

Pedestrian Survey of the Planned Brackenridge Pavilion Project, San Antonio, Bexar County, Texas



by
Kristi Miller Ulrich

Texas Antiquities Committee Permit No. 5968

Restricted



Prepared for:
Brackenridge Park
Municipal Golf Course
2315 Avenue B
San Antonio, Texas 78215

Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
One UTSA Circle
San Antonio, Texas 78249
Technical Report, No. 34

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Texas Antiquities Permit No. 5968

Principal Investigator

Steve A. Tomka

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Abstract:

In June of 2011, the Center of Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) was contracted by the Brackenridge Park Municipal Golf Course to conduct an archaeological pedestrian survey of the location of the proposed new golf pavilion. The intensive pedestrian survey was conducted under Texas Antiquities Committee Permit No. 5968. A total of four shovel tests were excavated within the footprint of the pavilion which measured 11.3-x-22.3-m (73-x-37-ft.). One shovel test (ST) was excavated to a depth of 83 cm (32.3 in.) below surface (bs) and the others to a terminal depth of 70 cmbs (27.6 in.). All four shovel tests revealed disturbed deposits that are associated with the construction of the old #10 tee box in 1968. Artifacts encountered included lithic flakes, porcelain, and a corroded wire nail. Due to the disturbed nature of the deposits, CAR recommended that no additional field investigations be conducted within the project area and that the construction of the pavilion could proceed as proposed.

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Chapter 1: Introduction

The Center for Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) was contracted by the Municipal Golf Association of San Antonio to perform an intensive pedestrian survey within the Brackenridge Park Golf Course. The City of San Antonio requested that the Municipal Golf Association hire a consultant to conduct the survey. The Municipal Golf Association of San Antonio is planning on constructing an 11.3-x-22.3-m (37-x-73-ft.) open-air pavilion at Brackenridge Park Golf Course near the SW corner of the clubhouse. The Brackenridge Park Municipal Golf Course contracted the CAR to perform the archaeological services required under the Antiquities Code of Texas. The survey was conducted under Texas Antiquities Permit No. 5968. Steve A. Tomka served as Principal Investigator, and Kristi Miller Ulrich served as the Project Archaeologist.

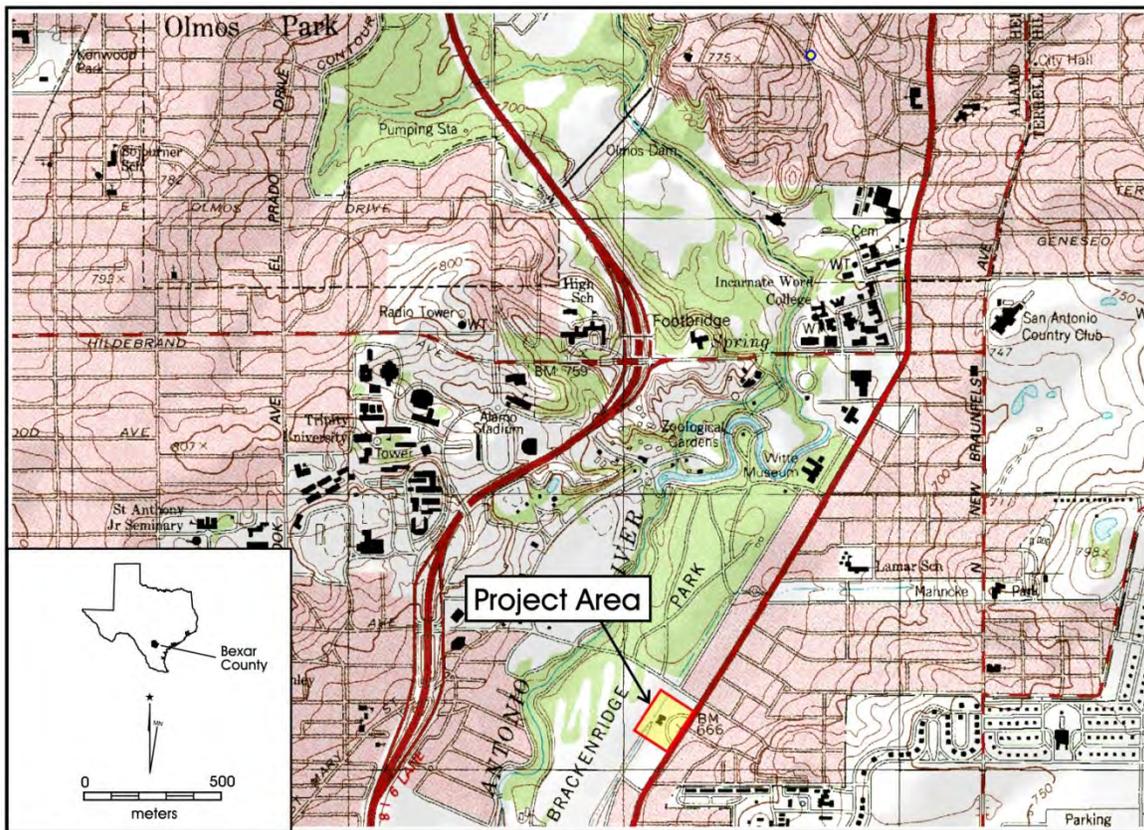


Figure 1-1. Project area depicted on the San Antonio East 7.5 minute series USGS quadrangle map.

Brackenridge Park is located north of downtown San Antonio along the east bank of the San Antonio River as seen on the San Antonio East 7.5 minute USGS quadrangle map (Figure 1-1). The Area of Potential Effect (APE) is the location of the 11.3-x-22.3-m (37-x-73-ft.) pavilion footprint, located at the former #10 tee box.

The planned pavilion is a mortise and tenon frame structure designed by Rialto Studio (Figure 1-2). The City of San Antonio Historic Design Review Commission had reviewed and approved the project with the condition that an archaeological survey of the footprint be completed.



Figure 1-2. *Conceptual drawing of planned pavilion.*

The site was previously the old #10 tee box that was built in 1968, and therefore, it was likely to contain heavily disturbed deposits. However, because the subgrade/foundation for the slab requires 0.9 m (3 ft.) of the existing soil to be replaced with compacted select fill, impact resulting construction may extend below disturbed deposits (Figure 1-3). The CAR proposed to investigate the area through a pedestrian survey and the excavation of shovel tests.

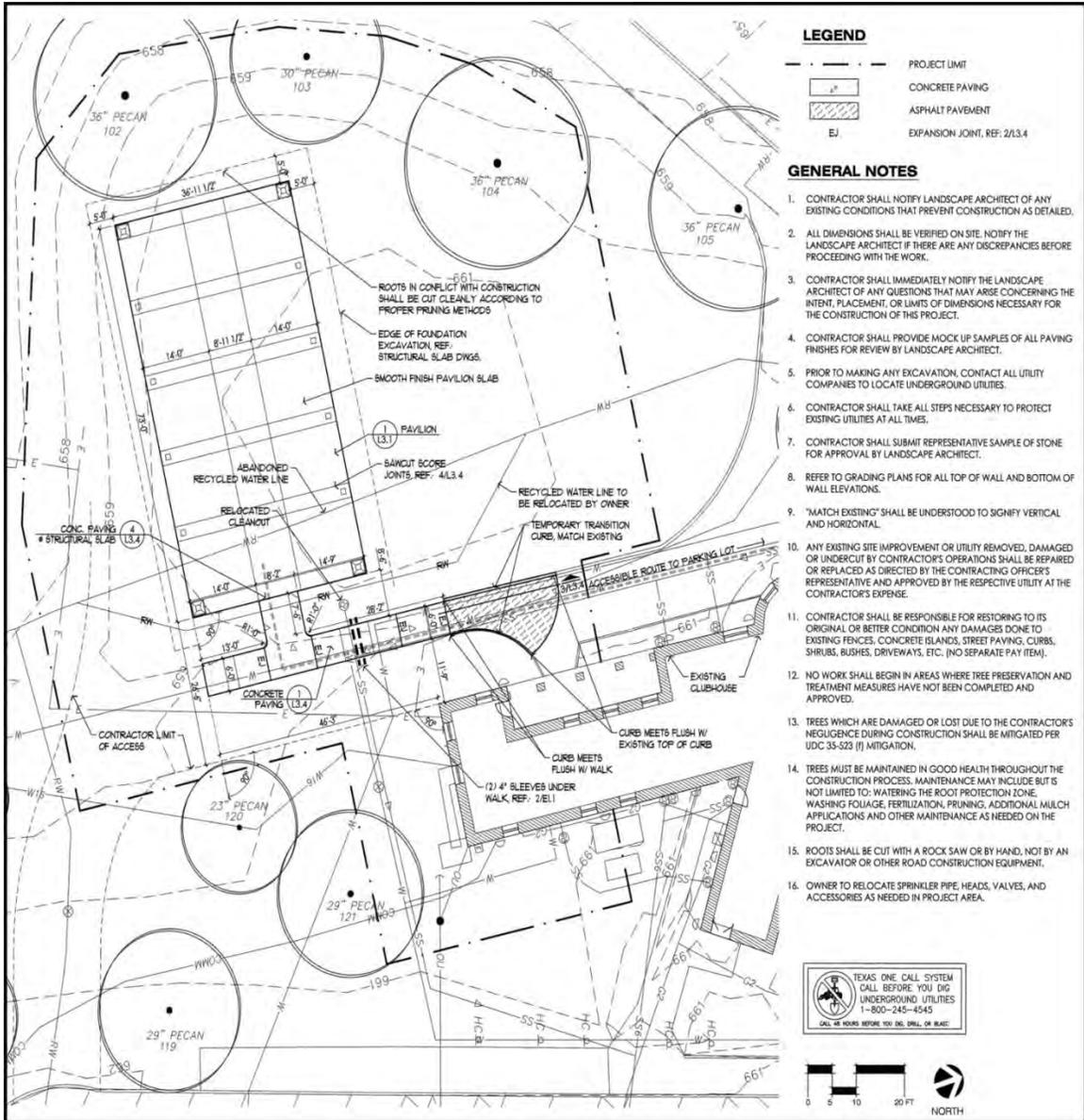


Figure 1-3. Construction details of the planned pavilion.

Chapter 2: Environmental Setting

The APE lies within Brackenridge Park, a 340-acre recreation area in the heart of San Antonio. Though the park is home to many native flora and fauna, it is within an urban area and has been altered for the enjoyment and convenience of the public. The park is bounded by Hildebrand Avenue on the north and Broadway Avenue on the east. Highway 281 wraps around the park to the south and west.

Brackenridge Park and Bexar County sit at the edge of the Edward's Plateau on the Balcones Escarpment, which encompasses parts of the Gulf Coastal Plain, the Hill Country, and the Edwards Plateau, thereby offering a suite of wildlife and natural resources, which were exploited by inhabitants of the area throughout history (Figure 2-1).

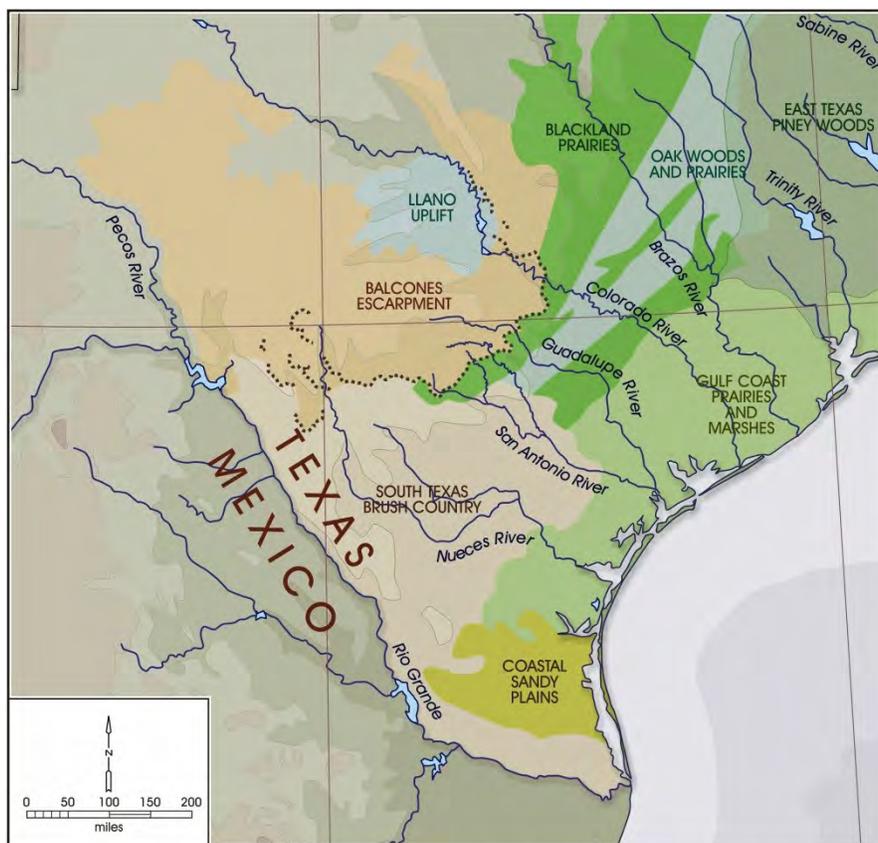


Figure 2-1. Geologic map of Central Texas showing the Edwards Plateau, Blackland Prairie, Balcones Escarpment, and major rivers.

The escarpment is a line of hills and cliffs that extends through Central Texas and serves as a dividing line between the ecological zones of the Edwards Plateau and the Blackland Prairie. It is the surface expression of the Balcones fault zone, which is a series of faults running from Del Rio to Waco, dividing

limestones on the west from claystones, chalks and marls on the east. Numerous caves and springs exist along the fault zone, which feed rivers and provide fresh water sources that have encouraged human settlement of the area. The landscape changes dramatically moving from east to west across the escarpment. The Edwards Plateau to the west is rugged with thin, stony soils supporting a juniper-live oak savannah best suited for ranchlands. To the east, the Blackland Prairie features rolling hills, broad rivers, and fertile clays that support native prairie grasslands and modern agricultural land use (Woodruff and Abbott 1986).

The San Antonio River crosses through the project area. Its headwaters are commonly reported to be the San Antonio Springs, one mile north of the park at the “Blue Hole.” Numerous springs rising from the Edwards Aquifer feed the river within the Olmos Creek catchment basin to the north. The greater San Antonio River Basin drains 6,727 square km (4,180 mi.) of land into the San Antonio River, which flows into the Guadalupe River and finally into San Antonio Bay. The San Antonio River is 290 km (180 mi.) long stretching from downtown San Antonio to Tivoli where it empties into the Guadalupe River. The Medina River and Cibolo Creek are its two major tributaries (SARA n.d.).

Geology

The geology of San Antonio is the result of Miocene uplifting that formed the Edwards Plateau and the Balcones Escarpment. The specific descriptions of formations in the area were taken from data published online by the USGS (2010) and exported for mapping over the project area (Figure 2-2). Brackenridge Park consists of Holocene Alluvium floodplain and Pleistocene Fluvial terrace deposits composed of gravel, sand, silts, and clays. The current study falls entirely within a quaternary alluvium floodplain. To the southwest and northeast above the terrace are the Navarro Group and Marlboro Marl formations composed of marl, clay, sandstone, siltstone, and limestone concretions. The Austin Chalk deposits in the western edge of the park in the Sunken Garden area contain chalks, marls, and limestone, which were mined during the historic period. The Uvalde Gravel formation lies just to the east of the park. These gravels include cobbles of chert, quartz, limestone, and igneous rock. Chert cobbles in this formation, as well as in the Edwards Limestone formation in the Balcones fault zone to the north of the APE, were an important raw material for prehistoric inhabitants of the area.

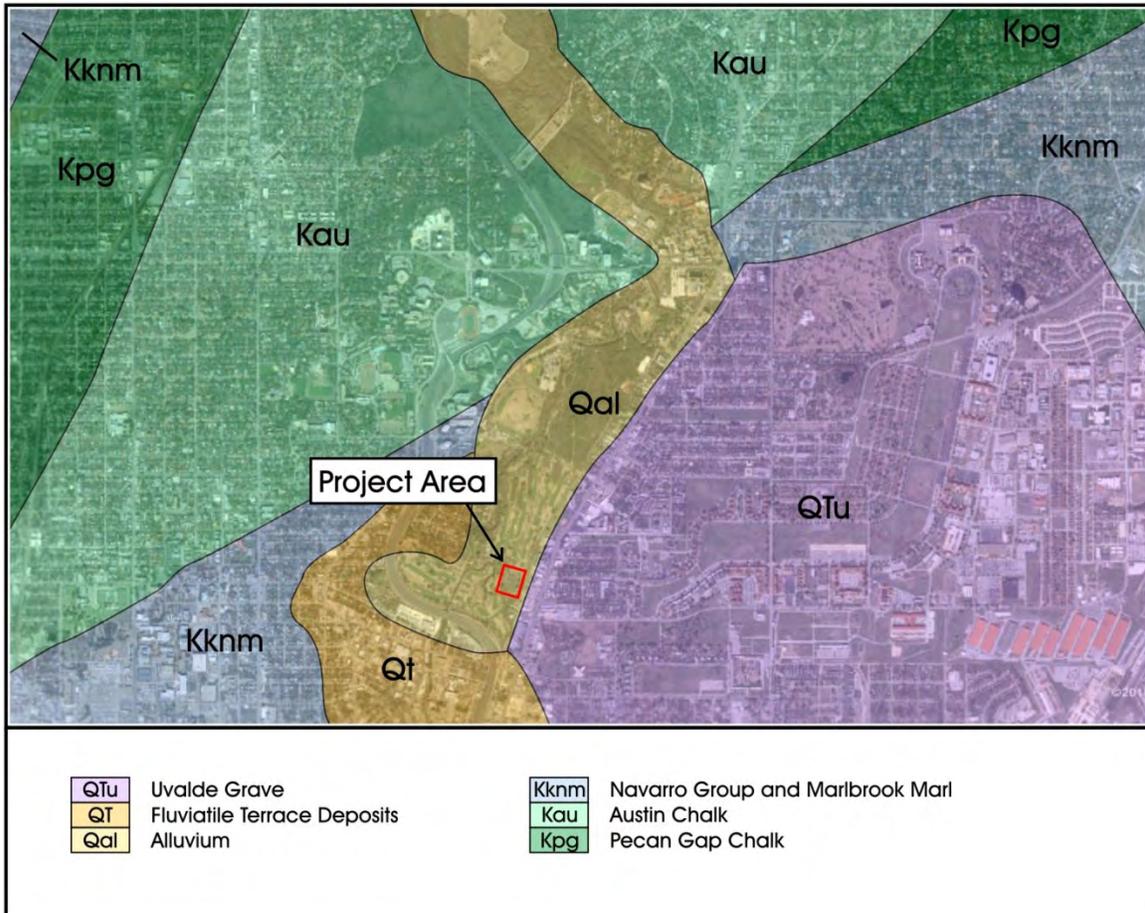


Figure 2-2. Geological map of the project area.

Soils

Soil units in the project are defined by the Soil Conservation Service (Taylor et al. 1966; Soil Survey Staff 2010). The APE passes through Lewisville, Trinity, and Frio soils (Figure 2-3). The Lewisville soils are found on stream terraces above the Trinity and Frio floodplain soils. The western end of the APE, as it skirts the driving range, is classified as Lewisville silty clay, 0 to 1 percent slopes (LvA). Lewisville silty clay, 1 to 3 percent slopes (LvB) is in the extreme eastern section of the APE in the northeast corner of the golf course. Lewisville soils are deep, well-drained soils common on stream terraces. Profiles depict brown, subangular blocky silty clay over reddish-yellow silty clays with calcium carbonate nodules. The center of the survey area and area of data recovery fall within the Trinity and Frio soils. These are found in floodplains and are therefore frequently flooded. Trinity and Frio soils are deep, slowly permeable, calcareous clays and clay loams. Trinity soils are clays derived from Holocene age clayey alluvium. A typical profile is clay to 2 m (6.6 ft.) with 25 percent CaCO_3 . Frio soils are also Holocene aged with a typical profile of silt clay loam to 1.27 m (4.2 ft.) and clay loam to 2 m (6.6 ft.) and 40 percent CaCO_3 .

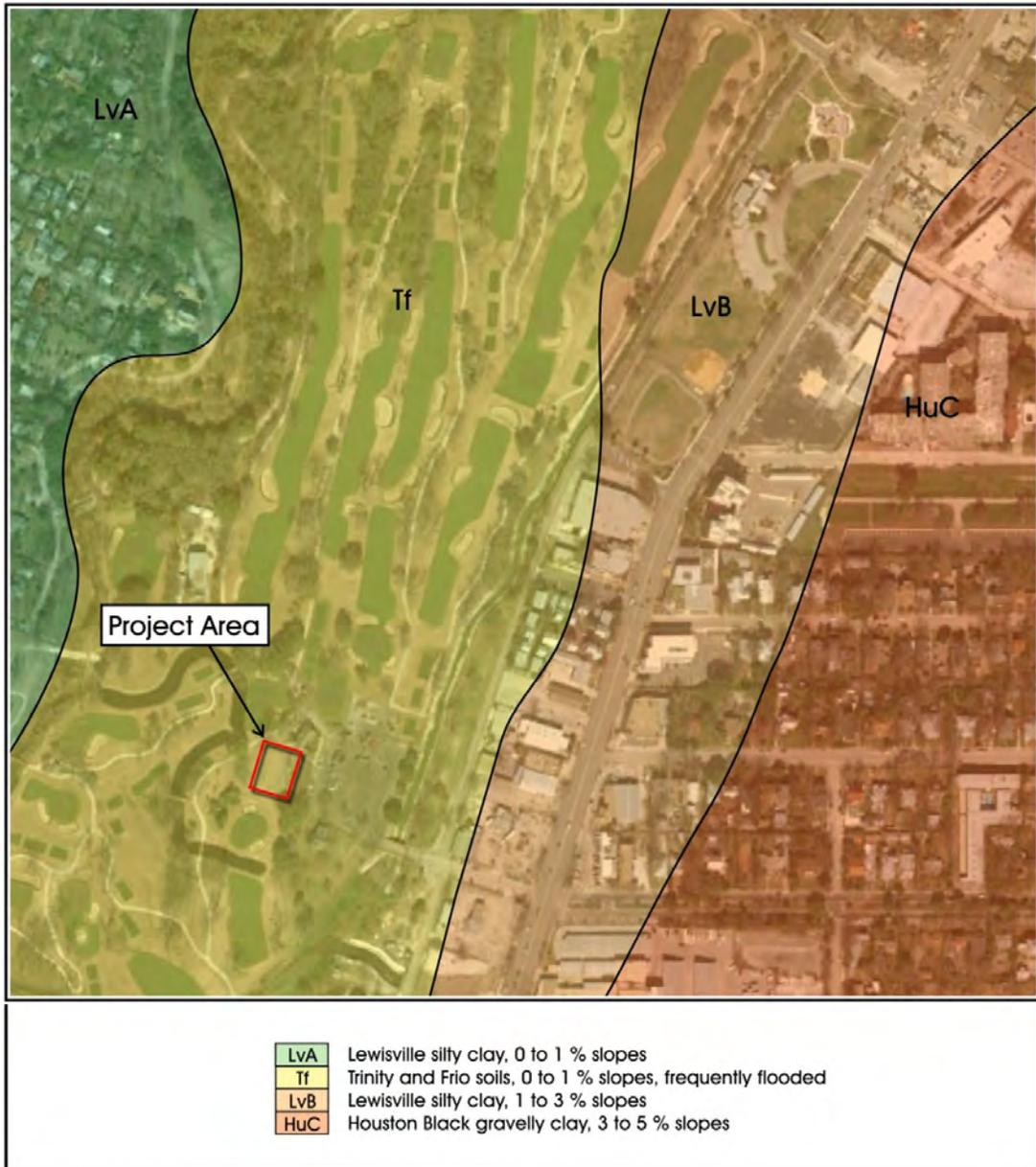


Figure 2-3. Soil map of the project area.

Five backhoe trenches (BHTs) exposed soil profiles to 1.2-2.5 mbs (3.9-8.2 ft.) east of the current APE within the Brackenridge Golf Course. Below varying depths of disturbance of approximately 40-50 cmbs (15.7-19.7 in.), the profiles revealed silty clay and clay with increasing calcium carbonate nodules from 90-200 cmbs (35.4-78.7 in.). Closer to the river, carbonate rich deposits were deeper where they were exposed at 130-230 cmbs (51.2-90.6 in.). Fill was observed when exposing the canal walls as expected (see Miller et al. 1999). The upper deposits were obviously altered and possibly removed during construction of the golf course, its subsequent renovations, and the installation of an irrigation system, which was exposed in BHT 1.

Flora and Fauna

A high percentage of animals found in Texas inhabit the Balconian biotic zone (Blair 1950), and a large proportion of them are found along the Balcones Escarpment. Many of these animals are constricted geographically and live either east or west of escarpment but not both (Neck 1986). Common mammals include white-tailed deer, opossum, raccoon, nine-banded armadillo (which is a relatively new migrant), and the black-tailed jackrabbit. Large mammals that once were commonly found in the area include bison, now only found in captivity, mountain lion, and black bear, both driven westward to mountainous regions of Texas (Davis and Schmidley 1997).

Over 80 species of fish live in the San Antonio River Basin. Fish species recorded in the San Antonio River include Bluegill (*Lepomis macrochirus*), Channel Catfish (*Ictalurus punctatus*), Red Shiner (*Cyprinella lutrensis*), Yellow Bullhead (*Ameiurus natalis*), Largemouth Bass (*Micropterus salmoides*), Green Sunfish (*Lepomis cyanellus*), Texas Shiner (*Notropis amabilis*), Gizzard Shad (*Dorosoma cepedianum*), Spotted Gar (*Lepisosteus oculatus*), and Central Stoneroller (*Campostoma anomalum*) (SARA n.d.).

Common migratory birds in the park are the Belted Kingfisher (*Megaceryle alcyon*), Great Blue Heron (*Ardea herodias*), Night Heron (*Nycticorax nycticorax*), White-winged Dove (*Zenaida asiatica*) and Turkey Vultures (*Cathartes aura*). Birdwatchers frequent the specific project area and have recorded Red-shouldered Hawk (*Buteo lineatus*), Golden-fronted (*Melanerpes aurifrons*) and Ladder-backed Woodpecker (*Picoides scalaris*), Wood Duck (*Aix sponsa*), Green Heron (*Butorides virescens*), and many other riparian and open field birds (San Antonio Audubon Society).

Native trees common along the river corridor are Black Willow (*Salix nigra*), Cedar Elm (*Ulmus crassifolia*), hackberry (*Celtis* spp.), pecan (*Carya illinoensis*), and sycamore (*Platanus occidentalis*). Shrubs and vines include Baccharis, Bluewood Condalia (*Condalia* sp.), Buttonbush, Mustang Grape (*Vitis mustangensis*), and Roughleaf Dogwood (*Cornus drummondii*). Common forbs are Arrowhead bush (*Sagittaria* sp.), sunflower (*Helianthus annuus*), Frogfruit (*Phyla* sp.), Pickerelweed (*Pontederia*), and Water Primrose (*Lugwigia*). Grasses and sedges along the river are Bushy Bluestem (*Andropogon glomeratus*), Eastern Gamagrass (*Tripsacum dactyloides*), Inland Sea Oats (*Chasmanthium latifolium*), switchgrass (*Panicum virgatum*), and Wild Rye. The uplands to the west support ashe juniper woodlands and shrubs. Common species include Texas persimmon (*Diospyros texana*), agarita (*Mahonia trifoliolata*), and prickly pear (*Opuntia* spp.). Vegetation in the Blackland Prairie to the east includes hickory (*Carya* spp.), red oak (*Quercus* spp.), and hackberry (*Celtis* sp.) trees (Gould 1969).

Chapter 3: History of Brackenridge Park and Previous Archaeology

History of Brackenridge Park

The APE falls within the boundaries of Brackenridge Park, a 340-acre park in Central San Antonio just south of the headwaters of the San Antonio River. The park is full of historic and prehistoric cultural resources. Most of those discussed are shown in Figures 3-1, 3-2, and 3-3.

Many of the historic features of the park are related to the river. During the early years of San Antonio de Bexar, the property was owned and managed by the Spanish Missions. Two *acequias* started near the headwaters of the river and flowed through the modern boundaries of the park. The first *acequia* constructed was the *Acequia Madre* (1719-1720). It was located on the east bank of the San Antonio River in the vicinity of current location of the Witte Memorial Museum (Figure 3-4). A large dam was constructed to divert the water from the river into the *acequia*, which flowed to the south, following the path of Broadway Road, and returned to the river south of Mission San Antonio de Valero (Figures 3-1 to 3-3). The water from the *acequia* was used to irrigate the Mission Valero croplands (Cox 2005). Recent investigations there have uncovered part of the dam and two channels of the *acequia* (Ulrich 2011).

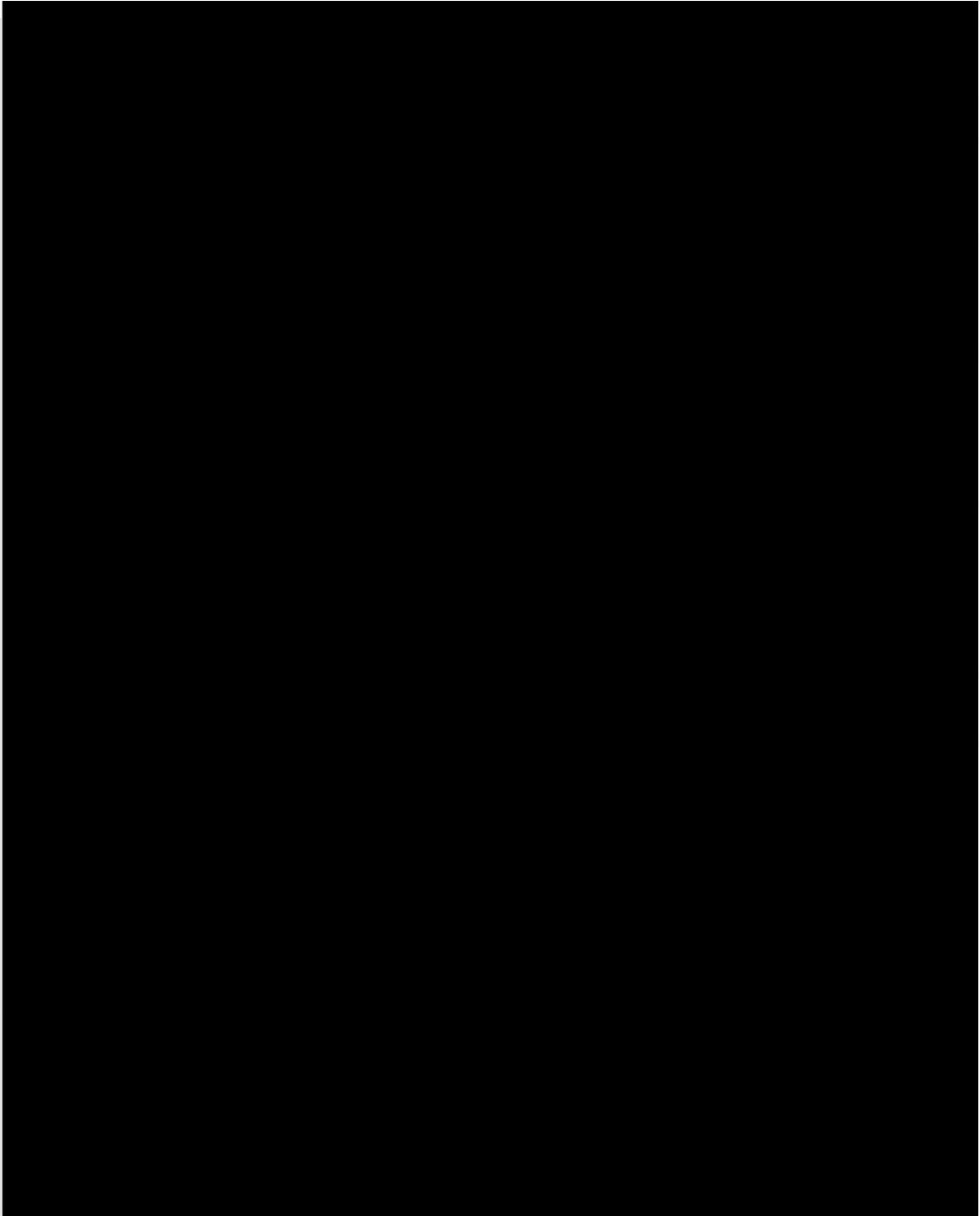


Figure 3-1. *Historic resources in the northernmost portion of Brackenridge Park.*

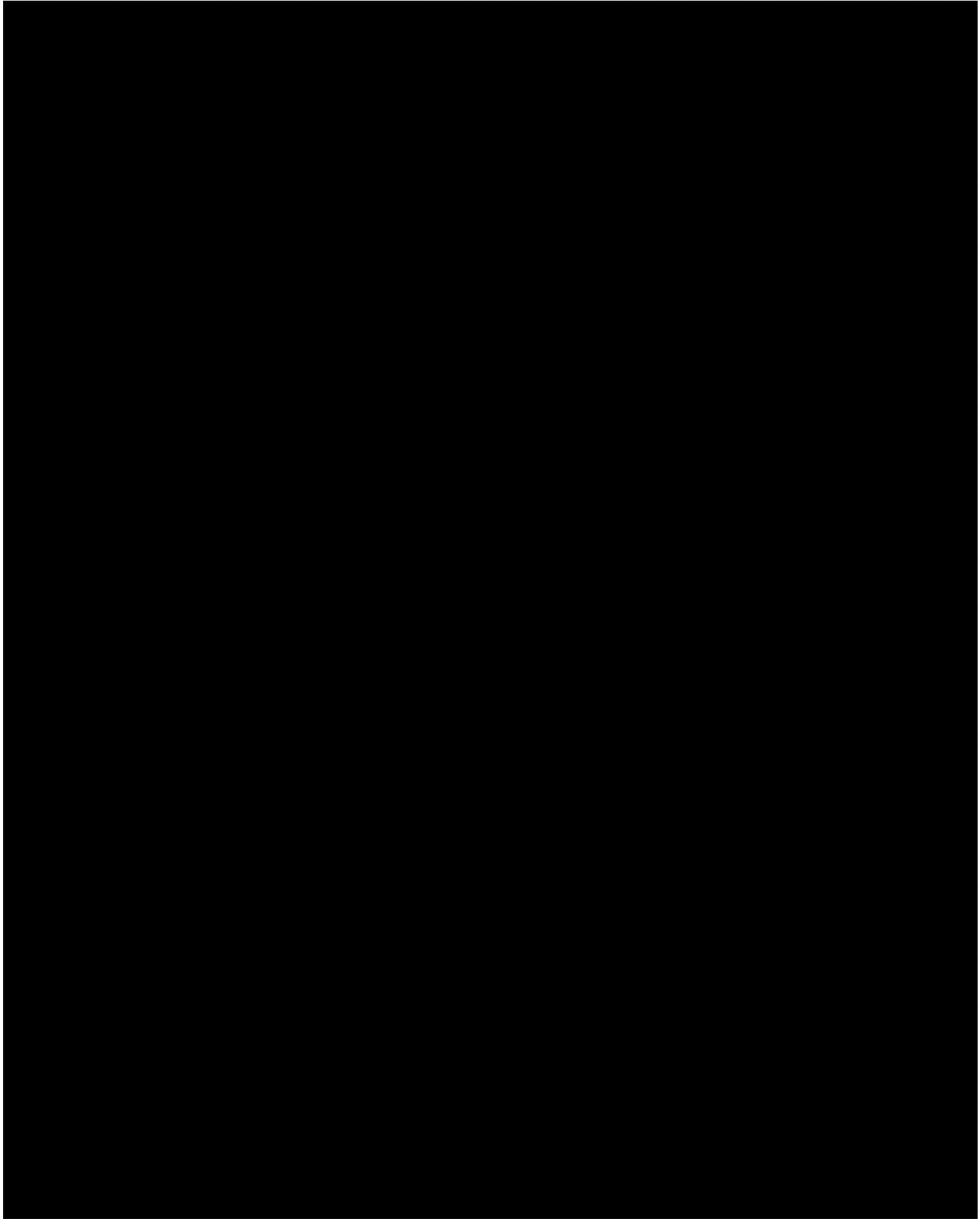


Figure 3-2. *Historic resources in the central portion of Brackenridge Park.*

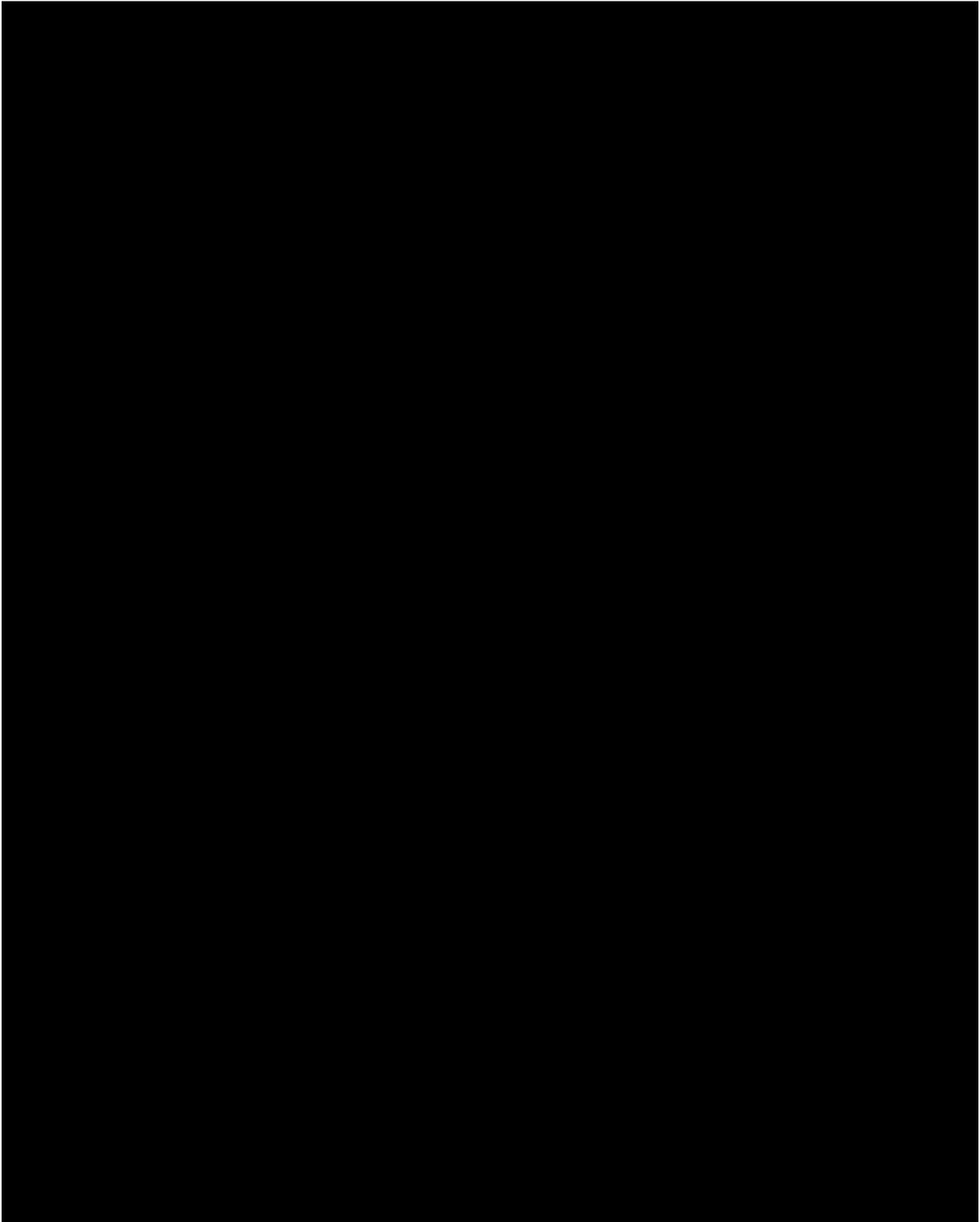


Figure 3-3. *Historic resources in the southernmost portion of Brackenridge Park.*

The second *acequia* was built much later and is known as the Upper Labor *Acequia* (ca. 1776) (Figure 3-4). This *acequia* was constructed closest to the headwaters of the San Antonio River, with its beginning located south of Hildebrand Avenue and north of the San Antonio Zoo (Figures 3-1 to 3-3). The Upper Labor Dam was constructed to divert the water from the river into the *acequia*. The *acequia* flows along the west side of the San Antonio River and re-enters the river north of Mission Valero (Cox 2005). The Spanish Colonial dam was found in 1996 during excavations near Hildebrand Avenue (Cox et al. 1999). The limestone dam had been repaired in the nineteenth century by German masons.

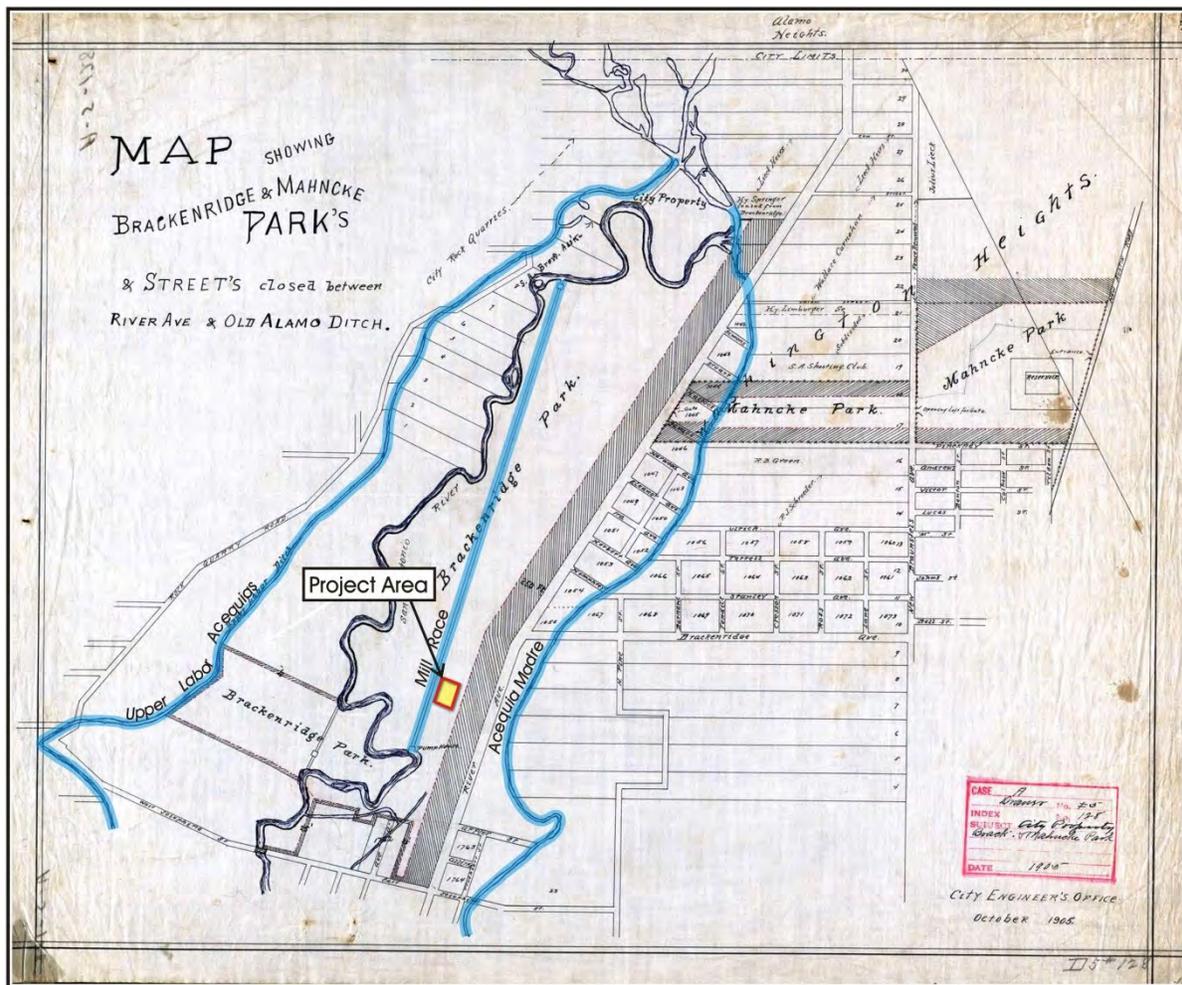


Figure 3-4. 1905 map that shows location of two acequias and the canal in relation to the APE.

Brackenridge Park remained a rural, agricultural area with scattered dwellings even after Texas joined the Union in 1846. The river and Spanish-built *acequias* continued to provide water for farmers and households. Travelers passed east and west of the park on roads leading to Austin and Fredericksburg, and land to the north was used for farming and ranching (Pfeiffer n.d.).

San Antonio grew from 3,488 to 12,256 residents between 1850 and 1870 (Pfeiffer n.d.). The demands of this growing population ultimately led to the park's transformation from irrigated farmland to industrial and commercial areas. This process began in the early 1850s and accelerated during and after the Civil War. Limestone bluffs on the western edge of Brackenridge Park were quarried by German stonemasons for rock to build many of San Antonio's earliest buildings in the 1880s. As the city's population grew, demand for stone grew to the point that the city began to lease quarries. Rock Quarry Road (now North St. Mary's) connected the city to the quarries. The limestone quarry business increased again with the invention of Portland cement. William Lloyd and George Kelteyer founded the Alamo Roman and Portland Cement Company in 1880, which leased the city's quarry until 1908 (Pfeiffer n.d.). This was the first cement company of its kind west of the Mississippi River. The operation included the cement business, but it also sold lime and building stone. The facility included stone quarries, kilns, mills, and houses for the workers. The location in Brackenridge Park served as the company's headquarters until 1908, when it moved to Alamo Heights. The quarries were later incorporated into the Park's Sunken Gardens. Between 1917 and 1947, they were the site of a Mexican market (Katz and Fox 1979).

In the early years of statehood, the City Council planned to sell surplus tracts of city-owned property to meet its growing budgetary needs. Because records of the original town tract boundaries had been lost, the City entered into a lawsuit to re-establish its claims and hired Francois Giraud to complete a new survey of the town tract. Land sales finally began in 1852 (Pfeiffer n.d.).

The majority of land in Brackenridge Park was already privately owned, but the 1852 land sale included property immediately to the north and east where springs forming the San Antonio River were located. The "head of the river," as it came to be called, was purchased by City Alderman James Sweet in 1852 at a public auction (BCDR K2:506-509). This sale put the source of the City's water supply under the control of a private enterprise where it would remain for several years.

During the American Civil War, 78 acres of Brackenridge Park was sold to the Confederate States of America for \$5,000 (Katz and Fox 1979:18). The confederates built a tannery to "fill footwear, harness and saddlery needs of the South" (marker text). Unlike many tanneries, this facility operated year round and was able to treat 6,000 hides at a time. A cotton and woolen mill, run by water power from the San Antonio River, was also built here. After the Civil War, the land was given to the Freedman's Bureau. In 1868, the land went up for auction and was purchased by the City of San Antonio for \$4,500 (Figure 3-1).

The park's namesake, George Brackenridge, moved to San Antonio in late 1865. His success as a cotton trader during the Civil War and connections with political and business leaders both statewide and

nationally served him well. In early 1866, Brackenridge established the San Antonio National Bank that became the foundation of his extensive business holdings. Three years later, he purchased a 108-acre tract and antebellum home at the head of the San Antonio River from Sweet. Because the word “bracken” was the Scottish word for “fern,” Brackenridge named his new home “Fernridge” (Sibley 1973:91). The property acquired by Brackenridge contained springs that fed the river and the city’s two major *acequias* a short distance to the south.

The issue of a privately held water source came to the forefront when, in the aftermath of the cholera epidemic of 1866, local physicians argued for construction of a safe municipal water system. Progress on this issue was slowed by Reconstruction politics and an overall lack of public support (Pfeiffer n.d.). Years later, a local newspaper began to campaign for repurchase of the head of the river property in 1872, leading the city to begin negotiations with Brackenridge. A \$50,000 contract was accepted by the City Council, but after public outcry over Brackenridge’s potential profit, the sale was eventually voided in April 1872, and he retained control of the headwaters (Sibley 1973:128-130; CCM D:36-37).

The City had failed to reacquire the headwaters and was making no progress in establishing a public water system. It was in this context that Brackenridge began to purchase additional riverfront land. The acquisition of the river front property would play an important role in the City’s water management in future years (Pfeiffer n.d.). Brackenridge acquired four of the upper five riverfront lots when the City placed ten lots from the Confederate Tannery property up for auction in 1875. These included lands in Kohler Park, Allison Park, and the Polo Field. He purchased the fifth lot in 1881. Brackenridge made his most significant purchase in June 1876, when he and his brother, John, paid Mary A. Maverick \$25,000 for a wooded 200-acre tract on the east side of the river that ran from the head-gate of the *Acequia Madre* ditch south to the property of Francois Guilbeau. The land was bounded on both the west and north by the river and on the east by the *Acequia Madre* (BCDR 4:473; BCDR 25:612).

J.B. LaCoste began the privately owned San Antonio Water Works Company after constructing a pump house and canals in 1877-1878 one-half mile from the Blue Hole on land leased from Brackenridge in the northern section of Brackenridge Park (Figure 3-1). The facility pumped water into a reservoir in Mahncke Park at the current site of the botanical gardens (Figure 3-2). The company did not do well and controlling interest went to Brackenridge in lieu of rent in 1883 (Pfeiffer n.d.). Brackenridge expanded the facility, building a second pump house at the south of the park near the current Golf Course Clubhouse and additional canal to connect both pump houses. The city’s growing water need outpaced Brackenridge’s ability to supply enough water, despite additional drilling. The original springs on his Fernridge property dried up by the turn of the century, but he continued to run the water works until 1906.

In 1899, Brackenridge donated 199 acres of riverfront land to the City of San Antonio for use as a park. The gift, accepted by the City Council on December 4, 1899, was celebrated in both the *San Antonio Light* and *Daily Express*.

This place [sic] of property is one of the loveliest pieces of land of Texas and for beauty is unrivaled. It is the largest natural park in the south controlled by a city, its scenery back on the river bank being unsurpassed. (San Antonio *Light* Nov 7, 1899)

Outside of Fairmount Park in Philadelphia, there is probably no city park that is in any way comparable to it. (San Antonio *Daily Express* Nov 11, 1899)

The gift of the Water Works property was generous but tightly constrained by reservations and restrictions. These caveats were at least partially attributable to years of distrust between Brackenridge and the city over financial dealings. The Water Works Company retained a 76.2 m (250 ft.) wide strip running the length of the property along the west side of River Avenue, and a 7.6 m (25 ft.) strip along each side of the river and the east bank of the Upper Labor ditch. The company retained full control of ingress and egress to the park as well as the banks of the river and *acequia*. A fence was built around the park and access was restricted to two locations. The issue of access remained unresolved until after Brackenridge sold the Water Works in 1906. Perhaps most notably, the bequest was restricted by its prohibition of the sale or consumption of alcoholic beverages in the park (BCDR 185:183; CCM N:284, 291, 304-305).

Brackenridge also donated land for what is now Mahncke Park and the land where the former Polo Field was located. The Polo Field was created ca. 1952 when the San Antonio Polo Club leased the field from the City for five years. After the Polo Club's lease expired, the field was then leased as a driving range. The field is now home to the Polo Field Golf Center.

Other donors to Brackenridge Park include Emma Koehler, who donated lands west of the river, the site of the Confederate Tannery, and Bexar County, which donated ten acres west of the river, south of Mulberry Avenue in honor of Judge James Davis (Pfeiffer 2010a).

Historic Park Attractions

The APE crosses the northern portion of the Brackenridge Park Golf Course, which is the oldest municipal course in the state (Figures 3-2 and 3-3). The course was constructed under the direction of City Parks Commissioner Ray Lambert in 1915 and completed by 1917. A. W. Tillinghast of Philadelphia

designed the course to incorporate the river's meanders (Pfeiffer 2010a). A golf clubhouse was constructed in 1923 replacing a two-story building used by the San Antonio Jockey Club, which was organized in 1889. The Jockey Club and track were popular in the 1890s and early 1900s for both horse and bicycle racing. Weekly horse races, which continued until 1910, were held on the track (Katz and Fox 1979:19).

Numerous other park attractions were developed under Ray Lambert, including Lion's Field (1916), one of the first playgrounds in San Antonio, Joske Pavilion (1926), the Municipal Zoo (1914), Eleanor Brackenridge playground, and a swimming beach (Figure 3-1 to 3-3). The Lambert bathing beach was opened in 1917 and remained open until 1950. Donkey rides were sponsored by the Rotary Club in the 1920s. The stone donkey barn today houses the Parks and Recreation offices. Lambert also converted the abandoned quarry into the Sunken Garden amphitheatre attraction and the surrounding buildings into a local crafts market (Pfeiffer 2010a). He created a lily pond named the Japanese Garden on the northern end of the Sunken Gardens, and to the south he had the Texas Star Garden designed with rock and flowers (Pfeiffer 2010b).

Few changes have occurred to Brackenridge Park since the 1940s. Construction on US 281 altered the golf course, the zoo has expanded, and new concessions and pavilions have been built (Pfeiffer 2010a). The bulk of park property is still on lands south of the river donated by George Brackenridge and by on the north side, which were donated by Emma Koehler and the original Spanish grant.

Archaeological Investigations in Brackenridge Park

Numerous archaeological projects have occurred in and near Brackenridge Park due in part to the park's wealth of historic and prehistoric resources. Much of this work was conducted by CAR and SWCA Environmental Consultants. The current study area crosses two sites, 41BX264 and 41BX1396, previously examined by SWCA and others.

Brackenridge Park Survey

In 1977, Katz and Fox (1979) of CAR conducted an archaeological survey of Brackenridge Park to inventory all prehistoric and historic resources in the park. This included a pedestrian survey of the entire park but did not include subsurface excavations. They documented four prehistoric archaeological sites, 11 collecting localities, and 27 historic sites (Figures 3-1 to 3-3). The collecting localities were areas where artifacts were observed in quantities too low to be considered a site. The four prehistoric sites (41BX264, 41BX321, 41BX322, and 41BX323) contained debitage, stone tool fragments, and burned

rock dating from the Early to the Transitional Archaic. From site 41BX264, the Polo Field Site, Katz and Fox recovered multiple tools including Pedernales, Nolan, and Castroville points, bone and mussel shell, debitage, and hearth features. Sites 41BX321 and 41BX322 were small lithic scatters, but site 41BX323, the Paddle Boat Concession Site, was more substantial and has seen additional archaeological excavations (see Houk et al. 1999; Meskill et al. 2000; Miller et al. 1999; Houk and Miller 2001; Houk 2002b; Figueroa and Dowling 2007). It was recorded as a large lithic scatter (300-x-75-m; 984-x-246-ft.) with at least 30 cm (11.8 in.) of cultural deposits below ground surface, and it contained one Late Archaic Frio point.

The historic features included water control features, industrial features, and recreational features. Katz and Fox (1979) recommended nomination of Brackenridge Park to the National Register of Historic Places (NRHP) as a Historic District.

SWCA Water Main Survey

SWCA performed the archaeological survey and backhoe trench excavations ahead of installation of a 40.6-cm (16-in.) San Antonio Water System (SAWS) water main (Houk 2002a). This survey crossed three site boundaries (41BX264, 41BX1396, and 41BX321) discussed individually below. The pipeline began west of the San Antonio River on East Mulberry and was bored under River Road and the river. Then, on the east side of the San Antonio River, the pipeline was bored beneath large trees on the north edge of the golf course (and through the current APE and 41BX1396) and exited near the Catalpa-Pershing Drainage Ditch at the northeast corner of the golf course. The pipeline turned south through the golf course, parallel to the ditch, and passed through site 41BX321. At the southern extent, the pipe crossed the ditch, running parallel with it to the eastern side of Mill Race Road, and finally turned into the parking lot of the Brackenridge Golf Course Club House. SWCA did not recommend any archaeological work along the pipeline segment that ran through the current study area along Mulberry Avenue east of the river. They did excavate one backhoe trench west of the river on Mulberry and a series of backhoe trenches along the pipeline parallel to the ditch within the golf course (Figure 3-5). Cultural materials related to both 41BX264 and 41BX321 were observed in the backhoe trenches. Houk (2002a:10) found the paucity of materials, lack of buried features, and disturbed subsoil (in the case of 41BX321) did not warrant eligibility status as a State Archeological Landmark (SAL) or NRHP listing for either site based on his findings.

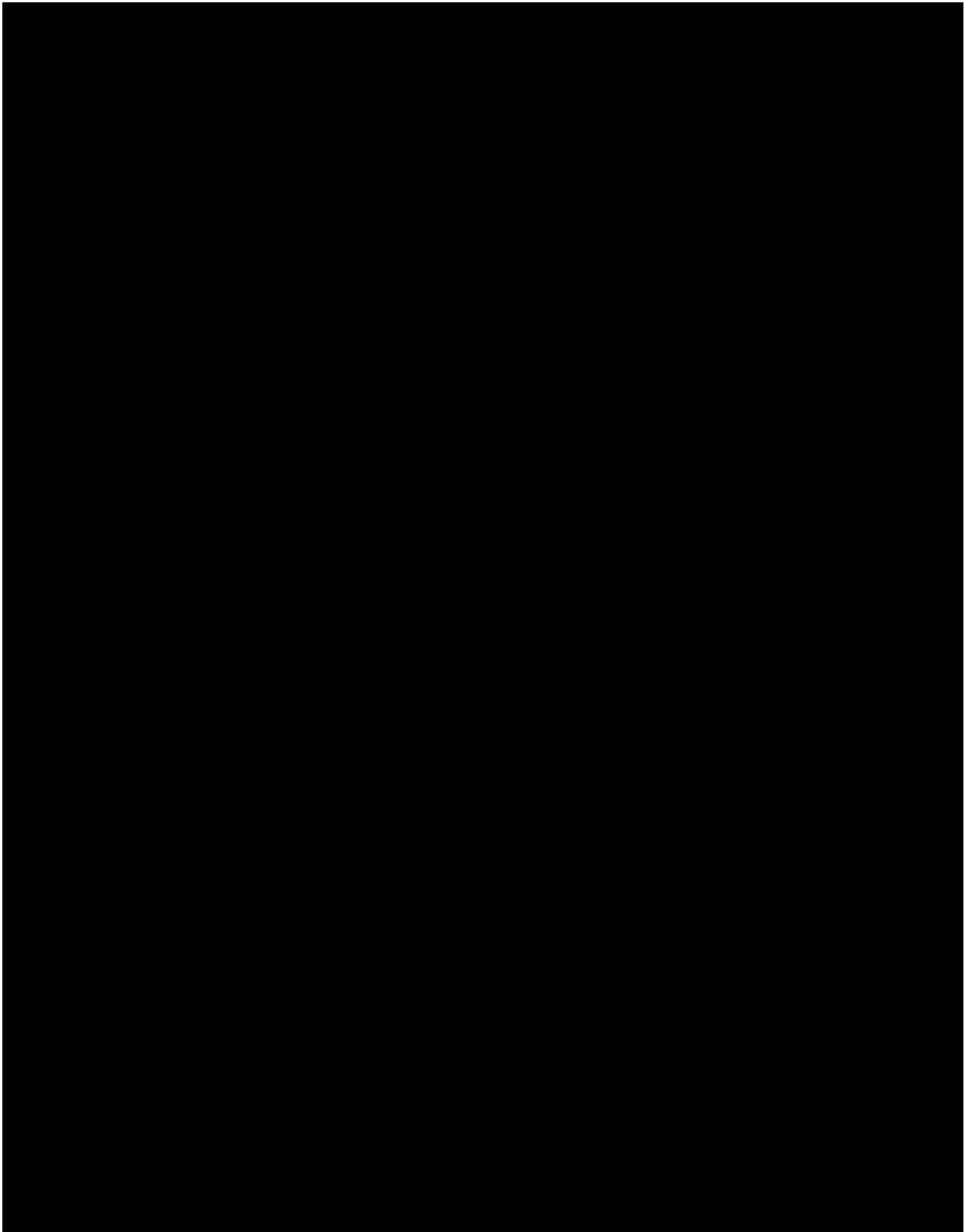


Figure 3-5. *Location of backhoe trenches and pipeline in Brackenridge Golf Course (see Houk 2002).*

The Polo Field Site, 41BX264

The western portion of the current APE crosses site 41BX264, which is on the Brackenridge Driving and Practice Range and former Polo Field. The site was examined by Dunphy in 1963, by Fox and Katz in 1976 (Katz and Fox 1979), by Miller of SWCA in 2001 (Miller and Barile 2001), and by Uecker and Molineu (2004) of South Texas Archaeological Research Services (STARS) in 2003. The site boundaries were determined by Katz and Fox based on a surface scatter of stone tools, faunal remains, debitage, and burned rock features but were expanded by Miller and Barile (2001) after subsurface trenching during a renovation project of the driving range. Houk (2002a) discussed the site again when he assigned artifacts identified in a backhoe trench south of Mulberry to 41BX264 (Figure 3-5).

Miller and Barile's (2001) work included a surface survey and mechanical trenching of a 20-acre project area that encompassed the driving range from Mulberry Avenue in the south to the train track in the north and from North St. Mary's on the west to the San Antonio River on the east (Figure 3-6).

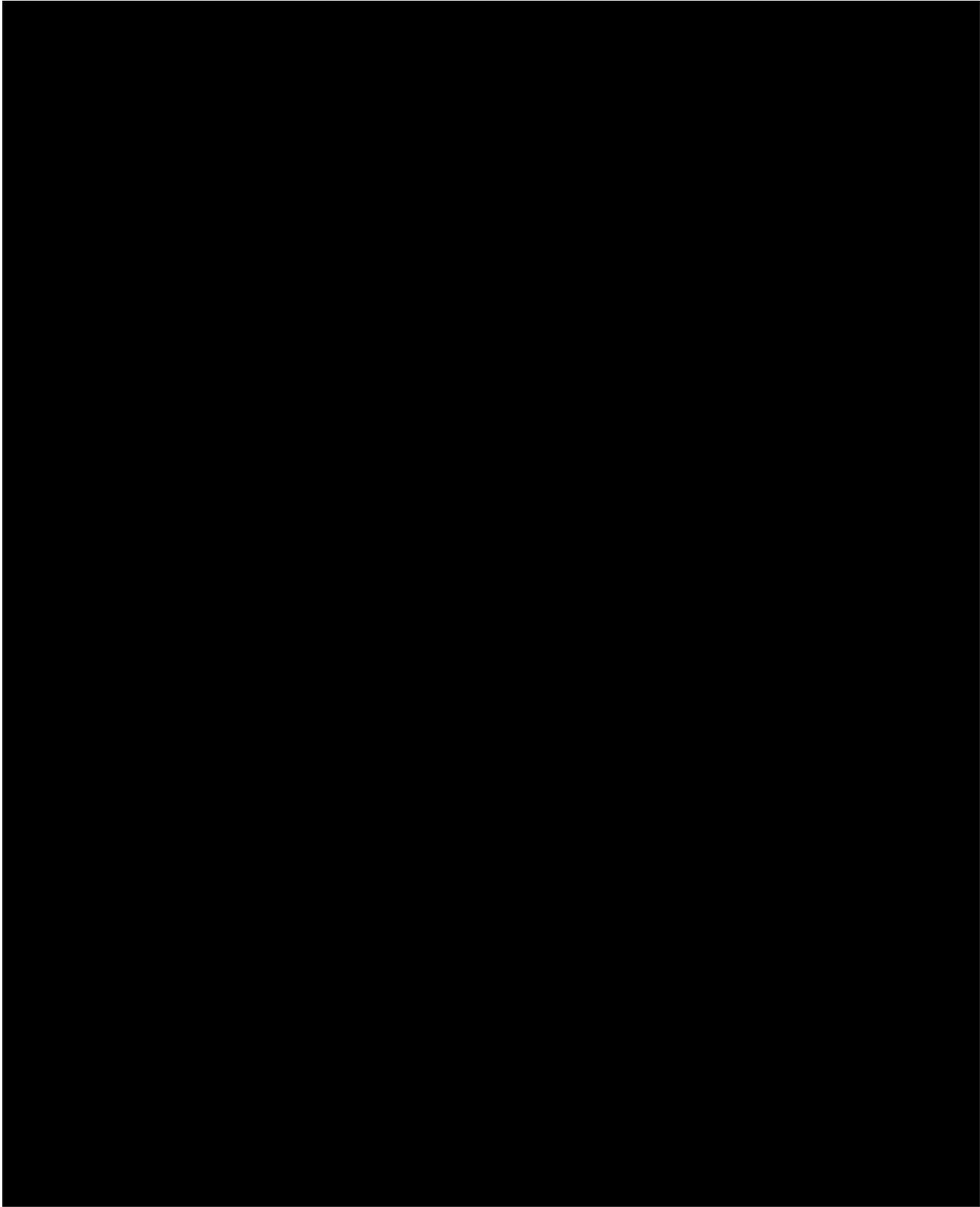


Figure 3-6. *Location of previous work at 41BX264.*

This project was undertaken ahead of construction on the driving range that involved extensive modifications to the landscape and renovations to the club house. Surface visibility was poor, but debitage was noted in the northern portion of the project area within the boundaries of site 41BX264. Eight backhoe trenches revealed a low density of lithic debitage, burned rocks, and tools, including one Langtry projectile point, from 5-130 cmbs (2-51.2 in.). However, most of these artifacts were within the upper 60 cm (23.6 in.) of disturbed deposits. SWCA concluded that, though intact cultural materials may remain on some portions of the site, they would not yield information important to prehistory, and therefore, the site was not recommended for listing on the NRHP or considered eligible as a SAL. This work revealed a larger site boundary than previously recorded though the northern extent remained undefined. They recommended monitoring during construction. This monitoring was conducted by Uecker and Molineu (2004) in 2003. In the interim, Houk (2002a) recorded artifacts that he considered part of 41BX264, south of Mulberry in a backhoe trench along a proposed pipeline.

Uecker and Molineu (2004) monitored excavations that exceeded 40 cmbs (15.7 in.) and conducted some data recovery excavations of features observed during scraping and trenching. They observed three distinct areas of cultural materials in the eastern portion of the site near the San Antonio River. Area A contained 36 burned rock clusters and associated cultural materials that were uncovered by paddle scraping. Three such clusters were identified in Area C from ground scraping. In Area B, two small burned rock clusters with other artifacts were identified in a trench wall. Features in Areas A and C were mapped and recorded but not investigated. These areas were covered with sterile sand and topsoil in efforts to preserve the deposits for future work. Limited data recovery efforts were conducted on features in Area B which were hand excavated in a 1-x-2-m (3.28-x-6.6-ft.) unit. Artifacts recovered from scraping in Areas A and C include projectile points dating to the Middle to Late Archaic and to the Late Prehistoric periods. Some of the typed points include Marshall, Pedernales, Castroville, Langtry, Noland, and Travis. A Guadalupe tool fragment was also found. These investigations confirmed what previous archaeologists had reported: clusters of burned rock and associated chipped stone artifacts, which were also heat altered, scattered across the landform. Though the research potential was considered low, preservation of the deposits below the construction impact and outside the project area was deemed sufficient to recommend eligibility as a SAL, especially within 150 m (492 ft.) of the center of the river channel. The site also has historic elements that contributed to the site's eligibility for inclusion on the NRHP, SAL, and the City of San Antonio Historic Landmark or Heritage Property list. Historic overviews of the Polo Field are provided in Miller and Barile (2001), Houk (2002a), and Uecker and Molineu (2004).

41BX1396

In 2002, SWCA also conducted archaeological investigations in Brackenridge Golf Course for SAWS Water Recycling Program (Barile et al. 2002). This work involved shovel testing and monitoring along a water line running parallel to the cart path at the ninth hole in the vicinity of two Collecting Localities (CL 1 and 3) recorded by Katz and Fox (1979) (Figure 3-3). Barile et al. (2002) formally recorded 41BX1396 after observing an area dense with lithic materials including stone tools around two of Katz and Fox's (1979; CL1 and CL3).

Further impacts to 41BX1396 occurred with the installation of a 40.6-cm (16-in.) water main installed by SAWS in 2002 (Houk 2002a). As described above, a 40.6-cm (16-in.) water main was bored under the river and through the boundaries of 41BX1396 (Figure 3-5).

Site 41BX1396 was investigated by SWCA again in 2008 in conjunction with restoration of the golf course to its original design (Carpenter et al. 2008). This project involved a complete assessment of cultural resources in the golf course, including sites 41BX1396, 41BX13, and 41BX321, and involved a pedestrian survey, shovel testing, and data recovery. Backhoe trenches exposed cultural material (burned rock, debitage, tools, and bone) from the surface to approximately 70 cmbs (27.6 in.), the upper portions of which had been impacted by previous projects on the golf course. The data recovery excavations were performed to explore deeper deposits 50-70 cmbs (19.7-27.6 in.; Figure 3-7). Carpenter et al. (2008) recommended the site eligible for designation as a SAL.

During November 2010, the CAR conducted a pedestrian archaeological survey of a proposed hike and bike path and data recovery excavations of portions of site 41BX1396 in Brackenridge Park, San Antonio, Bexar County, Texas. The proposed trail routes, 12 and 12b, run along the south side of Mulberry Avenue from Avenue A to Avenue B on the northern edge of the Brackenridge Golf Course and along the north side of Mulberry from Red Oak to the Polo Field Golf Center. The impacts associated with the path include installation of four light posts, three on the south side of Mulberry and one on the north side, installation of a fence-line separating the south path from the golf course, the construction of stone retaining walls along the south route between the edge of Mulberry Avenue and the path, and the construction of a pedestrian bridge across the location of a historic water canal. Engineering plans showed the southern path, utility trenches, retaining wall, fence posts, and one of the proposed light poles will transect the boundaries of site 41BX1396, a SAL. The path, a light post, and utilities will pass through the boundaries of site 41BX264.

The pedestrian survey included 20 shovel tests (STs), 6 backhoe trenches (BHTs) and visual inspection of

the ground surface. Backhoe trenches were placed in areas of deep impact at three of the proposed locations of light posts, each side of the pedestrian footbridge, and directly across the roadway from site 41BX1396 to explore the extent of the site boundaries. A backhoe was also used to expose a wing wall of the canal.

Two shovel tests along the trail section passing through 41BX264 contained cultural materials in disturbed strata. The integrity of the deeper deposits on 41BX264 within the APE is unknown in part because backhoe trenching was not possible here due to limited space. Backhoe trenching at the location of the light post was canceled because the APE was too narrow to investigate the deposits while also avoiding buried electric lines which run through the APE. Other investigators found cultural materials and features at 41BX264 40-60 cmbs (15.7-23.6 in.). However, any deposits within the upper meter (3.28 ft.) of the site within the APE may have been disturbed from road, train track installation, and utility work. Deeper impacts, such as those planned for light pole installation, might disturb any archaeological deposits that could have survived because of their depth.

Data recovery excavations on site 41BX1396 included one backhoe trench and two 1-x-1-m (3.28-x-3.28-ft.) units excavated to approximately 2.45 mbs (8 ft.). Early Archaic and possibly Late Paleoindian period artifacts were recovered from approximately 30-235 cmbs (11.8-92.5 in.), including three Guadalupe adzes, one small triangular dart point, one Gower dart point, one large adze fragment, and a rejuvenated Angostura dart point. Burned rock features were also documented at approximately 55 cmbs (21.7in.; Features 1 and 2) and 115 cmbs (45.3in.; Feature 3).

After the initial data recovery efforts, monitoring of the grading of the path of the trail occurred in March of 2011. The monitoring was conducted under a separate permit, although the features encountered were kept sequential with the November 2010 findings. Several features relating to the Early Archaic period were encountered, recorded, and removed during the monitoring phase. The features were excavated in whole and returned to the CAR laboratory to be screened, washed, and processed. Investigations were requested in areas to be deeply impacted with the installation of light posts. In April of 2011, three light post locations were singled out as having a high potential for producing intact deposits. One location was investigated with an auger test. Two other light post locations were investigated through the hand excavation of four 1-x-1-m (3.28-x-3.28-ft.) units. All locations were excavated to an approximate depth of 2.5 mbs (8.2 ft.). During the course of the excavations, two additional units were opened to further investigate a Paleoindian component encountered in Test Units 5 and 6. Artifacts recovered from the six units excavated during this phase in the data recovery included a Clearfork Adze, Guadalupe tools, Angostura point, St. Mary's Hall points, and a Dalton point.

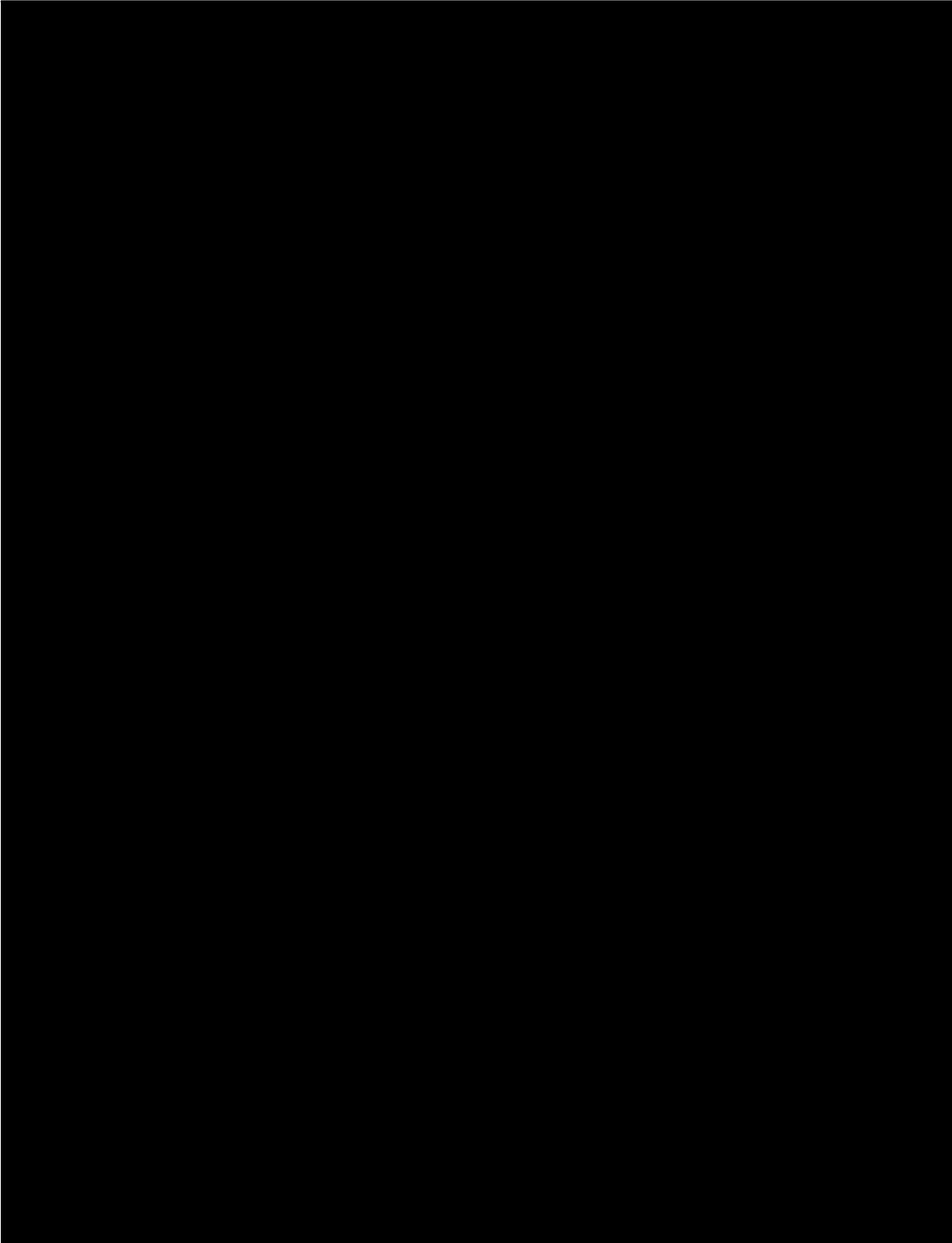


Figure 3-7. *Location of previous work at 41BX1396.*

41BX13

Site 41BX13 was recorded in 1966 by Witte Museum staff. No other work is noted until SWCA's investigation in 2008 prior to the golf course restoration project noted above (Carpenter et al. 2008). At this time, the site boundaries were redefined based on surface inspection and backhoe trenching (Figure 3-3). Most cultural materials were found in a buried stratum 60-100 cmbs (23.6-39.3 in.) of the T2 terrace, though scattered burned rock and debitage were also noted eroding out of the surface of the T1 terrace in disturbed areas. The integrity of the deeper deposits contributed to the site's SAL eligibility.

41BX321

In their survey of Brackenridge Park in 1976, Katz and Fox (1979) recorded 41BX321 on the eastern edge of the golf course (Figure 3-3). They noted the site was damaged by the large drainage ditch and sewer line but observed artifacts 30 cmbs (11.8 in.). The site was mentioned again in 2002 during backhoe trenching for the water main (Houk 2002a). Cultural materials seen in BHTs 5 and 6 of this work were attributed to 41BX321, though the site boundaries were not revised (Figure 3-5). A few artifacts were noted 80-100 cmbs (31.5-39.3 in.) in these trenches. The quality of the deposits and the quantity of artifacts were not sufficient to recommend further testing. Houk (2002a) did not recommend SAL eligibility for 41BX321.

Site boundaries were explored in 2008 when SWCA returned for the golf course restoration project (Carpenter et al. 2008). Three backhoe trenches excavated here revealed 20-50 cm (7.9-19.7 in.) of fill, some debitage, and burned rock. The burned rock was found in Trench 3, 110 cmbs (43.3 in.). Carpenter et al. (2008) concurred with Houk's (2002a) previous recommendations that the site was ineligible for SAL status.

The Paddle Boat Concession Site, 41BX323

Site 41BX323 (Figure 3-6) has seen excavation by CAR, the Texas Archeological Research Laboratory (TARL), and SWCA since it was first identified in 1979 during the Brackenridge Park Survey (Katz and Fox 1979). TARL conducted testing and data recovery excavations on the eastern portion of the site in 1995 for the Witte Museum H.E.B. Science Tree House (Meskill and Frederick 1998; Meskill et al. 2000). These archaeological and geological investigations identified Archaic components with rock features, floral and faunal remains, and lithics in twenty-three test units. Meskill et al. (2000) concluded that the site had been impacted by natural erosion and bioturbation.

From 1997 to 1999, SWCA conducted testing and data recovery at the site ahead of construction of the

proposed water pipeline for the SAWS Water Recycling Program. The initial testing included backhoe trenches, mechanical augering, and hand excavation of test units (Miller et al. 1999; Houk et al. 1999). Chipped stone and lithic tools, burned rock features, and ceramics were found across the tested area. The results suggested that Early Archaic and Late Prehistoric materials were compressed within the upper meter (3.28 ft.) of the site's deposits. Miller et al. (1999) determined that the site was potentially eligible for listing as an SAL and recommended avoidance of the site for data recovery.

Houk et al. (1999) report on the data recovery that followed these recommendations. They targeted Archaic deposits with intact burned rock features in two locales (including a burned rock midden) and a shallow Late Prehistoric component in another. The block excavations found the site dates primarily to the Middle Archaic but also has Late and Transitional Archaic components with a near-surface Late Prehistoric component.

Nordt (1999) conducted a geomorphological study of the site during the data recovery excavations. He observed the site occupied two terrace landforms which were associated with four stratigraphic units. Lower levels of Unit 3 date to the Middle and Late Archaic periods, and the upper portion of Unit 3 dates to the Late Prehistoric. Compression and bioturbation were again observed and thought to have negatively affected the deposits. The site was determined to be a SAL after this data recovery work.

SWCA returned to 41BX323 in 2000 to conduct auger testing as part of the Brackenridge Park Rehabilitation Project Survey (Houk and Miller 2001). The auger testing confirmed that intact deposits were located in the western portion of the site, which prompted additional testing in 2002 (Houk 2002b). Testing concluded that Late Prehistoric materials may be better preserved on the site south of Tuleta Drive, where minimal park development and erosion occurred.

In 2007, CAR conducted eligibility testing at 41BX323 at the location of a proposed parking garage facility (Figueroa and Dowling 2007). CAR's testing expanded the site boundaries south with evidence of Late Prehistoric and Archaic occupations recovered. Artifact recovery was sparse, and the southeastern portion of the site was not found to contribute to the site's significance.

Second Water Works and Canal

A historic mill race or Second Water Works Canal is a long linear earthen canal that extends from Tuleta Drive south through the park to Mulberry Avenue where it is exposed as it crosses into the golf course and heads to the site of the Second Water Works building and re-enters the San Antonio River (Figures 3-2, 3-3, and 3-6). Canal width varies from 10-30 m (32.8-98.4 ft.) with 2-3 m (6.6-9.8 ft.) high berms on

each side in a section north of Mulberry Avenue (Figure 3-8; from Miller et al. 1999:3). The berms were likely constructed from intact deposits within the canal. Wing walls of this canal are exposed within the current APE just south of Mulberry Avenue on the northern edge of the golf course. A good view of the canal route appears on a 1905 map of the area (Figure 3-4). The canal is associated with the Second Water Works that was started in 1886 after the previous water works system failed.

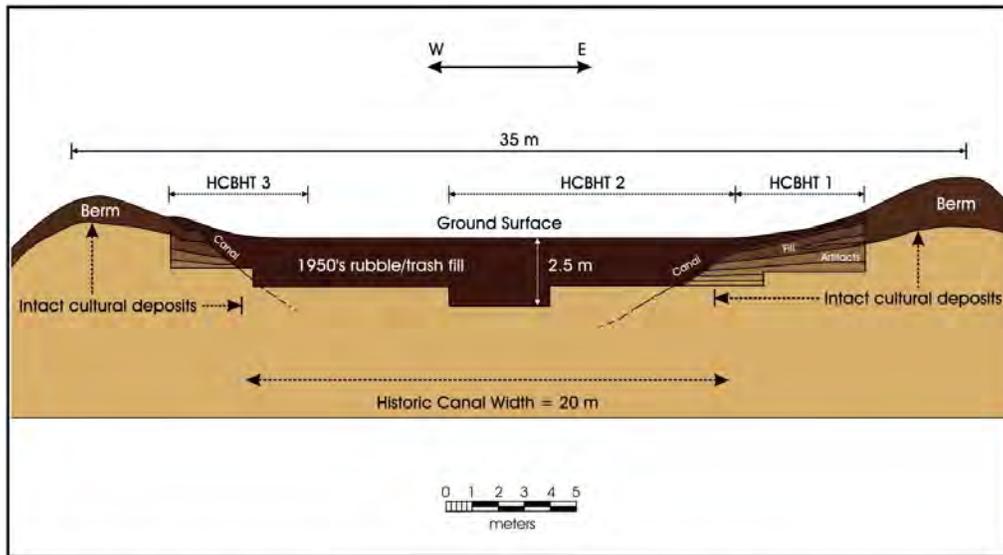


Figure 3-8. *Water works canal cross-section, north of the APE as recorded by Miller et al. 1999.*

The first water works system built in 1877-1878 included a pump house and series of canals that pumped water to a reservoir in Mancke Park. Water flowed downhill to customers through cast iron mains. The first water works system failed to attract enough customers, so ownership transferred to George Brackenridge, who successfully ran the Second Water Works from 1883 until the turn of the century. Brackenridge expanded the system by constructing a two-story limestone structure and canals that connected the original pump house in the north to this new structure in the south. The second pump house stands south of the golf course and was listed on the NRHP in 1981 (Figure 3-3). Demand eventually outpaced the Second Water Works capacity, and the entire operation closed at the turn of the twentieth century (Katz and Fox 1979:14). The City purchased the water works in 1925. Though the feature is sometimes referred to as a “mill race,” it was not connected to a mill.

SWCA conducted archaeological investigations of the Second Water Works Canal in 1997 (Miller et al. 1999). This was to record the structure and to assess its preservation. Three backhoe trenches were excavated in the northern end of the canal near its juncture with the San Antonio River. Two more trenches were placed near Mulberry Avenue. These provided a cross-section view of the canal and berms between Mulberry Avenue and Tuleta (Figure 3-8). Miller et al. (1999:43) reported the canal narrows

from 20 m to 10 m (65.6 to 32.8 ft.) as it approaches Mulberry and reaches depths below 2.5 m (8.2 ft.). The ground surface on which the berms were constructed was evident in the berm profiles as were intact prehistoric deposits beneath the berms along the canal (Miller et al. 1999:43). They found the canal was filled in the 1950s or 1960s with modern concrete, limestone blocks, asphalt, gravel, and recent trash (Miller et al. 1999:45).

Historic Properties

There are several historical properties located in the vicinity of the APE but not associated with the park. The river crossing Paso de Tejas was thought to be in the area and has been mentioned in historic documents (Cooley 1900; Cox 2005). These anecdotal accounts place the crossing at two different locations, one north and one south (near Lone Star Brewery) of the APE. However, one map dated 1879 shows the crossing within the site boundary of 41BX1396 near Katz and Fox's CL 1 and to the north of the Zambrano House (see Figure 3-7 and Figure 3-9). This is the only definitive location pinpointed on a map based on the historical record used by the CAR. This is not to discount other sources mentioning the crossing. It is possible that the same or similar names were used for multiple crossing locations along the river in San Antonio.

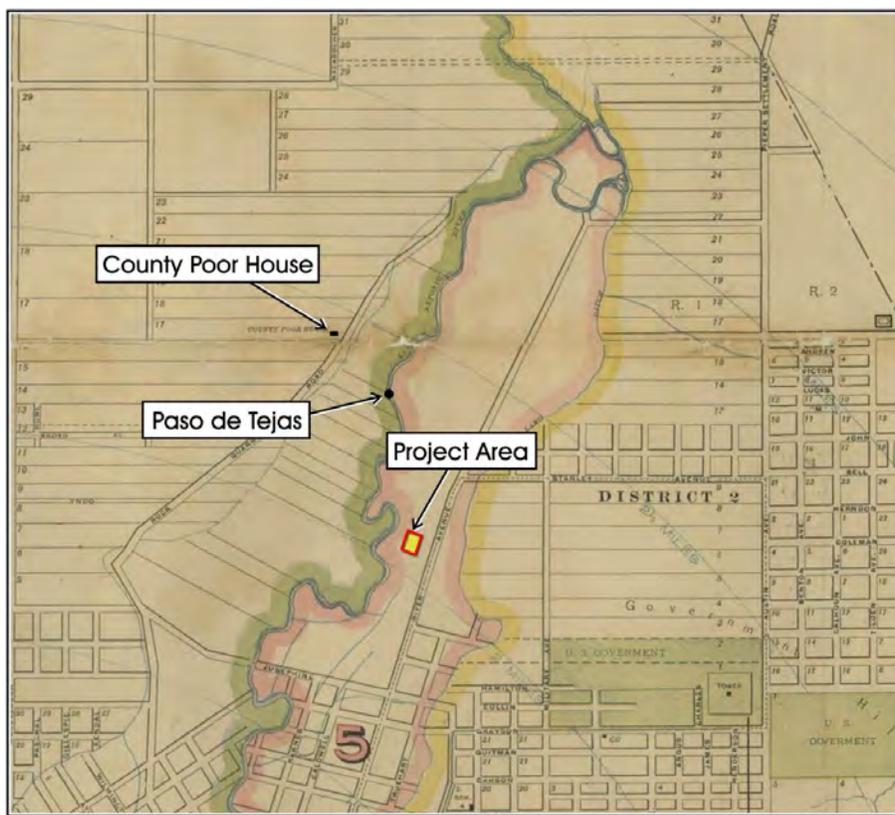


Figure 3-9. Overlay of APE on 1889 map showing one possible location of the Paso de Tejas and the Bexar County Poor House.

The Bexar County Poor House was located west of Rock Quarry Road (today known as St. Mary's). The property provided some housing for indigent people, but it also consisted of farm land and a cemetery. The house appears to have been in operation prior to 1889 (Figure 3-9). An article found in the San Antonio *Light* dated July 27, 1913, indicates that the property was approximately 18 acres. Four years prior, a county judge attempted to sell the property in efforts to establish another County Poor House on 100 acres outside of the city limits. The property was not sold at that time, and efforts were made later to remove the burials to the City Cemetery in hopes of securing a buyer. The cemetery at the Poor House was considered "unsightly," and the county judge in 1913 wanted to remove all evidence of its existence. There is no inventory on the number of interments at the Poor House Cemetery and no record of whether any or all those interments were ever moved to the City Cemetery.

The Bexar County Poor House was noted on the 1886 Birds Eye View of San Antonio created by Koch (Figure 3-10). It also appeared on 1889 map of San Antonio. A 1909 map of San Antonio did not detail the Poor House but labeled the parcel of land as Bexar County property (Figure 3-11). Since it is mentioned in a 1913 newspaper article, it can be inferred that the Poor House was likely running from the 1880s to the mid-1910s.

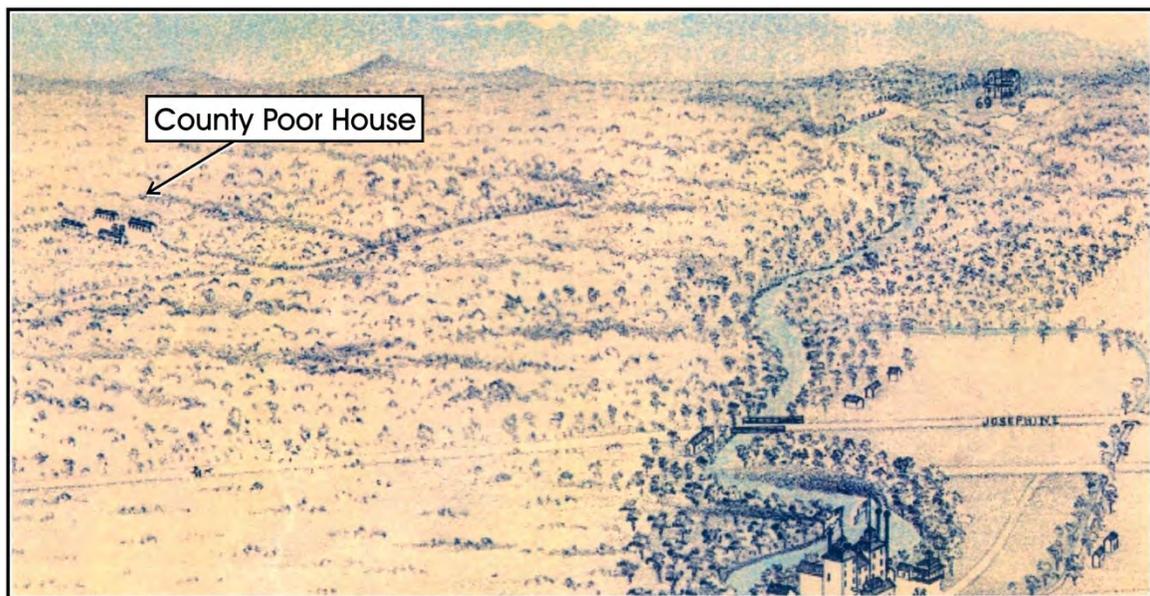


Figure 3-10. *Bexar County Poor House on Koch's 1886 Birds Eye View.*

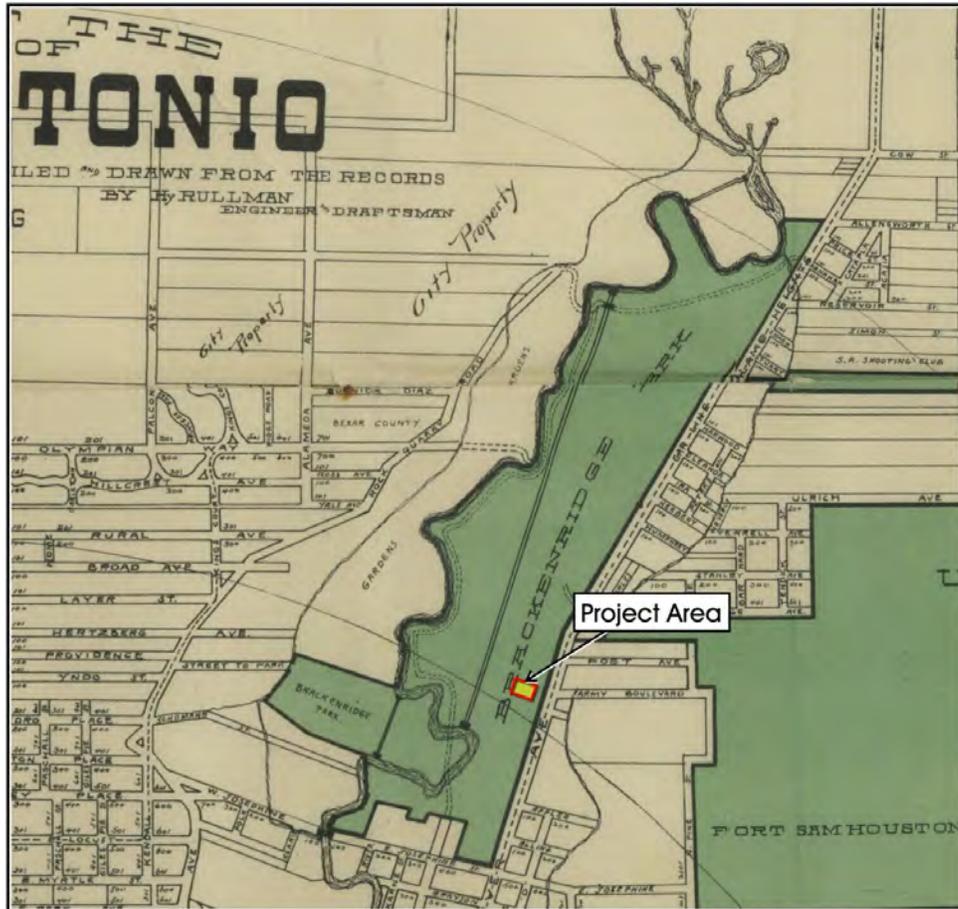


Figure 3-11. Overlay of the APE on 1909 map of San Antonio. Bexar County Poor House located to the west of the APE in a parcel of land labeled "Bexar County".

Chapter 4: Archaeological Field and Laboratory Methods

The plans for the new Golf Pavilion at the Brackenridge Municipal Golf Course indicate that up to 0.9 m (3 ft.) below the current surface will be impacted by the construction. To assess the potential for encountering intact deposits, shovel testing was conducted. Initially, each shovel test was to be excavated to a terminal depth of 100 cmbs (39.3 in.), but due to physical constraints, the final depths ranged between 70 and 80 cmbs (27.6 and 31.5 in.). The scope of work called for six shovel tests to be excavated. However, for the completion of the project, only four tests were deemed necessary to determine that the APE consisted of disturbed soils.

All shovel tests were 30 cm (11.8 in.) in diameter, and three of the four were excavated to a depth of 70-80 cmbs (27.6-31.5 in.) within the footprint of the proposed pavilion. One shovel test was excavated to a terminal depth of 83 cmbs (32.7 in.). Shovel tests were excavated in 10-cm (3.9-in.) increments and screened through ¼-inch hardware cloth. All artifacts recovered from shovel tests were collected in bags labeled with provenience information for laboratory processing, analysis, and curation. A shovel test form was completed for every excavated shovel test. Data collected on these forms included the final excavation depth, a tally of all materials recovered from each 10-cm (3.9-in.) level, and a brief soil description (texture, consistence, Munsell color, and inclusions). The location of every shovel test was recorded with Trimble Geo XT GPS units. Shovel test locations were also sketched onto aerial photographs as a backup to GPS information. Any additional observations considered pertinent were included as comments on the shovel test form.

Cultural materials and records obtained or generated during the project were prepared for curation in accordance with federal regulation 36 CFR part 79 and THC requirements for State Held-in-Trust collections. Additionally, the materials were curated in accordance with current guidelines of the CAR. Artifacts processed in the CAR laboratory were washed, air-dried, and stored in 4-mm zip-locking archival-quality bags. Acid-free labels were placed in all artifact bags. Each label contained provenience information and corresponding lot number written in archival ink or with pencil or were laser printed. Artifacts were stored in acid-free boxes. Field notes, forms, photographs, and drawings were placed in labeled archival folders. Digital photographs were printed on acid-free paper, labeled with archive-appropriate materials, and placed in archival-quality sleeves. All field forms were completed with pencil. Any soiled forms were placed in archival-quality page protectors. Ink-jet produced maps and illustrations were also placed in archival-quality page protectors to prevent accidental smearing due to moisture. All collected materials and project related documentation are permanently housed at the CAR.

All artifacts recovered during the project and all project related documentation are curated at the CAR facility. In consultation with the THC, subsequent to proper analyses or quantification, artifacts possessing little scientific value will be discarded pursuant to Chapter 26.27(g)(2) of the Antiquities Code of Texas. Artifact classes to be discarded specific to this project may include, but are not limited to, burned rock, snail shell, unidentifiable metal, and recent (post-1950) materials. Discarded materials will be documented, and their counts included in the final report and curation documentation.

Chapter 5: Results and Discussion of the Archaeological Survey

Results

A total of four shovel tests were excavated within the footprint of the proposed location of the open-air pavilion at the Brackenridge Municipal Golf Course (Figure 5-1).

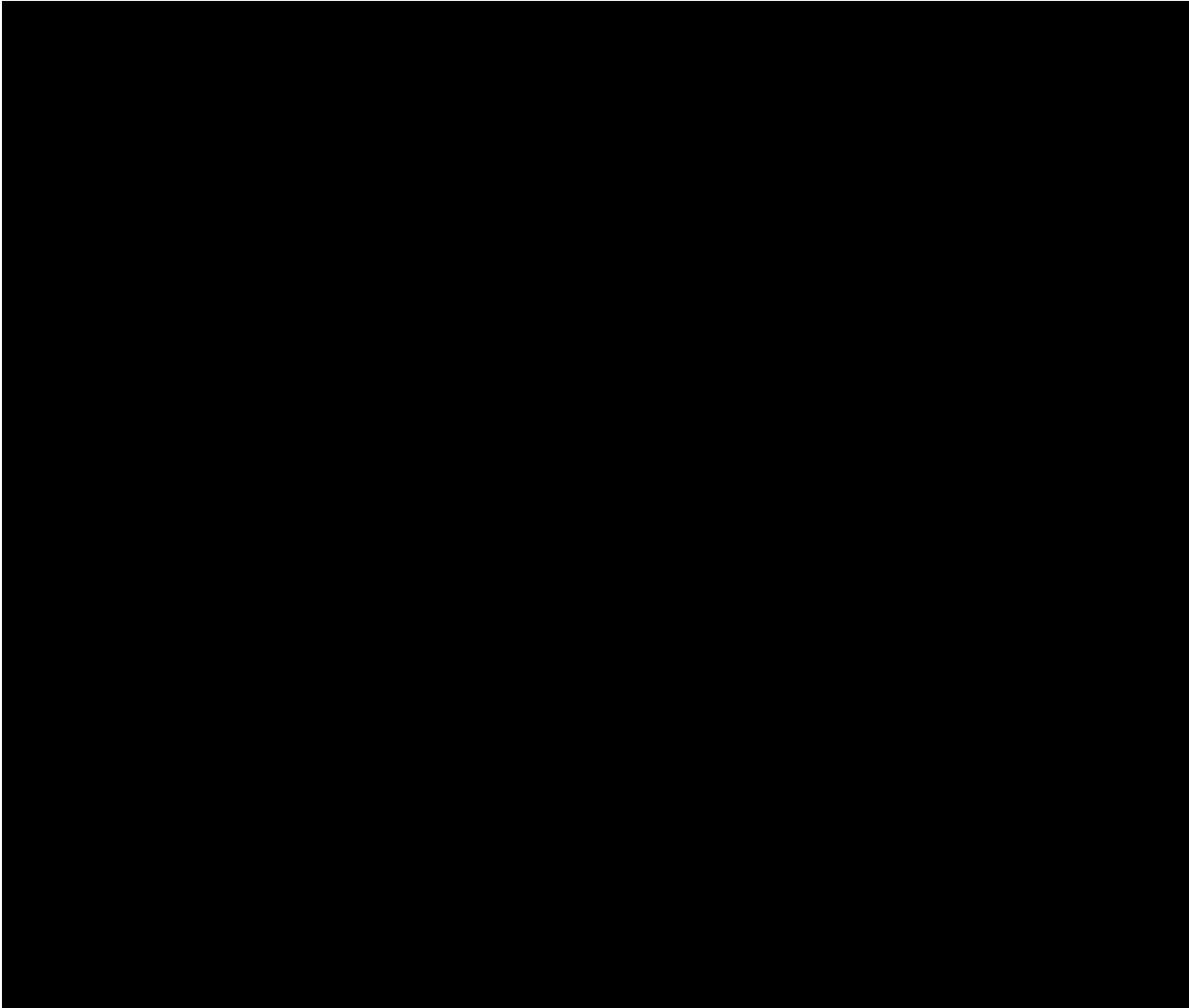


Figure 5-1. *Location of shovel tests.*

Shovel Test 1 (ST 1) was excavated in the southwest corner of the APE. The upper 20 cm (7.9 in.) of the shovel test was extremely hard packed and difficult to excavate. The soil consisted of dark yellowish brown silty clay (10YR3/4). No cultural material was encountered in these first two levels. The soil appeared to be less compacted but still difficult to excavate in the remaining levels. Level 3 (20-30 cmbs; 7.9-11.8 in.) also produced no cultural material. In Level 4 (30-40 cmbs; 11.8-15.7 in.), the soil texture

changed to a blocky sandy clay. Two fragments of burned rock were encountered within this level (Table 5-1). The remaining levels of the shovel test continued to exhibit a dark brown, block silty clay. No cultural materials were encountered. The test was excavated to a terminal depth of 70 cmbs (27.6 in.).

Table 5-1. Artifacts recovered from the Shovel Tests at the golf pavilion

Shovel Test	burned rock	debitage	porcelain	tar	wire nail	Total
ST 1	2					2
ST 2		2	1	1	1	5
ST 3		2				2

Shovel Test 2 (ST 2) was located in the northwest corner of the APE. Level 1 (0-10 cmbs; 0-3.9 in.) consisted of a silty sand that contained grass roots and small gravels. In Level 2 (10-20 cmbs; 3.9-7.9 in.), the soil changed to a hard-packed silty clay. The soil was blocky and broke into large chunks. Level 3 (20-30 cmbs; 7.9-11.8 in.) also exhibited the same soil as Level 2, but the presence of small snails was noted. The snails were present throughout the remainder of the shovel test. Level 4 (30-40 cmbs; 11.8-15.7 in.) produced one lithic flake (Table 5-1). Level 5 (40-50 cmbs; 15.7-19.7 in.) produced a fragment of porcelain and a fragment of asphalt. Level 6 (50-60 cmbs; 19.7-23.6 in.) produced one corroded wire nail. The shovel test was excavated to 83 cmbs (32.7 in.; Figure 5-2). At this point it was near impossible for the archaeologist to remove soil from the shovel test to reach the desired 100 cmbs (39.3 in.) mark, and therefore, it was not excavated to that depth.



Figure 5-2. *Base of Shovel Test 2.*

Shovel Test 3 (ST 3) was excavated in the center of the APE, to the east of Shovel Tests 1 and 2. The upper three levels of ST 3 were similar to those seen in the previously excavated units. Level 4 (30-40 cmbs; 11.8-15.7 in.) produced one lithic flake (Table 5-1). A second flake was recovered from Level 5 (40-50 cmbs; 15.7-19.7 in.). Level 6 also exhibited an orange mottling, which represents red construction sand, throughout a dark brown clay. This mottling continued into the top of Level 7 (60-70 cmbs; 23.6-27.6 in.). Small gravels were also noted in these levels. Near the base of Level 7, at approximately 66 cmbs (26 in.), a soil change was noted. The soil appeared to be a light tan gravely caliche. The caliche was located just below the hard-packed mottled clay. The shovel test was terminated at 70 cmbs (27.6 in.; Figure 5-3).



Figure 5-3. *Base of Shovel Test 3.*

Shovel Test 4 (ST 4) was located in the eastern portion of the APE. The soils encountered were almost identical to those noted in Shovel Test 3. No cultural material was encountered. Mechanically fractured chert fragments and cobbles were noted at the base of Level 1 (0-10 cmbs; 0-3.9 in.). The shovel test was excavated to a terminal depth of 70 cmbs (27.6 in.).

Discussion

Although six shovel tests were initially proposed, only four were needed to determine that the soils located in the footprint of the proposed pavilion were heavily disturbed. Each of the four shovel tests revealed a top layer of a sandy soil that appears to be the base on which the grass sod was placed when the area acted as the #10 tee box and below that was a sandy clay matrix that was very blocky. Cultural material encountered in these levels consisted of a mix of lithic flakes and recent material. In ST 2, the modern material was encountered beneath the lithic flakes, confirming that the matrix was disturbed. In STs 3 and 4, caliche was encountered at the base of the tests. The caliche seemed to be consistent with what is typically used for road bases. When speaking with Brad Fryrear of the Alamo City Golf Trail, he indicated that prior to the location being converted to the #10 tee box in the 1960s a road had once been in the vicinity. It is likely that the eastern portion of the APE is either on top of that road or in its immediate vicinity. The tee pad would have been built up and landscaped in the late 1960s. This would account for the disturbed nature of the deposits noted during the shovel testing.

Although mixed cultural materials were present in three of the four shovel tests, because CAR staff could not be sure that they were not brought in as fill to create the #10 tee box, they did not define the materials as representing a site. CAR does not recommend any further investigations within the current APE due to the disturbance that was noted in the shovel tests. It is unlikely the construction of the new open-air pavilion will impact intact buried deposits. CAR recommends that the construction of the pavilion occur according to the plans.

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