in Drainage System B.

In July and August 1999, CAR investigated the area along the southern walls of the Priest Quarters before installation of foundation piers and beams (Zapata et al. 2000). Zapata excavated fourteen 3.3-x-3.3 ft. (1-x-1 m) units. These excavations exposed an 82.7-ft. (25.2-m) section of the wall foundation and recovered a variety of Spanish Colonial and post-Colonial artifacts including ceramics, lithics, glass, metal, chipped stone, and animal bones.

Also in July of 1999, CAR shovel tested the route of an electrical utility trench as part of phase one of the Mission Trails Underground Conversion Project (Tennis 2001). Shovel testing began adjacent to the southwest corner of the mission compound and progressed to the center of the *acequia* on the north. CAR monitored excavation of the utility trench. This work revealed the area had been disturbed by construction of a septic field. Monitoring of the dry channel of the *acequia* revealed no early historic deposits (Tennis 2001:116).

Finally, in 2014 and 2015 (Figueroa and Kemp 2016), CAR monitored and tested in the parking lot north of the chapel and west of the *convento*. This work was associated with installation of 39 bollards and improvements to the parking lot. CAR also monitored plumbing utility installation. During bollard excavation, CAR noted Spanish Colonial material comprising ceramics, faunal, lithics, and glass. While grading the parking lot, they uncovered what they believed to be the 1772 gate. They identified what they interpreted as a Spanish Colonial period midden near the west side of the *convento*.

## **Chapter 4: Methods and Findings**

### **Field Methods**

The field crew included a single Project Archaeologist (PA). A lab-based GIS Specialist supported the PA. The PA was present for all below ground disturbances. The contractor performed all work within the archaeological site 41BX4. The PA performed one day of monitoring, produced field notes, and prepared a monitoring report. The PA screened matrix containing artifacts and collected all diagnostics. The PA completed a standard monitoring form and collected GPS data from which the GIS Specialist constructed a map. The PA maintained and archived photographs and made a photo log in digital format. No features were encountered.

### **Laboratory Methods**

All records CAR generated during the project are under federal regulation 36 CFR Part 79 and THC requirements for State Held-in-Trust collections. Records were made within the current guidelines of CAR. Lab staff separated field notes, forms, and photographs into labeled, archival-appropriate folders. Staff printed digital photographs on acid-free paper, labeled them with archival-appropriate materials, and placed them into archival-quality sleeves. Field forms were completed in pencil, and staff placed soiled forms in plastic, archival-quality page protectors. Maps produced by ink-jet printer and illustrations were placed in archival-quality page protectors to prevent smearing due to moisture. All collected materials and project related documentation are housed at the CAR.

### **Findings**

As noted, fieldwork occurred on May 2, 2016, and the PA monitored all below ground excavations. The contractor used a skid steer to accomplish the excavations. The contractor began by removing the two bollards and the four T-posts depicted in Figure 1-3. The excavation plan comprised widening the narrow swale transected by the T-posts. The existing swale was 10-12 in. (25.4-30.5 cm) wide and 4-5 in. (10.2-12.7 cm) deep and has proven inadequate to drain the current parking lot. The depth of the swale was slightly shallower than when originally excavated in 2014 (Figure 4-1; Figueroa and Kemp 2016:Figure 4-24). The change in depth was likely the result of recent deposition during rain events.



*Figure 4-1. Drainage swale as excavated in late 2014 (Figueroa and Kemp 2016:Figure 4-24).*

The current construction plan included widening the swale to approximately 6 ft. (1.8 m) and extending the depth to 6 in. (15.2 cm) below the surface. This excavation was oblong in outline and centered on the existing swale (Figure 4-2). The contractor slowly and methodically bladed the surface from the area under careful monitoring. The upper layer was medium brown clayey-silty matrix typical of O horizon soils. It contained grass and roots, leaves, and other organics, as well as a large number of earthworms. This layer extended from the surface to depth of 5-6 in. (12.7-15.2 cm). The next layer appeared lighter in color, contained less organic material than the horizon above it, and continued from the O horizon to the terminal depth of the swale (6 in.; 15.2 cm). All artifacts noted below were recovered from the upper horizon.





*Figure 4-2. Recent swale enlargement centered on the existing swale.*

As the blading neared a previously constructed paved pathway, the contractor began encountering historic artifacts (Figure 4-3). Excavation was halted, and the matrix surrounding the artifacts screened. Artifacts recovered included ceramics, cut nails, glass, faunal remains, and one piece of clear flat glass (Table 4-1). These artifacts were at a depth of 5-6 in. below surface (12.7-15.2 cm) and occupied an area 2-x-3 ft. (0.6-x-0.9 m). This area was recorded using GPS and photographed. The contractors had reached the maximum depth of the swale when they encountered these artifacts, and no further excavating occurred in the area. After the CAR archaeologist documented the artifacts, the contractor resumed blading, and a short distance away uncovered a modern coin (United States quarter). The coin came from the same horizon and depth as the historic artifacts. It is possible these artifacts, both modern and historic, were displaced during construction of the previously mentioned paved pathway.

Following excavation of the swale, the contractor gradually sloped the edges of the excavation (Figure 4-4). The contractor bladed on a gradual slope 4-5 ft. (1.2-1.5 m) on each side of the expanded swale line. A polygon around the swale, including the slope, was recorded using GPS, and the area was photographed.



Figure 4-3. Area where artifacts were collected.

Table 4-1. Artifacts Collected from Mission Espada (41BX4)

Superclass	Class	Description	Count	Weight (g)	Comments
Organics	Faunal Bone	Mammal--v. lg	1	12.1	Rib fragment
Organics	Faunal Bone	Mammal--v. lg	6	9.7	
Metal	Other Metal Obj./Unknown	Unidentified	2	15	Possible can
Metal	Other Metal Obj./Unknown	Unidentified cast iron	1	14.3	
Metal	Nails	Cut Nails	2	8.7	
Ceramics	European Earthenware	Scalloped Edgware	1		Rim Sherd
Ceramics	European Earthenware	Spongeware	1		
Ceramics	European Earthenware	Transferware	1		
Ceramics	European Earthenware	Undecorated white	2		Base sherds-refit; burned
Ceramics	European Earthenware	Undecorated white	1		burned
Ceramics	European Earthenware	Undecorated white	2		Rim Sherds
Ceramics	European Earthenware	Undecorated	1		
Ceramics	European Porcelain	Undecorated	1		Rim Sherd
Ceramics	European Stoneware	Lead Glaze	1		
Glass	Container/Vessel	Very Dark Olive	3		
Glass	Container/Vessel	Olive	1		
Glass	Container/Vessel	Clear	2		
Glass	Container/Vessel	Purple	1		
Glass	Flat/Window	Clear	2		





*Figure 4-4. Completed swale with sloped edges.*

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## **Chapter 5: Summary and Recommendations**

The CAR monitored excavations on May 2, 2016. The contractor initially removed two bollards and the four T-posts transecting the existing swale, which measured approximately 10-12 in. (25.4-30.5 cm) in width and 4-5 in. (10.2-12.7 cm) in depth. Contractors hand dug the swale in late 2014, but the swale did not adequately drain the parking lot. The excavation centered on the existing swale, and contractors widened the swale with a skid steer to approximately 6 ft. (1.8 m) and deepened it to 6 in. (15.2 cm). The contractor also bladed sloping edges of the swale on each side of the expanded swale line.

As the blading neared a previously constructed paved pathway, the contractor began encountering historic artifacts. Excavation was halted, and the matrix surrounding the artifacts screened. Artifacts recovered included ceramics, cut nails, glass, faunal remains, and one piece of clear flat glass (see Table 4-1). These artifacts were at a depth of 5-6 in. (12.7-15.2 cm) and occupied an area 2-x-3 ft. (0.6-x-0.9 m). Contractors had reached the maximum depth of the swale when they encountered these artifacts, and no further excavations occurred in that area. After the CAR archaeologist documented the artifacts, the contractor resumed blading the sloped edge of the swale and uncovered a modern coin (United States quarter). The coin was a short distance away from, and at the same depth as, the historic artifacts. This suggests the artifacts, both modern and historic, are in a disturbed context and may have been displaced during construction of a previously excavated pathway.

At this time, CAR recommends no further archaeological investigation of the APE. This recommendation is based on no additional ground-disturbances, and the CAR's findings during monitoring. Though no further work is recommended at present, it is known that Mission Espada and the surrounding area contains important archaeological resources. Therefore, archaeological monitoring and/or investigation should precede any future ground-disturbing activities in the area.

In accordance with the THC Permit specifications, all field notes, analytical notes, photographs, and other project related materials, along with a copy of the final report, will be curated at the CAR.

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