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**ARCHEOLOGICAL MONITORING OF THE
CATALPA-PERSHING CHANNEL IMPROVEMENTS
BEXAR COUNTY, TEXAS**

TEXAS ANTIQUITIES PERMIT NO. 5739

Prepared for:

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Abstract

From January 18, 2011, through July 19, 2011, Atkins archeologists monitored demolition and construction activities associated with a drainage improvement project in the Catalpa-Pershing channel adjacent to Brackenridge Park and Golf Course in San Antonio, Texas. This work was conducted in accordance with the Antiquities Code of Texas Permit 5739 and with Section 106 of the National Historic Preservation Act. The project area was 0.56 acre in size.

No archeological sites were recorded, but both prehistoric and historic-age artifacts were observed. Archeologists consulted with the City of San Antonio archeologist in the field to confirm their assessment that these artifacts were in mixed contexts. Artifacts were photodocumented and discarded in the field. The remains of a possible brick and cement crossing structure at Millrace Street were also observed; archeological and archival evidence suggest this structure dates to the early to mid-twentieth century.

Management Summary

This report details the results of archeological monitoring associated with the City of San Antonio's Catalpa-Pershing Channel Improvements. This work involved relocating existing sewer lines and encasing them in concrete, demolition of two bridges and associated culverts, construction of a temporary bridge crossing, boring holes for new bridge foundations, and relocating an existing gas line. The monitoring was performed in compliance with Antiquities Code of Texas Permit 5739 and Section 106 of the National Historic Preservation Act. The area of potential effect for the archeological monitoring was the project footprint for demolition and replacement of the Mulberry Avenue Bridge and the Millrace Street Bridge as well as a temporary bridge east of Millrace.

During the course of this project, archeologists observed several out-of-context artifacts and the remnants of a former crossing structure at Millrace Street. This crossing seems to date to the early to mid-twentieth century based on the presence of D'Hanis bricks as well as reinforced concrete. Archival research supports this assessment and suggests it could be associated with the lower water works pump house. No archeological sites or features were identified during this work. A nonarcheological visual impact survey of historic-age resources was completed by Atkins historians and reported in a separate technical memorandum dated August 2010 (McWhorter and Harris 2010).

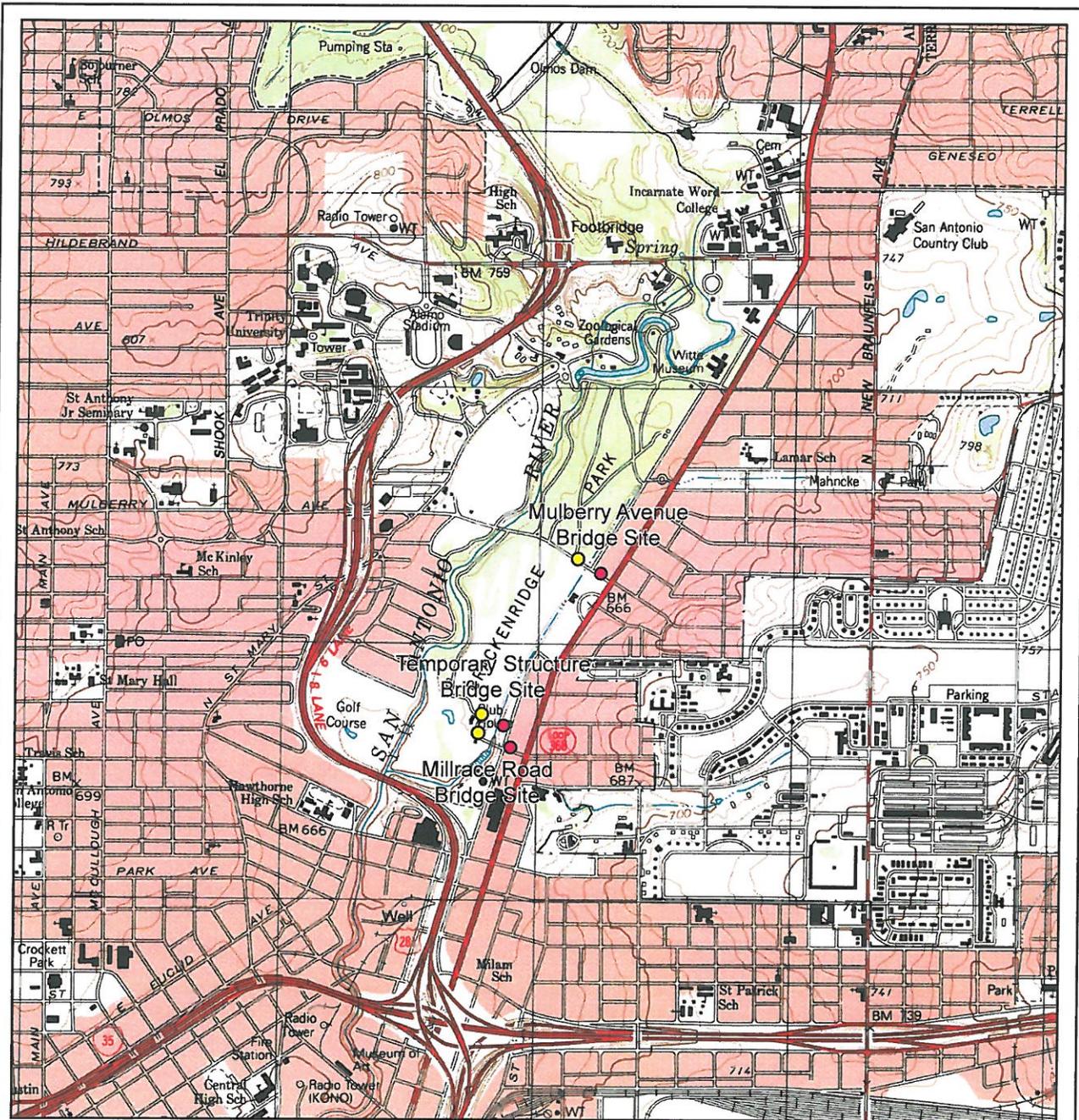
I. INTRODUCTION

The City of San Antonio's (COSA) Catalpa-Pershing Channel Improvement Project is located along the eastern edge of Brackenridge Park in San Antonio, Bexar County, Texas (Figure 1). The goal of this project is to provide better flood control to protect the park and golf course as well as to improve the bridge crossings at Mulberry Avenue and Millrace Street. This work involved demolition and replacement of the current bridge and culvert structures in these locations, construction of a temporary bridge crossing near Millrace Street, improvements to the existing sewer lines at these locations, and adjustment of a gas line on the north side of the Millrace Bridge. The two new bridge structures are 80-foot (ft)-long, single-span bridges. The Mulberry Avenue Bridge has five 30-inch-diameter piers at each abutment (10 piers total), while the Millrace Street Bridge has four 30-inch-diameter piers at each abutment (8 piers total). These piers extended approximately 42 ft deep (see Appendix).

The temporary bridge structure was located approximately 200 meters (m) north of the Millrace Street Bridge off Avenue B. Construction of this structure involved installation of a removable temporary drainage structure with asphalt-treated base and timber guard posts 3 ft in depth. The sewer line work, conducted under the auspices of the San Antonio Water Authority (SAWS), involved exposing existing sewer lines located underneath the currently channelized drainage and installing concrete saddles over them for the length of the project area. A 60-inch line and a 24-inch line were modified in this way at the Mulberry Bridge location, and a 36-inch line was modified at the Millrace location. A fire hydrant and valve were also relocated as part of the SAWS-sponsored work at Mulberry. In addition, an existing east-west gas line at the northwest and northeast corners of Millrace Street was relocated and adjusted slightly by CPS Energy (CPS) to move it away from project impacts.

Since this project was located on COSA-owned land, Atkins applied for and received an Antiquities Permit (5739) in compliance with the Antiquities Code of Texas. In addition, compliance with Section 106 of the National Historic Preservation Act (NHPA) was necessary because the project required a Clean Water Act Section 404 nationwide permit through the United States Army Corps of Engineers. The archeological Area of Potential Effect (APE) was defined as the project footprint, which encompassed three areas: the Mulberry Avenue Bridge, the Millrace Street Bridge, and the temporary crossing (figures 2 and 3).

Fieldwork took place from January 18, 2011, through July 19, 2011. Field monitors included Dawn Riggs, Melanie Nichols, Ray Tubby, Julie Shipp, Karissa Basse, and Haley Rush. Nesta Anderson served as Principal Investigator. Maria Pfeiffer conducted archival research. Nonarcheological historic resources were assessed in August 2010 in a separate technical memorandum (McWhorter and Harris 2010).



- Project Beginning
- Project Ending

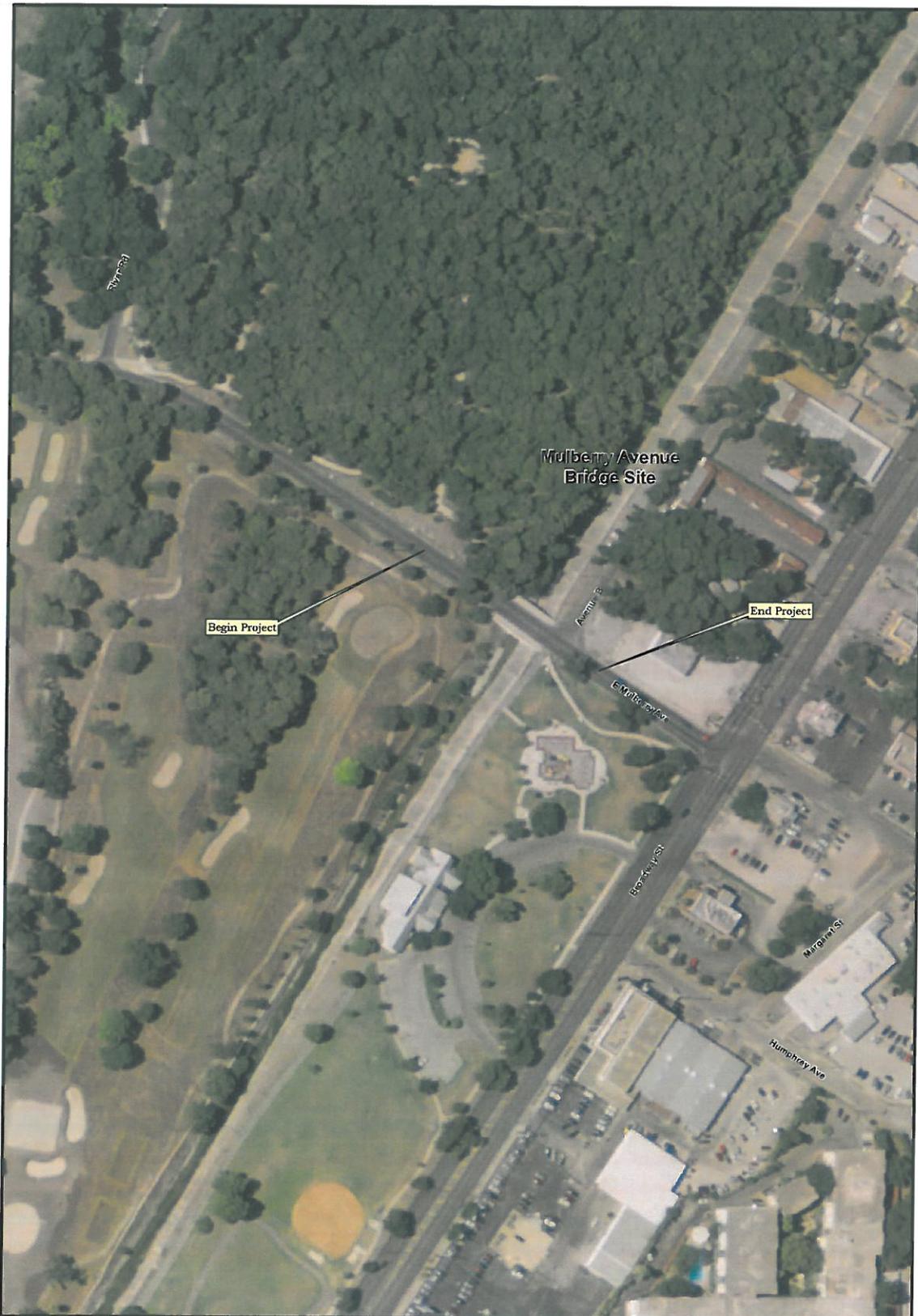


ATKINS

Figure 1

1992 MAP

Source: 1992 USGS 7.5' San Antonio East, Texas Quadrangle



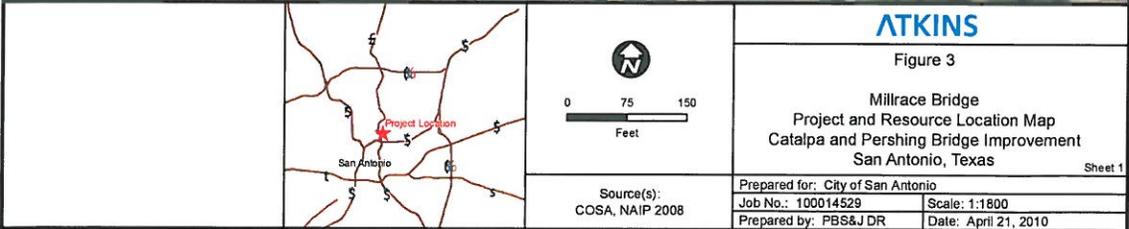
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		<p>ATKINS</p> <p>Figure 2</p> <p>Mulberry Avenue Bridge Project and Resource Location Map Catalpa and Pershing Bridge Improvement San Antonio, Texas</p> <p style="text-align: right;">Sheet 2</p>
	<p>Source(s): COSA, NAIP 2008</p>	<p>Prepared for: City of San Antonio Job No.: 100014529 Scale: 1:1800 Prepared by: PBS&JDR Date: April 21, 2010</p>

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II. SETTING

The Catalpa-Pershing Channel is located close to the San Antonio River, between Brackenridge Park and Golf Course on the west and Avenue B on the east. The park is part of a large linear greenbelt system following the river and encompasses several historic and archeological resources, including Native American archeological sites, Spanish-era acequias, a reported Spanish Colonial mill, remnants of a Civil War-period tannery, a nineteenth- and early-twentieth-century limestone quarry, and the San Antonio Water Works (C-G-R Inc. 1979). During the 1920s, City Parks Commissioner Ray Lambert developed the park into a recreational center, directing the construction of the San Antonio Zoo, the Witte Museum, gardens, a golf course, and other recreational green space (C-G-R Inc. 1979; Pfeiffer 2012). Currently, the Catalpa-Pershing Channel is concrete lined and flows along the eastern edge of the park. East of the channel is an area of commercial and some mixed residential development.

The proposed project is located on the margin of the Blackland Prairies, the Rio Grande Plain, and the Edwards Plateau (Taylor et al. 1991). The Catalpa-Pershing Channel lies within the floodplain of the San Antonio River, which contains Holocene alluvium of silt, clay, sand, and gravel (Brown et al. 1983). Soils within the proposed project area are mapped as belonging to the Lewisville silty clay series and Tinn (formerly Trinity) and Frio soils (Taylor et al. 1991). Soils surrounding the East Mulberry Avenue Bridge are mapped as Lewisville silty clay (0 to 1 percent slopes). These soils are developed from ancient calcareous and loamy sediments and are typically found along the first terrace of major rivers and their tributaries. Tinn and Frio soils (0 to 1 percent slopes) are present surrounding the Millrace Street Bridge and the temporary bridge replacement. These are recently formed alluvial soils that are frequently flooded and thus harbor the potential for buried cultural resources.

III. PREVIOUSLY RECORDED RESOURCES/BACKGROUND RESEARCH

A site file and records review was conducted through the Texas Historical Commission's (THC) Texas Historic Sites Atlas and Archeological Sites Atlas to identify previously recorded sites and historic properties within 1 kilometer (km) of the project location. Table 1 lists those resources along with their historic designations.

Table 1
Previously Recorded Archeological Sites and Historic Properties
within 1 km of the Project Location

Name	Designation	Within Project Footprint
Alamo Portland and Roman Cement Works	NRHP, SAL	No
Chinese Sunken Gardens Gate	NRHP	No
Fort Sam Houston	NRHP District, NHL	No
Pershing House	NRHP	No
San Antonio Water Works Pump Station No. 2	NRHP	No (within 150 feet)
Alamo Portland and Roman Cement Company	OSHM	No
Confederate Tannery	OSHM	No
Portland Cement Plants	OSHM	No
Site of First Portland Cement Plant	OSHM	No
Zambrano House	OSHM, RTHL	No
Sunken Garden Amphitheater	SAL	No
Archeological Site 41BX13		No
Archeological Site 41BX170		No
Archeological Site 41BX264		No
Archeological Site 41BX293		No
Archeological Site 41BX321		No
Archeological Site 41BX322		No
Archeological Site 41BX323	SAL	No
Archeological Site 41BX1396	SAL	No
Archeological Site 41BX1773		No
Archeological Site 41BX1892		No
Archeological Site 41BX1899		No

Eleven previously recorded archeological sites, five Official State of Texas Historic Markers (OSHM), four National Register of Historic Places (NRHP) properties, one NRHP District, one National Historic Landmark (NHL), one Recorded Texas Historic Landmark (RTHL), and four State

Archeological Landmarks (SALs) are located within 1 km of the proposed project area. None of the previously recorded resources are within the proposed project footprint. The San Antonio Water Works Pump Station No. 2, located west of the Millrace Street Bridge, is part of COSA's waterworks system constructed in the late nineteenth century to pump water from the San Antonio River to the rest of the city. Completed in 1885, the San Antonio Pump House No. 2 was built as part of a second phase of the waterworks construction. The property is NRHP-listed because it "typifies late 19th century industrial architecture in the southwest" and for its associations with San Antonio Water Works owner George W. Brackenridge, a prominent businessman and philanthropist. Additionally, the property is significant for its association with artist Gutzon Borglum and the development of San Antonio's art community in the early twentieth century. Borglum was most widely recognized for his creation of Mount Rushmore. He used the pump house as a studio following its abandonment in 1915 (THC 1981).

As a prominent piece of public land in San Antonio, Brackenridge Park has been the focal point for numerous archeological survey investigations since the 1970s. The park was originally surveyed by the University of San Antonio's Center for Archaeological Research (UTSA-CAR) in 1978 (Katz and Fox 1979) during the Brackenridge Park Archaeological and Historical Assessment Project in association with the "master plan" for future park development. During this survey, Katz and Fox recorded 4 prehistoric archeological sites (41BX264 and 41BX321, 41BX322, and 41BX323), 11 "collecting localities," and 27 historic sites/features. Based on the results of this initial survey, Katz and Fox recommended all of Brackenridge Park for inclusion into the NRHP as a historic district, but this nomination was never formally completed (Carpenter et al. 2008).

Following the initial UTSA-CAR survey of Brackenridge Park in 1978, an additional survey was carried out the same year to evaluate the impacts of the Catalpa-Pershing Channel excavation and realignment (Fox and Frkuska 1978). During the survey, test excavations were also conducted on previously recorded site 41BX322, located approximately 220 m (720 ft) north of the proposed East Mulberry Avenue Bridge replacement. Excavations determined that the site was a temporary camp. No diagnostic artifacts were recovered during the testing effort, and no further work was recommended.

In 1994, Anne Fox recorded 41BX170, a prehistoric site located approximately 700 m (2,300 ft) northwest of the proposed East Mulberry Avenue Bridge replacement. Subsequent work within Brackenridge Park included extensive testing and mitigation projects associated with prehistoric site 41BX323, located in the north end of the park near the intersection of Tuleta and Brackenridge Park Drive. Work was performed at the site in 1995 (Meskill 2000), 1997–1999 (Houk et al. 1999; Miller et al. 1999), 2000 (Houk and Miller 2001), 2002 (Houk 2002), 2004 (Houk and Miller 2005), and 2007 (Figueroa and Dowling 2007). As a result of the excavations performed by SWCA from 1997 through 1999, 41BX323 was determined to be a SAL. Site 41BX323 is north of and outside the current proposed project area.

Prehistoric site 41BX264 (The Polo Field Site), also recorded during the 1978 UTSA-CAR survey, was revisited in 2002 by SWCA as part of the Brackenridge Park Rehabilitation Project. This revisit revealed that the integrity of the prehistoric campsite had been “significantly compromised through years of construction and adaptation of the old Polo Field ground” (Carpenter et al. 2008). SWCA archeologists did not recommend the site for SAL listing. Additionally, the area was investigated by South Texas Archeological Research Services in 2003, who reported that “39 apparently discrete clusters of burned limestone, burned clay, and other associated cultural materials were impacted. Each of the clusters appeared to be the remnants of a prehistoric hearth or similar feature that probably resulted from a distinctive episode of human activity” (Uecker 2004:26). Provenienced artifacts included Pedernales and Marshall dart point fragments, burned limestone, chert debitage, bifacial chipped stone tools, charcoal and/or burned clay, terrestrial gastropod shells, caches of large chert flakes, and bone. Unprovenienced artifacts collected from machine-bladed surfaces included Castroville, Langtry, Marshall, Nolan, Pedernales, and Travis projectile points. Based on this evidence, the site represents a Middle to Late Archaic period occupation and also possesses a recognized Late Prehistoric cultural affiliation. The site was recommended as being potentially eligible for listing in the NRHP. The site is located on the west bank of the San Antonio River, northwest of the golf course and outside of the proposed project area.

In 2008, UTSA-CAR recorded prehistoric site 41BX1773 during archeological investigations of the Brackenridge Nursery and San Antonio Zoo Eagle Railroad Tract Relocation Project. The site consists of burned rock, lithic debitage, and formal tools and is located outside of the project area.

Archeological investigations within the Brackenridge Park Golf Course, adjacent to the current project area, occurred as early 1966 when the Witte Museum recorded prehistoric site 41BX13. Other sites located within the golf course include prehistoric sites 41BX321 and 41BX1396 (trinomial given in 2000), both recorded during the 1978 UTSA-CAR survey. Site 41BX321 is located approximately 200 m (656 ft) southwest of the proposed East Mulberry Bridge replacement. The site was originally recorded as a light to moderate lithic scatter. SWCA revisited the site in 2002 during a project related to the installation of a SAWS line running parallel to the Catalpa-Pershing Channel. Archeological backhoe trenching performed during this survey revealed “high levels of previous disturbances from golf course construction/maintenance” along with a few scattered cultural remains, but no subsurface evidence of site 41BX321 (Houk 2002).

Site 41BX1396 is located approximately 150 m (490 ft) west of the proposed East Mulberry Avenue Bridge and fronts the San Antonio River. The site was initially documented as two separate collecting localities during the 1978 UTSA-CAR survey. SWCA archeologists revisited the two localities during a 2001 SAWS project and determined that they were a single site consisting of a fairly dense deposit of lithic debitage. Further investigations conducted by SWCA in 2008 expanded the site’s boundaries, and excavations recovered burned rock hearths, lithic tools, animal bone, ochre, and in situ projectile points including Bandy, Travis, and Perdiz. Additionally, possible

Paleoindian biface fragments were found in a backdirt pile. The site likely represents a deflated cultural surface with a prehistoric chronology spanning approximately 4,000 years from ca. 8800 B.P. to 4000 B.P.. Historic artifacts including whiteware and stoneware ceramics dating to the late nineteenth century were also recovered during the 2008 investigations. While the upper 25 centimeters (cm) (9.9 inches) of deposits have been disturbed by previous ground-moving activities, the deeper deposits down to 131 cm (51.6 inches) contained artifacts in varying densities. The site was designated an SAL in 2008.

Directly across the San Antonio River from 41BX1396 is 41BX293, a prehistoric site recorded by Thomas Hester in 1975. Site 41BX293 is located on private property, and no further investigations have been carried out to date.

Site 41BX13 is located approximately 200 m (656 ft) west of the Millrace Street Bridge. Originally recorded in 1966 by personnel from the Witte Museum, the site was revisited in 2008 by archeologists from SWCA, who extended its defined boundaries to span the San Antonio River (Carpenter et al. 2008). While the site was primarily identified by surface inspection, the investigations demonstrated the presence of a buried Paleoindian component on the first terrace overlooking the river. Based on these deeper, and presumably intact, deposits, the site is considered potentially eligible for designation as a SAL; however, it has not yet been subjected to the formal designation process.

Site 41BX1892 is located approximately 830 m (2,723 ft) northwest of the Mulberry Avenue crossing. This site consists of quarry marks on the limestone bluff that could be associated with a modern industrial effort or even with Spanish Colonial period quarrying. Recorded by Herb Uecker of South Texas Archeological Research Services in 2011, this site lacks the archival research that could definitively associate the quarrying activity with Spanish Colonial times or with the Alamo Portland and Roman Cement Works, in operation between 1880 and 1908.

Site 41BX1899 was recorded in 2010 by Kristi Ulrich of UTSA-CAR. Backhoe trenching revealed a lithic scatter including flakes and a core. The depth of the deposit suggests it could be associated with Early Archaic populations, and NRHP testing was recommended. This site is located approximately 260 m (863 ft) southeast of the Millrace Street Bridge crossing.

IV. SUMMARIZED CULTURAL CHRONOLOGY

The project area is in a portion of San Antonio that has had extensive occupation from prehistoric times through the current day. This brief summary provides a very basic overview of different cultural groups who inhabited the area from the prehistoric period through the mid-twentieth century.

PALEOINDIAN (11,000 B.C.–7000 B.C.)

The Paleoindian period, representing the earliest occupations in the region, began before 10,000 B.C. and continued to about 6500 B.C. The Paleoindian people were hunters and gatherers who hunted now-extinct species of Pleistocene megafauna such as the mammoth, mastodon, camel, and bison. In most areas, however, big-game hunting was probably augmented by the utilization of wild plants and hunting or trapping smaller animals. Data collected during excavations at the St. Mary's Hall site (41BX229) in Bexar County have contributed to this view of a more-varied diet for Paleoindian groups (Hester 1978).

Few intact Paleoindian sites have been recorded in this region, partly because Paleoindian deposits are usually deeply buried in various alluvial settings and are difficult to locate and study. When Paleoindian sites are found, they are usually poorly preserved or stratigraphically mixed (Mercado-Allinger et al. 1996). However, Paleoindian sites with buried components have been excavated in the Central Texas region. These include the Kincaid Rockshelter site (41UV2) in Uvalde County (Collins et al. 1988), the Levi site (41TV49) in Travis County (Alexander 1963), the Wilson-Leonard site (41WM235) in Williamson County (Collins 1993), and the Pavo Real site 41BX52 (Henderson 1980), which yielded one of the few known Paleoindian burials. Late Paleoindian components have also been found during excavations at site 41BX47 on Leon Creek (Tennis 1996) as well as the Richard Beene site (41BX831) (Thoms et al. 2005).

At the end of the Paleoindian period, the archeological record exhibits evidence of a diversification in subsistence patterns that marks the beginning of the complex chronological period referred to as the Archaic. Indications suggest that the prehistoric inhabitants began focusing more on hunting a variety of small game animals, including deer and rabbit, as well as gathering edible roots, nuts, and fruits (Black 1989). Site types include rockshelters, camp sites, lookout sites, and quarry sites that are usually located near a reliable water source.

ARCHAIC (7000 B.C.–A.D. 700)

The Archaic period is divided into three subperiods: Early, Middle, and Late. The Early Archaic groups continue to exhibit many of the characteristics of the preceding Paleoindian period, and the early part of this period is sometimes referred to as transitional between the Paleoindian and the Archaic periods. Most of the projectile points from this period are well made, and many exhibit

characteristics typical of Paleoindian technologies, such as lateral edge grinding. In addition, Early Archaic artifact forms have been recovered beyond the boundaries of central Texas. The variety of projectile point types distributed over such a large area has prompted Prewitt (1981) to suggest that these people were organized in small, dispersed bands that roamed broad territories.

The Middle Archaic can be subdivided into early (Clear Fork) and late (Round Rock) intervals. Nolan and Travis projectile points are indicative of the Clear Fork interval, while the Round Rock interval is marked by Pedernales, Marshall, and Langtry points. It was during the Middle Archaic that burned rock middens became a specialized site type (Black 1989). This site type becomes extremely common during this period, suggesting an intense and perhaps rather specialized plant-processing economy. Weir (1976) has even suggested a population increase during this period and possible developments in social organization. Projectile points from this period are numerous, occurring in large frequencies at some sites. They tend to be large, straight-stemmed, and are often not as well made as the points from earlier or later periods.

By the beginning of the Late Archaic, a proliferation of projectile point types again occurred and the frequency of burned-rock middens appears to have decreased. Prewitt (1981) has suggested that proliferation of projectile points during the earliest phase of this subperiod may represent a return to the Early Archaic pattern of small, dispersed bands with wide-ranging territorial areas. The latter part of this period appears to be marked by an emphasis on the utilization of a wide variety of food resources, perhaps indicative of population or climatic stress at this time. Projectile points diagnostic of the early part of the Late Archaic include Bulverde and Pedernales types. Later in the period, Darl, Ensor, Frio, and Mahomet point types became prominent.

LATE PREHISTORIC (A.D. 700–A.D. 1350)

The Late Prehistoric period is marked by the introduction of several technological advances, most notably the bow and arrow and, later, pottery. The bow and arrow quickly became the standard weapon, replacing the throwing stick, or atlatl, and small thin arrow points became a key indicator among the material remains of the period. Sometime after the adoption of the bow and arrow, plainware ceramics were introduced into the area. This development probably came from agricultural groups to the east or northeast. Possible indications exist of major population movements, changes in settlement patterns, and, perhaps, lower population densities during the Late Prehistoric period (Black 1989).

INITIAL NATIVE AMERICAN/EUROPEAN INTERACTION (1350–1500s)

During this time period, Native American groups began what were at first intermittent interactions with European explorers, but which gradually developed into more-sustained contact as missionaries arrived. Early contact between native groups and Spanish explorers was infrequent and poorly documented, and did not immediately result in drastic cultural changes. As a result, Native groups from this time period are often identified as a single group rather than recognized as

distinct ethnic groups (Walter 2007:16–17). It is likely that missionization contributed to this categorization.

HISTORIC PERIOD (1500s–1950)

While there is extensive evidence of interaction between Native Americans and Europeans throughout South Texas, it appears that the area of present-day San Antonio was not explored until 1689 when the Spanish crown sent General Alonzo (Alonso) de León to explore the area (Fox 1977; Fox et al. 1989; Wade 2003). Initially, exploration of northern New Spain and the eventual settlement of San Antonio de Bexar began as a strategy by the Spanish throne to protect its holdings from an expanding French presence in Texas.

The first attempt at establishing a permanent European presence in present-day San Antonio came on May 1, 1718, when Don Martín de Alarcón chose locations for Mission San Antonio de Valero, Presidio San Antonio de Bexar, and Villa de Bexar along San Pedro Creek (De La Teja 1995). The Marqués de San Miguel de Aguayo, governor of Coahuila y Texas, relocated the presidio and villa to a new location on the west side of the San Antonio River in 1722. The government authorized the establishment of another mission, Mission San José y San Miguel de Aguayo, in 1720. The original location of the Mission San José y San Miguel de Aguayo is unknown, but it is believed to have been situated approximately 5 miles south of Mission Valero on the east bank of the San Antonio River. By 1724, this site included an irrigation ditch and temporary buildings (Clark et al. 1975). The mission relocated again between 1724 and 1727 to an unknown location on the west side of the river. In 1731, three additional missions were founded including missions Nuestra Señora de la Purísima Concepción de los Hainai, San Francisco de Espada, and San Juan Capistrano (Fox et al. 1989).

In 1731, immigrants from the Canary Islands arrived in present-day San Antonio to establish a civilian settlement near the extant presidio. The settlement was known as the Villa de San Fernando de Bexár. King Philip V of Spain originally recruited 200 families from the Canary Islands to permanently settle Texas in 1723 (Cruz 1988). The King promised these potential settlers free passage to New Spain, free land, and the status of Hijos Dalgos (*hidalgo*), a traditional title of Spanish nobility (Figueroa and Mauldin 2005). However, by March of 1731 a much smaller group of 16 families of Canary Islanders arrived in San Antonio. In July of 1731, Captain Juan Antonio Pérez de Almazán began to survey property for the villa beginning “from the place designated for the church” and in the process, laid out the community’s main plaza that would become La Plaza de las Islas (Spell 1962). Though located north of these original settlements, the current project vicinity includes the headwaters of the San Antonio River. As a result, several acequia features associated with colonial period settlement have been identified within Brackenridge Park. Specifically, the Acequia Madre, which was constructed in the 1720s, and the Upper Labor ditch, constructed in 1776, extend from the river in the park vicinity. The Acequia Madre was responsible for providing

water to Mission Valero, while the later Upper Labor ditch provided water to agricultural fields west of San Pedro Creek (Pfeiffer 2012).

The project vicinity remained primarily agricultural and undeveloped through the early nineteenth century. Residential settlement remained concentrated around the city's Main and Military plazas, including associated neighborhoods, and the area surrounding the current project area, a portion of which was donated to the city by the King of Spain (Katz and Fox 1979:1), remained part of the public domain during the post-Mission Period (Pfeiffer 2012).

During the early period of Texas's statehood, San Antonio began to grow quickly. By 1850, the city's population had grown to 3,488 citizens, and it was becoming one of Texas's largest cities (Fehrenbach 2012). It was during this period that the city began to sell land in what is now Brackenridge Park to private owners. The land was used for both residential and industrial purposes during the antebellum period.

In 1852, "the City sold the Headwaters of the San Antonio River to a City alderman, J. R. Sweet, who built his home there." The city began to lease rock quarries in the area during the same period (Pfeiffer 2012). The limestone from these quarries was used to construct many of the city's mid-nineteenth-century landmarks, including the Menger Hotel (Katz and Fox 1979:16). Other industrial facilities were constructed in the area during the same period, including a Confederate tannery that operated "in the vicinity of the present zoo" throughout the war (Katz and Fox 1979:18).

During this era, San Antonio became an essential part of the western movement of the United States, and by 1860, San Antonio was the largest city in Texas (Fehrenbach 2012). After the Civil War, the city continued to prosper as a cattle, distribution, mercantile, and military center serving the Southwest. In 1877, the Galveston, Harrisburg, and San Antonio Railroad arrived in the city, which sparked major growth in both business and population (Fehrenbach 2012).

Development associated with this growth also occurred in the project vicinity. In 1880, the Alamo Portland and Roman Cement Company constructed a factory adjacent to the extant limestone quarries. The factory, which was "the first of its kind west of the Mississippi," operated in the area through 1908 (Katz and Fox 1979:16). In addition to industrial development, the area's proximity to the headwaters of the San Antonio River meant that it also maintained its role as a critical water supply zone. In the late 1870s, a private water supply corporation known as the San Antonio Water Works Company "constructed a raceway and pumphouse" in what would become Brackenridge Park. The structures "raised water into a reservoir" from which it "was conducted by gravity flow to Water Works customers." The company was not successful and was later acquired by the future park's namesake George W. Brackenridge. Brackenridge was able to make the endeavor a success, and soon the company's facilities were expanded (Katz and Fox 1979:14) to include the NRHP-listed San Antonio Water Works Pump Station Number 2.

This water supply system became obsolete by the 1890s when “George Brackenridge succeeded in drilling artesian wells to meet the City’s growing water needs” (Pfeiffer 2012). In 1899, he donated 199 acres surrounding the headwaters of the San Antonio River to the city for recreational purposes. The park was an immediate attraction and continued to expand through additional land donations in the ensuing years (Figure 4) (Pfeiffer 2012).

During the early twentieth century, several major attractions were constructed in the park, including the zoo at the site of the old tannery in 1914, the public golf course in 1915, and the Lion’s Field playground, “acquired by the City between 1916 and 1920” (Katz and Fox 1979:19; Pfeiffer 2012). Major developments followed through 1940, including the “Japanese Garden” and Lambert’s swimming beach, both opened in 1917, the Witte Museum constructed in 1926, the San Antonio Civic Opera Company’s open-air theater in 1930, and several Works Progress Administration construction projects including improvements to the zoo (Katz and Fox 1979:18; Pfeiffer 2012).

The current project area abuts the park and is adjacent to many of the facility’s important historic resources, including the San Antonio Water Works Pump Station Number 2, also known as the Borglum Studio, the Lion’s Field playground, and the Brackenridge Golf Course (McWhorter and Harris 2010). Though not archeologically significant, it is possible that the structural remains identified during monitoring for this project were part of a historic river crossing associated with one or more of these significant features of the park.

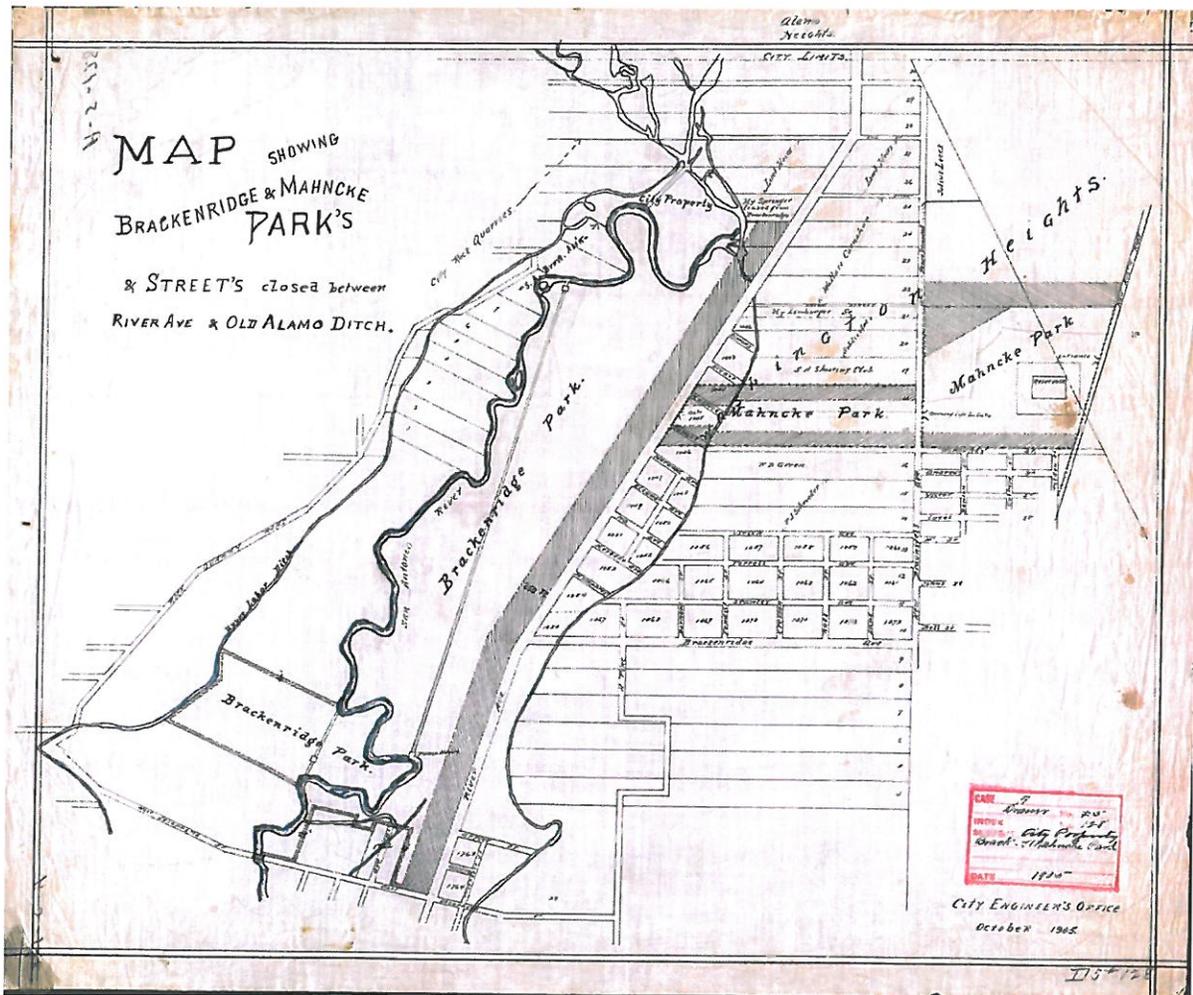


Figure 4
1908 Map Showing Brackenridge and Mahncke Parks from the City Engineer's Office

V. METHODS

ARCHIVAL METHODS

The history of the Catalpa-Pershing drainage ditch and street crossings was analyzed using the historian's previous research for the Brackenridge Park National Register nomination and interpretive signage for the San Antonio River Improvements Project. Additional research was conducted using online newspaper archives, vertical files at the San Antonio Public Library's Texana-Genealogy Department, San Antonio city directories, and the map collection of the San Antonio Municipal Archives. Gregg Eckhardt of SAWS provided information about the history of the water system, Fred Pfeiffer, former general manager of the San Antonio River Authority and Al Notzon, former executive director of the Alamo Area Council of Governments, also provided background information.

Because there are few photographs of this area, the historian compared available maps to provide information about development patterns. These ranged from surveyed, scaled maps prepared by the City Engineer's office to unscaled maps by graphic artists prepared for local publication. Mapping data combined with newspaper research provided sufficient material to assemble a history of the project site. While some conclusions remain speculative due to lack of available resources, the documentary evidence was sufficient to assemble a general history of the location of the Catalpa-Pershing drainage ditch, its construction, and its relationship to San Antonio's water system and urban development pattern since 1885. This history was used to analyze subsurface findings in the area of the Avenue B/Millrace Street/Catalpa-Pershing drainage ditch.

ARCHEOLOGICAL

Based on the results of the background study, Atkins worked in consultation with the COSA archeologist and the THC to ensure that all activities involving excavation would be monitored by an archeologist. As a result, during excavation, an Atkins archeologist observed all soil removal to identify any cultural remains, including features that may have been present. In addition, archeologists screened soil through 0.64-cm (¼-inch)-mesh hardware cloth at their discretion. Archeologists also inspected backdirt piles for artifacts, recorded observations in daily journals, took photographs, and sketched profiles and/or plan views of the work when applicable. When artifacts were observed, Atkins consulted with the COSA archeologist about context, photographed the artifacts, and left them in place.

LABORATORY

All paperwork and photographs produced in the field will be curated at UTSA-CAR.

VI. RESULTS

ARCHIVAL RESULTS

The History of the Catalpa-Pershing Drainage Project Right-of-Way and Crossings

The Catalpa-Pershing drainage project (“Catalpa Pershing”) as it appears in 2012 was initially constructed in 1977 with modifications in 2011. The recent work included replacement of bridges spanning the channel at Mulberry Avenue and Millrace Street. The new bridge structures were designed to provide greater channel capacity to enhance the passage of flood water. Bridge construction provided the opportunity to study both the overall history of the Catalpa-Pershing alignment and the history of Mulberry Avenue and Millrace Street where they cross the channel.

The Catalpa-Pershing Channel Alignment

The history of the Catalpa-Pershing alignment and its crossings is directly related to the development of San Antonio’s water supply system and urban street pattern in the late 1800s and early 1900s.

The San Antonio Water Works, later named the San Antonio Water Supply Company and today known as the San Antonio Water System (SAWS), was privately owned until 1925 when it was acquired by the City of San Antonio. It originated when Jean B. Lacoste received a contract from the city to build a private water system in 1877 and became operational the following year. George W. Brackenridge acquired the water works from Lacoste in 1883 and expanded and operated the system until he sold it in 1906.

It is the expansion of the water works in 1885 that first established the alignment associated with today’s Catalpa-Pershing drainage project. Prior to the expansion of the system in 1885, it consisted of a single canal, pump house, reservoir and associated piping. The first canal and pump house (now known as the “upper pump house”) can still be seen today in the north part of Brackenridge Park. Remnants of the reservoir form the amphitheater at the San Antonio Botanical Gardens. Piping has been removed and/or is no longer visible.

The area in the vicinity of today’s Millrace Bridge played a key role in the expansion of the water system in 1885 and in subsequent years. George Brackenridge built a second, “lower” pump house that is now known as the Borglum Studio for the renowned sculptor who worked there from 1926 until 1937. The pump house studio lies immediately west of the Millrace/Catalpa-Pershing crossing. A long canal was built to carry water from the river to the pump house where it powered turbines that forced water north and east to the original reservoir and a second, smaller reservoir. Though no documentary images have been located, the water would have been carried in large cast-iron pipes that presumably ran underground. Remnants of piping can be seen at the Borglum Studio.

The pipeline that carried water from the lower pump house to the reservoir over a mile away generally followed a straight line west of and parallel to River Avenue (now Broadway). Though the path of the pipeline has not been surveyed in relationship to today's Catalpa-Pershing channel, as seen on Figure 5, it appears to follow approximately the same route.

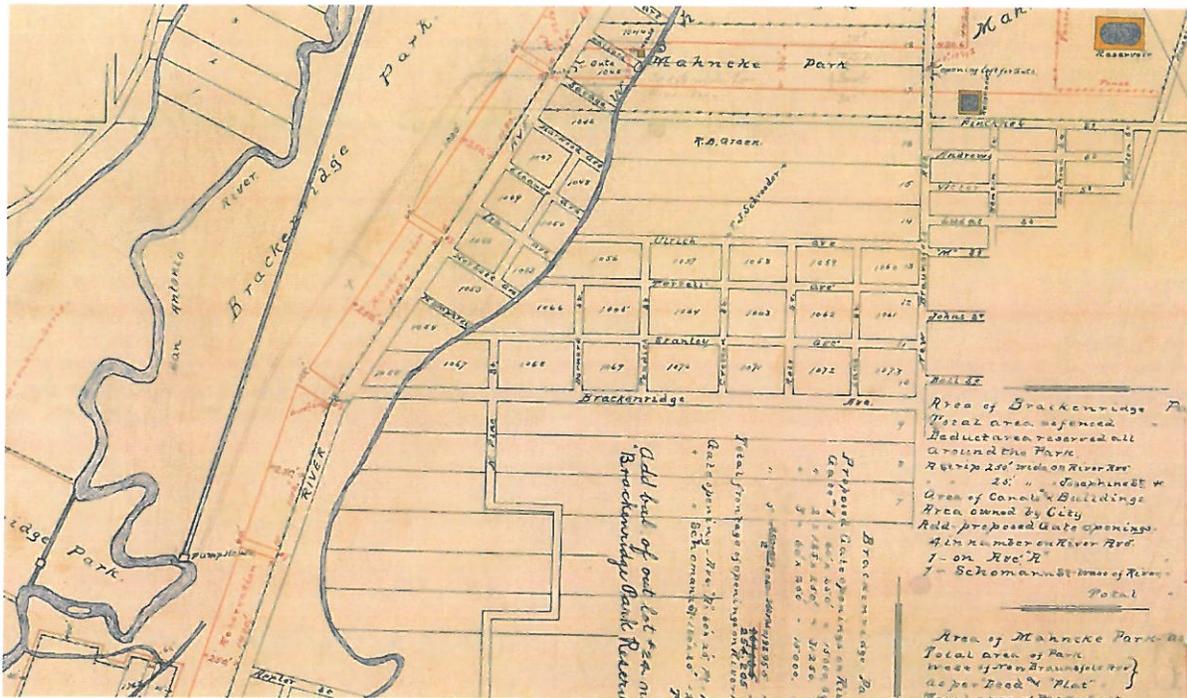


Figure 5
1908 Map Showing Brackenridge Park. City Engineers Office, Jan. 1908.
Source: San Antonio Municipal Archives, Office of the City Clerk.

Figure 5 also documents the 250-ft-wide reservation that George Brackenridge placed around the land he donated to the city for a park in 1899. Brackenridge granted only limited access to the park across the reserved property. This was also the case in 1916 when he donated another tract to the city that includes today's Mahncke Park and the old reservoir site.

Access to Brackenridge Park

The 250-ft-wide reserve around Brackenridge Park gave the Water Works Company almost complete control of access to the park and the banks of the river. Initially, a fence was built around the park and access was restricted to two locations. The issue of access remained unresolved when Brackenridge sold the water works in 1906. It is assumed that Brackenridge's purpose in limiting access was to protect the land from overuse.

It was not until 1908 that the city built additional entrances after compensating the Water Supply Company for access. Gates were established on Avenue A and Schomann Street on the southern and

western sides of the park, respectively. Most importantly, five gates were opened into the park from River Avenue—Gate One (Millrace Street), Gate Two (Avenue B); Gate Three (Mulberry Avenue); Gate Four (Parfun Way); and Gate Five (north of Witte Museum). Gates One, Two, Three, and Four intersected the Catalpa-Pershing channel.¹

Expanding the Brackenridge Pumping Station

A Belgian syndicate purchased controlling interest in the San Antonio Water Supply Company in 1909, and the company expanded and modernized the Brackenridge Park pumping station (Figure 6). Three new wells were drilled, bringing the total at the site to five. Known as the “high service station” because it served the northern part of the city, the plant had a pumping capacity of 26 million gallons per day. It became operational on June 1, 1915.²

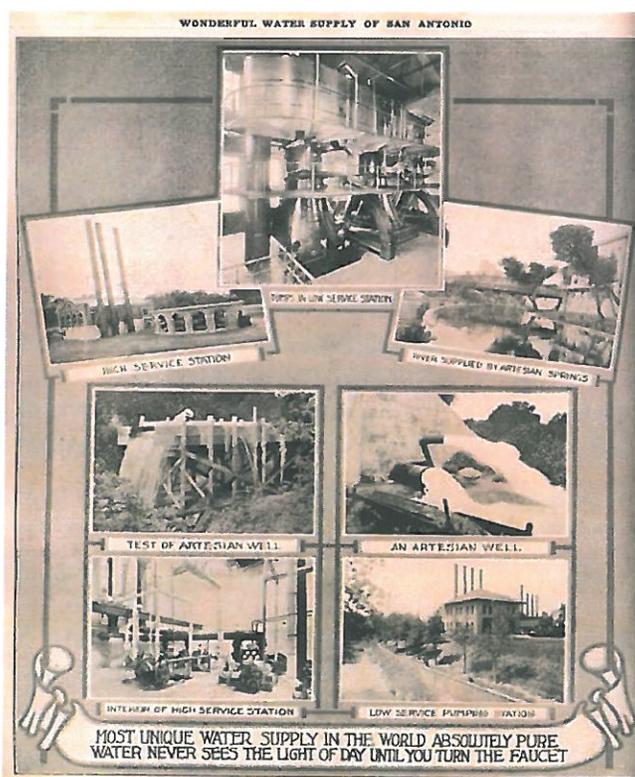


Figure 6

Advertisement of San Antonio Water Supply Company Improvements

Source: Luck, E.A. *Greater San Antonio: The City of Destiny and of Your Destination*.
San Antonio: Higher Publicity League of San Antonio, 1923.

¹ Bexar County Deed Records (BCDR) 185:183, December 28, 1899; City Council Meetings (CCM) N:284, 291, 304–305; CCM S:342, May 18, 1908; CCM S:418–419, July 20, 1908; S: 429–430, July 27, 1908; City Ordinance Book I:622, November 22, 1939. *San Antonio Express*, July 17, 1908; BCDR 289:482–491, July 30, 1908; BCDR 498:328, December 13, 1916; *San Antonio Daily Express*, December 5, 1899. It should be noted that, with the exception of these access points and Lions Field property, none of the 250-foot reserve property along Broadway was acquired by the city.

² *San Antonio Light*, May 24, 1915, 10; June 16, 1915, 8; McLean 1927:12–14; Eckhardt 2012. The high service station served the area north of Dewey/Josephine streets. The area to the south was served by the Market Street station. The Water Supply Company remained privately owned until it was acquired by the City of San Antonio on June 1, 1925, and renamed the City Water Board. Today it is called the San Antonio Water System.

The expansion of the “high station” coincided with the development of Brackenridge Park as a recreational destination. Brackenridge Golf Course, the first municipal course in Texas, opened in 1916 immediately west and north of the pumping station. At the time the course opened, the main access was from Avenue A, which no longer exists in this part of the park.

It is assumed that Avenue B was extended north to the pumping station and Gate One from its previous terminus near Grayson Street to provide better access to the facility as well as to the park. According to city directory listings, Avenue B did not extend this far north in 1922–1923. By 1924, however, Symons Golf Shop used 2210 Avenue B as its address. This is the site of today’s Pan American Golf Association clubhouse at the northeastern corner of Avenue B and Millrace. As seen on Figure 7, golfers could also use a parking lot at the terminus of Avenue B at the pumping station and cross pedestrian bridges over both the drainage ditch and old water works canal.

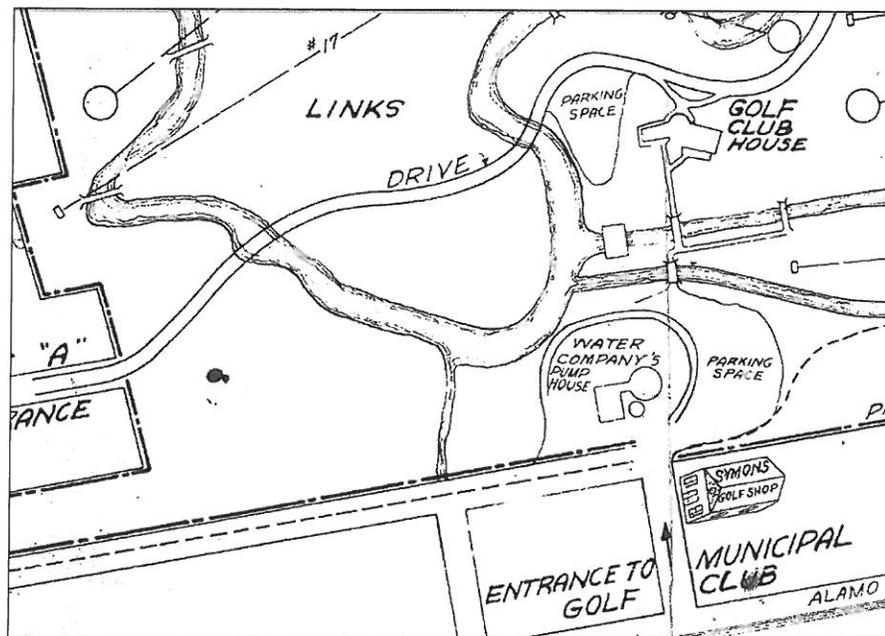


Figure 7

Map of Brackenridge and Koehler Parks, c. 1940.

Source: Texana/Genealogy Collection, San Antonio Public Library.

It was not until 1939 that the Gate One right-of-way between Broadway and Avenue B was named “Mill Race Road” (now commonly referred to as Millrace Street). It is not known when the parking lot immediately adjacent to the eastern side of the golf course club house was constructed. It is assumed that a vehicular bridge was built at that time. Available sources indicate that this was after 1940.³

³ City of San Antonio Ordinance OI-380:622, November 22, 1939; *San Antonio Express*, November 22, 1939, 10A. This naming likely took place because the Borglum Studio became known in the late 1930s as the Mill Race Studio.

At some point in the early 1900s, perhaps during the expansion of the pumping station and construction of the golf course, the pipeline leading from the lower pump house to the reservoirs was abandoned and an earthen drainage ditch was constructed along approximately the same alignment. Though no photographs have been located, a 1931 map of Brackenridge Park and a later undated map of the park (figures 8 and 9), both seen below, illustrate the drainage ditch. The ditch shown on Figure 8 follows the route of today's Catalpa-Pershing.

Like its modern successor the Catalpa-Pershing, the earthen drainage ditch was part of a larger system designed to divert flood water from the areas north and east of Brackenridge Park into the San Antonio River. A map drawn by the city engineers' office in 1908 (not reproduced here) illustrates three side ditches running from Broadway to the main drainage ditch in the area between Gate One (Millrace) and Gate Four (Parfun Way). An earthen drainage ditch running east-west through Mahncke Park, still visible today, also drained to Broadway. It should be noted that a similar drainage ditch was constructed to divert flood water around San Pedro Park to San Pedro Creek in the early 1900s.

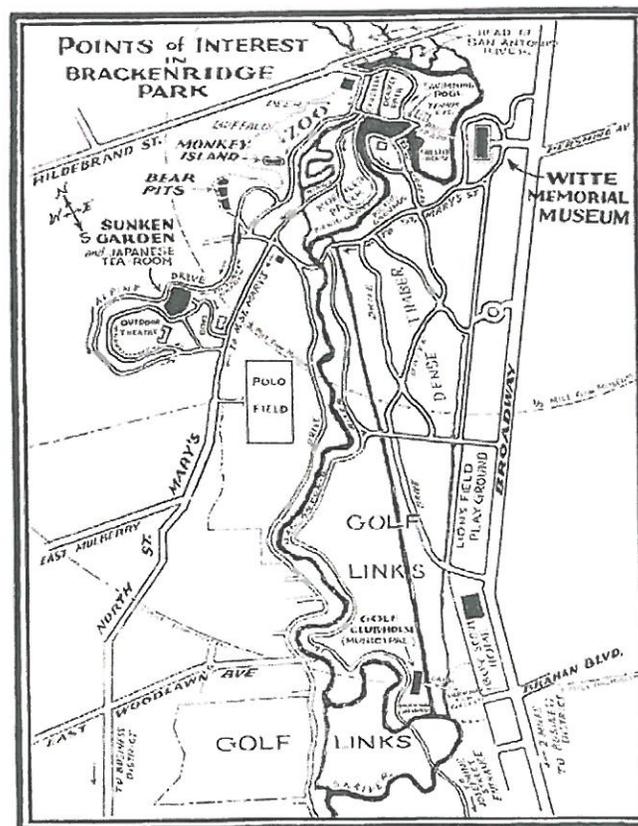


Figure 8
Map of Brackenridge Park, 1931. Source: Witte Museum, San Antonio.

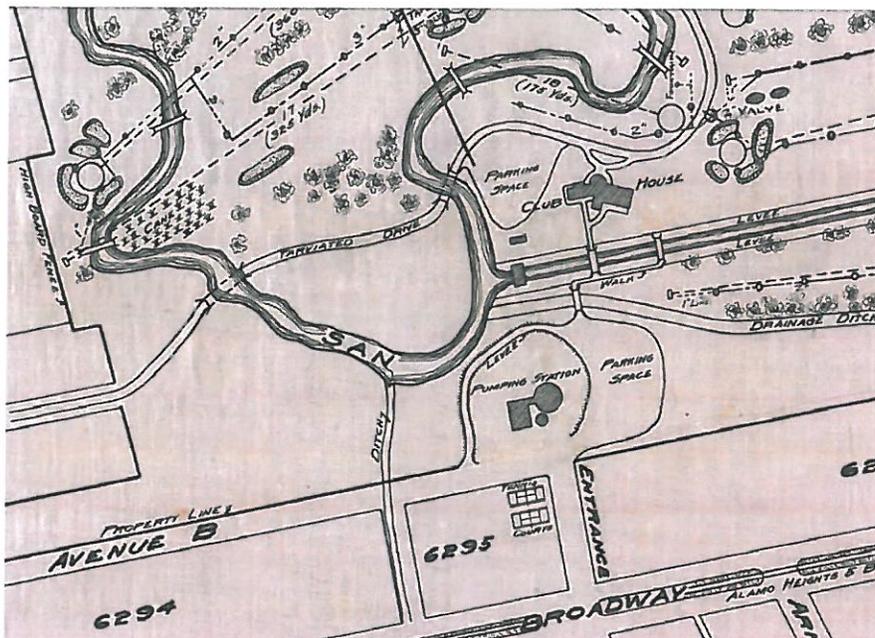


Figure 9
Municipal Golf Links, Brackenridge Park, n.d.
San Antonio Municipal Archives, Office of the City Clerk.

The Catalpa Pershing Drainage Project: 1977

The early drainage system described above was replaced in 1977 by the Catalpa-Pershing drainage project. The purpose of Catalpa-Pershing was to collect storm water runoff from the area northeast of Brackenridge Park including the Mahncke Park neighborhood and Fort Sam Houston. The project combined both underground culverts and open, concrete-lined channels. The system, named for area streets, begins near the intersection of North New Braunfels and Allensworth. It gathers water from throughout the Mahncke Park neighborhood, carries it in culverts under Broadway, and delivers it to the open concrete-lined ditch in Brackenridge Park located just south of Parfun Way. A large headwall marks the upstream limit of the channel. Like its predecessor, the channel runs along Avenue B and continues south past Lions Field, forming the eastern boundary of Brackenridge Golf Course. Storm water continues to flow down the channel until it empties into the San Antonio River near U.S. Highway 281 (US 281). The length of the open channel is approximately 5,300 ft. Figure 10 shows the extent of the project.⁴

⁴ San Antonio Bond Program 1970 brochure; San Antonio City Council bond package briefing by John Steen, August 27, 1970; San Antonio *Light*, September 7, 1970, 1-A; San Antonio *Express*, September 24, 1970, 2-B. The construction of Catalpa-Pershing was delayed by concerns over tree removal as well as the deaths of three ditch diggers (San Antonio *Light*, February 4, 1977, 5-A; San Antonio *Express*, February 8, 1977, 3-A; San Antonio *Express*, March 9, 1977; and challenges from the San Antonio Conservation Society.

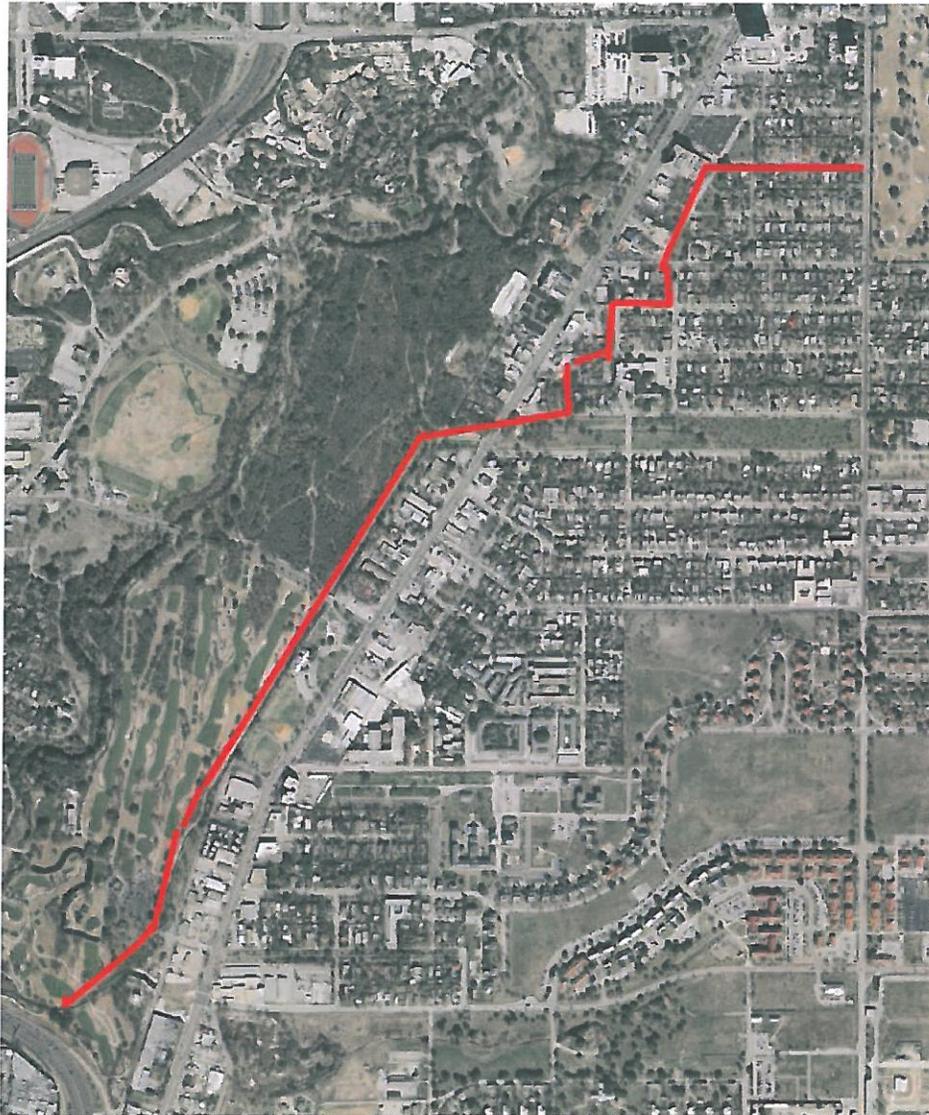


Figure 10

1977 Catalpa-Pershing Drainage Project. Source: San Antonio River Authority

ARCHEOLOGICAL RESULTS

Mulberry Bridge Investigations

SAWS Work

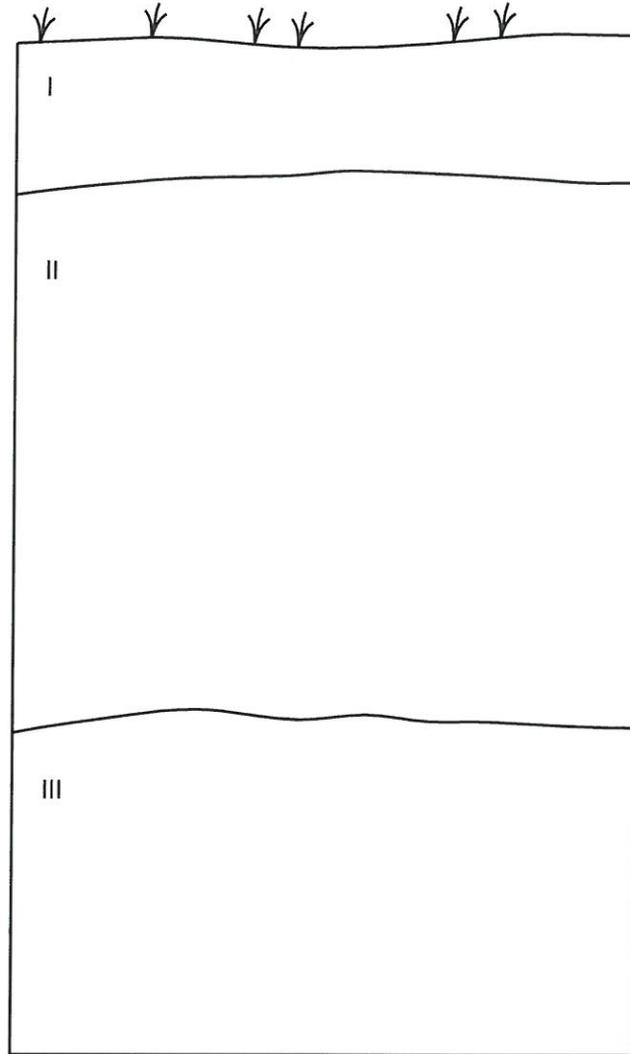
Crews began SAWS sewer line work on the northwestern side of Mulberry Bridge on January 19, 2011. SAWS work in this area lasted until February 1, 2011. Soils in this area were highly disturbed, exhibiting a layer of gravel immediately under the concrete-lined channel and highly mottled clays underneath this layer (Figure 11). A water line and fire hydrant were located between the two



Figure 11
Sewer lines underneath channel

sewer lines on this side of the bridge, and the profile of this area demonstrates it is disturbed to about 90 cm (35 inches) below ground surface (Figure 12). No artifacts or features were observed during this work, even in the possibly intact soils.

The western side of the bridge did yield a few historic-age materials associated with the sewer pipe modifications; a few clay pipe fragments (possibly an old sewer pipe), an aqua bottle base, and a milk glass fragment were recovered within the disturbed soils. However, this small collection of historic debris also contained a blue plastic toothbrush, further confirming this fill was disturbed and out of context (Figure 13).



- I 0-20 cmbs; medium bedded; mixture of 10YR 3/1 black, 10YR 4/3 brown, 10YR 6/1 gray, and 10YR 6/6 brownish yellow clays with moderate gravel and soft calcium carbonate nodules; very abrupt, smooth boundary (Fill).
- II 20-90 cmbs; thickly bedded; 10YR 2/1 black clay with common medium coarse soft calcium carbonate nodules and few modern glass bottle shards; medium angular blocky structure; very firm, many slickensides; clear smooth boundary (Fill).
- III 90-160+ cmbs; 10YR 4/3 brown clay with many fine medium soft calcium carbonate nodules; coarse angular blocky structure; extremely firm; boundary unknown.



ATKINS

Figure 12

MULBERRY AVENUE BRIDGE SITE
TRENCH PROFILE, WEST WALL



Figure 13
Historic artifacts at Mulberry

On the southwestern side of the bridge, the same pattern of soil disturbance was evident overall, although there were strips of intact soil located on this side. Utility disturbance was also present on this side, with a fiberoptics bank located near the sewer line (Figure 14). No artifacts or features were observed in this area.

Bridge Demolition

Crews demolished the Mulberry Bridge on February 2, 2011, through March 24, 2011. During this time, archeologists observed several out-of-context chert flakes. On March 8, five flakes were recovered from an area on the western side of the channel where disturbance had been documented previously during the SAWS work (Figure 15). Three additional flakes were found in the backdirt at Mulberry on March 10, 2011. No other cultural material was observed during demolition and temporary bridge construction at Mulberry, and no features were observed.



Figure 14
Fiberoptic bank at Mulberry



Figure 15
Flakes from Mulberry

New Bridge Borings

Following the Mulberry Bridge demolition, new bridge construction began. Four bore holes, measuring 1.2 m (4 ft) wide and 13 m (42 ft 6 inches) deep, were placed in the Mulberry crossing area to anchor the new bridge. These borings were completed from February 28, 2011, through March 1, 2011. No artifacts or features were observed during this monitoring effort.

Millrace Bridge Investigations

SAWS Work

Excavation to work on the sewer line at the Millrace Bridge began on June 24, 2011, and went through June 27, 2011. The sewer line ran under the concrete-lined drainage channel, and workers encountered water immediately after removing the concrete (Figure 16). The water was pumped out so that the pipe could be reached. No artifacts or cultural features were observed, but the soil was inundated, and archeologists could not determine whether it was fill or intact soil.



Figure 16
Channel demolition at Millrace

Temporary Bridge Construction

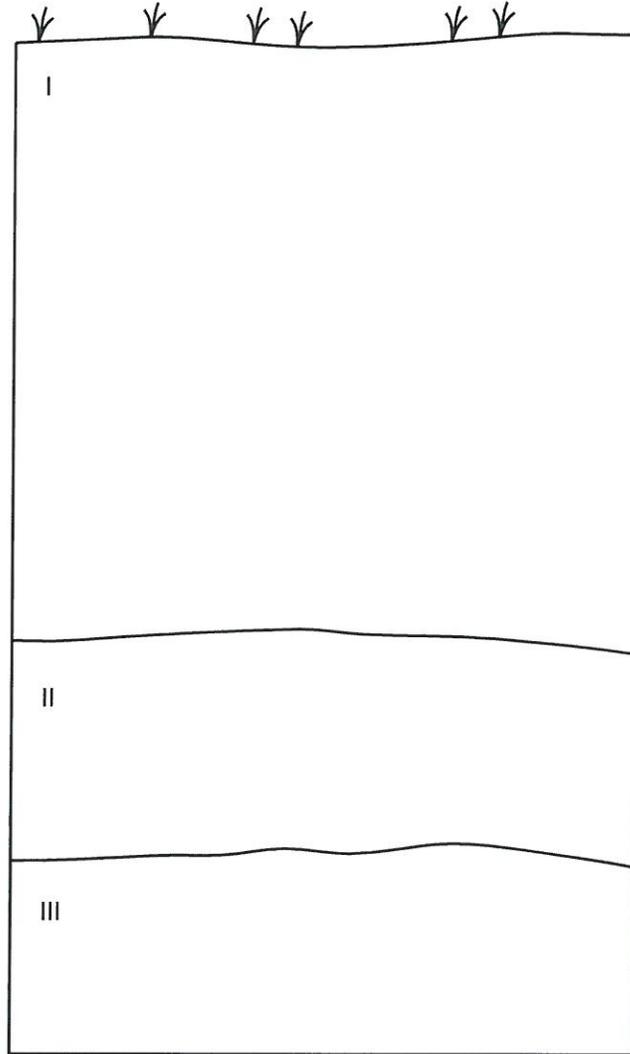
Drilling associated with temporary bridge construction occurred March 7–March 9. As crews began to drill supports for the temporary bridge on the northwestern side of Millrace, archeologists observed a secondary chert flake in the first 80 cm (31.5 inches) of the first support hole. Other materials in this hole included glass and possible asphalt. Atkins coordinated with the COSA archeologist, who agreed the soil was disturbed and artifacts were out of context. The first 80 cm (31.5 inches) of support hole 1 consisted of 10YR 4/3 dark brown clay, which overlaid approximately 30 cm (12 inches) of 10YR 6/6 brownish yellow clay, which lay on top of 7.5YR 5/8 brown clay and gravels, to a depth of 140 centimeters below surface (55 inches).

Soils in the second and third support holes mimicked the first (Figure 17). The second support hole contained burned rocks, 3 flakes (1 primary and 2 tertiary), a core, twisted metal, straw, and glass. The third support hole contained paper and clear glass. Two additional support holes excavated the following day showed a similar stratigraphy and contained no artifacts.

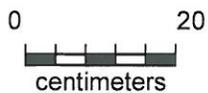
Bridge Demolition

The Millrace Bridge demolition began on March 7, 2011, and lasted through June 20, 2011. While working on the southwestern side of the Millrace Bridge, archeologists observed a 5-x-5-m (18-x-18-ft) area that contained historic artifacts (Figure 18) including coke bottles, asbestos tiles, animal bone, whiteware, champagne bottles, half pint and 7-Up bottles, unmarked bricks, nails, and glass shards (colorless, green, aqua, yellow). Additional deposits included a horseshoe, two chert flakes, and D'Hanis brick fragments; soils were disturbed, and trash deposits extended approximately 1 m (3 ft) below ground surface. Atkins notified the COSA archeologist of these items, photographed the items (figures 19 and 20), and after coordination with the COSA archeologist, continued monitoring efforts.

As bridge demolition continued, more brick fragments were observed on the southwestern side, although there were no concentrations or indications a feature was present. D'Hanis bricks were also observed in the middle of the bridge area. However, once the northeastern side of the bridge began to be demolished, an articulated brick area was observed. Mortar was sand-tempered hard paste, suggesting this feature represented a mid- to late-twentieth-century construction.



- I 0-80 cmbs; thickly bedded; 10YR 4/3 dark brown clay with many medium soft calcium carbonate nodules; very firm; clear smooth boundary.
- II 80-110 cmbs; 10YR 6/6 brownish yellow clay with many medium soft calcium carbonate nodules; very firm; clear smooth boundary
- III 110-140+ cmbs; 7.5YR 5/8 strong brown clay with many gravels; very firm; boundary unknown



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Figure 17

MILLRACE BRIDGE SITE
TEMPORARY STRUCTURE
TRENCH PROFILE



Figure 18
Historic-age trash area



Figure 19
Champagne bottle fragments



Figure 20
Ceramics from trash area

New Bridge Borings

Eight bore holes measuring 1.2 m (4 ft) wide and 13 m (42 ft 6 inches) deep were placed in the Millrace crossing area in order to anchor the new bridge (Figure 21). These borings were completed from July 6, 2011, through July 19, 2011. Table 2 shows the materials that were observed in these holes.

As Table 2 shows, layers of D'Hanis bricks, which date from 1905 to the present (Unknown n.d.), and rebar-reinforced concrete were present on the northeastern side of the existing bridge. Photographs and profiles of pier 2-2 (figures 22, 23, and 24) show this configuration.

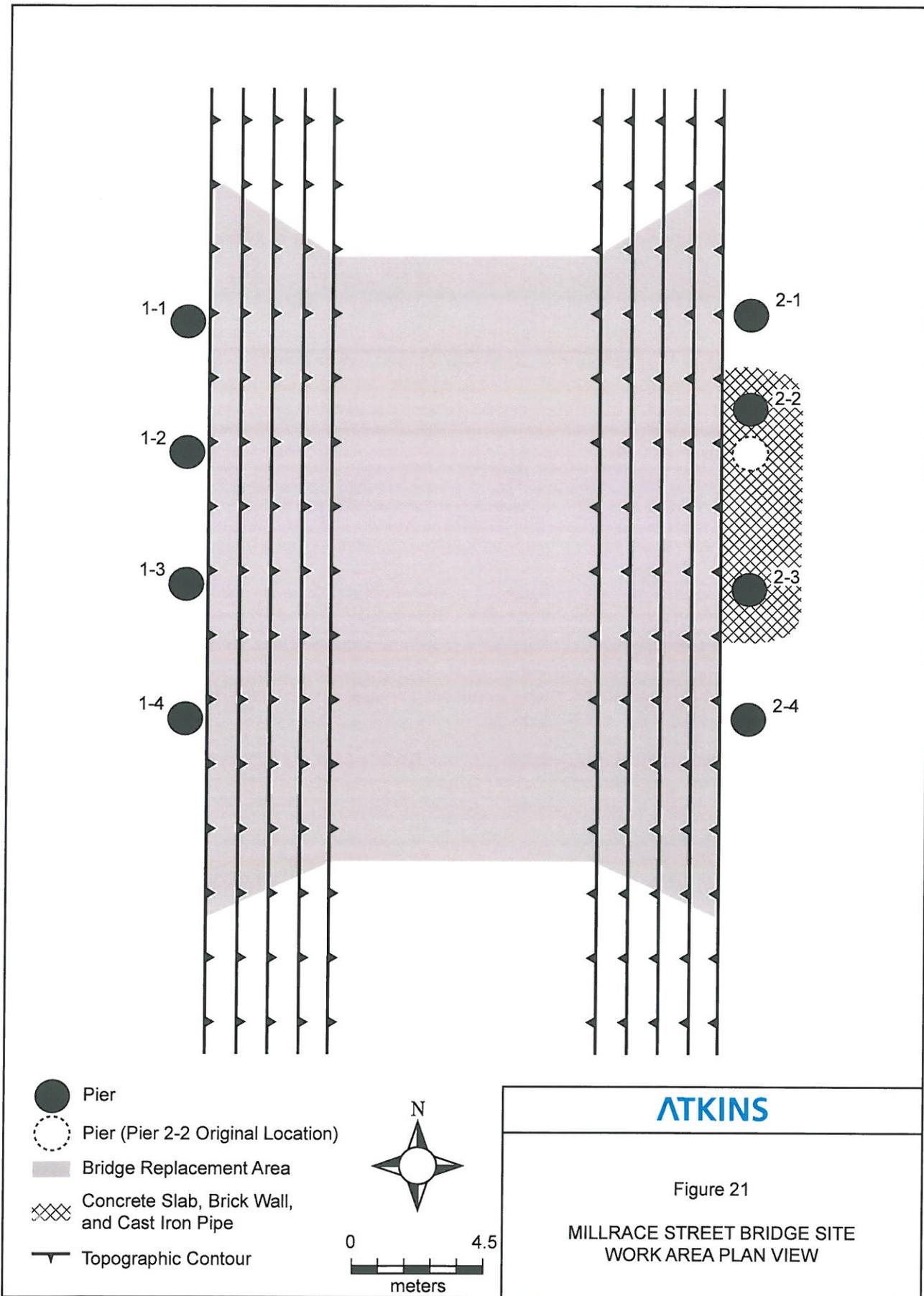
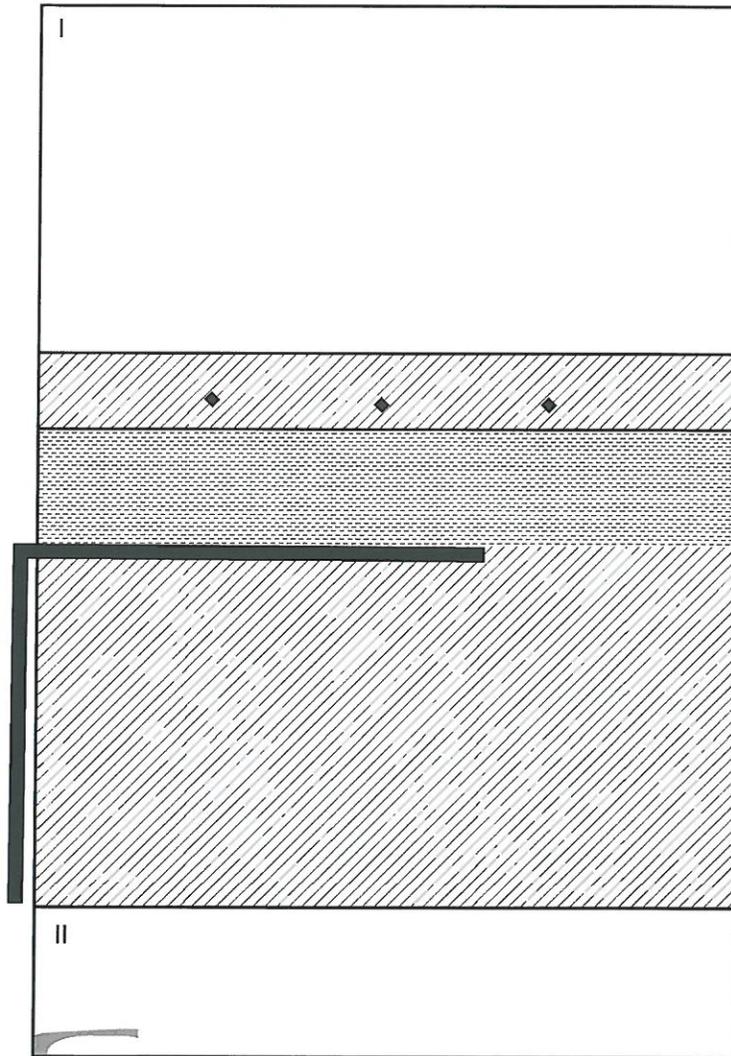




Figure 22
Pier 2-2 Brick and concrete profile

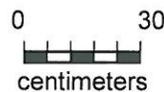


Figure 23
Detail view of brick in Pier 2-2



- I 0-90 cmbs; Black (10YR 2/1) clay; moderate coarse angular blocky structure; very firm; few fine roots; few fine pores; abrupt smooth boundary; Soil fill includes historic debris.
- II 130-170+ cmbs; Black (10YR 2/1) clay; moderate coarse angular blocky structure; very firm; few fine roots; few fine pores; common fine pressure faces; few calcium carbonate concretions; boundary unknown.

-  Cement
-  Brick Layer
-  Electrical Conduit
-  Cast Iron Pipe
-  Rebar



ATKINS

Figure 24

MILLRACE STREET BRIDGE SITE
PIER 2-2 PROFILE

Table 2
Millrace Bridge Boring Results

Pier Number	Materials Observed	Depth at which Materials Observed	Water Table
1-1	Clay sewer pipe fragments, colorless and brown glass, asbestos tile fragments, trunk handle, nail fragment		N/A
1-2	None	N/A	4.6 m (15 ft) below surface
1-3	Brick fragments		9 m (30 ft) below surface
1-4	Chert flake, twentieth-century debris	0–1.5 m (0–5 ft)	4.6 m (15 ft) below surface
2-1	None	N/A	N/A
2-2*	Glass, metal, brick, concrete slab on top of brick layer, electrical conduit, cast-iron pipe	0.9 m (3 ft)	N/A
2-3	Brick/concrete slab (D'Hanis bricks); metal and rebar under the slab	Top 3.7 m (12 ft); additional D'Hanis brick at 8.5–10.4 m (28–34 ft)	N/A
2-4	Hazardous materials in soils; no monitoring	N/A	N/A

*After encountering the pipe, the hole was moved 18 inches south, and the slab and brick layer were encountered in that hole as well. These layers were in yellow clay fill.

The presence of the articulated brick layer underneath the concrete slab on the eastern side of the bridge, in addition to the articulated bricks observed at the northeastern corner of the bridge during demolition, suggests they may have been part of an earlier crossing structure. Although they were not articulated elsewhere, D'Hanis bricks were also noted at the southwestern corner of the bridge and at the center of the bridge, further suggesting there may have been an earlier structure at this location. A cast-iron pipe observed near the bottom of pier 2-2 further suggests an early-twentieth-century construction date; SAWS employees indicated this type of pipe was typically installed in the area between 1900 and 1915. Archival evidence confirms there was a pedestrian crossing structure at this location in the 1920s and likely a vehicular crossing structure present after 1940.

CPS Utility Installation

In addition to the above-described components of this project, CPS relocated a gas line near the northwestern end of the Millrace Bridge. The line was slightly adjusted so that construction would not have any impacts on it. This work occurred from April 7, 2011, through April 12, 2011. No artifacts or features were observed in this area.

VII. CONCLUSIONS

ARCHEOLOGICAL CONCLUSIONS

Overall, the soils in the project area were disturbed from previous channel and structure improvements. At both the Mulberry and Millrace bridge crossings, as well as at the temporary bridge crossing, archeologists observed soil disturbance, and at both the Mulberry and Millrace crossings, mixed context artifacts, both historic and prehistoric. Evidence of disturbance within the channel was also present in association with utilities, including sewer lines and fiberoptic banks. However, remnants of earlier channel modifications still remain, such as the cast-iron pipe found in pier 2-2 at the Millrace Bridge. In addition, archeologists observed vestiges of a former crossing structure that appears to date to the early to mid-twentieth century at Millrace.

ARCHIVAL CONCLUSIONS

Archival research revealed that the Millrace Bridge and associated channel were likely modified initially in association with the San Antonio Water Works' lower pump house in the late nineteenth and early twentieth centuries, and then later with the development of the golf course. Evidence of these different periods of modification can be seen in Figure 25, which shows the brick and concrete structural remains as well as the earlier cast-iron pipe associated with channel improvements.

Research has not revealed any structures at the Millrace crossing prior to the 1885 construction of the lower pump house west of the Millrace Bridge. The undeveloped land near the Alamo acequia and San Antonio River was used previously for irrigated farming. The 1885 pump house required a pipeline to convey water to reservoirs built at a higher elevation northeast of this site. That pipeline followed an alignment that appears to be the same as today's Catalpa-Pershing channel.

The water works' pipeline was likely abandoned by the late 1890s after artesian wells replaced the San Antonio River as the city's water source. The pipeline was removed and its right-of-way reused as an earthen drainage ditch that drained flood water from Broadway, through the park and to the San Antonio River. In order to contain flood runoff within the earthen drainage channel, it is likely that large amounts of riprap and fill dirt would have been added to raise and strengthen the walls. Recent archeological excavations at the site of the Alamo dam and acequia near the Witte Museum revealed many feet of fill added to contain and direct flood water in that area. Many buildings were being demolished in downtown San Antonio to widen narrow streets during the early 1900s, and this material was often used for fill.

Water was channeled to the 1885 pump house through the open earthen channel shown in Figure 25. The channel began at the river in the northern part of Brackenridge Park near Tuleta Drive and ran in a straight course to the lower pump house. Though speculative due to the lack of late-nineteenth-century maps of the area, it is assumed that a small bridge or bridges would have been constructed across the channel near the pump house to provide access. It should also be noted that at this time, the river ran on the east side of the pump house (Figure 26), also necessitating a bridge. A bridge over the river at this location might have predated 1885.



Figure 25

Catalpa-Pershing Channel near the pump house.

Source: University of Texas at San Antonio Libraries Special Collections.



Figure 26
Pump house. Source: Hearst Corporation.

A section of cast-iron piping located during excavations in conjunction with the Millrace Bridge was determined by SAWS personnel to be from a 24-inch-diameter water main of the type called pit-cast iron. The installation date was estimated to be between 1900 and 1915. This would be consistent with water system operations in the period when the high supply station was built in 1914–1915. The excavation also produced areas of articulated D’Hanis bricks with a hard paste mortar. Because D’Hanis bricks date from 1906 through the 1980s, this again points to the period when the high station was put into operation.

Various maps illustrate small bridges crossing both the drainage ditch and the water works canal at the Millrace location (see figures 7 and 9). It is assumed that these were wooden structures supported by abutments and fill.

Small bridges would have also been required where the road leading from Broadway at Gate Three/Mulberry Avenue crossed the drainage ditch and water works canal. The entrance connected to roads that meandered through the east side of the park. On the west, Mulberry ended at the city’s polo field (now the First Tee and driving range). It was not until 1931 that a concrete bridge was constructed to extend Mulberry across the river and connect to Broadway. The roadbed of “cold rolled paving” might also have necessitated upgrading the crossings at the old water works channel and drainage ditch. Stone abutments were found during archeological excavations where Mulberry crosses the water works canal.⁵

⁵ San Antonio *Express*, February 15, 1931, 35; June 2, 1931, 24.

FINAL CONCLUSIONS

Together, the archival and archeological evidence suggest that although the soils are extensively disturbed from channel modification and previous bridge construction, there are remnants of earlier structures. These remnants are not accompanied by intact features or artifact deposits; previous activity has disturbed what may have been in these locations. However, these surviving structural elements have provided a glimpse into the way the water system and the built environment supporting that system has changed through time. In San Antonio, water works have been an essential element of history, from the acequias providing water to both the fledgling town and for irrigation to the city's current focus on maximizing available water resources (including water from elsewhere in Texas) to provide for its ever-expanding population. The current project is a reflection of this historical thread in its purpose to provide flood control.

Although San Antonio's water works are both currently and historically important, archeological deposits associated with this history at the current location are lacking. The few architectural remnants observed in the field have been documented in this report and destroyed through construction. Archival research has provided a good understanding of their significance in the context of water works and park development. As such, it is the opinion of the principal investigator that there are few or no archeological deposits/architectural remains left to make up an archeological site, and so these remains have not been recorded as an archeological site, and no NRHP evaluation is necessary.

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