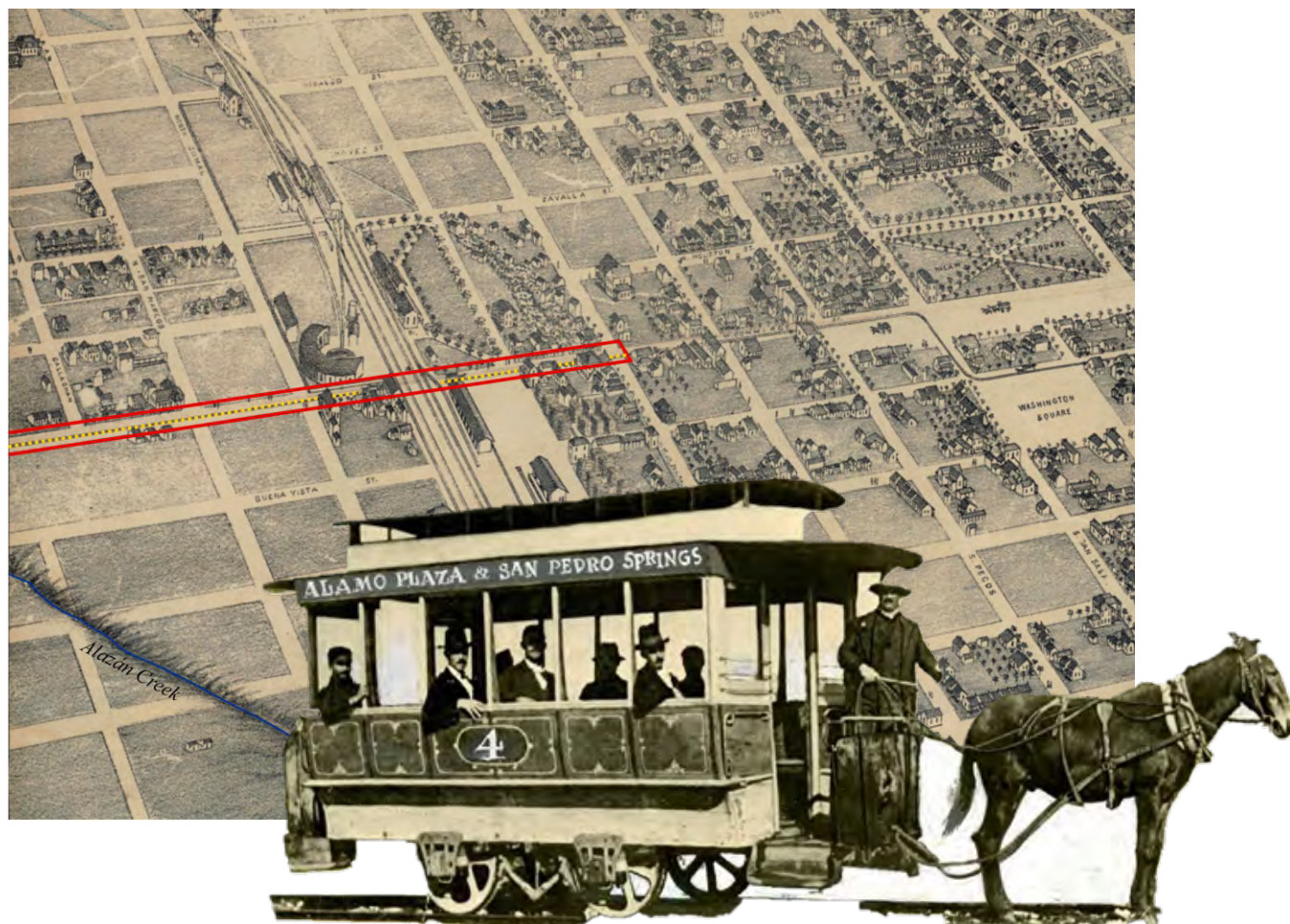


# Archaeological Documentation of Trolley Tracks on Commerce Street Between Frio Street and the Alazan Creek, San Antonio, Bexar County, Texas

by  
Sarah Wigley



Texas Antiquities Permit No. 9720

**REDACTED**

Principal Investigator  
Cynthia Munoz

*Prepared for:*  
City of San Antonio  
P.O. Box 839966  
San Antonio, Texas 78283



*Prepared by:*  
Center for Archaeological Research  
The University of Texas at San Antonio  
One UTSA Circle  
San Antonio, Texas 78249-1644  
Archaeological Report, No. 503

© CAR December 2023



**Archaeological Documentation of Trolley Tracks on Commerce Street  
Between Frio Street and the Alazan Creek,  
San Antonio, Bexar County, Texas**

*by*  
Sarah Wigley

Texas Antiquities Permit No. 9720

**REDACTED**

Principal Investigator  
Cynthia Munoz



*Prepared for:*  
City of San Antonio  
P.O. Box 839966  
San Antonio, Texas 78283

*Prepared by:*  
Center for Archaeological Research  
The University of Texas at San Antonio  
One UTSA Circle  
San Antonio, Texas 78249  
Archaeological Report, No. 503



## **Abstract:**

From January 2021 until July of 2023, the Center for Archaeological Research at the University of Texas at San Antonio conducted archaeological documentation of trolley track remnants located along West Commerce Street between the Alazan Creek and Frio Street. This work was conducted in response to a request from the City of San Antonio (COSA). The project area is located immediately west of downtown San Antonio in Bexar County, Texas on COSA property. The work was conducted under the requirements of COSA's Unified Development Code (UDC) (Article 6 35-630 to 35-634) and the Antiquities Code of Texas during an improvements project. CAR obtained permit Texas Antiquities Permit No. 9720 prior to the beginning of fieldwork. Dr. Raymond Mauldin served as the original Principal Investigator (PI) on the permit. Cynthia Munoz served as the final PI. Sarah Wigley served as the Project Archaeologist.

The project area extends along 931 meters (3054 ft.) of West Commerce Street, spanning roughly 2.4 ha (6 acres), and its eastern edge lies within the Cattleman Square Historic District. The focus of the project was the documentation of the trolley tracks located below the street. San Antonio's trolley system operated from 1878-1933 (Watson 1982). During the course of this project, steel ties encased in concrete from the line that ran along West Commerce Street were documented below the street before they were removed to permit access for the installation of utilities during the course of a street improvements project. The tracks are historically relevant due to their role in the expansion and development of the city of San Antonio, although the archaeological research value of the tracks themselves is limited. CAR recommends no additional work. The sections uncovered during the course of this project were documented as part of the previously recorded site 41BX2163. No artifacts or samples were collected over the course of this project. Records generated during the course of this project are permanently curated at the CAR under accession # 2756.

This page intentionally left blank.

## Table of Contents:

Abstract .....	iii
List of Figures .....	vii
List of Tables .....	ix
Acknowledgements .....	xi
Chapter 1: Introduction .....	1
Chapter 2: Background .....	3
Project Environment .....	3
Culture History .....	4
Spanish Colonial .....	4
Mexican Period .....	5
Texas Republic, Statehood and Civil War .....	5
Post-Civil War .....	6
Previous Archaeology .....	11
Chapter 3: Methodology .....	13
Field Methods .....	13
Laboratory Methods .....	13
Chapter 4: Results .....	15
Chapter 5: Summary and Recommendations .....	21
References Cited .....	23

This page intentionally left blank.



## List of Figures:

Figure 1-1. The project area on an aerial map .....	1
Figure 1-2. The project area on a topographic map .....	2
Figure 2-1. Soils within the project area.....	3
Figure 2-2. Alamo plaza to San Pedro Springs mule-drawn line, ca. 1878 (Photo number Txsay_ms26_79-6_50, from the John Kight Transportation Collection, UTSA Special Collections) .....	7
Figure 2-3. A 1900 photograph of an electric trolley line in San Antonio (Photo number Txsau_ms26_79-6_80, John Kight Transportation Collection, UTSA Special Collections).....	8
Figure 2-4. Map of streetcar lines in San Antonio ca. 1918, adapted from Figure 20 in Watson 1982:134.....	9
Figure 2-5. Project area on an 1886 Bird's Eye View Map. Project area in red (note that it extends west off the map), streetcar line in yellow, Alazan Creek in blue.....	10
Figure 2-6. 1892 Sanborn Fire Insurance Map on the left, 1896 Sanborn Fire Insurance Map on the right. The blocks highlighted in blue demonstrate the shifting demographics in the area surrounding the railroad depot. Note that the block north of Houston was unmapped in 1892 .....	10
Figure 2-7. Archaeological sites within 100 m of the project area REDACTED IMAGE.....	11
Figure 4-1. Map of recorded features within the project area REDACTED IMAGE .....	15
Figure 4-2. Example track profile with concrete and I-rail tie exposed; note lack of gravel foundation layer .....	16
Figure 4-3. Top, example track profile recorded near the Alazan Creek; below, irregular tie spacing observed within the example track profile.....	16
Figure 4-4. Narrow exposure of track remnants prior to tie removal .....	17
Figure 4-5. Close-up of tie profile after removal. North arrow used for scale, photo faces north.....	17
Figure 4-6. Paving stone recorded at the San Marcos Street intersection .....	18
Figure 4-7. The West Commerce Street overpass on the 1960 Sanborn Fire Insurance Map .....	19

This page intentionally left blank.

## **List of Tables:**

Table 2-1. Previously Recorded Archaeological Sites within 50 m of the Project Area.....	12
--	----

This page intentionally left blank.

## **Acknowledgements:**

Thank you to Jason Perez, Leonard Kemp, Dr. Lynn Kim, and Clint McKenzie, who helped complete the fieldwork for this project. Thank you to Dr. Raymond Mauldin, who offered guidance throughout the course of this project. Thank you to Dr. Jessica Nowlin and Peggy Wall, who processed the GIS data and produced maps. Peggy Wall also produced graphics as well as the final version of the report. Dr. Mary Whisenhunt edited a draft of this report. Thank you to Theresa Larsen, Environmental Services Coordinator at COSA, for her help in coordinating this work. Thank you to Matthew Elverson and Shawn Marceaux, City Archaeologists, for their help facilitating this project. Thank you as well Aetos Construction, LLC., Harper Brothers Construction, LLC and CEC Civil Engineering Consultants, who coordinated with CAR staff regarding finds on this project.

This page intentionally left blank.

## Chapter 1: Introduction

Beginning in January 2021 until July 2023, the University of Texas at San Antonio (UTSA) Center for Archaeological Research (CAR), in response to a request from the City of San Antonio (COSA), conducted archaeological documentation of trolley tracks encountered during improvements to West Commerce Street between Frio Street and the Alazan Creek. The project area is located on the west side of downtown San Antonio, Bexar County, Texas. At the municipal level, the property falls under COSA's Unified Development Code (UDC) (Article 6 35-630 to 35-634). The project also required review by the Texas Historical Commission (THC) under the Antiquities Code of Texas. The CAR obtained Texas Antiquities Permit No. 9720 prior to beginning fieldwork. Dr. Raymond Mauldin served as the original Principal Investigator

(PI) on the permit. Cynthia Munoz served as the final PI. Sarah Wigley of CAR served as the Project Archaeologist.

The project area consists of both sides of West Commerce Street between Frio Street and the Alazan Creek, a 931 m section spanning roughly 2.4 ha (6 acres; Figures 1-1, 1-2). Under the initial permit, the project extended from Frio to Colorado Street, but the CAR obtained a permit amendment from the THC to include the section of Commerce Street extending to Alazan Creek at COSA's request. The eastern 120 meters of the project lie within the Cattleman Square Historic District. The District contains structures dating to the late 1800s and early 1900s, several of which are associated with the International and Great Northern Railroad (I&GN;

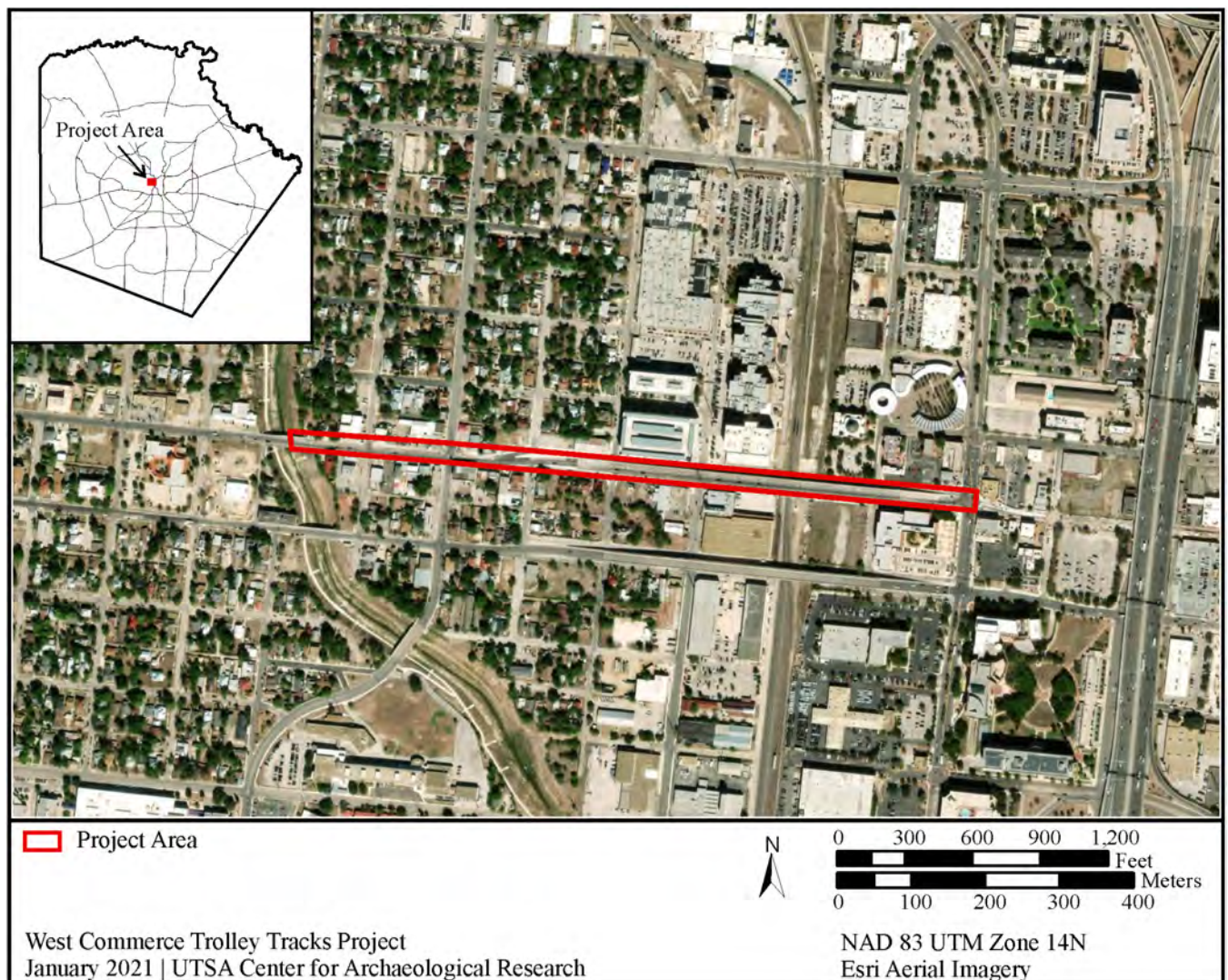


Figure 1-1. The project area on an aerial map.



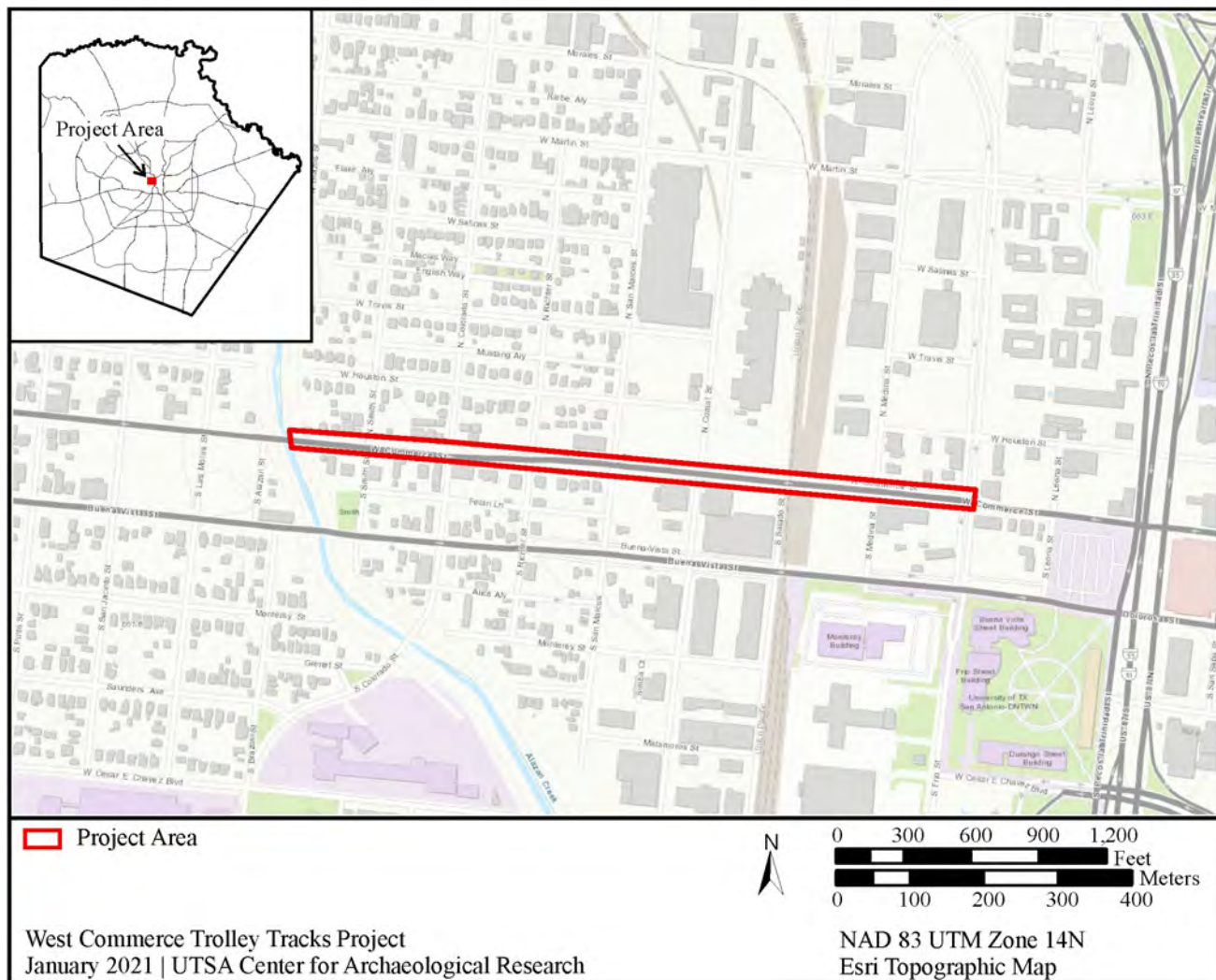


Figure 1-2. The project area on a topographic map.

COSA 2023). There are seven archaeological sites within 100 meters of the project area, all of which are included in the Historic District. All seven are historic sites, five of which are commercial in nature. Additionally, 41BX620, the Alazan Ditch, is within the project area along the far eastern boundary (THC 2023).

This project focused only on documenting the trolley tracks, part of a system operating within San Antonio from 1878-1933 (Watson 1982). CAR was notified when trolley tracks had been uncovered at certain locations and initiated documentation of the tracks using standard archaeological procedures, including GPS locations, photographs, and standardized forms. The CAR documented uncovered sections of steel ties encased in concrete. In most cases the ties had already been saw cut and removed prior to the arrival of CAR staff on site, although in some cases the CAR was able to document tie sections prior to their removal. No full horizontal tie sections or any sections of rail were documented due to the extent and location of the utility trenches. The tracks

are historically consequential due to the role of the trolley lines in San Antonio's growth and development. The portions documented here were recorded as part of the previously recorded site 41BX2163. No sections of trolley track were documented east of the San Marcos Street intersection. This is likely due to changes made to West Commerce Street to construct the bridge over the railroad tracks between Frio and Richter Streets. CAR also documented a section of historic brick pavers encountered below the intersection of West Commerce Street and San Marcos Street. CAR recommends that neither the trolley tracks nor the paver section are eligible for listing in the NRHP or designation as a SAL.

This report contains five chapters. After this introduction, Chapter Two provides an environmental and cultural background in order to provide context for the project. Chapter Three summarizes the field and laboratory methods employed during the course of this project. Chapter Four provides the results of the investigation, and Chapter Five provides a project summary and results.



## Chapter 2: Background

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

### Project Environment

The project area is located in central Bexar County, Texas. The project area consists of a stretch of West Commerce Street bounded by the Alazan Creek on the west and Frio Street on the east. The area today is primarily commercial in the eastern portion of the project area, which partially falls within the Cattleman Square Historic District (COSA 2021b). The western part of the project area is mixed commercial and residential development. Railroad tracks still run north to south through the project area at Salado Street, now owned by Union Pacific. The old I&GN station, just north of the project area on Medina Street, is now owned by VIA Metropolitan Transit (Hemphill 2021a).

The city of San Antonio 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 city's 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. The growing season averages 270 days (Petersen 2001:22). The temperature reaches average lows of 39.2°F (4°C) in January and average highs of 96.8°F (36°C) in July (Long 2023). Though highly variable, the average annual rainfall is approximately 76 cm, with seasonal peaks in the spring and fall (Petersen 2001:22). The project area is located near the borders of the Balconian biotic province, which is described as an intermediate ecological area between the eastern forest and the western desert, and the Tamaulipan biotic province, which has semi-arid climate and is dominated by thorny brush (Blair 1950). Elevations within the project are between 195-205 meters above sea level.

Soils within the project area are primarily Branyon clays (Hta), stretching west from Frio Street to midway between Richter and Colorado streets (Figure 2-1). Branyon clays are found

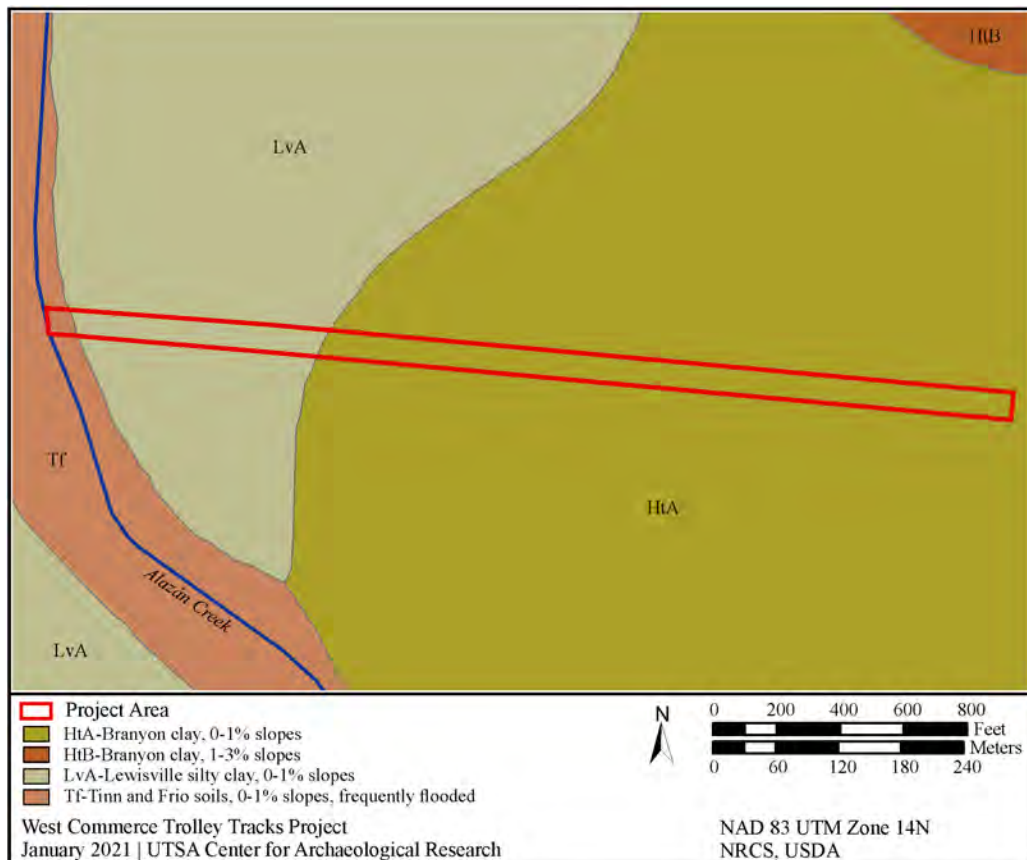


Figure 2-1. Soils within the project area.

on stream terraces of 0-1% slopes. They are moderately well drained and reach depths of more than 203 cm. West of Richter Street to immediately adjacent to Alazan Creek soils consist of Lewisville silty clays (LvA). Lewisville silty clays are found on stream terraces of 0-1% slopes. They are well drained and reach depths of more than 203 cm. Within the Alazan Creek drainage on the west are Tinn and Frio soils (Tf). These soils are found on flood plains with 0-1% slopes. They are moderately well drained and reach depths of more than 203 cm (NRCS 2021).

The primary ecological site in the project area is the Southern Blackland Prairie, with areas of Southern Clay Loam and Bottomland near the Alazan Creek. Natural vegetation in the Southern Blackland Prairie ecoregion includes tallgrass species such as big bluestem (*Andropogon gerardii*), Indiangrass (*Sorghastrum nutans*), switchgrass (*Panicum virgatum*), eastern gramagrass (*Tripsacum dactyloides*), little bluestem (*Schizachyrium scoparium*), abundant midgrasses, a wide variety of forbs, western hackberry (*Celtis occidentalis*), live oak (*Quercus virginiana*) and elm (*Ulmus* sp.). As is the case in the project area, most of the natural vegetation in this ecoregion has been lost, first due to agricultural activities, then to urban development. Less than one percent of the native prairie environment remains within the Blackland Prairie ecoregion (NRCS 2021). The Southern Clay loam region, located in the western section of the project area near Alazan Creek, is very similar in species composition to the Southern Blackland Prairie, but has more impact from flooding. The Bottomland ecoregion is located downslope and sees frequent flooding due to its location. All three sites are associated with tallgrass prairies, differentiated primarily by their flooding frequency (NRCS 2021).

The Alazan Creek watershed, where the project is located, spans 45 sq. km, beginning near Fredericksburg Road approximately 4.4 km northwest of the project area and extending to its confluence with Apache Creek approximately 1.1 km southeast of the project area. It is classified as an ephemeral stream but is rarely dry even in drought conditions. Early descriptions of the west side creek environment describe extensive trees in the upland areas and a diverse and aquatic ecosystem within the creeks, which followed winding paths. Following a major, damaging flood event in 1946, the west side creeks, including Alazan Creek, were extensively channelized. The path of the creek was straightened and floodway given a homogenous, trapezoidal shape with extensive concrete banks. This successfully mitigated flood risk but devastated the ecosystem, which had already been impacted by urbanization. Modern water quality is poor enough to classify the creek as an “impaired water body” (USACE 2014).

## Culture History

This section focuses on the Historic period in Central Texas, primarily the later historic period, due to the project’s focus

on historic features. Collins (2004) provides a summary of the prehistory of the Central Texas region. In Central Texas, the Historic period began with the first documented appearance of Europeans in AD 1528. Although early interactions between Europeans and indigenous populations in the area were infrequent, the lifeways of the indigenous people were still impacted by spread of invasive disease and the arrival of Native American groups from other regions of North America fleeing European incursions (Foster 1998; Kenmotsu and Arnn 2012).

## Spanish Colonial

In 1519, following the Alonso Álvarez de Pineda voyage, Spain laid claim to the area that would become Texas but made little attempt to establish settlement (Chipman and Joseph 2010). Conflict with the French, who began to show an interest in moving into the area, reignited Spanish interest in Texas in the late 17th and early 18th century. The Spanish government began to establish missions in the area in the early 1700s (Crux 1988). Ultimately the Mission San Antonio de Valero, the first Spanish settlement in what would become San Antonio, was established in 1718, followed by the Presidio de Bexar and Villa de Bexar (Habit 1968). The primary institutions Spain employed to secure its colonies were the missions, intended to assimilate the indigenous population through religious conversion; the presidio, which played a military defensive role; and, ultimately, the establishment of chartered town settlements (Cox 1997; de la Teja 1995). All three of these institutions played a role in San Antonio’s development. The mission and the presidio were intended to be transitory institutions, whose land and possessions would ultimately be distributed among successfully converted indigenous families (de la Teja 1995). The Spanish Colonial acequia system in San Antonio was established to serve as a source of water and irrigation for the inhabitants of these institutions. San Antonio is one of the few large cities of Spanish origin that still contains traces of its original *acequia* system, spanning more than 80 km (Cox 2005).

The early mission, presidio and villa were relocated multiple times, primarily due to environmental and weather challenges, before settling at their final locations (Habit 1968). The final location of the Spanish colonial presidio is approximately 870 m to the east of the project area, while the final location of the Mission Valero (41BX6) is about 1691 m to the east on the other side of the San Antonio River. Archaeological material associated with the second location of the presidio, including a Spanish colonial sheet midden, has been documented at site 41BX2088 (McKenzie et al. 2016). Four more missions (Mission San Jose, 41BX3; Mission Concepcion, 41BX12; Mission San Juan, 41BX5; and Mission Espada, 41BX4) were founded to the south

along the San Antonio River between 1720 and 1731 (de la Teja 1995). Archaeological work at the missions over the years has documented construction history and lifeways of mission inhabitants; summaries of work conducted in the San Antonio mission environs are provided by Scurlock and colleagues (1976), Ivey (2018), and Ivey and Fox (1999).

Although an early, unofficial town settlement associated with the presidio began to develop with the arrival of presidio soldiers and their families, this settlement lacked legal status (de la Teja 1991). The arrival of a group of immigrants from the Canary Islands in 1731 marked the establishment of the Villa de San Fernando (de la Teja 1995; Poyo 1991). The original villa was located approximately 1040 m to the east of the project of the project area. The villa was granted water rights to the San Pedro Creek (de la Teja 1995). The early years of the settlement were marked with conflict between the villa, the missions and the earlier settlers, particularly over land and irrigation (de la Teja 1991, 1995; Poyo 1991). From early in its history, the west side of town was called “Laredito” (de la Teja and Wheat 1991).

In 1793, the Mission Valero was secularized, and the lower farms were surveyed and distributed (Cox 1997; de la Teja 1995). The mission compound subsequently served primarily a military function in the city, and it was, significantly, the site of the Battle of the Alamo in 1836. The other missions were not fully secularized until 1824, when their churches and furnishings were inventoried and surrendered (Habit 1968). However, they were partially secularized in 1794, when their farmlands were surveyed and redistributed, and the distribution of former mission farmlands contributed to the growth of the town (de la Teja 1995).

In the late 18th century, the majority of the recorded population of Texas are described as Spaniards, followed by “settled” Native Americans (Chipman and Joseph 2010). The residents of San Antonio were underprivileged in contrast to those in other areas of New Spain (de la Teja 1996). Unrest in Europe and Mexico contributed to turmoil in San Antonio, as well as increased conflict with the United States as that country sought to expand (Chipman and Joseph 2010; de la Teja 1996). After the Louisiana purchase in 1800, the United States attempted to claim Texas as part of the acquisition as well, and the boundaries were not formally settled until 1819 (Campbell 2012).

An uprising against Spain in Texas began in 1811 and included both Mexican revolutionaries and Anglo-American forces (de la Teja 1996, Chipman and Joseph 2010). A series of battles took place near San Antonio in 1812 and 1813. This included the Battle of Alazan Creek, which was a victory for the rebels (Chipman and Joseph 2010; Marshall 2015). The battlefield is commonly thought to be near present-day West Commerce Road, where a historical marker is located at 2300 West Commerce, about 700 m west of the current project area

(THC 2023). Recent evaluation of contemporary accounts suggests that it may instead have been located between Alazan and Martinez Creeks (Marshall 2015). The uprising ultimately failed and the Spanish reaction was punitive, resulting in a depleted population and negatively impacted economy for decades afterwards (Chipman and Joseph 2010; Cox 1997).

## Mexican Period

Mexico gained independence from Spain in 1821, and Texas became part of the state of Coahuila (Cox 1997). During this period, immigration to the area from the United States increased due to the draw of cheap land, and by the 1830s in Texas Anglo-American settlers outnumbered Tejanos in the state. Despite attempts by the state to encourage it there was little immigration from Mexico. Conflict with Mexico increased over trade rules and immigration. Ultimately, Texas revolted against Mexico in 1835. Mexican General Martín Perfecto de Cos fortified the old Mission Valero against the Texans, including diverting a branch of the *acequia* to flow outside the Mission compound (Cox 1997). The Texans defeated General Cos, but they were defeated themselves by Santa Anna after 13-day siege in 1836 at what became known as the Battle of the Alamo (Cox 1997). A number of sites downtown include features associated with this military activity, including a trench feature associated with General Cos’ occupation of Main Plaza at 41BX1752 (Hanson 2016), and a Mexican fortification trench associated with the Siege of Bexar at 41BX2170 (Kemp et al. 2020). A smaller skirmish in 1835, called the Grass Fight, occurred just south of the project area (Barr 2021; Campbell 2012). In the fall of 1836, Santa Anna was ultimately defeated, and Texas became a Republic (Cox 1997).

## Texas Republic, Statehood and Civil War

During the century that followed Texas’s break with Mexico, San Antonio saw considerable growth despite the impact of numerous conflicts (Cox 1997). In December of 1837, San Antonio was incorporated as one of the early acts of the newly established Republic of Texas. The state became increasingly urbanized (Miller and Johnson 1990). The Tejano population were increasingly marginalized, and conflict and distrust towards them had increased during the war against Mexico, despite their participation in the fight for independence (Hardin 1996; Poyo 1996; Tijerina 1996). In 1840, census records indicate that at this point Tejanos owned 85 percent of town lots, but by 1850, records show Tejanos claiming nine percent of real estate, and the population was increasingly concentrated west of downtown (Marquez et al. 2007).

A number of epidemics impacted the city’s population during the early to mid-1800s, spread in part by pollution of the city’s *acequia* system. The City attempted to combat the issue by establishing standards of cleanliness, but the issue



remained ongoing (Cox 2005). After a turbulent period in which Texas saw conflict with both Mexico, which did not accept the new Republic's independence, and local Native American groups, Texas became part of the United States in 1846. The state's annexation brought about war between Mexico and the United States, which initially included conflict in the Rio Grande valley, but for the most part took place outside Texas. The war ended in 1848. In the 1840s and 1850s, conflict with Native American groups was also common, particularly in west Texas (Campbell 2012). The state's population saw significant increases following statehood, but restricted transportation ability within and outside of the state limited economic development. Railroad development was authorized by the legislature in 1854 but construction was slow. The economy remained overwhelmingly agricultural. Education in the state was limited to private enterprise (Campbell 2012).

Texas seceded from the United States and joined the Confederacy in 1861 as part of the conflict between northern and southern states over the practice of slavery (Campbell 2012). Bexar County voted in favor of secession (TSHA 2018). Texas served a supply role during the Civil War (Campbell 2012; Wooster 2021). There was little fighting within Texas itself, with the exception of the coast, which was blockaded (Campbell 2012). In 1865, Texas surrendered to the Union and rejoined the United States (Wooster 2021). The practice of slavery in the United States ended with the Confederacy, and June 19 became known as Juneteenth in celebration of Emancipation (Campbell 2012).

### Post-Civil War

The arrival of the railroad to the city in 1877 resulted in significant growth in San Antonio (Cox 1997). Railroad mileage had actually decreased during the Civil War, but by 1880, thousands of miles of track had been built (Campbell 2012). Within the project area, the arrival of the International-Great Northern Railroad to the locale in 1881 resulted in considerable development in the area (COSA 2021; Thomas and McKenzie 2019). This was the second railroad in the city and provided important connections to both the rest of the United States and Mexico, making the city a central location for trade and driving significant economic growth in the city and state (Campbell 2012; Hemphill 2021a; Miller and Johnson 1990). However, San Antonio was less affected by industrialization than other major Texas cities (Miller and Johnson 1990). The late 1800s saw infrastructure and economic development throughout the city, including water, electric, and gas utilities (Heusinger 1951). Public education in Texas was also established in 1870 (Campbell 2012). The City also attempted to update the *acequia* system with the construction of new ditches,

including the construction of the Alazán ditch (41BX620) in 1875 intended to serve the west side. Construction of this new ditch necessitated modifications to the existing *acequia* system (Thomas and McKenzie 2019). The ditch functioned poorly from the beginning due to faulty engineering of the slope and substandard construction (Cox 2005; Thomas and McKenzie 2019). The adoption of the new water works system in 1878 transformed the *acequia* system into, primarily, a drainage system, and water flow was reduced in the 1890s due to the increased drilling of wells. As a result of these infrastructural changes in the city, as well as ongoing cleanliness issues, the urban *acequias* were closed by 1912 (Cox 2005).

As the city grew, San Antonio was increasingly differentiated socioeconomically (Sanders 1990). The west side, where the project area is located, was predominately Hispanic, many of whom were recent immigrants; Kemp (2019) and Zapata and colleagues (2023) provide detailed background of the area. Around 1900, immigration from Mexico increased due to unrest in that country (Campbell 2012), including to San Antonio, where neighborhoods had become increasingly segregated beginning in the 1860s (Campbell 2012; Johnson 1990, Marquez et al. 2007). Growth in Texas and San Antonio was increased during WWI, partially due to military activity and spending during that time (Campbell 2012; Freeman 1994; Heusinger 1951). A major flood in 1921 caused extensive damage and loss of life along the San Pedro and Alazan Creeks, ultimately leading to the construction of Olmos Dam for flood control (Heusinger 1951; Zapata et al. 2023). During the Great Depression however, beginning in 1929, immigration to Texas slowed, and poverty increased, although Texas was not as severely impacted as some other states (Campbell 2012). Mexican Americans were particularly affected. A visitor described conditions on the predominately Hispanic west side as "some of the worst in the United States" (Sanders 1990: 156), due to lack of infrastructure such as running water, paved roads and sewer systems, despite the development of those services elsewhere in the city half a century previous. *Jacale* (mud, clay, and grass structures) and adobe structures in these parts of San Antonio persisted well into the early twentieth century (De León 1982:114). Menger (1913:269), in his observations on the city of San Antonio, describes "large rows of Mexican dwellings" along the San Pedro Creek and Alazán Creek. Various New Deal programs offered support for struggling Texans, and also served to improve public works such as parks (Campbell 2012). San Antonio dropped to the third largest city in Texas in 1930, behind Dallas and Houston (Miller and Johnson 1990). WWII brought significant activity and growth to San Antonio and Texas, as the state became the largest military training ground in the world (Campbell 2012; Freeman 1994). Municipal construction projects halted during the war however (Heusinger 1951).

Ultimately, the increased growth contributed significantly to the state's recovery from the Great Depression. After the war, industrialization of the economy and urbanization increased (Campbell 2012). However, inequality persisted and infrastructure development did not keep pace with growth in San Antonio, where in underprivileged areas many streets remained unpaved and many areas still lacked sewer service in 1951, including the west side (Sanders 1990).

### **The Trolley System and its Influence on Surrounding Neighborhoods**

The development of trolley or streetcar systems in the United States is closely tied to industrialization. The earliest versions were horse-drawn and developed in New York and New Orleans in the 1830s, spreading to other large cities in the mid-19th century. Trolley systems did not become widespread in the South until after the Civil War due to a delay in industrialization in that area (Litvak et al. 2020). The use of horses presented a number of challenges, including increased accidents due to spooking of horses and maintenance costs. An early attempt to replace them with a steam-powered version failed due to excessive noise and pollution. Cable cars became popular, but could be costly and unreliable. The

electric version was developed in Virginia in 1887-1888, and this system was widely adapted (Litvak et al. 2020). Across the country trolley system development affected how cities grew by allowing residents to travel farther at increased speeds (Litvak et al. 2020).

Development of the San Antonio system began in the late 1870s, and early cars were mule-drawn (Figure 2-2). Service on the early mule-drawn streetcars was unreliable, earning them the nickname the "GOP, or Get off and Push" line (Hemphill 2021b). Electric lines were in use by 1890 (Hemphill 2021b; Watson 1982; Figure 2-3), which increased car size and service speed (Hemphill 2021b). Downtown, the increase in use of streetcar lines propelled development on Houston Street over Commerce Street, which was too narrow to easily accommodate streetcar lines (Hemphill 2021b). Most lines did not include double tracks (Hemphill 2021b). Initially, each line was operated by a separate company, which was responsible for the expensive maintenance of both lines and the streets they ran on, although over time companies gradually consolidated (Hemphill 2021b; Watson 1982). The charter and planning of lines was dependent on City Council (Watson 1982). Trolley track mileage in San Antonio peaked in 1926 at 145 km (Hemphill 2021b; Watson 1982). By 1933, the streetcars had gained a reputation as

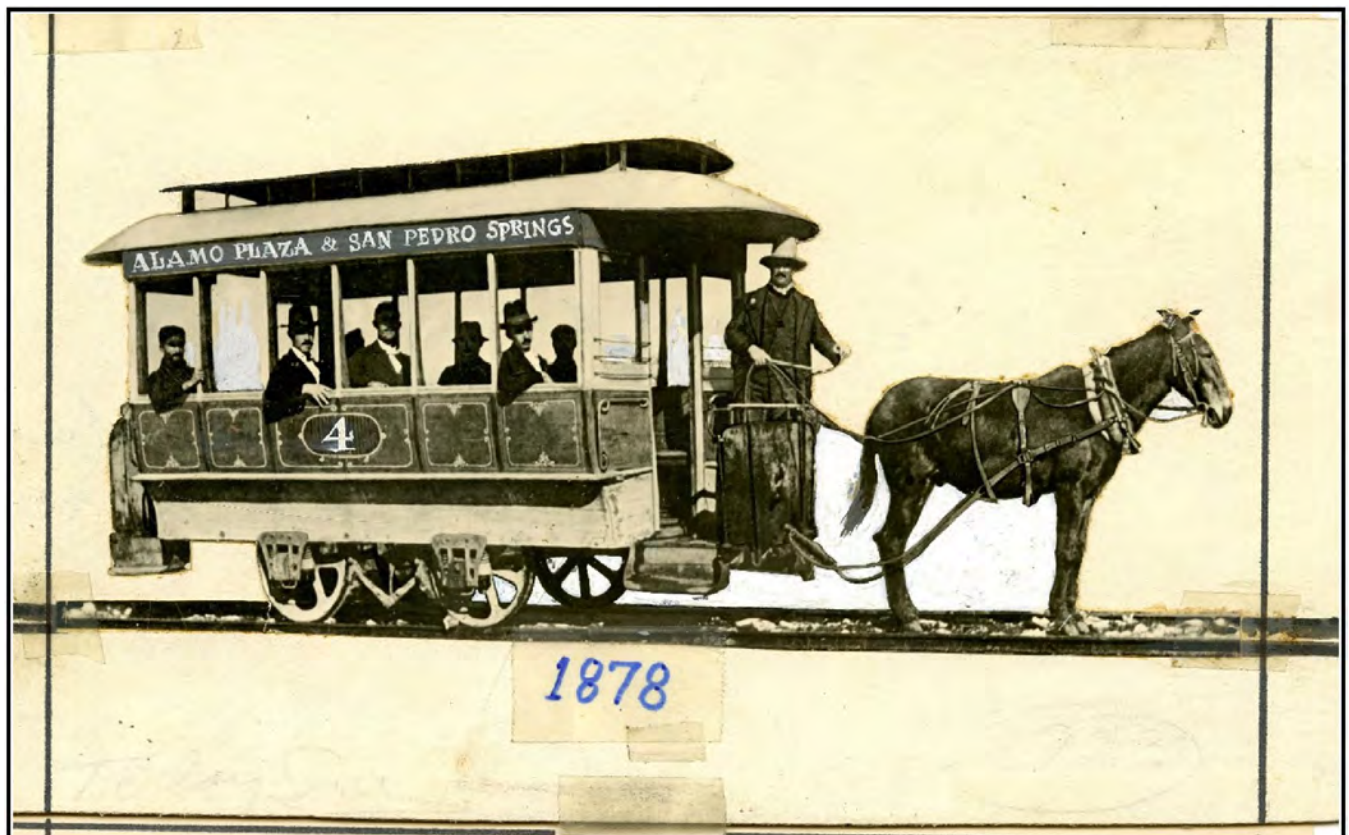


Figure 2-2. Alamo plaza to San Pedro Springs mule-drawn line, ca. 1878 (Photo number Txsay\_ms26\_79-6\_50, from the John Kight Transportation Collection, UTSA Special Collections).





Figure 2-3. A 1900 photograph of an electric trolley line in San Antonio (Photo number Txsau\_ms26\_79-6\_80, John Kight Transportation Collection, UTSA Special Collections).

being used only by less-affluent city residents (Hemphill 2021b). At the same time the use of automobiles and buses was increasing, and San Antonio was the first major city to retire its trolley system and convert its public transportation entirely to buses in 1933 (Watson 1982).

The development of the trolley system in San Antonio, as in other major American cities, was closely tied to urban development. Watson (1982) outlines this pattern in her discussion of the development of San Antonio's trolley system. The system in San Antonio expanded dramatically until the late 1920s, driven by an increase in suburban expansion. In San Antonio, the formal planning of suburbs began in 1850, with the land containing the project area beginning to be platted in 1849. However, the area still contained large portions of undeveloped land as late as 1886 (Watson 1982). This suburban expansion was curtailed only by the Great Depression, which exacerbated the financial issues of the trolley companies as well (Hemphill 2021b; Watson 1982).

The first line developed ran from Main Plaza north to San Pedro Springs Park (see Figure 2-2). The line was proposed as early as 1866, but construction was not complete until 1878 (Watson 1982). The line running through the project area is depicted on a ca. 1918 map as the West-Commerce-Prospect Hill line, constructed in 1892 (Figure 2-4; Watson 1982: 134). The 1892 date suggests that the development of this line occurred towards the tail end of the earliest period of trolley development, from 1880-1890. However, an 1886 Bird's Eye View map of San Antonio indicates a line operating in the area in the area six years earlier (Koch 1886; Figure 2-5). An earlier map from 1909 has no date of construction but names the line as Lakeview to I&GN Depot (Mason 1994). The Prospect Hill Street Railway Company was founded in 1883 (Watson 1982: 60). The I&GN railroad depot, located within the eastern portion of the project area, served as a transportation hub, associated with multiple trolley lines and both passenger and freight travel along the railroad, which spurred economic development in the area (Watson 1982). While the railroad brought jobs to the area,

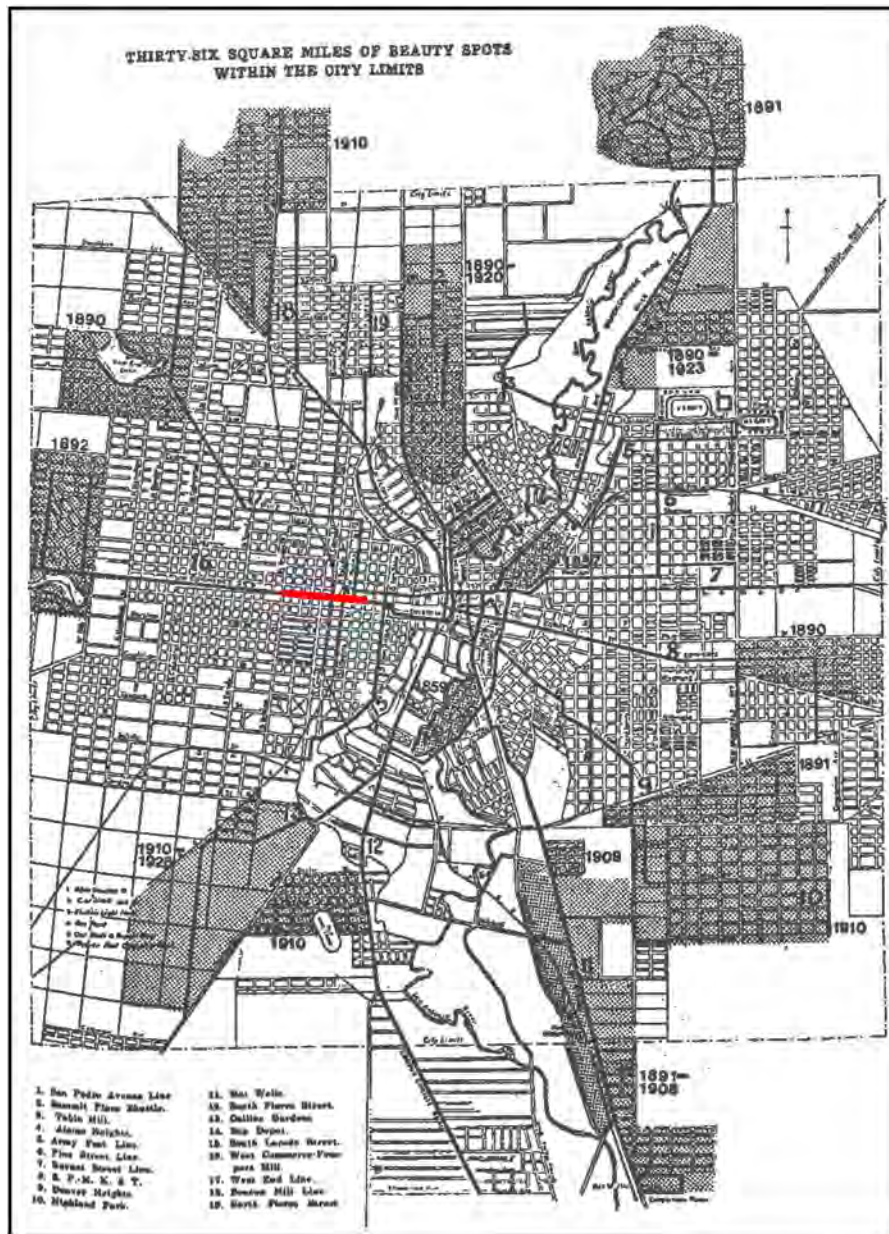


Figure 2-4. Map of streetcar lines in San Antonio ca. 1918, adapted from Figure 20 in Watson 1982:134.

the industrial development made the area unattractive to affluent residents (Mason 1994).

The development of the West Commerce neighborhood was closely tied to industrial development in San Antonio as well as shifting racial demographics and relationships. In 1870, closely following the Civil War, the area near the depot was home to a cluster of Black families (Mason 1994: 42), still shown living in the area in 1892 (Sanborn 1892; Figure 2-6). By 1896, the area is shown as inhabited primarily by Mexican-Americans (Sanborn 1896). Steps were taken by the city in the early 1900s to segregate Mexican-Americans to the west side (Mason 1994). The neighborhood that was

located within the project area was not affluent, although neighborhoods that were more prosperous were built west of Alazan Creek. Early maps and environmental descriptions indicate scattered, insubstantial homes, and after the arrival of the railroad, the neighborhood was dominated by the working class (Watson 1982). Mission activities in the area, including the construction of Prospect Hill Baptist Church, originally located at West Commerce and San Jacinto, are indicative of the poor economic conditions (Watson 1982).

The development of mass transportation also allowed neighborhoods to become increasingly racially segregated (Mason 1994). The City Council introduced Jim Crow seating



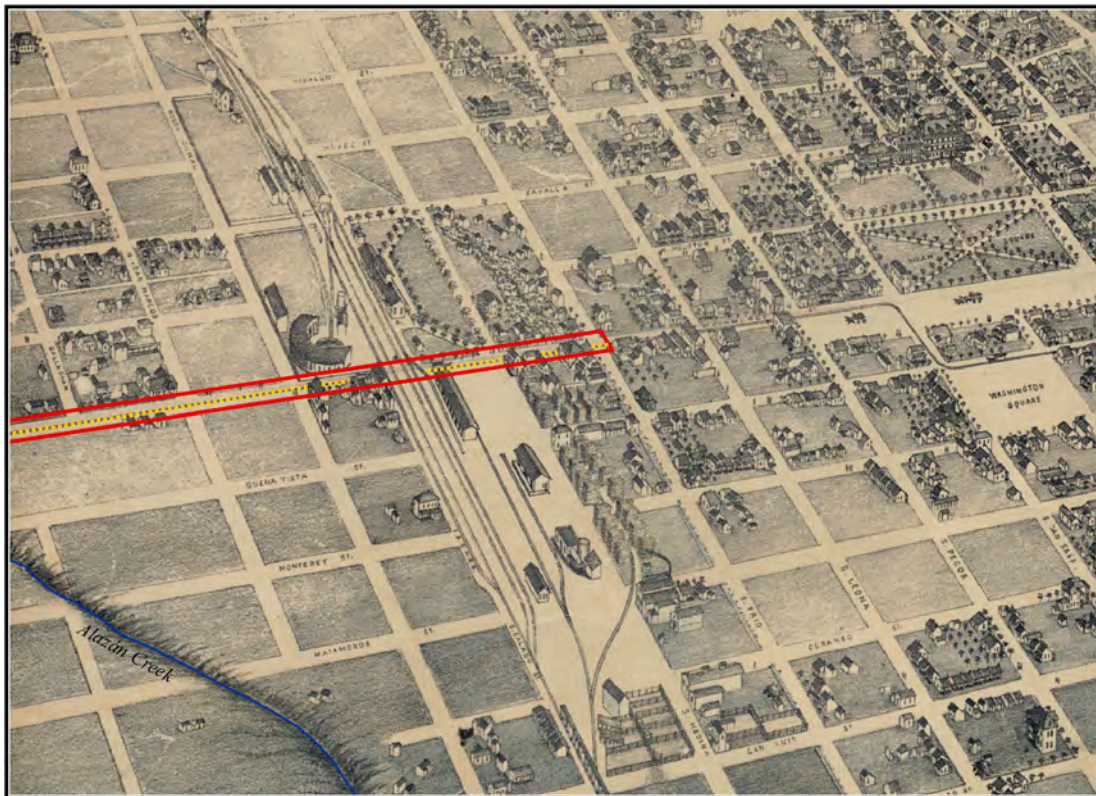


Figure 2-5. Project area on an 1886 Bird's Eye View Map. Project area in red (note that it extends west off the map), streetcar line in yellow, Alazan Creek in blue.

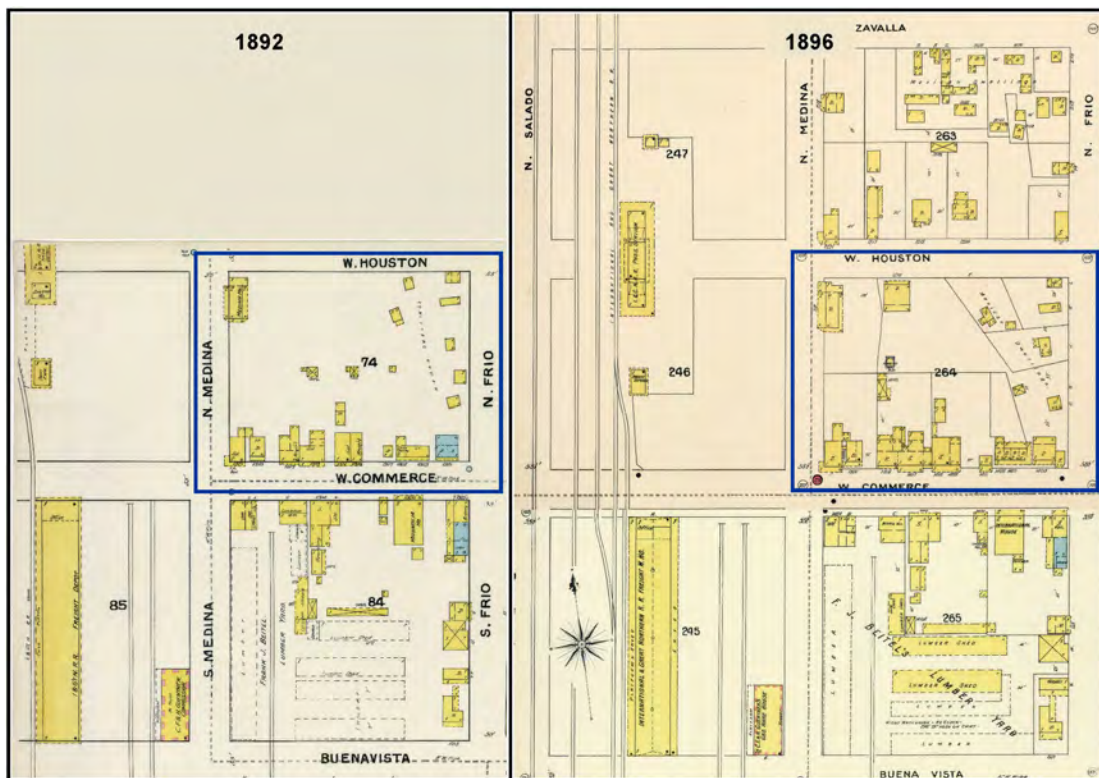


Figure 2-6. 1892 Sanborn Fire Insurance Map on the left, 1896 Sanborn Fire Insurance Map on the right. The blocks highlighted in blue demonstrate the shifting demographics in the area surrounding the railroad depot. Note that the block north of Houston was unmapped in 1892.



on trolleys in 1904 (Mason 1994: 339). In response, African Americans boycotted the use of the trolleys, significantly affecting the labor market throughout the city. This was one of a number of similar boycotts that occurred in the South at this time (Meier and Rudwick 1969). A specific incident on a West Side trolley involved a young Black man being physically removed from a car (Mason 1994: 431). Ultimately, the boycott forced a compromise of sorts, and normal use of the trolley system resumed. Segregation persisted, but separate cars were not enforced (Mason 1994). The boycott demonstrated the role that the trolley transportation system played in race relations in the city.

### **Previous Archaeology**

This section summarizes the previously recorded archaeological sites and other cultural resources within 100 m of the project area (THC 2021). The eastern 120 m of the project area is within the Cattleman Square Historic District (COSA 2021).

The District includes a variety late 19th and early 20th century commercial and industrial structures associated with the I&GN Railroad (COSA 2021). The majority of the archaeological sites recorded in the vicinity are related to this development. Additionally, two National Register properties, also associated with this development, are also located less than 100 m north of the project area (THC 2021).

Seven archaeological sites are present within 100 m of the project area; 41BX620, 41BX2074, 41BX2194, 41BX2195, 41BX2196, 41BX2197 and 41BX2198 (Figure 2-7, Table 2-1). All seven archaeological sites are within the Historic District.

Site 41BX620, the Alazan Ditch, has been previously recorded just inside the eastern boundary of the project area. The site was first formally recorded by the CAR in 1983 during the Vista Verde project west of Frio Street (Labadie 1986; THC 2021), although the irrigation channel's existence was known from archival sources previously and a portion had been uncovered in San Pedro Park (Fox 1978). The site has been

Redacted Image

*Figure 2-7. Archaeological sites within 100 m of the project area.*

Table 2-1. Previously Recorded Archaeological Sites within 50 m of the Project Area

Site	Name	Time Period	Site Description
41BX620	Alazan Acequia	20th century	Historic irrigation channel
41BX2074		late 19th to early 20th century	Multiple refuse deposits, brick support features, and the base of a privy
41BX2194	Schoenert Bakery	late 19th century	Stone foundation and trash pit
41BX2195	Pettus Commercial Building	late 19th to early 20th century	Wall segments
41BX2196	A. Androlli Saloon and Residence	early 20th century	Trash pit
41BX2197	Gebhardt Chili Powder Co.	early 20th century	Brick wall segment
41BX2198	Hotel Rex	early 20th century	Wall segments

encountered during the course of multiple archaeological projects (Dayton et al. 2014; Nickels and Cox 1996; Thomas and McKenzie 2019; and Ward 2014), and has been found eligible for the NRHP (THC 2021).

Site 41BX2074 was recorded during the course of backhoe trenching and subsequent archaeological monitoring by Blanton and Associates in 2015 (Griffith et al. 2015; THC 2021). Nine historic features, including refuse deposits, brick support features, and the remains of brick-lined privy were recorded during the course of the project. The features were dated to the late 19th to early 20th century on the basis of the historic debris present, including machine-made bottle fragments. The site was recommended as not eligible for designation as a SAL or listing in the NRHP.

The remaining five sites, 41BX2194, 41BX2195, 41BX2196, 41BX2197 and 41BX2198, were recorded during the course of a monitoring project along Frio Street conducted by the CAR (Thomas and McKenzie 2019; THC 2021). The monitoring project included the far eastern edge of the project area along Frio Street. Site 41BX2194 consists of a limestone foundation segment and a trash pit that were associated with Schoenert's Bakery, erected ca. 1882. Site 41BX2195 consists of two exposed yellow brick wall segments that were associated with the Pettus commercial building, which appears on the 1904 and 1911 Sanborn maps. Site 41BX2196 consists of a trash pit associated with the Androlli residence and saloon, which dated to the late 19th and early 20th century. Site 41BX2197 is a yellow brick wall segment associated with the Gebhardt Chili Powder Company Warehouse dating to the early 20th century. Site 41BX2198 consists of exposed portions of a red brick foundation associated with the Hotel Rex, erected in 1910-

1911. Four of the five sites were recommended as not eligible for the NRHP or as SALs, in part due to the limited data available from the monitoring investigations. Site 41BX2197, the Gebhardt Chili Powder Warehouse, was recommended as potentially eligible due to its association with Wilhelm "Willi" Gebhardt, a person significant to San Antonio's history.

The two National Register properties near the project area are both part of the Historic District (COSA 2021; THC 2021). The I&GN Passenger Station was designed in 1907 to replace an earlier wood frame station. The building, located at 123 N. Medina, was closed in 1979 (COSA 2021) after significant decline in passenger train service after WWII (Hemphill 2021b) but has since been restored. At one point, the building served as bank (COSA 2021) but it was purchased by VIA Metropolitan Transit in 2010. It was found to be historically significant due both its architectural features and its role as an important transportation center in the city's history (Williams and Smith 1975). The second property is the I&GN Hotel at 118 N. Medina. The building was constructed in 1909. After the area declined post-WWII following widespread demolition for highway construction, it was mostly vacant until 2000, when it was restored to serve as a non-profit headquarters. The building was found to be significant due to its role in the city's commercial development as well as its architectural features (Valencia 2005). Both properties were associated with the extensive commercial and transportation activity following the construction of the railroad (COSA 2021). Mule-drawn streetcar service to the original station was implemented soon after its construction, due to the area's importance for transportation. The area was so busy that the city's first electric streetlight was placed on Commerce Street across from the original passenger station (Hemphill 2021b).

## **Chapter 3: Methodology**

This chapter provides a discussion of the field and laboratory methods employed during the completion of this project. This discussion includes methods of documentation and curation standards.

### **Field Methods**

Initially, the Scope of Work called for the CAR to be notified whenever trolley tracks were encountered during excavations in order to document the tracks before they were removed in order to install utilities. However, it quickly became apparent that the trajectory of the utility trenches, shifted slightly to avoid existing utilities, placed the excavations directly on top of the path of the trolley tracks, meaning that rails were encountered in all of the excavations. After consultation and with the concurrence of COSA-OHP, the CAR modified their approach to document representative sections of the tracks as the trenches approached each intersection on West Commerce Street within the project area (Alazan Creek, Smith Street, Colorado Street, Richter Street, San Marcos Street, Comal Street, Salado Street, Medina Street, and Frio Street; Marceaux email February 9 2021). The contractors notified CAR if they encountered trolley tracks at each location. Additionally, the original project area extended from Colorado Street to Frio Street. After consultation with Theresa Larsen of the COSA, CAR was informed that the project area had been extended east to the Alazan Creek. CAR obtained a permit amendment to reflect this change from the THC on February 2, 2021.

Prior to beginning fieldwork, CAR staff reviewed relevant literature and documented resources. Sanborn maps for the area did not depict trolley lines, but other 19th and early 20th century maps were discovered which did depict some trolley line locations (Hemphill 2021b; Mason 1994; Watson 1982).

Within four hours of notification by the construction contractor/subcontractors, the CAR initiated a field visit in order to document the exposed portion of the trolley tracks. Documentation included completion of standard forms and digital photographs. GPS locations were recorded using a Trimble unit.

### **Laboratory Methods**

Throughout the project, the organization of records was ongoing. All records generated during the project were prepared in accordance with Federal Regulations 36 CFR Part 79 and THC requirements for State Held-in-Trust collections. Forms were printed on acid-free paper and completed with pencil. All field notes, forms, photographs, and drawings were placed in labeled archival folders. Digital photographs were printed on acid-free paper and stored in archival-quality page protectors. Following completion of the documentation, all project-related records, including the final report, are permanently stored at the CAR's curation facility under accession # 2756. No artifacts or samples were collected during the course of this project.

This page intentionally left blank.

## Chapter 4: Results

CAR staff documented trolley tracks at intervals along West Commerce Street beginning January 22, 2021 and ending July 11, 2023. The project area consisted of the section of West Commerce Street located between Frio Street and the Alazan Creek west of downtown San Antonio. The focus of the project was on documenting uncovered trolley tracks only, per the SOW developed in consultation with the THC and COSA-OHP. CAR staff also documented a section of brick pavers identified below the Commerce Street bridge (Figure 4-1).

Historically, basic trolley track construction included the elements of roadbed (foundation material), track ballast (the material upon which the ties are laid), cross ties, and the rails themselves (Minor 2014; Richey 1924). During this project, only concrete base material and ties were documented by CAR staff. No other track elements were observed. CAR staff

documented steel, I-rail ties placed at irregular intervals along West Commerce Street. The intervals ranged from 50-188 cm (Figures 4-2, 4-3). Trenches ranged widely in width, but no trench documented was wider than 1 m (Figure 4-4). No ties were fully exposed horizontally due to the limited extent of the utility trenches, though research indicates most tracks in San Antonio were four feet (1.2 m) wide, rather than the standard four feet eight inches (1.4 m; Hemphill 2021b). No sections of rail above the ties were documented, a condition that has been recorded in other sections of streetcar in San Antonio. The most likely explanation is that they were salvaged at some point (Kemp et al. 2020). The ties were found encased in concrete below 25 cm of road base. The steel I-rail ties were about 10 cm in height, with a 14 cm crosspiece at the top and a narrower 9 cm crosspiece at the bottom (Figure 4-5). The concrete in which they were encased was thick and sturdy, at

Redacted Image

Figure 4-1. Map of recorded features within the project area.



Figure 4-2. Example track profile with concrete and I-rail tie exposed; note lack of gravel foundation layer.

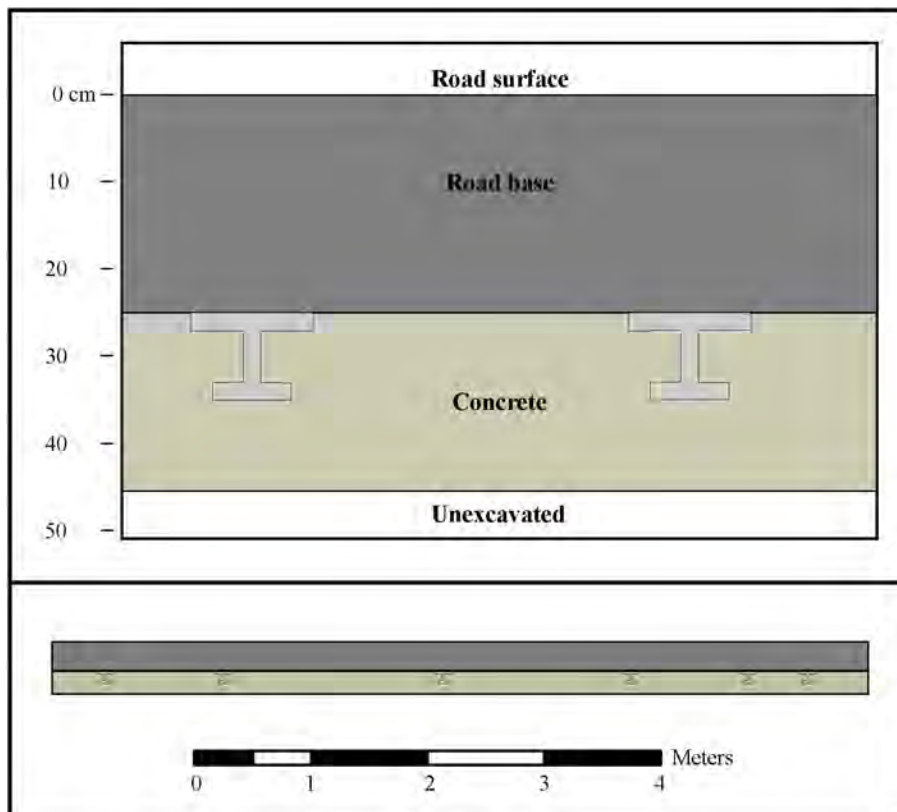


Figure 4-3. Top, example track profile recorded near the Alazan Creek; below, irregular tie spacing observed within the example track profile.





*Figure 4-4. Narrow exposure of track remnants prior to tie removal.*



*Figure 4-5. Close-up of tie profile after removal. North arrow used for scale, photo faces north.*



a minimum of 0.6 m. thick. Below the concrete was dark clay in most areas, although only a few of the trenches extended far enough below the concrete in order to confirm this. No discernible gravel foundation layer, as has been documented in other parts of the country (Minor 2014), was observed. Tracks were only documented on the south side of the street, indicating a single line in the West Commerce area.

Site 41BX2163 was initially recorded by the CAR in 2016 during monitoring on Soledad Street in downtown San Antonio (Kemp et al. 2020). Additional sections were recorded near Alamo Plaza (Zapata and McKenzie 2020) and on East Commerce Street approximately 1850 m east of the current project area (Figuerola and Zapata 2017). Previous investigations have found that the track remnants are not eligible for listing in the NRHP or designation as a SAL. Previously documented sections of site 41BX2163 on Soledad Street (Kemp et al. 2020) included both steel and wooden ties, while a section near Alamo Plaza (Zapata 2020) exhibited similar construction to the portion uncovered on West Commerce Street. Richey states that as late as 1924, wooden ties were the most common type of tie in the United States (Richey 1924: 27). Additionally, the concrete observed during this project is considerably thicker than the 7-9 in (18-22 cm) recommended by Richey (1924: 30). However, Hemphill

(2021b) states that San Antonio struggled with wooden-tie tracks derailing more frequently with earlier lines, which may explain the investment in sturdier track. Richey (1924) notes that clay soils were challenging for trolley track construction due to difficulties in excavation and poor drainage. The use of solid forms of construction such as concrete and steel could result in increased corrugation of the track, which had to be ground away, necessitating increased maintenance (Richey 1924:53). Overall, the West Commerce line appears to have been built more sturdily than lines in other large cities in the United States at the time (Richey 1924). This suggests greater investment in the construction of the track.

At the W. Commerce and San Marcos intersection, no trolley tracks were recorded. However, a section of brick street pavers was encountered and documented. The pavers consisted of a single layer sitting on concrete and sandy base material (Figure 4-6). An area spanning at least 260 cm by 330 cm was exposed. The pavers likely represent an old surface (post-1960) below the overpass. Clear, brown and green container glass were observed in the backdirt. This intersection and the remainder of the project area to the east of it is located below a concrete bridge that take West Commerce across the railroad tracks. This bridge was constructed between 1950 and 1960 (Figure 4-7; Sanborn 1950, 1960). It is likely that



*Figure 4-6. Paving stone recorded at the San Marcos Street intersection.*



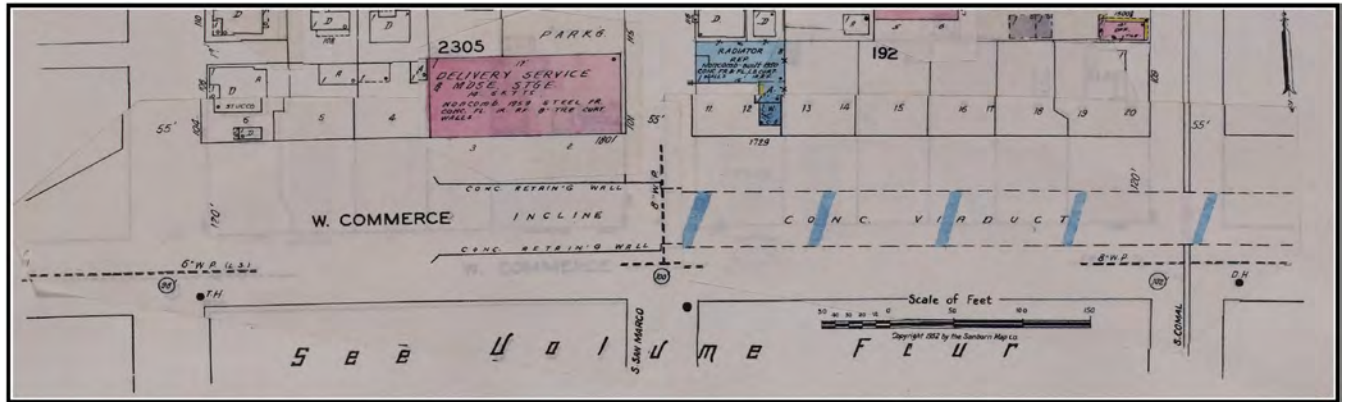


Figure 4-7. The West Commerce Street overpass on the 1960 Sanborn Fire Insurance Map.

disturbance from the bridge construction is the reason that trolley tracks were not encountered east of Richter Street.

Assuming continuity between the documented areas, a 312-m long section of steel trolley track ties encased in concrete were uncovered and documented during this project. The documented portion of the West Commerce line was recorded as an additional portion of previously recorded

site 41BX2163 (Kemp et al. 2020). The tracks exhibited characteristics consistent with other portions of the San Antonio trolley system that have been documented (Figueroa and Zapata 2017; Kemp et al. 2020; Zapata and McKenzie 2020). Overall the physical remnants of the trolley system provide limited opportunity for archaeological research. However, the system did play an important role in San Antonio's development as a city.

This page intentionally left blank.

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

From January 2021 to July 2023, CAR staff documented representative portions of the exposed remains of trolley tracks along the approximately 931-m section of West Commerce Street extending from Alazan Creek to Frio Street. In total, a 312-m long section of trolley tracks within the project area was documented. The tracks were exposed and removed during the course of an improvements project carried out by COSA. CAR's SOW for the project was for intermittent documentation of these trolley tracks during the course of their removal only. After consultation with COSA, the CAR documented portions of the tracks exposed near the Alazan Creek, as well as near the intersections of Smith Street, Colorado Street, and Richter Street. These tracks were recorded as part of previously recorded site 41BX2163 (Figueroa and Zapata 2017; Kemp et al. 2020; Zapata and McKenzie 2020). No evidence of trolley tracks was found below the Commerce Street bridge over the railroad tracks. However, a post-1960 brick paver surface was documented near the San Marcos Street intersection.

The exposed portions consisted of steel ties encased in concrete approximately 25 cm below the street surface. The ties were irregularly spaced and extended the length of the West Commerce Street project area. The full horizontal extent of the ties was not exposed due to the limits of the utility trench. The sections of ties that obstructed the new

construction were saw cut and removed. Tracks were only documented along the south side of the street, suggesting a single track for this line. The trolley track remnants documented are the remnants of the West Commerce Street trolley line, which functioned from the 1880s to 1933 (Watson 1982). The line was associated with the I&GN railroad depot located near the eastern edge of the project area, as well as residential development along West Commerce and suburban development west of Alazan Creek (Watson 1982).

The portions of trolley track recorded during this project were documented as part of previously recorded site 41BX2163 (Kemp et al. 2020; Zapata et al. 2020). The trolleys provided transportation over longer distances to San Antonio residents, but also ultimately played a role in increasing racial and economic segregation of the city (Mason 1994; Watson 1982). The West Commerce line provided an important connection to the Cattleman's Square area, including the I&GN depot located just outside the project boundaries. The line served the socioeconomically disadvantaged, primarily Mexican-American residents of the immediate area, many of whom worked in the Cattleman's Square district (Watson 1982). The trolley lines are of historical interest due to the role they played in the development of modern San Antonio. However, the track remnants themselves offer limited archaeological research value. The CAR recommends no additional work.

This page intentionally left blank.

## References Cited:

Barr, A.

2021 Grass Fight. Texas State Historical Association, Handbook of Texas Online. Electronic resource, <https://www.tshaonline.org/handbook/entries/grass-fight>, accessed February 22, 2021.

Blair, W.F.

1950 The Biotic Provinces of Texas. *Texas Journal of Science* 1(2):93-117.

Campbell, R.B.

2012 *Gone to Texas: A History of the Lone Star State*. Oxford University Press, New York.

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. Pertulla, pp. 205-265. Texas A&M University Press, College Station.

City of San Antonio (COSA)

2021 The Railroad Era and Industrial Development. Electronic document, <https://www.sanantonio.gov/Mission-Trails/Prehistory-History/History-of-San-Antonio/Railroad-Era-and-Industrial-Development/Railroad-Era-and-Industrial-Development-Narrative>, accessed February 23, 2021.

2021b Cattleman Square. Electronic document, <https://www.sanantonio.gov/historic/scoutsa/HistoricDistricts/CattlemanSquare>, accessed March, 2, 2021.

Cox, I.W

1997 The Growth of San Antonio. In *Archaeology at the Alamodome: Investigations of a San Antonio Neighborhood in Transition. Volume 1, Historical, Architectural, and Oral History Research*, edited by A.A. Fox, M. Renner, and R.J. Hard, pp. 8-44. Archaeological Survey Report, No. 236. Center for Archaeological Research, The University of Texas at San Antonio.

2005 *The Spanish Acequias of San Antonio*. Maverick Publishing Company, San Antonio.

Cruz, G.R.

1988 *Let There Be Towns: Spanish Municipal Origins in the American Southwest, 1610-1810*. Texas A&M University Press, College Station.

Dayton, C., M. Green, H. Rush

2014 Martin/Medina Maintenance Facility Archaeological Survey San Antonio, Bexar County, Texas. CMEC-AR-072, Cox/McClain Environmental Consulting, San Antonio, Texas.

de la Teja, J.F.

1991 Bexar: Profile of a Tejano Community, 1820-1832. In *Tejano Origins in Eighteenth-Century San Antonio*, edited by G.E. Poyo and G.M. Hinajosa, pp. 1-27. University of Texas Press, Austin.

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

1996 Rebellion on the Frontier. In *Tejano Journey 1770-1850*, edited by Gerald E. Poyo, pp.15-33. University of Texas Press, Austin.

---

## References Cited

---

de la Teja, J.F. and J. Wheat

- 1991 Bexar: Profile of a Tejano Community, 1820-1832. In *Tejano Origins in Eighteenth-Century San Antonio*, edited by G.E. Poyo and G.M. Hinajosa, pp. 1-27. University of Texas Press, Austin.

De Leon, A.

- 1982 *The Tejano Community, 1836-1900*. Southern Methodist University Press, Dallas, Texas.

Figueroa, A.L. and J.E. Zapata

- 2017 *Archaeological Services for Utilities Placement on Commerce Street, San Antonio, Bexar County, Texas*. Technical Report, No. 73. Center for Archaeological Research, The University of Texas at San Antonio.

Foster, W.C.

- 1998 *The La Salle Expedition to Texas: The Journal of Henri Joutel 1664-1687*. Texas State Historical Association, Austin.

Fox, A.

- 1978 *Archaeological Investigations of Portions of the San Pedro and Alazan Acequias in San Antonio, Texas*. Archaeological Survey Report, No. 49. Center for Archaeological Research, The University of Texas at San Antonio.

Freeman, M.D.

- 1994 *Camp Bullis: a Military Training Facility in the Southern Department and the Eighth Corps Area*. Komatsu/Rangel Inc., Fort Worth.

Griffith, T.B., J.M. Sanchez, R. Lapham, A. Reynolds, M. Russo, J. Dowling, and B.S. Young

- 2015 *Cultural Resources Investigations of the VIA Metropolitan Transit Westside Multi-Modal Transit Center Phase 2 Project*. Blanton and Associates, Inc., Austin.

Habig, M.A.

- 1968 *The Alamo Chain of Missions: A History of San Antonio's Five Old Missions*. Franciscan Herald Press, Publishers of Franciscan Literature, Chicago.

Hanson, C.

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

Hardin, S.L.

- 1996 Efficient in the Cause. In *Tejano Journey 1770-1850*, edited by Gerald E. Poyo, pp. 49-73. University of Texas Press, Austin.

Hemphill, H.

- 2021a Missouri Pacific Railroad in San Antonio. Electronic document, <https://txtransportationmuseum.org/history/>, accessed March 2, 2021.

- 2021b Streetcars in San Antonio. Electronic document, <https://txtransportationmuseum.org/history/>, accessed March 2, 2021.

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, San Antonio

Johnson, D.R.

- 1990 Frugal and Sparring: Interest Groups, Politics, and City Building in San Antonio, 1870-85. In *Urban Texas: Politics and Development*, edited by C. Miller and H.T. Sanders, pp. 33-58.

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.

Kemp, L., with contributions by R. Mauldin

2019 *Archaeological Monitoring along South Colorado Street near Downtown San Antonio, Bexar County, Texas*. Archaeological Report No. 472. Center for Archaeological Research, The University of Texas at San Antonio.

Kenmotsu, N.A., and J.W. Arnn

2012 The Toyah Phase and the Ethnohistoric 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.

Labadie, J.H.

1987 *An Archaeological and Historical Assessment of the Vista Verde South Project, San Antonio, Texas*. Archaeological Survey Report No. 156, Center for Archaeological Research, The University of Texas at San Antonio.

Litvak, D., and E. Reath, N. VanderKwaak, and J. Wahlers

2020 *Historic Streetcar Systems of Colorado*. CDOT-2020-11, Mead and Hunt, Inc.; ARCH Professional, LLC.; AECOM.

Long, C.

2021 Bexar County. Handbook of Texas Online. Texas State Historical Association. Electronic document, <https://tshaonline.org/handbook/online/articles/hcb07>, accessed February 26, 2021.

Marquez, R.R., L. Mendoza, and S. Blanchard

2007 Neighborhood Formation on the West Side of San Antonio, Texas. *Latino Studies* 5:288-316.

Marshall, R.P.

2015 The Battle of the Alazan: First Texas Republic Victorious. *Southwestern Historical Quarterly* 119(1):44-57.

Mason, K.

1994 Paternal Continuity: African-Americans and Race Relations in San Antonio, Texas, 1867-1937. Dissertation, The University of Texas at Austin.

McKenzie, C.M., L. Martinez, and R. Mauldin

2016 *Archaeological Monitoring and Test Excavations at the 1722 Presidio San Antonio de Bexar (Plaza de Armas Buildings)*. Archaeological Report, No. 445. Center for Archaeological Research, The University of Texas at San Antonio.

Meier, A. and E. Rudwick

1969 The Boycott Movement Against Jim Crow Streetcars in the South, 1900-1906. *The Journal of American History* 55(4):756-775.

Menger, R.

1913 *Texas Nature Observations and Reminiscences*. Guessaz and Ferlet Company, San Antonio, Texas.

Miller, C. and D.R. Johnson

1990 The Rise of Urban Texas. In *Urban Texas: Politics and Development*, edited by C. Miller and H.T. Sanders, pp.3-33. Texas A&M University Press, College Station.

Natural Resources Conservation Service (NRCS)

2021 Web Soil Survey. United States Department of Agriculture. Electronic document, <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>, accessed February 10, 2021.

Nickels, D.L., and I.W. Cox

1996 *An Archaeological Assessment of the Alazán Ditch (41BX620) in the Five Points Area of San Antonio, Bexar County, Texas*. Archaeological Survey Report, No. 253. Center for Archaeological Research, The University of Texas at San Antonio.

---

## References Cited

---

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.

Poyo, G.E.

- 1991 The Canary Island Immigrants of San Antonio: From Ethnic Exclusivity to Community in Eighteenth-Century Bexar. In *Tejano Origins in Eighteenth-Century San Antonio*, edited by G.E. Poyo and G.M. Hinajosa, pp. 41-61. University of Texas Press, Austin.

- 1996 Community and Autonomy. In *Tejano Journey 1770-1850*, edited by G.E. Poyo, pp. 1-15. University of Texas Press, Austin.

Richey, A.S.

- 1924 *Electric Railway Handbook: A Reference Book of Practice, Data, Formulas and Tables for the Use of Operators, Engineers and Students*. Second Edition. McGraw-Hill Book Company, New York.

Sanborn Map Company (Sanborn)

- 1892 Sanborn Fire Insurance Map, San Antonio, Texas, Sheet 2.

- 1896 Sanborn Fire Insurance Map, San Antonio, Texas, Sheet 3.

Sanders, H.T.

- 1990 Building a New Urban Infrastructure: The Creation of Postwar San Antonio. In *Urban Texas: Politics and Development*, edited by C. Miller and H.T. Sanders, pp. 154-174. Texas A&M University Press, College Station.

Texas Historical Commission (THC)

- 2021 Texas Archaeological Sites Atlas. Electronic document, <https://atlas.thc.state.tx.us/>, accessed February 22, 2021

Thomas, A. and C.M.M. McKenzie

- 2019 *Archaeological Monitoring for Frio Street Utility Improvements from Houston Street to Cesar Chavez Boulevard, San Antonio, Bexar County, Texas*. Archaeological Report, No. 460. Center for Archaeological Research, The University of Texas at San Antonio.

Tijerina, A.

- 1996 Under the Mexican Flag. In *Tejano Journey 1770-1850*, edited by Gerald E. Poyo, pp.33-49. University of Texas Press, Austin.

US Army Corps of Engineers (USACE)

- 2014 San Antonio Channel Improvement Project, General Re-evaluation Report and Environmental Assessment. Westside Creeks Ecosystem Restoration, San Antonio, Texas. Final Report, January 2014. Westside Creeks Restoration Project, San Antonio River Authority.

Valencia, L.

- 2005 Heimann Building National Register of Historic Places Registration Form. National Park Services.

Ward, R.A.

- 2014 *Archaeological Monitoring Investigations for the San Antonio Water System VIA Transit-Westside Multimodal Transit Center Phase II Water Main Replacement Project, San Antonio, Bexar County, Texas*. SWCA Cultural Resources Report No. 14-580, SWCA Environmental Consultants, San Antonio, Texas.

Watson, A.M.

- 1982 San Antonio on Track: the Suburban and Street Railway Complex Through 1933. M.A Thesis, Trinity University.

Williams, J.R. and S. Smith

- 1975 International & Great Northern Railroad Passenger Station National Register of Historic Places Inventory-Nomination Form. National Park Service.



Wooster, R.A.

2021 Civil War. Handbook of Texas Online. Texas State Historical Association. Electronic document, <https://tshaonline.org/handbook/online/articles/qdc02>, accessed February 22, 2021.

Zapata, J.E.

2023 *Alazan Creek Trail System Project, San Antonio, Bexar County, Texas*. Archaeological Report, No. 496, Center for Archaeological Research, The University of Texas at San Antonio.