An Archaeological Survey of CPS Energy's Railroad Ground Wire Project T-0248, San Antonio, Bexar County, Texas

by

Sarah Wigley and Mikaela Razo

Texas Antiquities Permit No. 9637

REDACTED

Principal Investigator
Cynthia M. Munoz

Prepared for:
Adams Environmental, Inc.
12521 Nacogdoches Road #102
San Antonio, Texas 78217

Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
One UTSA Circle
San Antonio, Texas 78249-1644
Archaeological Report, No. 489

An Archaeological Survey of CPS Energy's Railroad Ground Wire Project T-0248, San Antonio, Bexar County, Texas

by
Sarah Wigley and Mikaela Razo

Texas Antiquities Permit No. 9637

REDACTED

Principal Investigator
Cynthia M. Munoz

Prepared for:
Adams Environmental, Inc.
12521 Nacogdoches Road #102
San Antonio, Texas 78217

Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
One UTSA Circle
San Antonio, Texas 78249
Archaeological Report, No. 489

This page intentionally left blank.

Abstract:

On October 14-19, 2020, the Center for Archaeological Research (CAR) completed an archaeological survey along a 0.72 km (0.45 mi) long and 20 m (65.6 ft.) wide CPS Energy (CPS) easement that comprises 1.44 ha. (3.6 acres) in northeastern San Antonio, Bexar County, Texas. The work was conducted in response to a request from Adams Environmental, Inc., in advance of the installation of four new CPS poles. The survey, conducted under the requirements of the City of San Antonio Office of Historic Preservation Unified Development Code and the Antiquities Code of Texas, was carried out under Texas Antiquities Permit No. 9637. Mikaela Razo and Sarah Wigley served as Project Archaeologists, and Cynthia Munoz served as Principal Investigator.

A pedestrian survey with shovel testing was conducted in order to identify potential cultural resources within the easement. Twenty shovel tests were excavated, eight of which were positive for cultural material. Material recovered from shovel tests includes historic ceramics, construction material, glass, and metal. Three previously unrecorded archaeological sites were documented, 41BX2390, 41BX2391, and 41BX2392, all primarily historic in nature. The CAR recommends that the three sites are ineligible within right-of-way (ROW) for inclusion to the National Register of Historic Places or designation as a State Antiquities Landmark, and that construction be allowed to proceed as planned. Collected artifacts and records generated during the course of this project are permanently curated at the CAR as Accession 2318, with the exception of artifacts discarded with the concurrence of CPS and the Texas Historical Commission.

This page intentionally left blank.

Table of Contents:

This page intentionally left blank.

List of Figures:

This page intentionally left blank.

List of Tables:

This page intentionally left blank.

Acknowledgements:

Thank you to Clint McKenzie of CAR who helped with the fieldwork on this project. Thank you to Cynthia Munoz, CAR Interim Assistant Director and Lead Curator, who served as Principal Investigator, offered guidance throughout the course of the project, and curated the associated records and artifacts. Thank you to Dr. Raymond Mauldin, CAR Interim Director, who oversaw the project and offered guidance throughout. Thank you to Dr. Jessica Nowlin, who processed the GIS data, produced maps, and edited the report. Thanks to Heath Bentley, Archaeologist at CPS Energy, and Sable Kitchen of Adams Environmental, Inc., who helped facilitate this project. Thank you to Adams Environmental, Inc. for the opportunity to work on this project.

This page intentionally left blank.

Chapter 1: Introduction

From October 14-19, 2020, the Center for Archaeological Research (CAR) at the University of Texas at San Antonio (UTSA), in response to a request from Adams Environmental, Inc. (AEI), conducted an intensive pedestrian survey of a 720 m long by 20 m (1.44 ha. [3.6 acres]) wide easement in advance of the installation of four new CPS Energy (CPS) poles. The property, owned by CPS, is located in northeastern San Antonio, Bexar County, Texas, directly west of Salado Creek and east of Severn Road (Figures 1-1 and 1-2). The work was completed under the City of San Antonio Office of Historic Preservation (COSA-OHP) Unified Development Code (UDC; Article 6 35-630 to 35-634) as well as the Antiquities Code of Texas. CAR obtained Antiquities Permit No. 9637 prior to the commencement of fieldwork. Cynthia Munoz served as the Principal Investigator, and Mikaela Razo and Sarah Wigley served as the Project Archaeologists.

The CAR excavated 20 shovel tests (STs) within the project area. Eight (STs 1, 2, 3, 6, 9, 11, 12, and 17) were positive for cultural material, which was concentrated in the upper 40 cm of deposits. Three previously unrecorded sites, 41BX2390, 41BX2391, 41BX2392, were documented during the course of the survey. Site 41BX2390 contained metal, glass, and construction material to a depth of 67 cm below the surface (cmbs). Site 41BX2391 contained historic ceramics, metal, glass and construction material to a depth of 40 cmbs. Site 41BX2392 contained metal and glass to a depth of 20 cmbs. No temporally diagnostic artifacts or cultural features were found within the sites. All three sites had been disturbed by construction of the drainage running along the southern boundary of the easement as well as development in the area, including use of the area as an easement for utilities, clearing, and erosion. The CAR recommends the three sites as ineligible within right-of-way (ROW) for inclusion to the National Register of Historic Places (NRHP) or designation as a State Antiquities Landmark (SAL), and that construction proceed as planned. All records generated and artifacts collected during the course of this project are curated at the CAR in accordance with Texas Historical Commission (THC) guidelines, with the exception of construction material, nails, wire, metal scrap, metal containers and fasteners, and coal, which was discarded with the concurrence of CPS and the THC.

This report contains five chapters. Following this introductory chapter, Chapter Two provides a project background, including a brief overview of the project environment, regional culture history, and archaeological work previously conducted in the area. Chapter Three presents a discussion of field and laboratory methods used during the completion of this project. Chapter Four provides a discussion of the results of these investigations, and Chapter Five presents a summary of the project and CAR's recommendations.

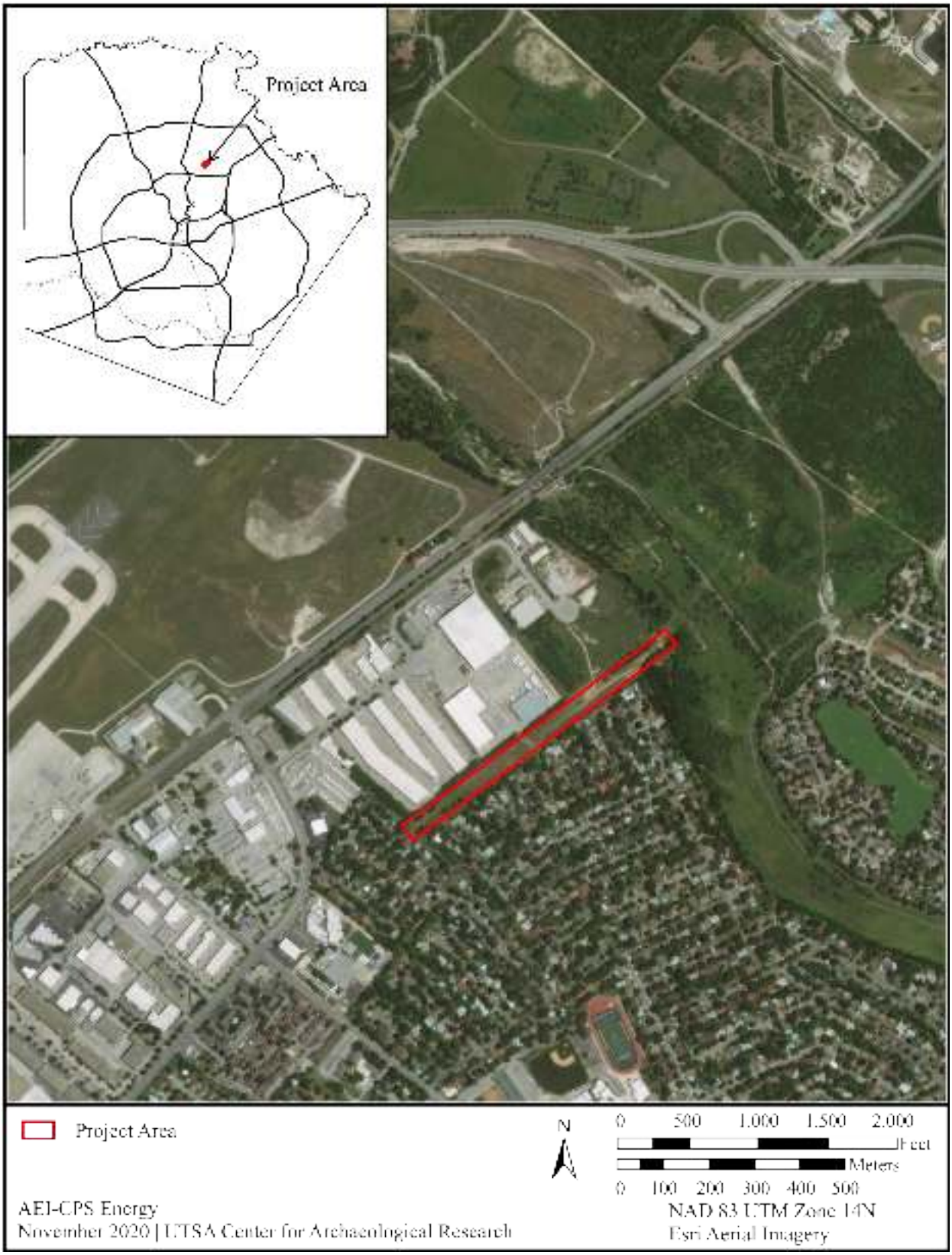

Figure 1-1. Project area on aerial imagery.

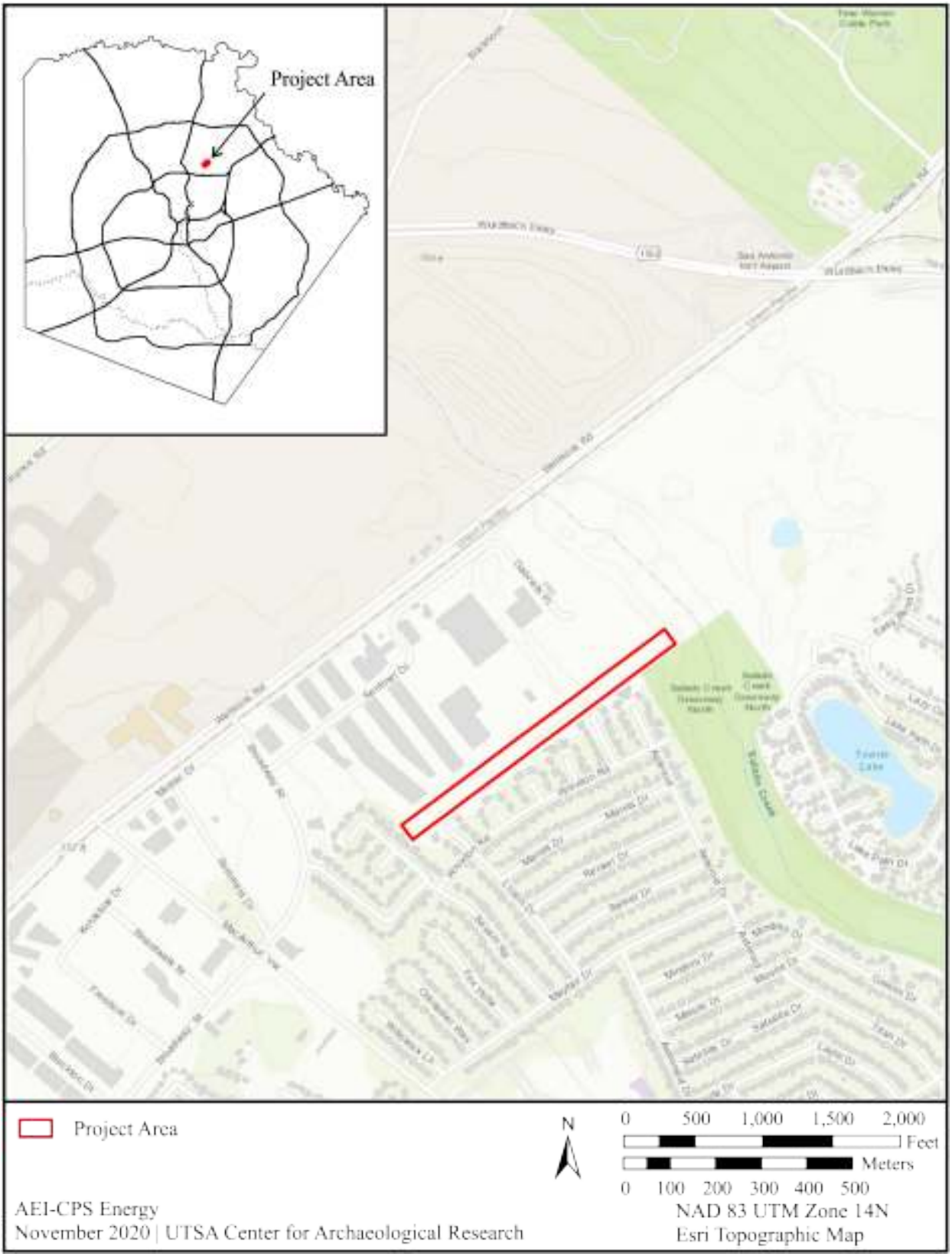

Figure 1-2. Project area on topographic map.

This page intentionally left blank.

Chapter 2: Project Background

This chapter presents a background discussion of the project area. This includes a description of the natural environment, a brief summary of the region's culture history, and a review of previous archaeology conducted in the vicinity.

Project Environment

The project area is located in northeastern Bexar County, Texas. Bexar County is positioned where the southernmost Great Plains meets the Gulf Coast, demarcated by the Balcones Escarpment. It is also near a significant climate boundary, partitioning a humid-subtropical from an arid zone (Petersen 2001). The location near these significant geological and climactic boundaries results in a varied resource base. The area contains a number of reliable freshwater sources, including the San Antonio River, freshwater artesian springs, and the Edwards Aquifer (Eckhart 2020). The growing season averages 270 days (Petersen 2001:22). The temperature reaches average lows of 4°C in January and average highs of 36°C in July (Long 2017). Though highly variable, the average annual rainfall is approximately 76.2 cm (30 in.), with seasonal peaks in the spring and fall (Petersen 2001:22). The property falls within the Balconian biotic province, which is described as an intermediate ecological area between the eastern forest and the western desert (Blair 1950).

The project area is located within a CPS easement in northeastern San Antonio. It is bounded by the Salado Creek on the east, Severn Road to the west, commercial development to the north, and residential development to the south. Transmission towers have been installed in the easement and an artificial drainage runs through the area along the southern boundary. A dirt service road also runs through the project area on the north side. This part of the Salado Creek is near the transition of what Potter et al. (1995) characterized as the "Upper Salado" and the "Middle Salado" watershed. The Upper Salado has a steeper gradient, is bed-load dominated, and is associated with the Balcones Canyonlands ecological zone. The Middle Salado has a distinctive "stepped" gradient, has a regime of punctuated flooding events, and is associated with the Blackland Prairie ecological zone. It is also associated with a number of sites containing deeply buried Archaic period deposits (Potter et al. 1995). Current vegetation in the area is predominantly grasses and small live oak trees. The elevation of the project area ranges from 735-757 ft. above sea level.

More than 50% of the soils within the project area are Lewisville silty clays (LvA, LvB), ranging from 0-3% slopes (Figure 2-1). These soils are located on stream terraces, are well-drained, and reach depths of more than 8 inches (NRCS 2020). Patrick (PaB) soils are also found within the project area. These soils are found on paleoterraces and have 1-3% slopes. They are well-drained and reach depths of more than 80 inches (NRCS 2020).

Culture History

Material recovered during the course of this project included both prehistoric and historic artifacts. A general review is provided for these time frames in order to provide context to the investigation results.

Prehistory

The prehistoric record in Texas is generally divided into the Paleoindian, Archaic, and Late Prehistoric periods. Bexar County's archaeological record has been included in reviews of both Central (Collins 2004) and South (Hester 1980) Texas as the county is near the cultural area boundary between the two. The following summary generally follows a Central Texas chronology.

The Paleoindian period in Central Texas spans 13,000-9000 BP. In-depth reviews of this time period are available (see Bousman et al. 2004). Groups inhabiting the area during this period are generally characterized as highly mobile (Bousman et al. 2004). Temporally diagnostic artifacts from the period include Folsom and Clovis points, among others (see Turner et al. 2011). Faunal remains from Paleoindian components on sites such as Lubbock Lake (41LU1) and Wilson-Leonard (41WM235) suggest a broad subsistence base (Bousman et al. 2004). Within Bexar County, there are multiple sites that have Paleoindian components. These include the St. Mary's Hall site (41BX229; Hester 1977), located approximately 1700 meters to the south along the Salado Creek. This site will be discussed in more detail in the section on Previous Archaeology.

The Archaic period in Central Texas ranges from 9000-1200 BP. The period is characterized by several technological developments, including an increased diversity of material culture and the use of heated rock technology (Carpenter and Hartnett 2011; Collins 2004; Johnson and Goode 1994; Thoms and Clabaugh 2011). The period is often subdivided into Early, Middle and Late Archaic periods (see Collins 2004; Hester 2004). Temporally diagnostic artifacts from

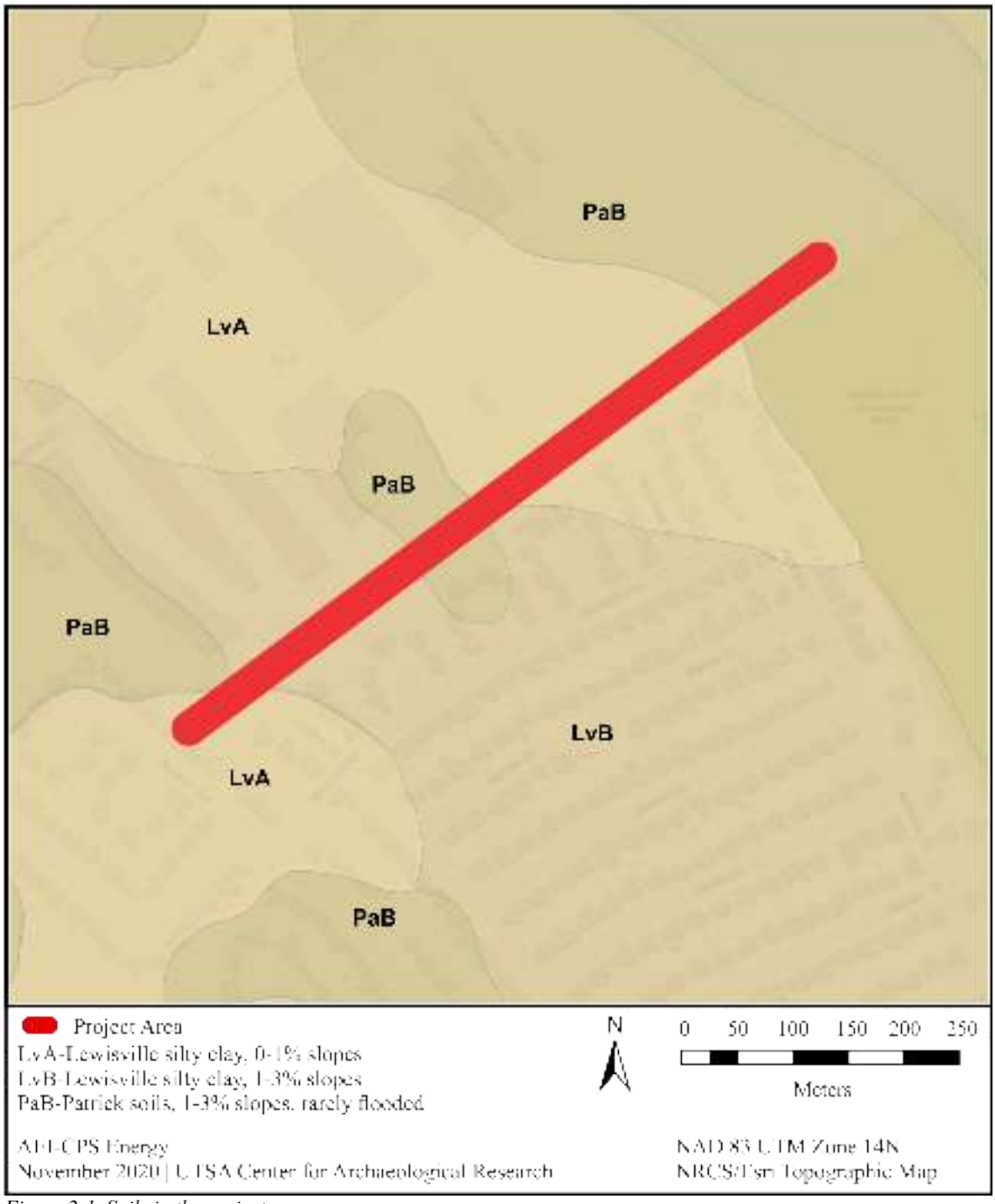

Figure 2-1. Soils in the project area.

the Early Archaic period (9000-6800 BP) include Angostura, Early Split Stem, and Martindale-Uvalde dart points, among others (Collins 2004). The Middle Archaic spans 6800-4200 BP. Temporally diagnostic artifacts from this period include Calf Creek, Bell-Andice, Nolan, and Travis points, among others (Collins 2004; Houk et al. 2009, Turner et al. 2011). The Late Archaic spans 4200-1200 BP. Temporally diagnostic artifacts from the Late Archaic include a wide variety of types, with Pedernales, Ensor, and Frio points being common (Collins 2004). Many Archaic Period components have been recorded in Bexar County. Two of the more influential sites include the Granberg site (41BX17; see Munoz et al. 2011; Schuetz 1966; Wigley 2018), approximately 2700 m south of the current project area, and Panther Springs (41BX228; Black and McGraw 1985), 6600 m to the northwest. Both sites are located within the Salado Creek watershed.

The Late Prehistoric period begins at 1200 BP and terminates around 350 BP (see Carpenter 2017; Kenmotsu and Boyd 2012). The time period is divided into two intervals, Austin (1200-750 BP) and Toyah (750-350 BP). The period is characterized by a shift to bow and arrow technology, evidenced by arrow points such as Scallorn and Perdiz (Collins 2004). The Toyah style interval of this period also includes the adoption of ceramic technology (Collins 2004). There is evidence that burned rock middens increased in use (Black et al. 1997; Mauldin et al. 2003). Bison remains are common on Late Prehistoric sites (Mauldin et al. 2012), though they may have been more intensively exploited toward the end of the period (Lohse et al. 2014). Sites with Late Prehistoric components in Bexar County include 41BX300 (Katz 1987), located along the Salado Creek approximately 9 km north of the project area. Late Prehistoric sites in the immediate project area include 41BX1007 and 41BX1764 (Figueroa 2008). These sites will be discussed in greater detail in the section on Previous Archaeology.

Historic Texas

The end of the Late Prehistoric period, at 350 BP (AD 1650), overlaps with the beginning of the Historic period. It is generally marked by the arrival of Europeans in the region in AD 1528. Early interactions between the indigenous population and the Spanish were infrequent. However, even prior to the establishment of European settlements in the area, Native American populations in the area were impacted by invasive disease and the arrival of other Native American groups that had been displaced by European settlement to the north, south, and east (Kenmotsu and Arnn 2012).

Colonial Period (AD 1700-1824)

The area that would become San Antonio was first explored in 1691 by a Spanish expedition led by Domingo de Terán (Cox 1997). Spanish occupation of the region began when San Antonio was founded in 1718 (Jasinski 2018) with the establishment of the San Antonio de Béxar Presidio. The Presidio was intended as a way-station between the Rio Grande and east Texas missions (Cox 1997). Five Spanish missions were located along the San Antonio River during this time. In San Antonio, some Native Americans sought refuge within the missions, which required some adaptation to Spanish Colonial customs as well as changes in mobility patterns (Cargill 1996). Many of the Native Americans who inhabited the missions were displaced from other areas of Texas (Campbell and Campbell 2004). The settlement expanded with Spain's charter of the Villa San Fernando de Béxar in 1731 (Jasinski 2018). By 1775 populations in all of the San Antonio missions had declined considerably (Campbell and Campbell 2004), and in 1793 the secularization of the missions began (Chipman and Joseph 2010:214). The land owned by the missions was divided and distributed among the mission residents (de la Teja 1995).

Archaeological sites dating to the colonial period in San Antonio are often characterized by the presence of irregular limestone architectural features, Spanish Colonial ceramics, Native American ceramics, and faunal bone (Figueroa and Mauldin 2005; Hanson 2016; Kemp et al. 2020; Mauldin and Kemp 2016). Sites in San Antonio dating to this time period include a multicomponent site with features related to the Siege of Bexar (41BX2170), the Veramendi site (41BX2164; Kemp et al. 2020), Mission de Valero (41BX6; Anderson et al. 2017; Cox 1997; Fox 1976; Zapata 2017), and Missions San José (41BX3), Espada (41BX4), San Juan (41BX5), and Concepción (41BX12; Fisher 1998).

Mexican Period (AD 1821-1836)

Unrest in Mexico began with a failed rebellion against the Spanish in 1810 (Chipman and Joseph 2010; Cox 1997). San Antonio participated in another failed rebellion in 1812-1813, which resulted in retaliation against its citizens by the Spanish. Spanish executions and fleeing citizens led to significant depopulation of the city during this time period (Chipman and Joseph 2010; Cox 1997). After years of unrest, Texas ceased to be ruled by Spain and became part of Mexico with the adoption of the Constitution of 1824 (Cox 1997). Under this constitution, Texas became part of the state of Coahuila, and a system which provided land to settlers was created (Campbell 2003). This policy played a role in an influx of settlers from the United States until immigration was prohibited in 1830 (Campbell 2003). Conflict within the newly formed Mexican government, as well conflict between the existing inhabitants of Texas and the new arrivals, resulted in instability and unrest in the region (Campbell 2003).

Republic of Texas and Statehood (AD 1835-1950)

During the Texas Revolution (1835-1836), San Antonio was the site of numerous battles, including the Battle of the Alamo, at the site of Mission Valero. The population of the city was decimated by the warfare. The number of people living in San Antonio grew rapidly after Texas became part of the United States in 1845, and in 1860, it was the largest city in Texas (Jasinski 2018).

The state joined the Confederacy in 1861, and San Antonio served as a Confederate depot during the Civil War (Jasinski 2018). Confederate forces in Texas surrendered on June 2, 1865 (Wooster 2018). Union forces arrived and declared freedom for all enslaved peoples on June 19, 1865 (Acosta 2018).

After the Civil War, San Antonio served as a cattle, military, and mercantile center due to its proximity to the border and the southwest (Cox 1997; Jasinski 2018). The arrival of the railroad in 1877 further increased growth in the city. San Antonio was the largest city in the state in 1900, 1910, and 1920 (Jasinski 2018) and was known for its unique mix of cultures due to Mexican and European, significantly German, immigration. Characteristic artifact assemblages from sites dating to this period in Bexar County include metal, glass, and white earthenware (Mauldin and Kemp 2016). The city continued to grow through the twentieth century, with an associated expansion of construction and infrastructure projects (Heusinger 1951).

Previous Archaeology

Nine archaeological sites were identified within 2.5 km of the project area. One, 41BX2168, was within 1 km (Figure 2-2, Table 2-1). All were prehistoric and one site (41BX959) included a historic component. The sites are associated with the Salado Creek watershed, which traverses the area heading roughly north-south.

Site 41BX229, recorded in 1974 by H. Kohnitz and T. Hester (THC 2020a), was excavated in 1974-1975 by the Southern Texas Archaeological Association (STAA) and in 1977 by UTSA (Hester 2020). It is an occupation site that contains deeply buried deposits dating from the Paleoindian to the Late Prehistoric (THC 2020a, Hester 2020). The site is significant in regional archaeology and serves as a type site for the St. Mary's Hall projectile point, a Paleoindian point that resembles the Plainview (Turner et al. 2011).

Site 41BX841 was recorded by M. Kohnitz in Lady Bird Johnson Park (THC 2020a). The site is recorded as a lithic scatter and only a surface collection was conducted. The site was revisited by the CAR in 2008 (Figueroa 2008). Buried lithic material was encountered to a depth of 60 cmbs at the site during the course of shovel testing.

Site 41BX949 was recorded in 1991 by the Texas Department of Transportation (TXDOT) during a survey of the Wurzbach Parkway (THC 2020a; Potter et al. 1995). The site, initially recorded as a surface site, was excavated with shovel testing and backhoe trenching by the Texas Archeological Research Laboratory (TARL) in 1992 (Potter and Black 1995). Although a small quantity of buried lithic material was recovered, the site was found to have poor research potential (Potter and Black 1995). A pedestrian reconnaissance, conducted at the site by SWCA Environmental Consultants in 2007, recommended the portion of the site within the TXDOT right-of-way as ineligible for the NRHP (Galindo et al. 2010). No evidence of cultural material was observed on the surface during a 2017 revisit by Horizon Environmental Services (Owens 2017).

Site 41BX959 was recorded in 1991 by C.K. Chandler (THC 2020a). It is described as an Archaic period lithic procurement site. The site was revisited by the CAR in 2005. A farmstead, dating from the 1930s to the 1950s, was recorded during shovel testing. The site was primarily surficial and determined to have insignificant research value (Figueroa and Thompson 2005; THC 2020a). Chandler recorded site 41BX1007 in 1994 (THC 2020a). The site is described as a Late Prehistoric midden site. Archaeology was limited to a surface inspection.

Table 2-1. Summary of sites previously recorded within 2.5 km of the project area

Site	Time Period	Site Type	References
41BX229	Paleoindian to Late Prehistoric	Occupation	THC 2020, Hester 1978, Figueroa 2008
41BX841	Prehistoric	Lithic scatter	THC 2020, Figueroa 2008
41BX949	Archaic	Campsite	THC 2020, Potter and Black 1995, Galindo et al. 2010
41BX959	Archaic, historic	Lithic procurement	THC 2020, Figueroa and Thompson 2005
41BX1007	Late Prehistoric	Midden	THC 2020, Figueroa 2008
41BX1764	Late Prehistoric	Unknown	THC 2020, Figueroa 2008
41BX1765	Late Archaic	Unknown	THC 2020, Figueroa 2008
41BX1766	Prehistoric	Unknown	THC 2020, Figueroa 2008
41BX2168	Prehistoric	Lithic scatter	THC 2020, Owens 2017

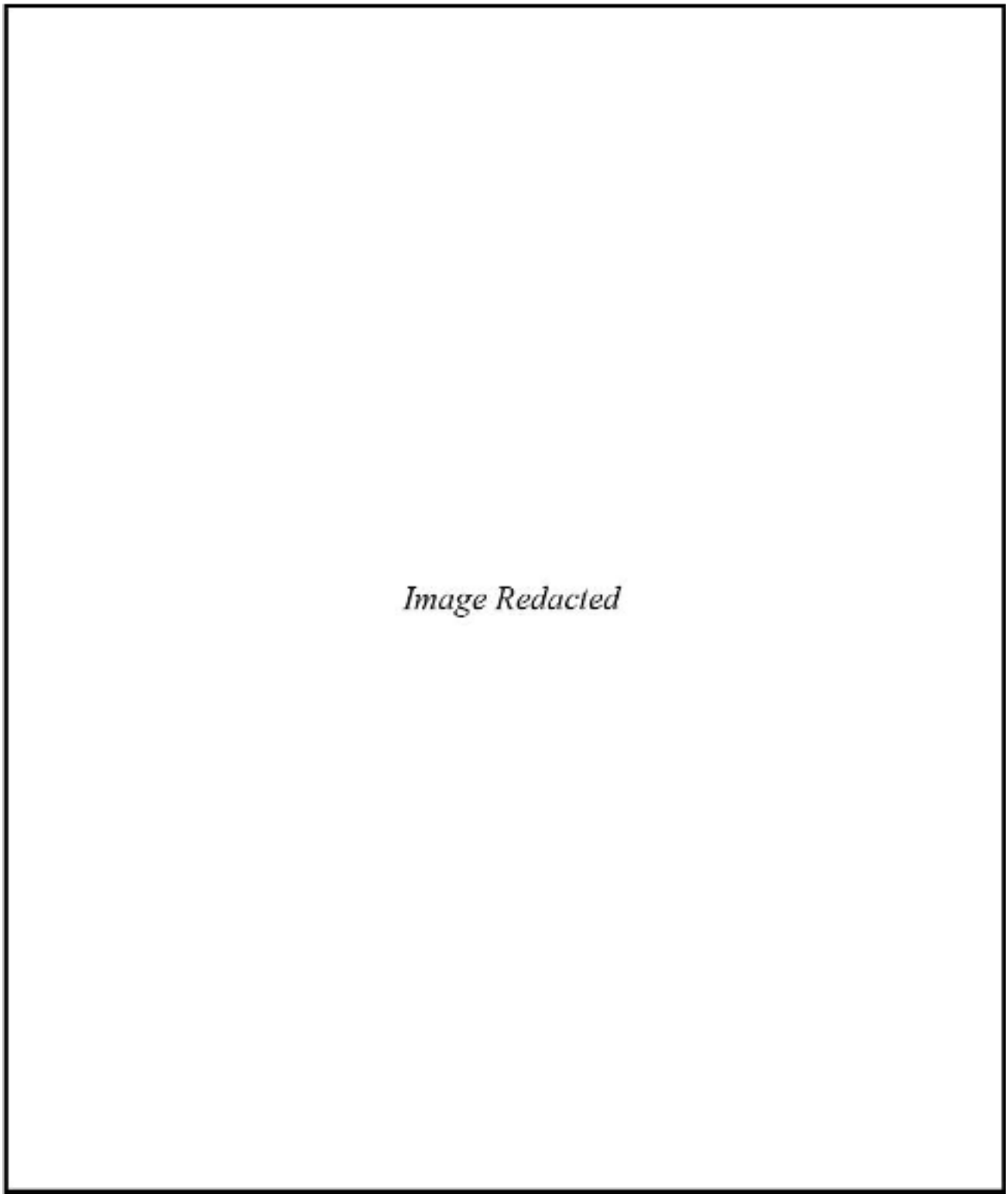

Figure 2-2. Previously recorded sites within 2.5 km of the project area.

Sites 41BX1764, 41BX1765, and 41BX1766 were documented by the CAR in 2008 during a survey of the Salado Creek Greenway (Figueroa 2008). Lithic material, documented to 60 cmbs, and a Perdiz projectile were recovered during shovel testing of 41BX1764 (THC 2020a; Figueroa 2008). Eligibility testing, conducted by the CAR in 2009, documented a Toyah Phase component and an earlier component. Both components were determined to lack integrity and research potential (Figueroa 2009). Site 41BX1765 is a prehistoric site containing sparse lithic material within dense gravels. Site 41BX1766 documented mixed prehistoric and modern materials within dense gravel deposits. Both sites were found to be lacking in research potential due to poor integrity (THC 2020a; Figueroa 2008). A 2017 revisit of 41BX1766 by Horizon Environmental Services found no evidence of cultural material on the surface (Owens 2017).

Site 41BX2168 is the only recorded site within 1 km of the project area. It is a lithic scatter documented during a 2017 survey by Horizon Environmental Services. No buried deposits were recorded during shovel testing. The site was found to be lacking in research potential due to a lack of integrity (THC 2020a; Owens 2017).

Chapter 3: Methodology

This chapter provides a discussion of the field and laboratory methods used during the completion of this project. This includes details of excavation techniques, collection policy, site definitions, field documentation, laboratory processing and final curation.

Field Methods

To identify and document cultural resources on the project area, CAR conducted pedestrian survey with shovel testing. Shovel tests, excavated at a rate of one per 100 meters of easement, were centered in the 720 m long by 20 m wide CPS easement and excavated in 20 cm levels to a depth of 80 cmbs unless archaeologists encountered an obstruction (e.g., bedrock) or potentially dangerous objects (e.g., utility lines). Tests were 30 cm in diameter. All material was screened through ¼ inch mesh. For each shovel test, a standard shovel test form was completed and provenience was recorded. This record was supported by digital data, including Trimble GPS records and photographs. In addition, the shovel tests were plotted on an aerial photograph of the project area.

For the purposes of this survey, CAR defined a site as containing either: 1) four or more surface artifacts within a 3-meter radius (0.14 artifacts per square meter); 2) an intact surface feature, such as a hearth or evidence of a structure; 3) a positive shovel test with 5 or more artifacts; 4) a shovel test with three or more positive levels; 5) evidence of a feature (e.g., charcoal or several pieces of burned rock) in a shovel test; or 6) two positive shovel tests within 30 m. Artifacts or features must be at least 50 years old. When evidence of cultural materials meeting one of these criteria was encountered in a shovel test or on the surface, shovel tests were excavated at close intervals to define the extent of the distribution. Due to the narrow width of the project area (20 m), delineating shovel tests were limited, and CAR was unable to excavate six shovel tests to define a site's boundaries as per THC guidelines. Site boundaries were plotted on aerial photographs and a topographic quadrangle map and location data was collected using a Trimble GPS unit. An archaeological site form was completed for each new site and submitted to the THC.

All material encountered in shovel tests was collected. Surface collections were limited to potentially temporally diagnostic artifacts. Surface collections were recorded with a GPS unit. All collected material was transported to the CAR laboratory for processing and analysis.

Laboratory Methods

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. Any artifacts collected during the survey were brought to the CAR laboratory, washed, air-dried, and stored in 4-mil zip-lock, archival-quality bags. Any materials needing extra support were double-bagged, and acid-free tags was placed in all artifact bags. Each label contains provenience information and a corresponding lot number. Artifacts were separated by class and stored in acid-free boxes labeled with standard tags.

All field notes, forms, photographs, and drawings were placed in labeled archival folders. Digital photographs were printed on acid-free paper, labeled, and placed in archival-quality page protectors to prevent damage. All recovered artifacts and project-related materials, including the final report, are permanently stored at the CAR's curation facility, with the exception of construction material, nails, wire, metal scrap, metal containers and fasteners, and coal, which was discarded with the concurrence of CPS and the THC.

This page intentionally left blank.

Chapter 4: Results

In October of 2020, CAR conducted a pedestrian survey of a CPS easement located between Severn Road and the Salado Creek in advance of the installment of four new CPS poles. This chapter provides the results of the investigation. The initial section of this chapter provides a review of the shovel testing effort, followed by a discussion of positive STs and the identification of three newly recorded archaeological sites.

Shovel Testing and Survey

CAR excavated 20 shovel tests within the 720 m long project area and delineated three previously unrecorded sites (Figure 4-1, Table 4-1). Eight of the 20 shovel tests (40%) were positive for cultural material. Initially eight shovel tests, spaced approximately 100 m apart, were excavated. An additional 12 shovel tests were excavated to delineate five shovel tests initially found to be positive for cultural material (STs 1, 2, 3, 6 and 7). Four of the delineating shovel tests were positive (STs 9, 11, 12, and 17). ST 7 was later determined to be negative in the lab when the collected material, a fragment of galvanized wire, was found to be modern. Shovel tests excavated on either side of it, STs 19 and 20, were also negative.

None of the shovel tests were excavated to 80 cmbs. Initial shovel tests were terminated early due to rocks, limestone, gravel, and impenetrably hard clays. The delineating shovel tests were terminated at 40 cmbs because cultural material was found to be concentrated in the first 30 cm during initial testing. The average terminating depth was 43 cmbs.

Soils in the western portion of the project area (STs 1-5) contained silty clay, ranging from very dark grayish brown (2.5Y 3/2) to dark grayish brown (10YR 4/2) in color, that was soft to compact near the surface and increasingly hard with depth. Carbonate flecks were observed from 20-74 cmbs. In the eastern part of the project area near Salado Creek, dense gravels were observed in all shovel tests. A gravel pit just north of the project area is recorded on the 1967 United States Geological Survey (USGS) Longhorn Quadrangle Map (Figure 4-2). Any intact deposits located in this area were likely impacted by the gravel pit. A cut bank documented near STs 6 and 7 indicates that the gravel extends at least 3 m below surface (Figure 4-3). Soils throughout the project area were likely disturbed by CPS activities within the easement, as multiple towers are already located along the project area. In addition, an artificial drainage has been excavated along the southern boundary of the project area, near the residential development.

Material was concentrated in the western portion of the project area. The 1953 USGS Longhorn Quadrangle Map shows a farmhouse nearby, just southwest of the project area (Figure 4-4). The house and associated outbuildings are also depicted on a 1930 Stoner map of the area on Theo Kappmeyer's property (Figure 4-5). A construction dump documented within the boundary of site 41BX2390 appears to be the remains of the house left behind after the construction of the subdivision. It is located across the drainage ditch to the south of ST 10 (Figure 4-6). The dump contained cement, metal, and chunks of orange brick/tile that are similar to the materials recovered from the shovel tests (STs 1, 2, 9, 11, 12) in 41BX2390 and 41BX2391. The ground in the area appears to have been leveled. Another, smaller pile of construction debris was found near ST 2.

Both 41BX2390 and 41BX2391 appear to be associated with the Kappmeyer's property. The Stoner map and 1953 USGS Longhorn Quadrangle map suggest that the area was largely undeveloped during this time except for agricultural use. It appears that the project area, roughly located at the boundary between Kappmeyer's and Leopold Shulmeyer's property, may have been in use as some kind of easement early in its history. The house is gone on the 1967 USGS Longhorn Quadrangle map (see Figure 4-2). The modern subdivision is now located in its place and a gravel pit is on the east side of the property. It is likely that the historic materials recovered from the western part of the project area are associated with this house. Except for one piece of debitage, recovered from Level 1 (0-20 cmbs) of ST 1, and a medial biface fragment, collected from the surface near ST 3, all the material recovered was historic. Glass, metal, and construction material were the most common artifact classes recovered. Recovered nails were all wire suggesting that the historic deposits post-date 1900 (Fontana et al. 1962). Four historic ceramic sherds were collected, all from shovel test 2. Coal and charcoal were also documented.

Level 1 (0-20 cmbs) of ST 3 was positive with orange brick and a ferrous S hook, most likely from a fence, but did not meet the definition of a site (see Figures 4-1 and 4-7). The sparse materials recovered from the east side of the property are likely impacted by the gravel pit. No development other than agricultural is depicted on the east side of the property until 1967. Of the 71 artifacts recovered during the survey, 59% (n=42) were found on the surface or in Level 1 (0-20 cmbs). Only two items, a shard of brown glass and brick, were recovered from below 40 cmbs. This suggests generally shallow deposits in the project area.

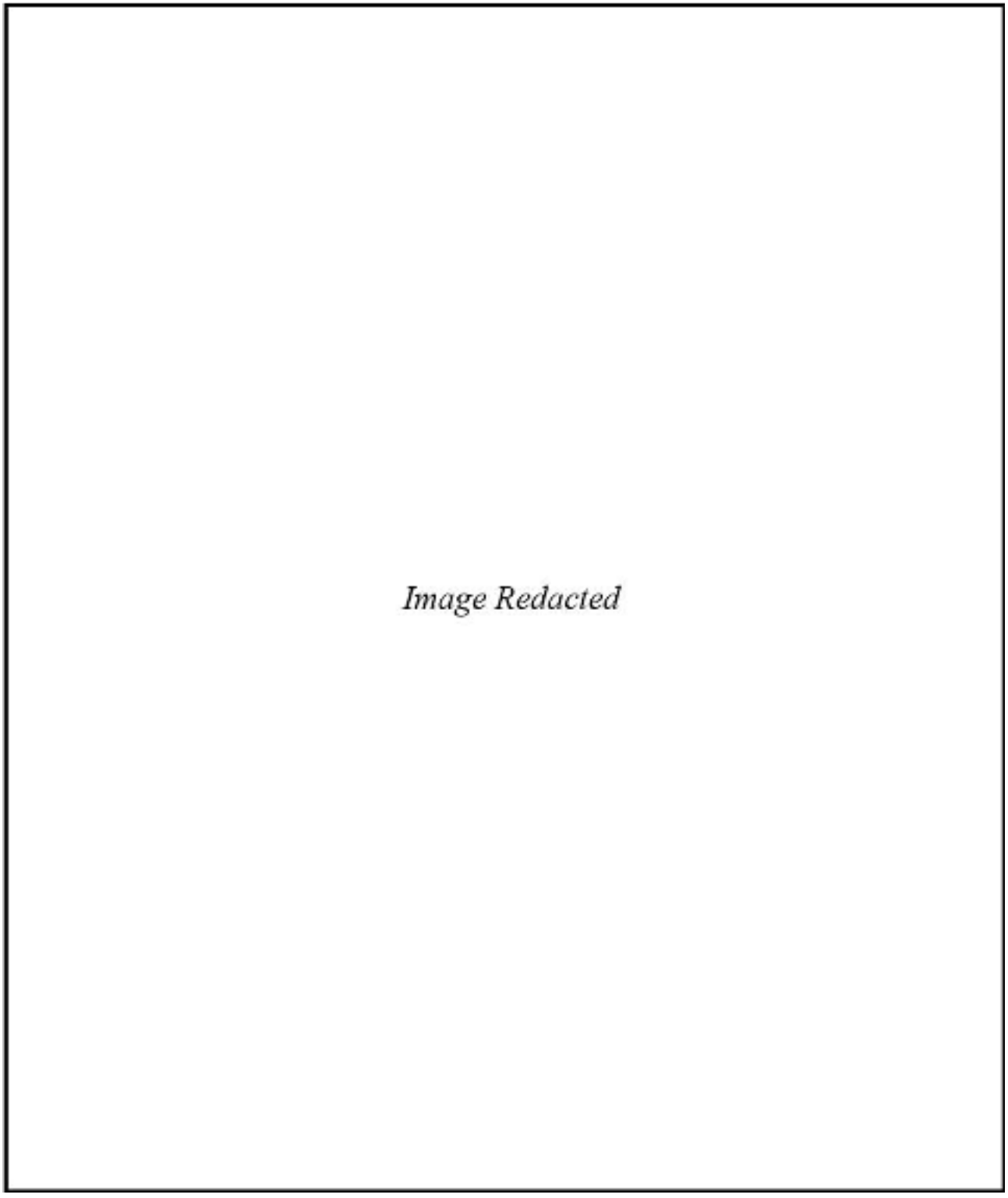

Figure 4-1. Distribution of positive STs and newly recorded sites on a topographic map.

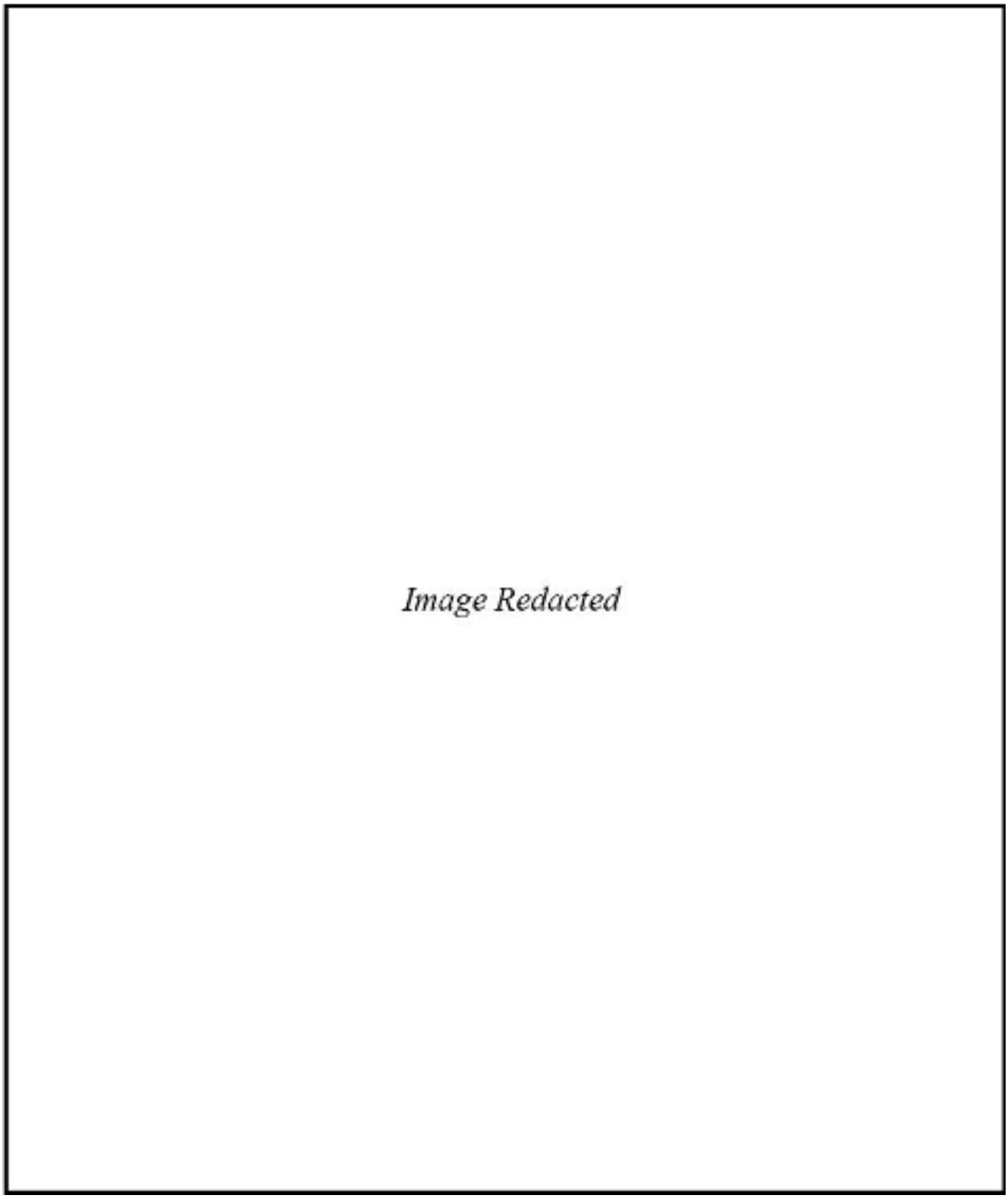

Figure 4-2. Project area and newly recorded sites on 1967 USGS Longhorn Quadrangle Map.

Table 4-1. Summary of shovel test results

ST	Cultural Material Present	Termination Depth (cmbs)	Reason for Termination	Reason for Exacavation
1	Y	67	Large Rock	Initial Testing
2	Y	52	Impenetrable clay	Initial Testing
3	Y	60	Impenetrable clay	Initial Testing
4	N	74	Impenetrable clay	Initial Testing
5	N	40	Impenetrable clay	Initial Testing
6	Y	57	Rocks	Initial Testing
7	N	8	Gravel	Initial Testing
8	N	23	Limestone	Initial Testing
9	Y	40	Complete	Positive Test Delineation
10	N	40	Complete	Positive Test Delineation
11	Y	40	Complete	Positive Test Delineation
12	Y	40	Complete	Positive Test Delineation
13	N	40	Complete	Positive Test Delineation
14	N	40	Complete	Positive Test Delineation
15	N	40	Complete	Positive Test Delineation
16	N	40	Complete	Positive Test Delineation
17	Y	40	Complete	Positive Test Delineation
18	N	40	Complete	Positive Test Delineation
19	N	40	Complete	Positive Test Delineation
20	N	40	Complete	Positive Test Delineation

Recorded Sites

Three previously unidentified archaeological sites were recorded during the course of this investigation, all primarily historic. Sites 41BX2390 and 41BX2391 appear to be associated with the 1930s to 1950s era farmhouse identified on historic maps of the area (see Figures 4-4 and 4-5). The construction dump recorded near ST 10 appears to be the remains of the house after construction of the subdivision. The materials in the dump are very similar to the construction material recorded in shovel tests in 41BX2390 and 41BX2391. Although 41BX2390 and 41BX2391 both appear to be associated with the farmhouse, they are located 50 m apart and therefore meet the definition of two separate sites. Site 41BX2392 is located in gravel deposits on the eastern side of the project area.

41BX2390

Site 41BX2390 is a historic site located at the western end of the project area (Figure 4-8). Of the four shovel tests excavated within the site area (STs 1, 9, 10 and 11), three were positive for cultural material (STs 1, 9, and 11; Table 4-2). No delineating shovel tests were excavated to the north, south or west due to the limits of the project area, therefore the site may extend outside the project area. Soils within the site ranged from very dark grayish brown (10YR 3/2) to yellowish brown (10YR 5/4) silty clays, which were soft near the surface and very hard below approximately 30 cmbs (Figure 4-9). Artifacts recovered included construction material, metal and glass. A single piece of debitage was recovered from Level 1 (0-20 cmbs) of ST 1, indicating a limited prehistoric component. No temporally diagnostic artifacts were recovered. Deposits extended to at least 67 cmbs. The site appears to be associated with a farmhouse and outbuildings depicted on the 1930s Stoner Maps as well as the 1953 USGS Longhorn Quadrangle map. A dump of construction material, containing materials similar to that recovered from shovel testing, was recorded within the site boundaries and is likely to be the remains of this house. The site has been impacted by construction, erosion, and utilities in the area. The site has limited historical significance and research potential within the easement, and is not recommended for inclusion to the NRHP or registration as a SAL.

41BX2391

Site 41BX2391 is a historic site located 50 m to the east of 41BX2390 (Figure 4-10). Of the four shovel tests excavated in the site area (STs 2, 10, 12, and 14), two were positive for cultural material (STs 2 and 12) (Table 4-3). No delineating shovel tests were excavated to the north or south due to the limits of the project area, therefore the site may extend outside the project area. Soils within the site ranged from dusky red (2.5YR 3/2) to dark grayish brown (10YR 4/2) silty clays (Figure 4-11). Soil was soft near the surface but compact to very hard below 30 cmbs. Cultural material recovered includes white earthenware and porcelain, container glass, metal, and construction material. Deposits at 41BX2391 extended to 40 cmbs. An undecorated sherd of white earthenware and a very small sherd of probable blue floral transferware were recovered from Level 1 (0-20 cmbs). Undecorated white earthenware dates to the 19th century in Texas, and sites containing only white wares are post-Civil War (THC 2006). Transferwares date from the 1850s to the present (THC 2006). A sherd of undecorated porcelain and a body sherd of floral transferware were recovered from Level 2 (20-40 cmbs). These are the only ceramics recovered during the course of the investigation. No cultural features were recorded. The site is likely associated with the same farmhouse as 41BX2390, but distribution of cultural material has been disturbed by drainage, erosion, and construction activities. The site has limited historical significance and research value within the easement and is not recommended for inclusion to the NRHP or registration as a SAL.

41BX2392

Site 41BX2392 is a historic site located in the eastern half of the project area, approximately 250 meters west of Salado Creek (Figure 4-12). Of the four shovel tests excavated within the site area (ST 6, 16, 17, and 18), two were positive for cultural material (ST 6 and 17; Table 4-4). No delineating shovel tests were excavated to the north or south due to the limits of the easement, therefore the site may extend outside the project area to the north or south. Soils within the site consisted of dark grayish brown (10YR 4/2) silty clays with dense gravels (Figure 4-13). Cultural material recovered consisted of clear, brown, and green container glass (n=5)

Figure 4-3. Cut bank near STs 6 and 7, facing northwest.

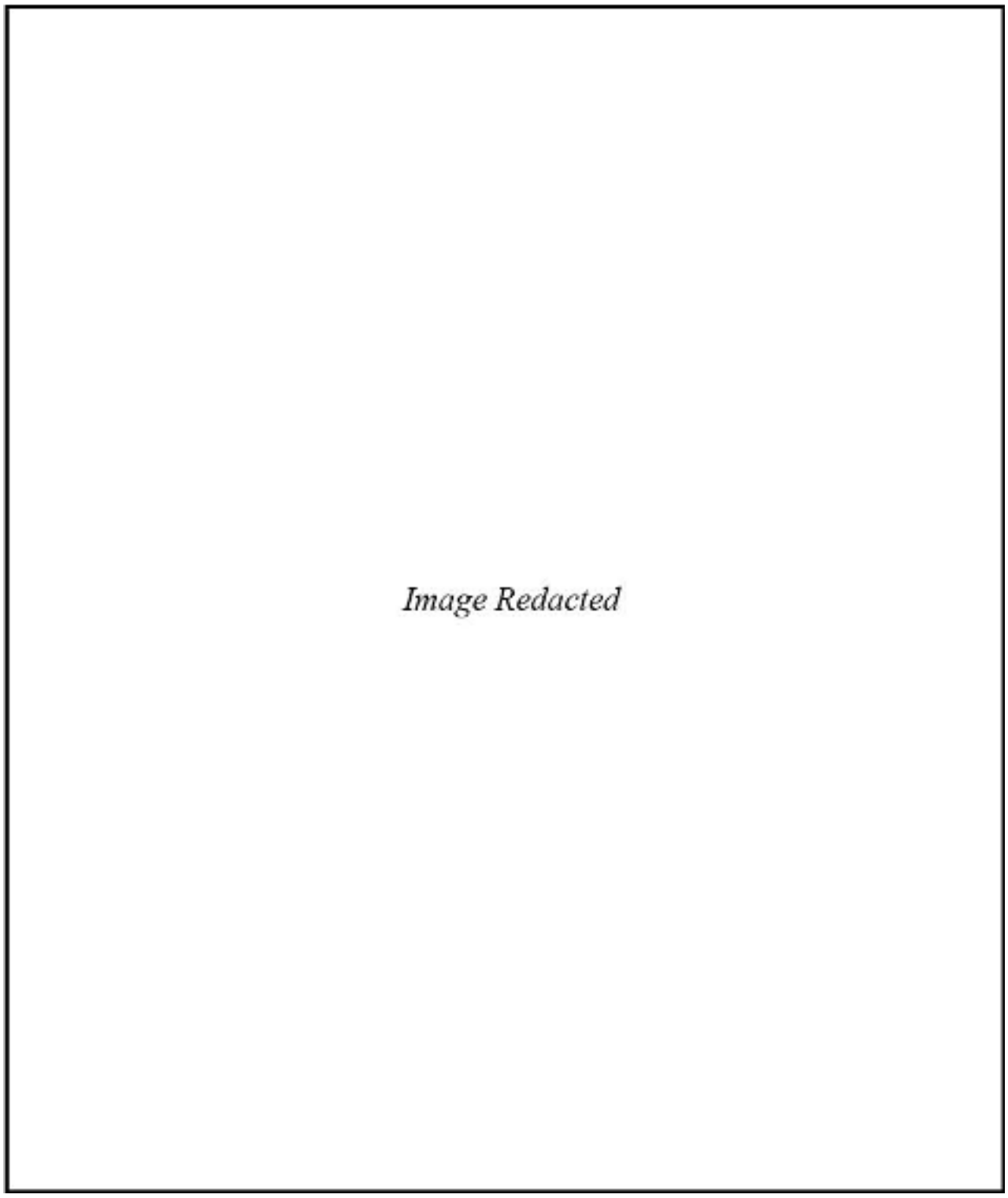

Figure 4-4. Project area and newly recorded sites on the 1953 USGS Longhorn Quadrangle Map.

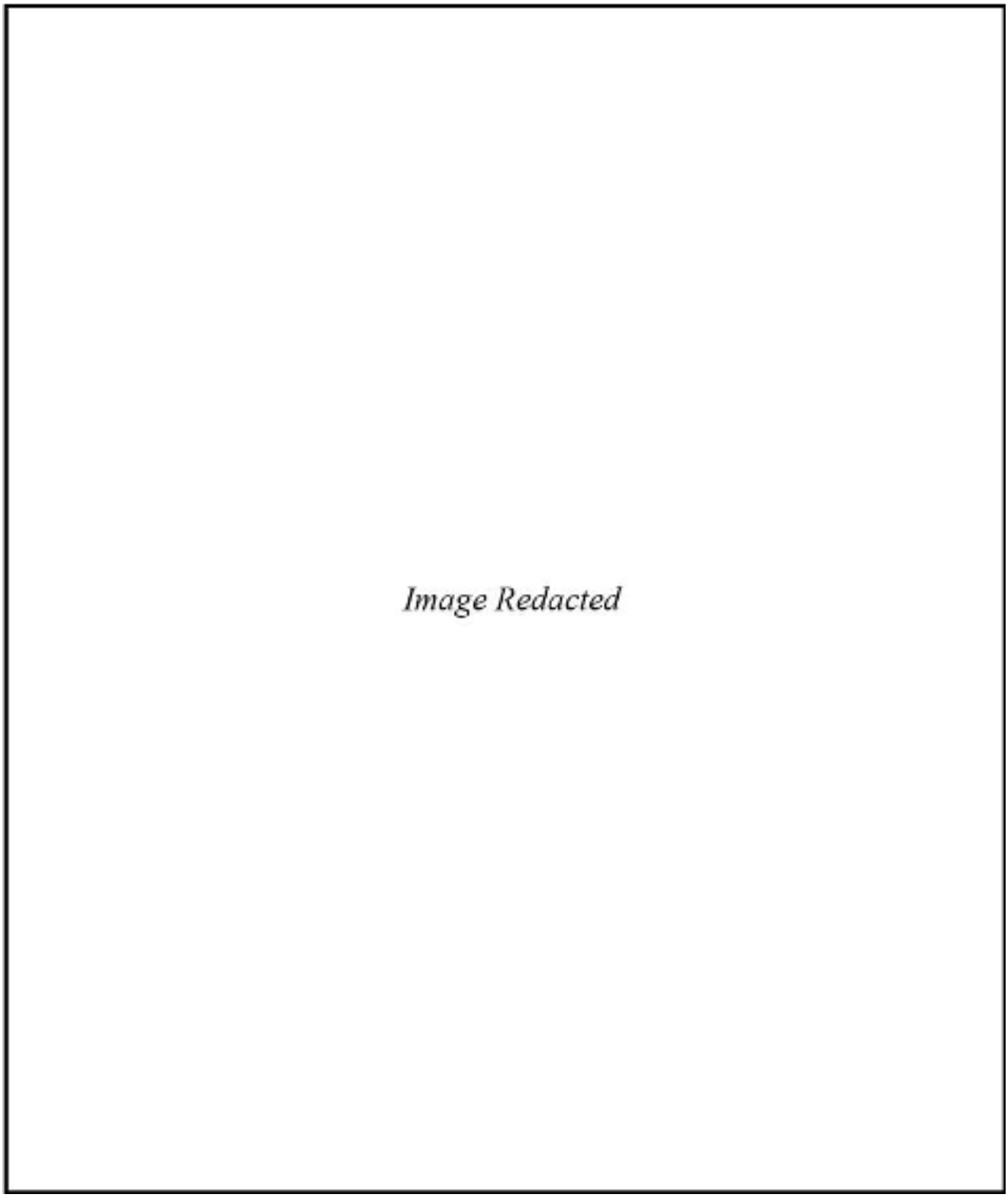

Figure 4-5. Project area and newly recorded sites on Stoner Map.

Figure 4-6. Construction dump across from ST 10, facing north. Note the project area across the ditch in the background.

Figure 4-7. ST 3 termination at 60 cmbs.

Figure 4-8. 41BX2390, facing west from ST 10. M. Razo at ST 11 location. Note the drainage bisecting the project area as well as the transmission tower within the site boundaries, and residential development to the west.

Table 4-2. Summary of material recovered from 41BX2390

Level	Depth	ST 1	ST 9	ST 11
1	0-20	Orange brick/tile (3.78 g), Early plastic (1.52 g), Debitage (n=1), Wire nail (n=1), Coal (1.25 g)	Orange brick/tile (1.5 g), Concrete (30.54 g), Unidentified ferrous scrap (0.62 g)	Clear and brown container glass (n=2)
2	20-40	Negative	Orange brick/tile (0.75 g), Concrete (114.29 g), barbed wire (1.75 g).	Negative
3	40-60	Orange brick/tile (0.26 g)	Not excavated	Not excavated
4	60-80	Brown container glass (n=1)	Not excavated	Not excavated

Figure 4-9. ST 9 termination at 40 cmbs in 41BX2390.

Figure 4-10. 41BX2391 from ST 10, facing east. Note drainage that runs along the southern boundary of the project area, as well as transmission towers within the boundaries, and residential development to the south.

Table 4-3. Summary of materials recovered from 41BX2391

Level	Depth	ST 2	ST 12
1	0-20	Ceramics (n=2), brown glass (n=9), Orange brick/ tile (3.92 g), wire nail (n=1), ferrous container rim (2.5 g), barbed wire (7.86 g), Unidentified ferrous scrap (1.47 g), coal (1.77 g)	Clear glass (n=2), Wire nail (n=1), Unidentified metal (7.34 g)
2	20-40	Ceramics (n=2), Clear brown, and green glass (n=15), Wire nails (n=3), Unidentified metal (1.51 g), Coal (2.12 g), charcoal (0.09 g)	Negative
3	40-60	Negative	Not excavated
4	60-80	Not excavated	Not excavated

Figure 4-11. ST 12 termination at 40 cmbs.

and ferrous wire (0.43 g; Table 4-4). Cultural deposits were restricted to Level 1 (0-20 cmbs) in both positive shovel tests. No cultural features or temporally diagnostic artifacts were documented. The site is just south of the gravel pit present on the 1967 USGS Longhorn Quadrangle Map (see Figure 4-2). Deposits are shallow and sparse. The site has limited historical significance and research potential and is not recommended for inclusion to the NRHP or registration as a SAL.

Figure 4-12. 41BX2392 from ST 16, facing east. Note the drainage that runs along the southern boundary of project area, and the transmission towers within the boundaries, with residential development to the south, and commercial development to the north.

Figure 4-13. ST 6 termination at 57 cmbs.

Table 4-4. Summary of cultural material recovered from 41BX2392

Level	Depth	ST 6	ST 17
1	0-20	Pressed glass (n=1), grayish-clear & green, very thick	Clear, green, and brown glass (n=5), ferrous wire (0.43 g)
2	20-40	Negative	Negative
3	40-60	Negative	Not excavated
4	60-80	Not excavated	Not excavated

Summary

Of the 20 shovel tests excavated within the project area eight were positive for cultural material. Three previously undiscovered archaeological sites were recorded: 41BX2390, 41BX2391, 41BX2392. All three sites were predominantly historic in character, except for a single piece of debitage recovered from Level 1 in 41BX2390. Ceramics recovered from 41BX2391 indicate a post-Civil War date, and the fact that only wire nails were recovered from any of the sites indicates a date post 1900 (Fontana et al 1962). Site 41BX2390 and 41BX2391 are both associated with a farmhouse depicted on 1930s and 1950s maps of the area, and may have been one site before distribution of cultural material was disrupted by disturbances. Site 41BX2392 contains sparse, shallow materials found in dense gravel deposits. All three sites were found to lack research potential.

This page intentionally left blank.

Chapter 5: Summary and Recommendations

In October of 2020, the CAR conducted a linear pedestrian survey within a CPS easement in advance of the installation of four new CPS poles. The survey consisted of a pedestrian survey with shovel testing along a 720 m long, 20 m wide (1.44 ha. [3.6 acres]) easement located east of Severn Road and west of the Salado Creek. The survey was conducted in order to identify buried cultural material within the area, document any previously unrecorded archaeological sites encountered, and assess the potential impact of the planned installation to any archaeological deposits. There was particular concern about the potential for significant prehistoric sites due to the project area's proximity to the Salado Creek (see Potter et al. 1995).

Of 20 shovel tests excavated within the project area, eight were positive for cultural material. Three previously unrecorded archaeological sites, 41BX2390, 41BX2391, 41BX2392, were documented within the project area. All three are primarily historic in nature, with the exception of one piece of debitage recovered from Level 1 (0-20 cmbs) of 41BX2390. Historic artifacts recovered from the sites, including white earthenware and wire nails, indicate a post-1900 date. Site 41BX2390 is located on the far western side of the project area. Construction material, glass and metal were recovered to a maximum depth of 67 cmbs from three positive shovel tests (STs 1, 9 and 11). No temporally diagnostic artifacts were recovered from the site. A construction dump, containing materials similar to construction material recovered from the shovel tests, was recorded on the surface within the site boundary. This dump is likely the remains of the 1930s-1950s era farmhouse depicted on historic maps of the area. Site 41BX2391 is located 50 m east of 41BX2390. Historic ceramics, glass, metal and construction material were recovered to a maximum depth of 40 cmbs from two positive shovel tests (STs 2 and 12). No cultural features were recorded at the site. Both 41BX2390 and 41BX2391 appear to be associated with the farmhouse, originally located to the southwest of the project area. THC guidelines state that in most cases, late 19th to early 20th century sites are not considered significant due to an abundance of available data and uniformity of artifact assemblages from this time period (THC 2020b). Site 41BX2392 is located in the eastern portion of the project area, approximately 250 meters from Salado Creek. Glass and metal were recovered from two positive shovel tests (STs 6 and 17) to a maximum depth of 20 cmbs. No temporally diagnostic artifacts or cultural features were recorded at the site. Deposits at 41BX2392 were sparse and shallow.

All three sites have been impacted by erosion, drainage, and construction in the project area, suggesting limited research potential. Therefore, the CAR recommends that the three sites are ineligible within ROW for inclusion to the NRHP or designation as a SAL. The CAR recommends that construction proceed as planned.

This page intentionally left blank.

References Cited:

Acosta, T.P.
2018 Juneteenth. Handbook of Texas Online. Texas State Historical Association. Electronic document, https://tshaonline.org, accessed October 23, 2020.

Anderson, N.J., K.M. Nichols, S. Tomka, C. McKenzie, A. Young, M. Nichols, M.J. Galindo, S. Marceaux, J. Zapata, J. Perez, and S. Wigley
2017 *Archaeological Testing of Site 41BX6, The Alamo, City of San Antonio, Bexar County, Texas.* Pape-Dawson, San Antonio.

Black, S.L., and A.J. McGraw
1985 *The Panther Springs Creek Site: Cultural Change and Continuity within the Upper Salado Creek Watershed, South-Central Texas*. Archaeological Survey Report, No. 100. Center for Archaeological Research, The University of Texas at San Antonio.

Black, S.L., L.W. Ellis, D.G. Creel, and G.T. Goode
1997 *Hot Rock Cooking on the Greater Edwards Plateau: Four Burned Rock Midden Sites in West Central Texas*. Studies in Archeology 22. Texas Archeological Research Laboratory, The University of Texas at Austin. Archeology Studies Program, Report 2. Texas Department of Transportation Environmental Affairs Department, Austin.

Blair, W.F.
1950 Biotic Provinces of Texas. *Texas Journal of Science*, 1(2): 93-116.

Bousman, C.B., B.W. Baker, B.W., and A.C. Kerr
2004 Paleoindian Archaeology in Texas. In *The Prehistory of Texas*, edited by T.K. Perttula, pp. 205-265. Texas A&M University Press, College Station.

Campbell, R.
2003 *Gone to Texas: A History of the Lone Star State.* Oxford University Press, New York.

Campbell, T.N., and T.J. Campbell
2004 *Indian Groups Associated with the Spanish Missions of the San Antonio Missions National Historic Park.* Special Report, No. 16. Center for Archaeological Research, The University of Texas at San Antonio.

Cargill, D.A.
1996 Stable Isotope Analysis at Mission San Juan de Capistrano, San Antonio, Texas. Master's thesis, The University of Texas at San Antonio.

Carpenter, S. and C. Hartnett
2011 Archaic Macroeconomic Spheres: A Case Study from Fort Hood, Central Texas. *Bulletin of the Texas Archaeological Society* 82:223-251.

Carpenter, S.M.
2017 The Toyah Complex of South and Central Texas: Long-range Mobility and the Emergence of Dual Economies. *Plains Anthropologist* 62(242):133-156.

Chipman, D.E., and H.D. Joseph
2010 *Spanish Texas, 1519-1821*. Rev. ed. University of Texas Press, Austin.

Collins, M.B.
2004 Archeology in Central Texas. In *The Prehistory of Texas*, edited by T.K. Perttula, pp. 205-265. Texas A&M University Press, College Station.

Cox, I.W.
1997 The Growth of San Antonio. In *Archaeology at the Alamodome: Investigations of a San Antonio Neighborhood in Transition. Volume I: Historical, Architectural, and Oral History Research,* edited by A.A. Fox, M. Renner, and R.J. Hard, pp. 8-45. Archaeological Survey Report, No. 236. Center for Archaeological Research, The University of Texas at San Antonio.

de la Teja, J.F.
1995 *San Antonio de Bexar: A Community on New Spain's Northern Frontier.* University of New Mexico Press, Albuquerque.

Eckhardt, G.
2020 The Edwards Aquifer Website. Electronic document, http://edwardsaquifer.net, accessed October 23, 2020.

Figueroa, A.L.
2008 *An Intensive Pedestrian Archaeological Survey of the Salado Creek Greenway, Wetmore Avenue to Eisenhower Road, San Antonio, Bexar County, Texas. Phase II: N.E. Loop 410 to Wetmore Avenue.* Archaeological Report No. 395, Center for Archaeological Research, The University of Texas at San Antonio.

2009 *National Register of Historic Places Eligibility Testing of 41BX1764 (The Dos Mujeres Site), Bexar County, Texas.* Archaeological Report, No. 398. Center for Archaeological Research, The University of Texas at San Antonio.

Figueroa, A.L., and R P. Mauldin
2005 *Test Excavations and Monitoring at 41BX1598: A Multicomponent Historic Site in Bexar County, Texas.* Archaeological Survey Report, No. 360. Center for Archaeological Research, The University of Texas at San Antonio.

Figueroa, A.L. and J.L Thompson
2005 *Intensive Pedestrian Survey of Three Tracts to be Impacted by the Planned Expansion of the San Antonio International Airport, Bexar County, Texas.* Archaeological Report No. 357, Center for Archaeological Research, The University of Texas at San Antonio.

Fisher, L.F.
1998 *The Spanish Missions of San Antonio*. Maverick Publishing Company, San Antonio.

Fontana, B.L., J.C. Greenleaf, C.W. Ferguson, R.A. Wright, and D. Frederick
1962 Johnny Ward's Ranch: A Study in Historic Archaeology. *Kiva* 28(1/2):1-115.

Fox, A.
1976 *The Archaeology and History of Alamo Plaza.* Archaeological Survey Report, No. 16. Center for Archaeological Research, The University of Texas at San Antonio.

Galindo, M.J. K. Miller and A. McGraw
2010 *Intensive Cultural Resources Survey of the Proposed Wurzbach Parkway Extension from Blanco Road to Wetmore Road, Bexar County, Texas.* SWCA Cult. Res. Report #07-225, TxDot and SWCA, Inc., Austin, Texas.

Hanson, C.
2016 *Archaeological Investigations for the Main Plaza Redevelopment Project, San Antonio, Bexar County, Texas*. Atkins, Austin.

Hester, T.R.
1977 Excavations at St. Mary's Hall (41BX229): A Buried Plainview Campsite in South Central Texas. Paper Presented at the 1977 Texas Archaeological Society Annual Meeting, Arlington. Manuscript on file, Center for Archaeological Research, The University of Texas at San Antonio.

1980 11,000 Years of South Texas Prehistory. In *Digging into South Texas Prehistory*, pp. 131-164. Corona Publishing, San Antonio.

2004 The Prehistory of South Texas. In *The Prehistory of Texas*, edited by T.K. Perttula, pp. 127-155. Texas A&M University Press, College Station.

2020 St. Mary's Hall Site. Handbook of Texas Online, Texas State Historical Association. Electronic Resource, https://www.tshaonline.org, accessed October 23, 2020.

Heusinger, E.W.
1951 *A Chronology of Events in San Antonio: Being a Concise History of the City Year by Year, From the Beginning of its Establishment to the End of the First Half of the Twentieth Century.* Standard Printing Co., San Antonio.

Houk, B.A., K.A. Miller, and E.R. Oksanen
2009 The Gatlin Site and Early-to-Middle Archaic Chronology of the Southern Edwards Plateau, Texas. *Bulletin of the Texas Archeological Society* 80:51-75.

Jasinski, L.E.
2018 San Antonio, TX. Handbook of Texas Online. Texas State Historical Association. Electronic document, https://tshaonline.org, accessed October 22, 2020.

Johnson, L. and G.T. Goode
1994 A New Try at Dating and Characterizing Holocene Climates, as Well as Archeological Periods, on the Eastern Edwards Plateau. *Bulletin of the Texas Archeological Society* 65: 1-51.

Katz, P.R.
1987 *Archaeological Mitigation at 41BX300, Salado Creek Watershed, South-Central Texas*. Archaeological Survey Report, No. 130. Center for Archaeological Research, The University of Texas at San Antonio.

Kemp, L., J.E. Zapata, C.M.M. McKenzie, M. Pfeiffer, and R. Curilla
2020 *Archaeological Monitoring of the Downtown Street Reconstruction Project at North Main Avenue and Soledad Street and the State Antiquities Landmark Testing of 41BX2164 and 41BX2170, San Antonio, Bexar County, Texas.* Archaeological Report, No. 462. Center for Archaeological Research, The University of Texas at San Antonio.

Kenmotsu, N.A., and J.W. Arnn
2012 The Toyah Phase and the Ethnohistorical Record: A Case for Population Aggregation. In *The Toyah Phase of Central Texas, Late Prehistoric Economic and Social Processes,* edited by N.A. Kenmotsu and D.K. Boyd, pp. 19-43. Texas A&M University Press, College Station.

Kenmotsu, N.A., and D.K. Boyd
2012 The Toyah Phase in Texas: An Introduction and Retrospective. In *The Toyah Phase of Central Texas, Late Prehistoric Economic and Social Processes*, edited by N.A. Kenmotsu and D.K. Boyd, pp. 1-18. Texas A&M University Press, College Station.

Lohse, J.C., D.B. Madsen, B.J. Culleton, and D. J. Kennett
2014 Isotope Paleoecology of Episodic Mid-to-late Holocene Bison Population Expansions in the Southern Plains, U.S.A. *Quaternary Science Reviews* 102:14-26.

Long, C.
2017 Bexar County. Handbook of Texas Online. Electronic document, https://tshaonline.org, accessed October 23, 2020.

Mauldin, R., and L. Kemp
2016 Spatial Patterns at the Plaza de Armas Buildings. In *Archaeological Monitoring and Test Excavations at the 1722 Presidio San Antonio de Bexar (Plaza de Armas Buildings)*, by C. McKenzie, L. Martinez, and R. Mauldin, pp. 123-134. Archaeological Report, No. 445. Center for Archaeological Research, The University of Texas at San Antonio.

Mauldin, R.P., D.L. Nickels, and C.J. Broehm
2003 *Archaeological Testing to Determine the National Register Eligibility Status of 18 Prehistoric Sites on Camp Bowie, Brown County, Texas*. Archaeological Survey Report, No. 334. Center for Archaeological Research, The University of Texas at San Antonio.

Mauldin, R., J. Thompson, and L. Kemp
2012 Reconsidering the Role of Bison in the Terminal Late Prehistoric (Toyah) Period in Texas. In *The Toyah Phase of Central Texas: Late Prehistoric Economic and Social Processes*, edited by N.A. Kenmotsu, pp. 90-110. Texas A&M University Press, College Station.

Munoz, C.M., R.P. Mauldin, J.L. Thompson, and S.C. Caran
2011 *Archeological Significance Testing at 41BX17/271, the Granberg Site: A Multi-Component Site along the Salado Creek in Bexar County, Texas.* Archaeological Survey Report, No. 393. Center for Archaeological Research, The University of Texas at San Antonio.

Natural Resources Conservation Service (NRCS)
2020 Web Soil Survey. United States Department of Agriculture. Electronic document, https://websoilsurvey.sc.egov.usda.gov., accessed October 22, 2020.

Owens, J.D.
2017 *Intensive Cultural Resources Survey of the Proposed San Antonio Water System E-20 Wastewater Project, Segments 1 and 2, San Antonio, Bexar County, Texas.* Horizontal Environmental Services, Inc. Austin, Texas.

Petersen, J.F.
2001 San Antonio: An Environmental Crossroads on the Texas Spring Line. In *On the Border: An Environmental History of San Antonio,* edited by C. Miller, pp.17-41. University of Pittsburgh Press, Pennsylvania.

Potter, D.R. and S.L. Black.
1995 *Archaeology Along the Wurzbach Parkway Module 2: Initial Testing and Evaluation of Five Prehistoric Sites in the Upper Salado Watershed, Bexar County, Texas.* Studies in Archeology 18, Texas Archeological Research Laboratory, The University of Texas at Austin.

Potter, D.R., S.L. Black, and K. Jolly
1995 *Archaeology Along the Wurzbach Parkway Module 1: Introduction, Conceptual Framework, and Contexts of Archeological Investigations in Bexar County, South-Central Texas.* Studies in Archeology 17, Texas Archeological Research Laboratory, The University of Texas at Austin.

Schuetz, M.K.
1966 *The Granberg Site: An Archaic Indian Habitation in Bexar County, Texas*. Witte Museum Studies, No. 1. San Antonio,.

Texas Historical Commission (THC)
2006 A Steward's Illustrated Key to Historic Ceramics Revised Edition. Texas Archaeological Stewardship Network.

2020a Texas Archeological Sites Atlas. Texas Historical Commission. Electronic document, https://atlas.thc.state.tx.us/, accessed October 2020.

2020b Guidance for Studying Late 19th and Early 20th Century Sites. Electronic document, https://www.thc.texas.gov/about/publications, accessed April 10, 2019.

Thoms, A.V. and P.A. Clabaugh
2011 The Archaic Period at the Richard Beene Site: Six Thousand Years of Hunter-Gatherer Family Cookery in South-Central North America. *Bulletin of the Texas Archaeological Society* 82:77-117.

Turner, E.S., T.R. Hester, and R.L. McReynolds
2011 *Stone Artifacts of Texas Indians*. Taylor Trade Publishing, Lanham, Maryland.

Wigley, S.
2018 Hunter-Gatherer Mobility at the Granberg Site (41BX17), Bexar County, Texas. Master's thesis, The University of Texas at San Antonio.

Wooster, R.A.
2018 Civil War. Handbook of Texas Online. Texas State Historical Association. Electronic document, https://tshaonline.org, accessed October 23, 2020.

Zapata, J.E.
2017 *The 2006 UTSA Field School at Mission de Valero (41BX6), the Alamo, San Antonio, Bexar County, Texas*. Archaeological Report, No. 453. Center for Archaeological Research, The University of Texas at San Antonio.