

# **Archaeological Investigation for the Proposed Willow Springs Golf Course Bridge Replacement Project, San Antonio, Bexar County, Texas**

**Antiquities Permit #7444**

**Principal Investigator: Melanie Nichols, M. Sc.**

**Prepared for Municipal Golf Association of San Antonio  
2315 Avenue B  
San Antonio, TX 78215**

**Report Authors: Joshua Hamilton, M.A.; and Melanie Nichols, M.Sc.  
Pape-Dawson  
7800 Shoal Creek Boulevard  
Suite 220W  
Austin, TX 78757  
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## Abstract

At the request of the Municipal Golf Association of San Antonio (MGASA), an intensive archaeological survey was conducted by Pape-Dawson for the proposed Willow Springs Golf Course Bridge Replacement Project within the City of San Antonio in Bexar County, Texas. The proposed project will entail the demolition of six existing culvert bridges, the construction of four span bridges, the realignment of golf cart paths, and the planting of trees within the Willow Springs Golf Course. As the Willow Springs Golf Course is a municipal golf course operated by the City of San Antonio, compliance with the Antiquities Code of Texas (ACT) will be necessary. Since the project will require a Section 404 permit from the United States Army Corps of Engineers (USACE), compliance with Section 106 of the National Historic Preservation Act (NHPA) will also be necessary. In addition, the project is located within the San Antonio city limits, which necessitates compliance with the Historic Preservation and Urban Design Section of the City of San Antonio's Unified Development Code.

For the purposes of this project, the area of the Area of Potential Effects (APE) has been defined as the footprint of the existing bridges and bridge replacements, the realigned golf cart paths, and three tree planting areas located along Salado Creek. The APE will consist of a total area of 8.79 acres. The vertical depth of impact is anticipated to be up to 8 feet (2.4 meters) below the ground surface based on typical bridge design.

The intensive pedestrian survey was conducted by Pape-Dawson archaeologists on January 18, 2016. The entirety of the APE was subjected to visual inspection supplemented by judgmentally placed backhoe trenches and shovel tests in order to evaluate the impact of the proposed project on cultural resources. This work was conducted under Texas Antiquities Permit No. 7444. A total of four backhoe trenches and 12 shovel tests were excavated within the APE. All backhoe trenches and shovel tests were negative for cultural materials. During the course of the survey, one previously recorded site (41BX1678) was revisited within the limits of the APE. However, no archaeological material associated with site 41BX1678 was encountered. A historic resources survey was also completed for the Willow Springs Golf Course Replacement Project by a Pape-Dawson historian. The results of the historic resources evaluation have been presented in a separate technical report (Anderson 2016).

No archaeological resources were located or recorded during the courses of this survey. Based on the survey findings, the Principal Investigator concludes that no significant or NRHP-eligible archaeological properties will be adversely affected by the proposed project. Pape-Dawson recommends that no further archaeological work is necessary for the proposed undertaking as presently designed and that the project be allowed to proceed within the APE. No artifacts were collected, but all project records and photographs will be curated at the Center for Archeological Research (CAR) at the University of Texas at San Antonio.

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## **Introduction**

The Municipal Golf Association of San Antonio (MGASA) proposes to demolish six culvert bridges and replace them with four span bridges, realign the golf cart path to the new bridge locations, and plant trees within the Willow Springs Golf Course in the City of San Antonio, Bexar County, Texas (Figure 1). Four of the bridges to be demolished are located along the unnamed tributary of Salado Creek that enters the golf course from the north. Two new bridges will be constructed to replace the four older ones. Another bridge will be replaced along the unnamed tributary of Salado Creek that enters the golf course from the west, and the last bridge will be replaced along Salado Creek. Three additional areas were incorporated into the APE due to plans for planting trees along Salado Creek. The northernmost tree planting area falls within the boundary of previously recorded archaeological site 41BX1678.

As Willow Springs Golf Course is a municipal golf course operated by the City of San Antonio, compliance with the Antiquities Code of Texas (ACT) will be necessary. Since the project will require a Section 404 permit from the United States Army Corps of Engineers (USACE), compliance with Section 106 of the National Historic Preservation Act (NHPA) will also be necessary. In addition, the project is located within the San Antonio city limits, which necessitates compliance with the Historic Preservation and Urban Design Section of the City of San Antonio's Unified Development Code.

For the purposes of this project, the area of Area of Potential Effects (APE) has been defined as the footprint of the existing bridges and bridge replacements, realigned golf cart paths, and three tree planting areas along Salado Creek (Figure 2). The APE will consist of a total area of 8.79 acres. The vertical depth of impact is anticipated to be up to 8 feet (2.4 meters) below the ground surface based on typical bridge design.

At the request of the MGASA, an intensive archaeological survey was performed by Pape-Dawson for the proposed Willow Springs Golf Course Bridge Replacement project. Fieldwork took place on January 18, 2016. Melanie Nichols served as Principal Investigator and was assisted in the field by Joshua Hamilton, Katie Hill and Jacob Sullivan. The goals of the investigation were to: (1) locate all prehistoric and historic archaeological sites, if present, within the APE; (2) establish vertical and horizontal site boundaries, as appropriate with respect to the APE; (3) evaluate the significance of recorded sites and structures with regard to National Register of Historic Places (NRHP) and State Antiquities Landmark (SAL) eligibility. A historic resources survey was also completed for the Willow Springs Golf Course Bridge Replacement Project by a Pape-Dawson historian. The results of the historic resources evaluation have been presented in a separate technical report (Anderson 2016).

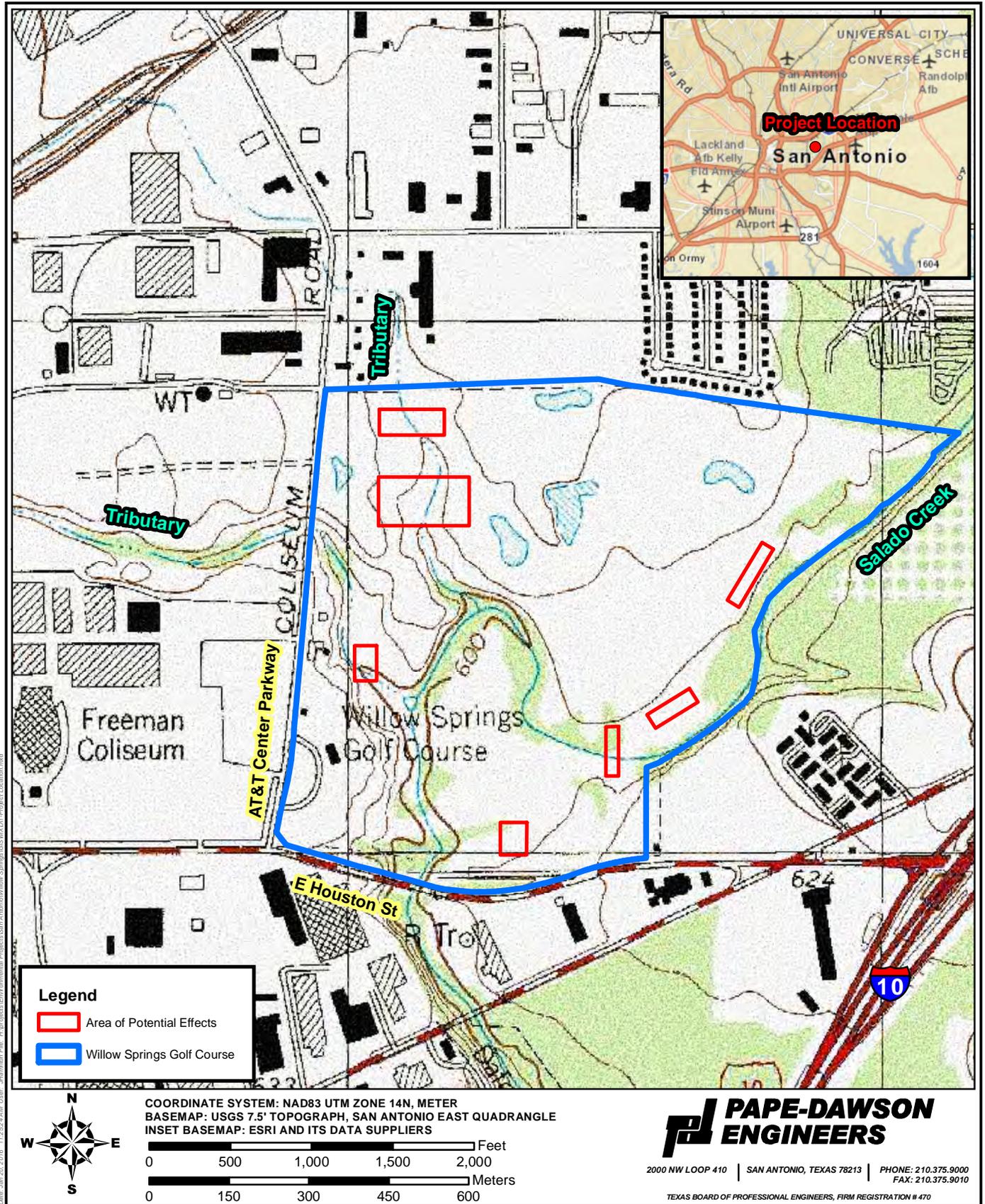
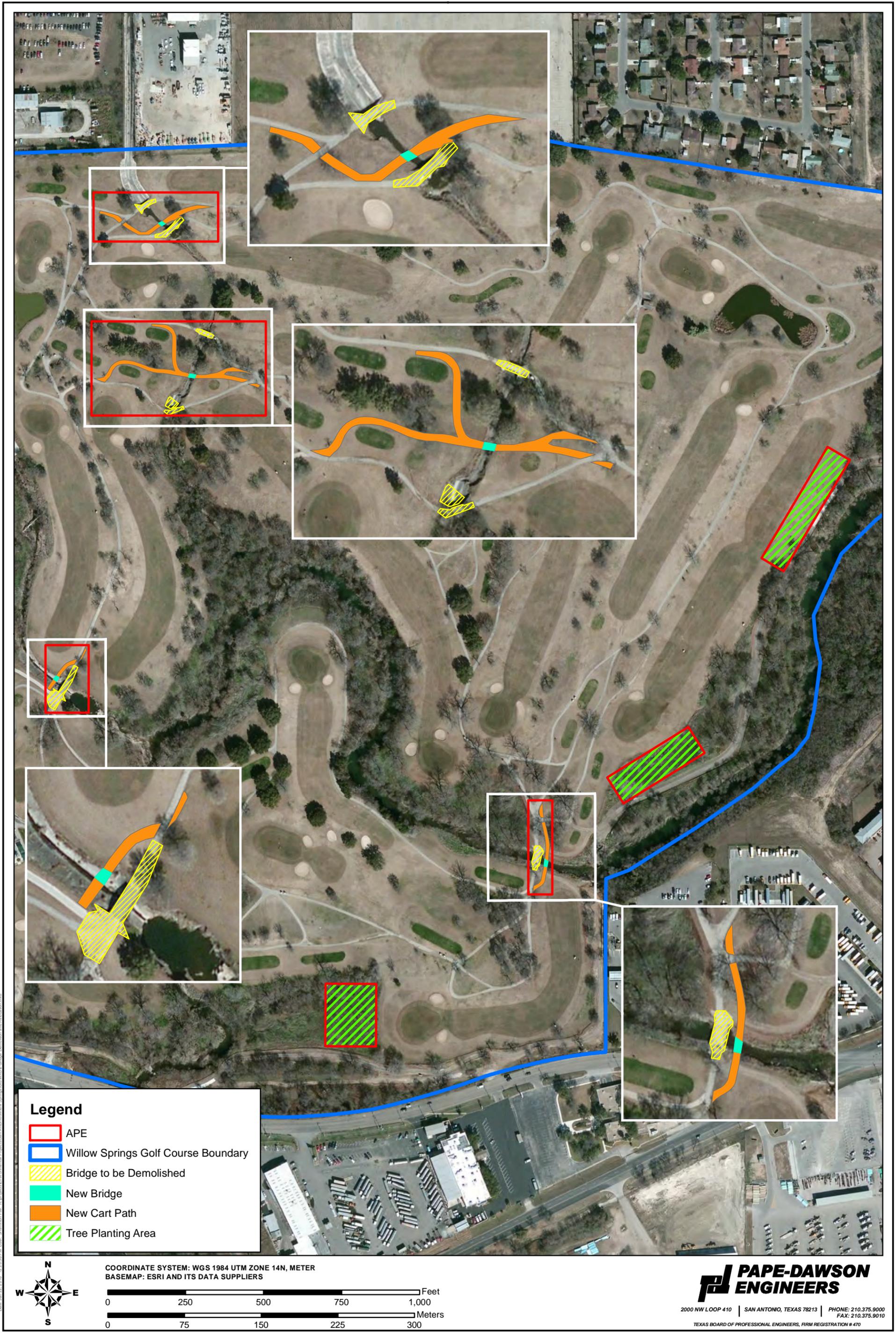


Figure 1 : Project Location Map

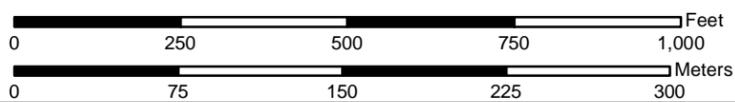


**Legend**

- APE
- Willow Springs Golf Course Boundary
- Bridge to be Demolished
- New Bridge
- New Cart Path
- Tree Planting Area



COORDINATE SYSTEM: WGS 1984 UTM ZONE 14N, METER  
 BASEMAP: ESRI AND ITS DATA SUPPLIERS



**Pape-Dawson**  
**ENGINEERS**

2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000  
 FAX: 210.375.9010  
 TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

**Figure 2 : Bridge Replacement and Tree Planting Areas Map**

## **Project Setting**

The project is located in east-central San Antonio and northeast of the intersection of AT&T Center Parkway and East Houston Street. The APE is situated within the Willow Springs Golf Course, which opened in 1923, and is surrounded by industrial complexes and residential neighborhoods (San Antonio Golf 2016). Historical and modern aerial photographs, spanning from 1955 to the present, show that the six subject bridges appear to have remained intact since at least 1955. A perennial and two intermittent streams traverse through the golf course. Salado Creek parallels the northeastern and eastern boundary of the golf course. The creek then enters the southeastern portion of the golf course and traverses west where it confluences with the two intermittent streams. From this point, the creek proceeds south and exits the Willow Springs Golf Course boundary. An unnamed tributary of Salado Creek enters the northern portion of the golf course and proceeds south where it confluences with Salado Creek in the center of the golf course. Another unnamed tributary of Salado Creek enters the western portion of the golf course and proceeds along a general southeastern direction until it confluences with Salado Creek.

Located along the margins of the Blackland Prairie and the Interior Coastal Plains regions of central Texas (Wermund 1996), the project landscape is largely characterized by narrow floodplains and stream terraces associated with Salado Creek and its tributaries. The APE is located within an area that is geologically mapped as Pleistocene-age Fluvial terrace deposits (Bureau of Economic Geology 1983). These terrace deposits outcrop adjacent to the immediate channels of significant water systems.

The soils that formed within these pre-Holocene deposits belong to the Houston Black (HuB), Sunev (VcA), Lewisville (LvB), and Loire (Fr) series (Figure 3). The most prevalent soil within the APE is Houston Black gravelly clay, 1 to 3 percent slopes. Houston Black soils are classified as Vertisols and are formed in clayey residuum derived from calcareous mudstone of Cretaceous Age. Soils of the Houston Black series are found on interfluvial and along the side slopes of upland ridges and dissected plains. They consist of very dark gray clay with a granular structure (A-horizon) yielding to very dark gray clay with a blocky structure (B-horizon) at depths of approximately 8 inches (20 cm) below the ground surface. Sunev clay loam, 0 to 1 percent slopes are located primarily within the eastern portion of the golf course. Sunev soils are located on nearly level to moderately steep stream terraces or footslopes of valley ridges. These soils are classified as Mollisols and are very deep, well drained soils that form in loamy alluvium. These soils are characterized by dark grayish brown loam (A-horizon) overlying brown loam (B-horizon) at an average depth of 12 inches (30 cm) below the ground surface. The Lewisville soil series are primarily located along the western portion of the golf course. Lewisville series soils are classified as Mollisols and are very deep, well drained, and moderately permeable upland soils that form in ancient loamy and clayey calcareous sediments along stream terraces. Lewisville soils are characterized by dark grayish brown silty clay (A-horizon) atop grayish brown silty clay (B-horizon) at a depth of about 16 inches (41 cm) below the surface. Loire soils are primarily located within the southeastern portion of the golf course. Loire clay loam, 0 to 2 percent slopes, occasionally flooded are found on nearly level flood plains. Loire series soils are classified as Entisols and are very deep, well drained, moderately permeable soils that form in alluvial sediments. These soils are characterized by brown silty clay loam (A-horizon)



**Figure 3 : Soils Types Located within the APE**

yielding to grayish brown silty clay loam (C-horizon) at depths of approximately 8 inches (20 cm) below the ground surface (Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture 2016).

The soils in the area are predominately mapped as shallow upland gravelly clays extending across gently sloping upland rises, and therefore, it was anticipated that archaeological deposits, if present, would be shallowly buried or on the ground surface and visible to surface inspection. Within the floodplain of Salado Creek, there is a potential for deeply buried archaeological deposits to exist.

## Methods

### Records Review

Prior to fieldwork, a Pape-Dawson archaeologist performed a literature review to determine whether any previously recorded cultural resources were located within 0.62-mile (1 km) of the APE. The archaeologist consulted the Texas Historical Commission's (THC) Texas Historic Sites Atlas and the Texas Archaeological Sites Atlas, as well as site records and maps at the Texas Archaeological Research Laboratory (TARL) to determine whether any previously recorded archaeological sites, National Register of Historic Places (NRHP) listed properties, Recorded Texas Historic Landmarks (RTHLs), State Antiquities Landmarks (SALs), Official State of Texas Historic Markers (OTHMs), cemeteries, and previously conducted archaeological surveys are located within 0.62-mile (1 km) of the APE. The City of San Antonio's Historic Landmark Sites and Historic Districts GeoDatabases were also consulted.

### Fieldwork

Pape-Dawson archaeologists performed a 100% pedestrian survey of the area within the APE. The pedestrian survey included a visual inspection of the ground surface supplemented by judgmental shovel testing in areas with perceived potential for buried cultural deposits. A total of 12 shovel tests were excavated to investigate the 8.79-acre APE, exceeding the state's minimum standard of 2 shovel tests per acre for project areas measuring between 3 to 10 acres in size. Shovel tests were roughly 11.8 inches (30 cm) in diameter and were excavated in 4 inch (10 cm) levels to sterile clay, bedrock, or to a maximum of 31.5 inches (80 cm) below the ground surface when intact soils were encountered. All soils were screened through ¼-inch wire mesh unless clay concentrations were high enough to require hand sorting. All shovel tests were recorded, visually described, plotted by a Global Positioning System (GPS) unit, and backfilled upon completion.

Pape-Dawson personnel also conducted archaeological trenching near the bridge to be replaced and within three tree planting areas along Salado Creek. A total of four backhoe trenches were excavated to investigate the project's potential to impact deeply buried cultural deposits within the APE. Trenches were approximately 4 to 5 ft (1.2 to 1.5 m) deep and were excavated in 4 inch (10.2 cm) levels with a flat blade bucket. Archaeologists recorded representative trench profiles and mapped the trenches with a handheld Trimble GPS unit. Trenches were backfilled upon completion.

No artifacts were recovered or collected during the course of this archaeological survey. All original paperwork (e.g., photographs, shovel test logs) will be curated at the Center for Archeological Research (CAR) at the University of Texas at San Antonio following the specified standards of preparation.

## Results

### Records Review

The results of this review identified four previously recorded archaeological sites (41BX1678, 41BX1832, 41BX1833, and 41BX1965) within 1 km of the APE. No SALs, OTHMS, RTHLS, or cemeteries were found to have been documented within the 1 km radius. Of the four identified archaeological sites, site 41BX1678 is located within the APE. The site is located within the eastern portion of the golf course and within the easternmost tree planting area (Table 1, Table 2, and Figure 4).

**Table 1: Archaeological Sites within the APE.**

Archaeological Site	Site Type	Landform	Depths of Deposits	Distance & Direction from APE	Additional Information
41BX1678	Prehistoric lithic scatter	Located on the west bank of Salado Creek	0-5 cmbs	Within APE	SHPO determination: Ineligible

**Table 2: Archaeological Sites within 1 kilometer of the APE.**

Archaeological Site	Site Type	Landform	Depths of Deposits	Distance & Direction from APE	Additional Information
41BX1832	Historic homestead	Located along the terraces of Salado Creek	Surface	800 m S	Recording archaeologist recommended the site as eligible for listing as NHRP and SAL.
41BX1833	Prehistoric open campsite	Located along the western terrace of Salado Creek	0-97 cmbs	715 m S	SHPO determination: Undetermined
41BX1965	Historic	Located along the terrace of Salado Creek	Surface	570 m SE	SHPO determination: Undetermined

Site 41BX1678 was originally recorded by Blanton & Associates, Inc. in 2006 during the archaeological investigation of the Salado Creek Hike and Bike Trail Survey. The site was described as a prehistoric lithic scatter of an unknown temporal affiliation. The site is located within the eastern portion of the Willow Springs Golf Course and along the western bank of Salado Creek. The site extends 15-by-5 meters along a north/south-by-west/east orientation. While excavating shovel tests, a core and a chert chunk were located along the surface and a heavily patinated secondary flake was observed 5 centimeters below the surface (cmbs). Due to the extensive cut and fill and land contouring that occurred with the construction and subsequent maintenance of the golf course, the vast majority of the site has been

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it contains restricted  
information**

destroyed (Young 2006). According to the THC's online atlas, the SHPO determined the site to be ineligible for NRHP inclusion in 2006.

During the background review, the previously conducted surveys within the APE and within 1 km buffer were also reviewed. According to the Texas Archaeological Site Atlas nine previously conducted archaeological surveys have occurred within 0.62-mile (1 km) of the APE. The surveys are summarized in Table 3.

**Table 3: Previously Conducted Archaeological Surveys within 1 kilometer of the APE.**

Agency	Firm/Institution	Antiquities Permit #	Date	Survey Type	Location (Approximate)
State Department of Highways and Public Transportation	Unknown	-	1987	Linear	250 m north of the APE along Gemblar Road
San Antonio Water System (SAWS)	SWCA	2185	2000	Linear	200 m east of the APE
Federal Highway Administration (FHWA) and Texas Department of Transportation (TxDOT)	Center for Archaeological Research (CAR) at UTSA	2917	2004	Linear	200 m south of the APE along Salado Creek
FHWA, TxDOT, and City of San Antonio (COSA)	Blanton and Associates	4122	2006	Linear	15 m east of the APE
SAWS	Raba Kistner Consultants	4730	2007	Area	300 m east of the APE
FHWA	CAR	4879	2008	Area	900 m south of the APE along East Houston Street
TxDOT and COSA	GTI	5371	2009	Area	850 m south of the APE
TxDOT	Prewitt and Associates	5485	2010	Area	200 m south of the APE along East Houston Street
San Antonio Independent School District	SWCA	6477	2013	Area	900 m southeast of the APE along Interstate Highway 10

## Fieldwork

Pape-Dawson archaeologists conducted the archaeological survey on January 18, 2016. The field crew walked the APE, visually inspecting the ground surface and cut banks for features and artifacts. Shovel tests were placed in areas displaying minimal disturbance. However, the survey found the majority of the APE to be extensively disturbed. Backhoe trenches were placed along the northern terrace of Salado Creek and within the three tree planting areas. Previous impacts to the APE were photographed and noted as part of the survey effort. The vegetation within the APE largely consisted of well-maintained short grasses. Ground surface visibility varied across the APE ranging from obscured to 30 percent and averaged roughly 10 percent at the time of the survey (Figure 5).



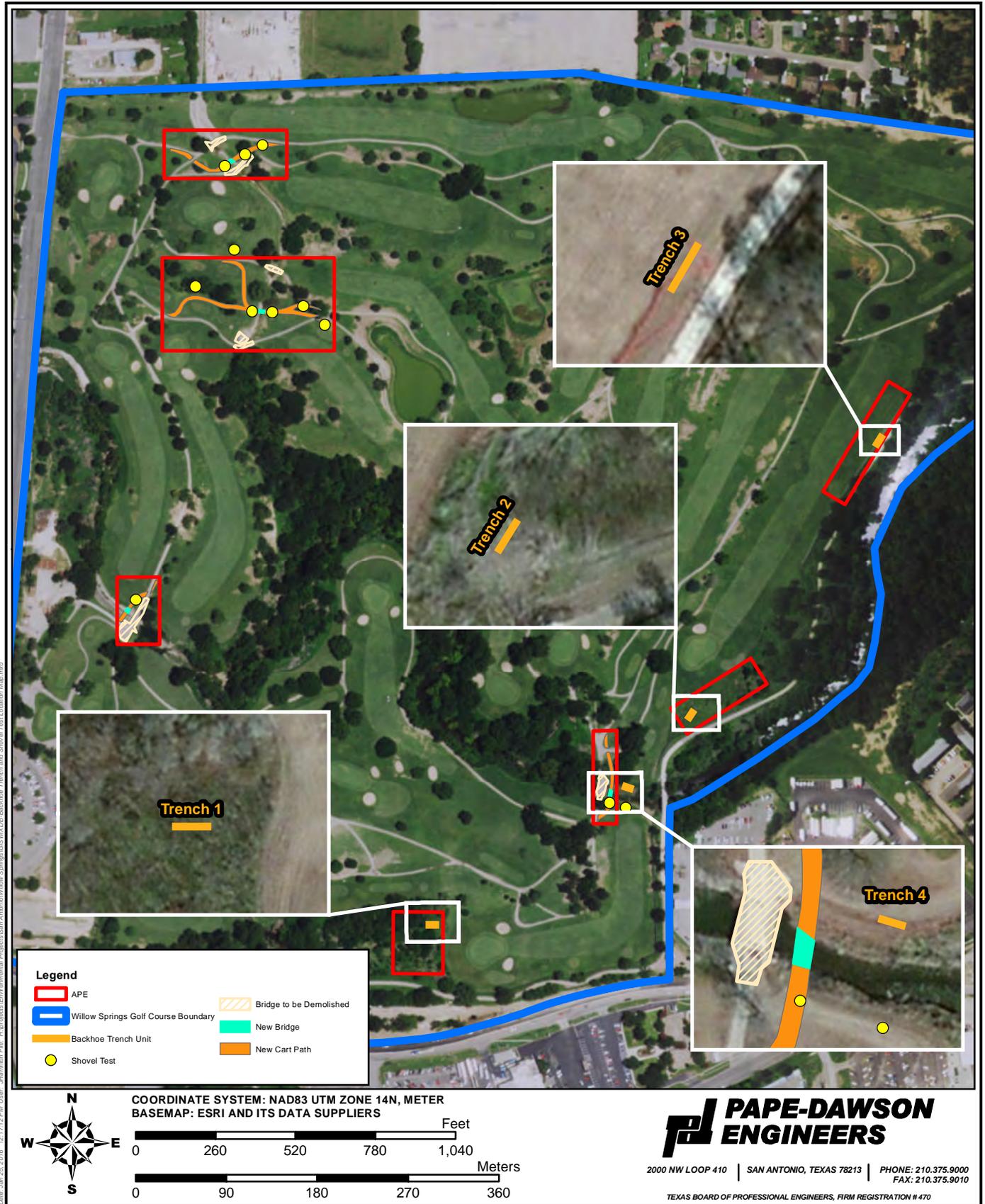
Figure 5: Overview of APE

During the course of this survey, one previously recorded site (41BX1678) was revisited within the limits of the APE. A backhoe trench was excavated near the site boundary. However, no archaeological material associated with site 41BX1678 was encountered.

Disturbances to the APE were found to have resulted from both artificial and natural impacts. Artificial disturbances included historical agricultural activities and the construction and maintenance of the Willow Springs Golf Course. Natural impacts to the APE largely resulted from water erosion as evidenced by areas where soil from the channel embankments has been washed away.

### *Shovel Testing*

A total of 12 shovel tests (Figure 6) were excavated during the survey of the 8.79-acre APE. Shovel tests were excavated in areas with the perceived potential for containing intact archaeological materials. Excavating shovel tests across the APE verified soils documented during the background research. Since the majority of the APE was located across terraces of uplands that emerge above the Salado Creek tributaries, the majority of recorded soils were deep clayey soils belonging to the Houston Black clay soil series. These soils were characterized as a dark grey loamy clay and compact clay ranging from a 10YR3/1 to a 10YR2/1 hue (Figure 7). However, half of the shovel tests (n=5) exposed disturbed soils as evidenced by the presence of a sandy soil that had been brought in to form the artificial contours of the golf course. While ten of the 12 shovel tests were located on upland terrain, the remaining two were placed within the southern floodplain of Salado Creek across from Backhoe Trench 4. Initially, a fifth trench was planned to be excavated within the southern floodplain of Salado Creek. However, upon conversing with the maintenance manager, it was found that numerous irrigation lines were located along the southern bank. To assess the soils within Salado Creek's southern floodplain, two shovel tests were excavated along the southern bank. One shovel test exposed an irrigation line 3.9 inches (10 cm) below the surface and the other contained a very dark grayish brown (10YR3/2) clay that was terminated at 15.7 inches (40 cm) below the surface due to the compact clay. Shovel tests were typically terminated at an average depth of 50 cmbs. Subsurface exposures, in the form of cut banks or terraces, were inspected to provide additional insight into the stratigraphic composition of the valley floor. No cultural resources were encountered during the excavation of the shovel test units.



**Figure 6 : Backhoe Trench and Shovel Test Location Map**

Willow Springs Golf Course Bridge Replacement PN: 8917-00  
 Bexar County, Texas  
 Cultural Resources Research Design  
 January 2016



Figure 7: Shovel Test Profile

### *Backhoe Trenching*

Backhoe trench investigations were conducted within the APE to assess the overall potential for containing deeply buried cultural resources. A total of four backhoe trenches (see Figure 6) were excavated within the APE. Trench 1 was located within the southern portion of the golf course and within the southernmost tree planting area. Trench 2 was situated within the southeastern portion of the golf course and within the south-easternmost tree planting area. Trench 3 was located within the eastern extent of the golf course and within the easternmost tree planting area. Trench 4 was situated within the southeastern portion of the golf course and within the northern floodplain of Salado Creek. Trenches 1 and 3 revealed a layer of fill within the stratigraphic column. The fill layers were usually indicated by an abrupt change in soil or high gravel and/or cobble content. Fill deposits likely reflect areas where the golf course has been built up to achieve a desired elevation or slope.

### **Backhoe Trench 1 (BHT 1)**

BHT 1 was excavated on a gently sloping toe slope of a small upland rise. The trench extended 18 ft (5.5 m) in length and was 21.7 inches (55 cm) wide. During the excavation of the trench, the backhoe exposed four soil zones. Zone I consisted of a very dark grayish brown (10YR3/2) clay loam with fine yellow brownish (10YR5/6) clay mottles that extended from the surface to 11.8 inches (30 cm) below the surface. Many roots, rootlets, and gravels were observed throughout the soil zone. In addition, modern trash consisting of golf balls and plastic fragments were also observed. Directly underneath Zone I, Zone

II consisted of a dark yellowish brown (10YR5/6) clay loam that extended 31.5 inches (80 cm) below the surface. Zone III consisted of a yellowish brown (10YR5/6) silty clay loam fill that extended 50.4 inches (128 cm) below the surface (Figure 8). A few calcium carbonate flecks and masses were observed within the zone. In addition many limestone cobbles and gravels were present throughout the unit. Zone IV consisted of a brownish yellow (10YR6/6) fine sand fill that was located 47.2 inches (120 cm) from the eastern extent of the trench. The sandy fill patch extended 23.6 inches (60 cm) in length and an abandoned concrete water pipe was observed within the zone. The trench was located within one of the tree planting areas and the soils appear to have been disturbed from previous land modifying activities and flooding periods. In addition, large asphalt and concrete aggregate and many limestone cobbles were observed 49.2 feet (15 m) west of the trench.



Figure 8: Overview of Backhoe Trench 1, facing west

## **BHT 2**

BHT 2 was excavated on the nearly level floodplain of Salado Creek and was 180 ft (55 m) northwest of Salado Creek. The trench extended 14.8 ft (4.5 m) in length and was 23.6 inches (60 cm) wide. One soil zone was exposed during the excavation of the trench. Zone I consisted of a very dark grayish brown (10YR3/2) loamy clay that extended from the surface to 53.1 inches (135 cm) below the surface. A moderate amount of roots and rootlets were observed between the surface and 7.9 inches (20 cm) below the surface. In addition, a few limestone gravels and calcium carbonate flecks were also observed. The trench was located within one of the tree planting areas and the soil within the trench appeared intact.

### BHT 3

BHT 3 was located on an upper terrace and was 87 ft (26.5 m) northwest of Salado Creek. The trench extended 16.4 ft (5 m) in length and was 21.7 inches (55 cm) wide. During the excavation of the trench, two soil zones were exposed. Zone I consisted of a very dark grayish brown (2.5YR3/2) silty clay fill that extended 9.8 inches (25 cm) below the surface. Many roots and rootlets were observed throughout the zone. A few angular chert and limestone pebbles and calcium carbonate flecks were also observed. Underneath Zone I, Zone II consisted of a dark yellowish brown (10YR4/6) silty clay that extended to the maximum depth of 46.5 inches (118 cm) below the surface (Figure 9). The zone had a moderate amount of calcium carbonate flecks and nodules and a few small shell fragments. The trench was located within one of the tree planting areas and within the boundary of site 41BX1678.



Figure 9: Backhoe Trench 3, eastern wall profile

### BHT 4

BHT 4 was excavated within the northern floodplain of Salado Creek. The trench extended 13.8 feet (4.2 m) in length and was 23.6 inches (60 cm) wide. A single soil zone was exposed during the excavation of the trench. Zone I consisted of a dark gray (10YR4/1) clay loam that extended from the surface to the maximum depth of 47.2 inches (120 cm) below the surface. A few fine rootlets were observed within the upper 3.9 inches (10 cm) of the trench. The soil became more saturated the deeper the trench was excavated and the water table was observed at 47.2 inches (120 cm) below the surface. Four abandoned irrigation cables were observed within the western extent of the trench and paralleled the trench wall.

## Site Description

### **41BX1678**

#### ***Setting and Description***

Site 41BX1678 is a previously recorded prehistoric lithic scatter of indeterminate temporal affiliation. The site is located on a gently sloping upper terrace that extends along Salado Creek. The site was originally recorded by Blanton & Associates in 2006 during the archaeological investigation of the Salado Creek Hike and Bike Trail Survey. This small site extended 15-by-5 meters along a north/south-by-west/east orientation. While excavating shovel tests, a core and a chert chunk were located along the surface and a heavily patinated secondary flake was observed 5 cmbs. The integrity of the site was reported to have been largely destroyed during the construction and subsequent maintenance of the golf course (Young 2006). The site is currently characterized as well-maintained short grasses and lies along the border of the Willow Springs Golf Course and the Salado Creek Hike and Bike Trail (Figure 10). Based on the disturbed soils exposed during the excavation of BHT 3, it appears the area has undergone significant ground disturbing activities and no cultural materials were observed.



Figure 10: Overview of Site 41BX1678, facing south

### ***Work Performed and Recommendation***

Site 41BX1678 was revisited by Pape-Dawson archaeologists during the course of the current survey. The ground surface was visually inspected, and a backhoe trench (BHT 3) was excavated to investigate the potential for subsurface archaeological deposits within and near the original site boundary. BHT 3 revealed a layer of clay fill from 0 to 25 cmbs. The disturbed soil observed within the trench corroborated with Young's assessment of the disturbed nature of the area. BHT 3 was negative for cultural material. No archaeological deposits associated with site 41BX1678 were observed with the APE during the current survey effort.

## Summary and Recommendations

On January 18, 2016, Pape-Dawson conducted an archaeological investigation for the proposed Willow Springs Project within the City of San Antonio in Bexar County, Texas. The APE for the proposed project is defined as the footprint of the existing bridges and bridge replacements, the realigned golf cart paths, and three tree planting areas. The majority of the APE was found to be heavily disturbed. A total of four backhoe trenches and 12 shovel tests were excavated to investigate the APE in areas displaying minimal disturbance. All shovel tests and backhoe trench units were negative, and no historic or prehistoric artifacts were identified. No archaeological sites were recorded as a result of this survey.

Based on the results of the survey, the Principal Investigator concludes that no significant or NRHP-eligible archaeological properties will be adversely affected by the proposed project. Pape-Dawson recommends that no further archaeological work is necessary and that the project be allowed to proceed. However, if cultural material is encountered during construction, it is recommended that all work in the vicinity should cease and that the discovery be evaluated by a qualified archaeologist who can provide guidance on how to proceed in accordance with state regulations.

## References Cited

Anderson, N.J.

- 2016 *Historic Resources Reconnaissance Survey of the Willow Springs Golf Course Project, San Antonio, Bexar County, Texas*. Pape-Dawson Engineers. Austin, Texas.

Bureau of Economic Geology (BEG)

- 1983 *Geologic Atlas of Texas, San Antonio Sheet*, Robert Hamilton Cuyler Memorial Edition. 1974; rev. 1983. GA0029. Bureau of Economic Geology, The University of Texas at Austin.

Google Earth Map. "*Bexar County*" Map. Imagery Dates: January 1, 1995 to January 14, 2016. Web. 2016 (Accessed January, 2016).

NETR Online

- 2016 Aerial Imagery of San Antonio, Texas 2004. <http://www.historicaerials.com/> (accessed January, 2016).

San Antonio Golf

- 2016 Willow Springs Golf Course. <http://www.sanantoniogolf.com/courses/willow-springs/> (accessed January 2016).

United States Department of Agriculture, Soil Conservation Service (USDA)

- 2016 *Soil Survey of Bexar County, Texas*. <http://websoilseries.sc.egov.usda.gov/> (Accessed January, 2016)

Wermund, E.G.

1996. Physiographic Map of Texas. Bureau of Economic Geology. The University of Texas at Austin.

Young, B.S.

- 2006 *Archaeological Survey for the Salado Creek Hike and Bike Trail between Houston Street and Benz-Engleman Road in the City of San Antonio, Bexar County, Texas*.