

Pedestrian Survey of the Proposed Tuscan Heights Elementary School Campus, Bexar County, Texas



by
Antonia L. Figueroa

Texas Antiquities Permit No. 5043



Prepared for:
North East Independent School District
8961 Tesoro Drive
San Antonio, Texas 78217

Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
Technical Report, No. 14

©2008

Pedestrian Survey of the Proposed Tuscan Heights Elementary School Campus, Bexar County, Texas

by
Antonia L. Figueroa

Principal Investigator
Jennifer L. Thompson

Texas Antiquities Permit # 5043

Prepared for
North East Independent School District
8961 Tesoro Drive
San Antonio, Texas 78217

Prepared by
The Center for Archaeological Research
The University of Texas at San Antonio
Technical Report, No. 14

2008

Abstract

The Center for Archaeological Research at The University of Texas at San Antonio performed an intensive pedestrian survey for the proposed Tuscan Heights Elementary School in northwest Bexar County, Texas. The work was conducted for the North East Independent School District. The proposed Tuscan Heights Elementary School will occupy 24.5 acres. The project area consisted of gently sloping terrain with thin soils and exposed bedrock. The investigations performed by CAR resulted in traversing the area and excavating 20 shovel tests. No sites were identified during the survey conducted by CAR and it is recommended that the proposed construction can proceed as planned. The project was performed under Texas Antiquities Permit #5043 with Jennifer L. Thompson serving as Principal Investigator and Antonia L. Figueroa serving as the Project Archaeologist.

All materials recovered during the investigations and all project related documents are curated at the Center for Archaeological Research.

Table of Contents

Abstract	i
List of Figures	iii
List of Tables.....	iv
Acknowledgements	v
Chapter 1: Introduction	1
Chapter 2: Project Background	3
Project Area and Areas of Potential Effect.....	3
Culture History	5
Previous Archaeological Investigations	8
Chapter 3: Field and Laboratory Methods.....	10
Field Methods.....	10
Laboratory Methods	11
Chapter 4: Results of Archaeological Investigations	12
Summary	15
Chapter 5: Conclusions and Recommendations	16
References Cited.....	17

List of Figures

Figure 1-1. The location of the project area in northern Bexar County, Texas	1
Figure 2-1. Aerial photograph of the project area	3
Figure 2-2. General environment of the project area, exposed bedrock and juniper.....	4
Figure 4-1. Area of Potential Effect (APE) and shovel tests.....	12
Figure 4-2. Informal trail that intersects project area from east to west.....	13
Figure 4-3. Area that has been cleared of vegetation	13

List of Tables

Table 4-1. Shovel Tests Results 14

Acknowledgements

The pedestrian survey could not have been completed without the hard work of the field crew that included Cyndi Dickey and Jason Perez. Thanks to Jorge Cabello and Garret J. Sullivan with North East ISD. Laboratory duties were performed by Jason Perez, under the direction of Marybeth Tomka (laboratory director). Thanks to Steve Tomka (Director) and Raymond Mauldin (Assistant Director) for their continuous support during field projects. Thanks to Jennifer L. Thompson for providing comments on the draft report and aiding with field logistics. Report figures and the final report editing was done by Bruce Moses.

Chapter 1: Introduction

On October 6, 2008 the Center for Archaeological Research (CAR) of The University of Texas at San Antonio (UTSA) conducted an intensive pedestrian survey for the proposed Tuscany Heights Elementary School. The North East Independent School District in San Antonio, Texas is planning to construct a new campus, the Tuscany Heights Elementary School, in northern Bexar County (Figure 1-1). The goal of the survey was to document any prehistoric or historic resources that may be impacted by the proposed improvements associated with the Tuscany Heights Elementary School. The project was conducted under Texas Historical Commission permit #5043. Jennifer L. Thompson served as the Principal Investigator and Antonia L. Figueroa served as the Project Archaeologist.

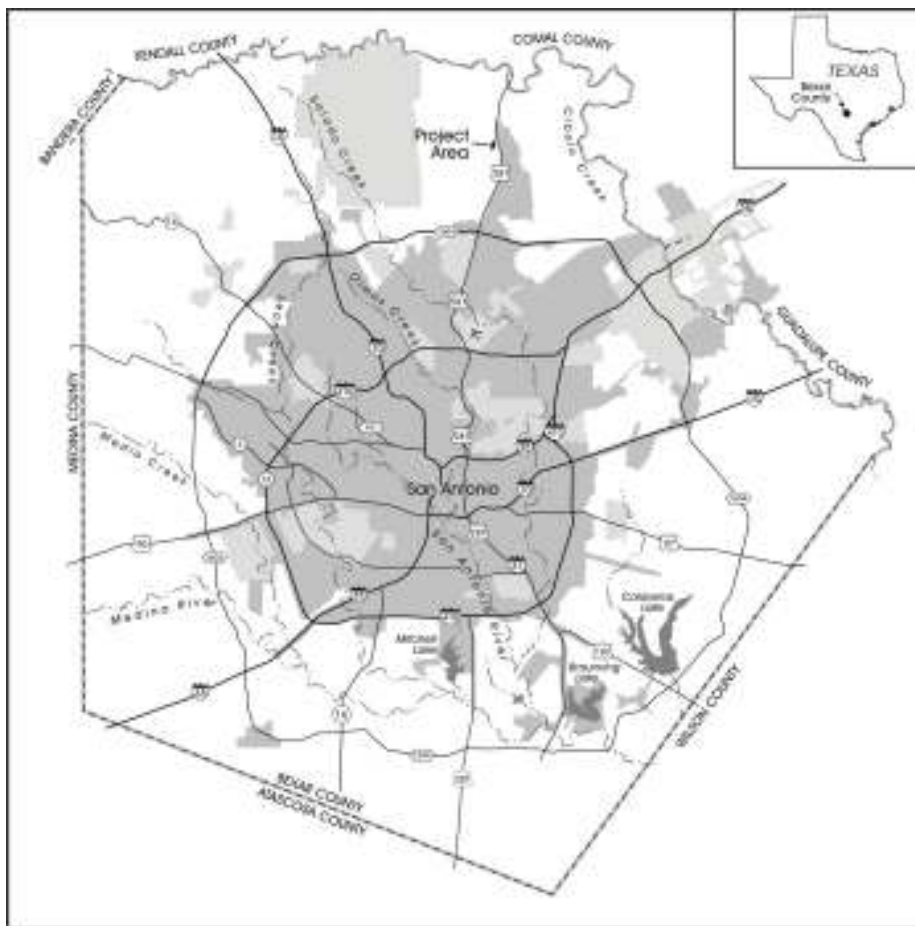


Figure 1-1. The location of the project area in northern Bexar County, Texas.

The survey was conducted because the project is being carried out by a political subdivision of the State of Texas and falls under the jurisdiction of the Antiquities Code of Texas administered by the Texas Historical Commission (THC). The project also requires several City permits and

therefore also falls under the oversight of the City of San Antonio Unified Development Code, Chapter 35, administered by the San Antonio Historic Preservation Division. The Texas Historical Commission, after consultation with the North East ISD, requested a pedestrian survey of the project area prior to construction.

The archaeological investigations conducted by CAR resulted in the excavation of 20 shovel tests. During shovel testing no sites were identified. CAR does not recommend further archaeological work and suggests the proposed Tuscany Heights Elementary School can proceed as planned.

Chapter 2: Project Background

This chapter gives an overview of the project area along with its environs. The discussion on the environs includes flora and soil descriptions. A brief culture history is presented followed by previous investigations within a one mile radius of the project area.

Project Area and Area of Potential Effect

The project area is immediately west of US 281 in northern Bexar County on the Edwards Plateau (Figure 2-1). The project area is depicted on the *Bulverde, Texas 7.5 Minute Series USGS quadrangle map*. The Area of Potential Effect (APE) is bounded by Summerglen Way to the north and Wilderness Oak to the east. To the west of the APE is a gated residential community. The proposed construction activities associated with the Tuscany Heights Elementary School will impact approximately 24.5 acres of land.



Figure 2-1. Aerial photograph of the impact area

The topography in this part of Bexar County is hilly and the source of many springs and streams. Two springs and Mud Creek to the west and Elm Creek to the east are the closest sources of water. The two springs lie to the west within .75 miles of the project area, which ranges in elevation from 1180 to 1260 ft amsl. The APE is situated on a gentle slope and is characterized by thin soils and exposed bedrock (Figure 2-2). Juniper and prickly pear dominate the vegetation community.



Figure 2-2. General environment of the project area, exposed bedrock and juniper.

Flora that is characteristic of the Edwards Plateau region includes juniper (*Juniperus ashei*), plateau liveoak (*Quercus fusiformis*), Texas persimmon (*Diospyros texana*) and agarita (*Berberis trifoliata*). In the western portions of the region, mesquite (*Prosopis glandulosa*) and live oak (*Quercus virginiana*) are dominant tree species (Blair 1950:112). Historic land use of the region has resulted in the spread of juniper.

Soils in the area are part of the general Tarrant-Brackett Association, which includes shallow soils over limestone in the northern third of Bexar County on the Edwards Plateau. This Association is now occupied by large ranches, military reservations, and housing developments.

Such soils are more suited for ranching or wildlife preserves than farming and the rocky soils and sloping terrain are better suited for game than machinery (Taylor et al. 1966).

Tarrant soils that are specific to the APE include the Tarrant Association, Hilly (TaD), found across steep slopes of up to 30 percent and on ridge tops (Taylor et al. 1966). Bedrock outcrops make up 15 to 20 percent of the association. Tarrant soils are clayey, very dark grayish-brown with a calcareous surface and up to ten inches thick. The profile and surface of Tarrant soils include various amounts and types of stone and bedrock outcrops. Runoff is rapid in these areas (Taylor et al. 1966).

Culture History

This section summarizes the culture history for the region. Due to the presence of both prehistoric and historic sites in the areas surrounding the APE, this discussion includes the Paleoindian through Historic periods of Texas.

Paleoindian (11,500-8800 BP)

The Paleoindian period corresponds with the earliest documentation of humans in Bexar County and occurred between 11,500-8800 BP (Collins 1995). Subsistence patterns during this time focused on large, highly mobile mega fauna. This period is typically divided into early and late subperiods. The early portion of the period is associated with Clovis and Folsom adaptations. Lithic technology includes fluted Clovis and Folsom projectile points during the early part of this period. In the later portion of the period, there were stylistic changes in projectile point technology seen in Dalton, Scottsbluff, and Golondrina traditions. While widespread in geographic range, these types occurred in high densities in the High Plains and Central Texas (Meltzer and Bever 1995). As the climate warmed, megafauna gradually died off, and subsistence patterns shifted.

Archaic (8800-1200 BP)

This period is subdivided into the Early, Middle and Late subperiods. The subperiods are distinguished by differences in climate conditions, resource availability, subsistence practices and diagnostic projectile points (Collins 1995). Plant gathering appears to have become an important part of subsistence strategies during this period and was probably even more important during xeric periods. This may explain the appearance of burned rock earth ovens used to cook a variety of plant foods that were otherwise inedible, such as the roots of sotal and yucca (Collins 1995: 383).

In the Early Archaic (8800-6000 BP), there was a shift in subsistence from large game hunting to plant foods and medium and small prey (Collins 1995). Projectile point styles include Angostura and Early Split Stemmed forms. Task-specific tools include Clear Fork gouges and Guadalupe and Nueces bifaces (Turner and Hester 1992:246, 256). Early Archaic sites are located along the eastern and southern portions of the Edwards Plateau in areas with reliable water sources (McKinney 1981). Population densities were relatively low during this subperiod and consisted of small highly mobile bands (Story 1985:39).

The Middle Archaic spans from 6000 to 4000 BP (Collins 1995). Diagnostic projectile points from this period include Bell, Andice, Taylor, Nolan, and Travis. According to Collins (1995), during the Middle Archaic there was a focus bison hunting. However, recent studies suggest an absence of bison during the Middle Archaic (Mauldin and Kemp 2005). Climate was gradually drying as the onset of the Altithermal drought began. Demographic and cultural change likely occurred in response to these hotter and drier conditions.

The last subperiod of the Archaic is the Late Archaic that spans 4000 to 1200 BP (Collins 1995). Dart point diagnostics of the Late Archaic are triangular points with corner notches that include Ensor and Ellis (Turner and Hester 1992:114,122). Other Late Archaic projectile points are Bulverde, Pedernales, Marshall, and Marcos types (Collins 1995). Evidence from the Thunder Valley sinkhole cemetery suggests that hunter-gatherer territoriality may have established during the Late Archaic, possibly as a result of population increase (Bement 1989). Some researchers state the accumulation of burned rock middens ceased at this time though current research has challenged this notion (Black and Creel 1997; Mauldin et al. 2003).

Late Prehistoric (1200-350 BP)

The Late Prehistoric period is marked by the Austin and Toyah phases. During the Austin Phase, the bow and arrow was introduced. Nickels and Mauldin (2001) suggested at the beginning of this period environmental conditions were warm and dry. More mesic conditions appear to accelerate after 1000 BP. Subsistence practices remain relatively unchanged, especially during the Austin Phase. The Austin Phase may represent the most intensive use of burned rock middens (Black and Creel 1997) and includes the Scallorn and Edwards arrow point types (Collins 1995; Turner and Hester 1992).

The presence of bone tempered ceramics (Leon Plain) during the Toyah Phase suggests interaction between Central Texas and ceramic producing traditions in East and North Texas

(Perttula et al. 1995). Ceramics were in common use in East Texas by 2450 BP, but the first Central Texas wares did not appear until ca. 650-700 BP. Other technological traits of this phase include the diagnostic Perdiz point and beveled bifaces. These specialized processing kits are thought to be an adaptation to flourishing bison populations by some (Ricklis 1992) and a sign of intensification of declining bison populations by others (Mauldin et al. 2004).

Protohistoric (ca. 1528-1700)

The Protohistoric period is a term typically used to describe the transition between the Late Prehistoric and the Historic period. This period is not well documented archaeologically in Texas. Some researchers (Wade 2003) argue that the Protohistoric period may coincide with the end of the Late Prehistoric Toyah Interval, spanning from A.D. 1250/1300 to A.D. 1600/1650 (Hester 1995). For the purposes of this report, we define the period as beginning with the Early Spanish explorations in Texas (ca. 1528) and ending with the establishment of a strong Spanish presence in the region in the late 1600s and early 1700s.

During this period, there was intermittent contact between the native groups and Spanish explorers. It was a time before the Spanish economy significantly impacted the indigenous groups in the area. A number of encounters between the indigenous communities and Europeans were recorded, including those of Cabeza de Vaca (1528-1536) and the French settlement of Fort Saint Louis established by Rene Robert Cavelier, Sieur de La Salle (1685-1689). The Spanish sent General Alfonso de Leon into the area in 1689, and in 1691 the area of present-day San Antonio was first visited by Domingo de Teran.

Archaeologically, the period is poorly documented but components dating to it have been identified at several sites in south Texas (e.g., Hall et al. 1986; Inman et al. 1998; Mauldin et al. 2004). Because there is no clear material culture associated with the period, it is difficult to document it archaeologically. Sites that have been deemed as “Protohistoric” may have Late Prehistoric and/or Historic artifacts associated with them, and in several cases radiocarbon dates confirm their Protohistoric designation (Mauldin et al. 2004).

Historic Period

The Historic period is characterized by European contact with Native cultures in the Americas. While Spanish explorers had established their presence in Texas since the 1500s, European settlements, the Spanish in particular, became part of the Texas landscape beginning in the late 1600s. Mission settlements began to be established in Bexar County in 1718 with Mission San

Antonio de Valero (Chapa 1997). The introduction of a new culture is reflected in settlement patterns and material culture.

Previous Archaeological Investigations

The Texas Archeological Sites Atlas lists one areal survey and two linear surveys within one mile of the current project area, but no previous work was recorded within the APE. Information related to the nearby surveys is scant. No archeological sites were recorded on either of the linear surveys. One of these was performed by PBS&J and reported by Michael Smith in 2004, and the second was performed for City Public Services of San Antonio in 2003. One site, 41BX1699, lies within the areal survey performed by HDR for TxDOT (THC 2008a). This survey was reported by William J. Wagner in 2006.

No archaeological sites are currently recorded within the APE. Six archaeological sites and one historic cemetery lie within one mile of the project area. Most of these were recorded in connection with construction along US 281.

41BX177. No information is available for this site in the Texas Archeological Sites Atlas database.

41BX1620. Michael Chavez recorded this prehistoric lithic procurement site as a part of the US 281 Expansion Survey by SWCA for TxDOT in 2005 (though no SWCA surveys are listed on the Texas Archeological Sites Atlas). Chavez observed approximately 30 pieces of debitage composed mainly of primary and secondary flakes and a few cores and utilized flakes distributed across a 170-x-41 meter (m) area within the ROW of US 281. The site was thought to continue west of the highway out of the survey area. No shovel tests or other subsurface excavations occurred, but because the site was disturbed by the construction on US 281, no further subsurface testing was recommended (THC 2008a).

41BX1672. This site includes a burned rock midden at the confluence of Mud Creek and an unnamed creek. The site was recorded by David L. Calame, Sr. with the Texas Archeological Stewardship Network in 2006. Calame found numerous looter holes and reported little of the site remained intact. He estimated the site boundaries at 61-x-30 feet. Interviews with a known collector who had dug at the site report a burial associated with Langtry projectile points. Numerous other projectile point types include Martindale, Travis, Pedernales, Nolan, Bulverde, Marcos, Montell, Pandale, Base Tangs, Marshall, Darl, and Hoxie. The site was recommended for

further testing to determine the site boundaries and explore any additional areas that may have been associated with the burial or may still be intact (THC 2008a).

41BX1697. In 2006, this prehistoric lithic scatter was recorded by Melanie Nichols for PBS&J in association with expansion of US 281 (Nichols and Farabough 2006). Surface inspection showed tested cobbles, cores, modified flakes, and debitage scattered across a 30-x-30-m area within the ROW. No temporally diagnostic artifacts were recovered. More work was recommended though the edge of the site was disturbed by previous road construction (THC 2008a).

41BX1698. Brian Farabough of PBS&J recorded this prehistoric lithic scatter of debitage and tools during a survey as part of the US 281 Impact Evaluation for TxDOT in 2006 (Nichols and Farabough 2006) . Artifacts were scattered across an area measuring 60-x-60-m. At the time of the pedestrian survey, the land was used as a dump. No temporally diagnostic artifacts were recovered. No subsurface excavations occurred during this survey and further examination of the site was recommended prior to the widening of US 281 (THC 2008a).

41BX1699. This site was also recorded in 2006 by PBS&J as part of the US 281 Impact Evaluation for TxDOT (Nichols and Farabough 2006). Surface inspection showed a 30-x-30-m scatter of debitage and a distal fragment of a dart point. No subsurface excavations occurred and no temporally diagnostic artifacts were recorded. The site was described as possessing low potential for significant deposits although recommendations included subsurface testing to determine the site's significance prior to expansion of US 281 (THC 2008a).

Classen-Steubing Cemetery. One historic cemetery is recorded on the Texas Historic Sites Atlas. Only the name and location information are in the database. The cemetery is on the Golf Course property at the end of Wilderness Oak (THC 2008b).

Chapter 3: Field and Laboratory Methods

As part of the archaeological services required by the Texas Historical Commission guidelines and provided to the Sponsor, CAR conducted an intensive pedestrian survey to document any prehistoric or historic resources that may be impacted by the proposed construction associated with the Tuscan Heights Elementary School. This chapter outlines the field and laboratory methods followed during archaeological investigations.

Field Methods

The field methods for a pedestrian survey of 24.5 acres, according to the Minimum Survey Standards set by the Texas Historical Commission guidelines, include a minimum of one shovel test every two acres. The survey crew traversed the project area along 30-meter (m) transects. Shovel tests were not excavated when the terrain slopes were greater than 20 percent, as per THC guidelines. All shovel tests were 30-cm in diameter and excavated in 10-cm levels. Excavated soils were screened through .25-in mesh. CAR recorded the location of all excavated shovel tests with GPS units and plotted their locations on aerial photos. A form was completed for each shovel test that included observations of soil texture and color, artifact counts and provenience, excavation depth of the shovel test, and other notes.

Positive shovel tests were units that contained cultural material at least 50 years old. When positive shovel tests were identified, additional units were excavated at 15-m intervals in each cardinal direction from the original test to determine whether a site was present. Additional shovel tests were excavated until no cultural materials were recovered in two consecutive units.

For this project, a site was defined as follows: 1) locations with at least five artifacts within 30-m² area or; 2) a location containing a single cultural feature such as a hearth, either on surface or exposed in a shovel test or; 3) a location with a positive shovel test containing at least three artifacts within a given 10-cm level or; 4) a location with a positive shovel test containing at least five total artifacts or; 5) two positive shovel tests located within 30 m of each other. All surface artifacts or positive shovel tests that did not meet one of these site definitions were identified as isolated finds.

All artifacts were collected from the field, analyzed, and processed in the CAR laboratory.

Laboratory Methods

All cultural material collected during the survey was prepared in accordance with federal regulation 36 CFR part 79 and in accordance with current guidelines of the Center for Archaeological Research. The collected burned rock was processed in the CAR laboratory. In consultation with THC the burned rock, which possessed little scientific value, was discarded pursuant to Chapter 26.27 (g) (2) of the Antiquities Code of Texas. The data was entered into a Microsoft Access database. Field notes, forms, and hard copies of photographs were placed in labeled archival folders. All field forms were completed in pencil. Documents and forms were printed on acid-free paper and any soiled forms were placed in archival-quality page protectors. A copy of the final report in Adobe Acrobat® file format and all digital material pertaining to the project, including photographs, were burned onto a CD and permanently curated with the field notes and documents at the Center for Archaeological Research.

Chapter 4: Results of Archaeological Investigations

On October 6, 2008 CAR conducted a pedestrian survey of 24.5 acres in northwest Bexar County, Texas for the proposed Tuscan Heights Elementary School. This chapter summarizes the results of field investigations. The fieldwork resulted in the excavation of 20 shovel tests and no archaeological sites were documented. Figure 4-1 depicts the APE and the locations of the excavated shovel tests. Disturbances to the project area include a trail that runs west to east in the northern portion of the project area and areas that have been cleared of brush (Figures 4-2 and 4-3).



Figure 4-1. Area of Potential Effect (APE) and shovel tests.



Figure 4-2. *Informal trail that intersects project area from east to west*



Figure 4-3. *Area that has been cleared of vegetation.*

The CAR crew traversed the project area in north-south oriented transects spaced 30-m apart. Shovel tests (ST) were placed where soil was present along transects. The ground surface was also inspected for cultural material. Soils in the project area were thin and STs only reached a

maximum of 30-centimeters below surface (cmbs). Due to the shallow soils in the project area, only 9 (45%), out of the 20 shovel tests, could be excavated beyond 10 cmbs. The remaining 11 shovel tests only reached depths of 5 to 10 cmbs. Soil observed in shovel tests consisted of dark brown (10YR 3/3) silty loam. Table 4-1 lists the shovel tests with terminal depths and cultural material.

Shovel Test	Terminal Depth (cmbs)	Cultural Material	Total
1	10	burned rock (0-10cmbs)	1
2	5	negative	0
3	10	burned rock (0-10cmbs)	1
4	5	negative	0
5	6	negative	0
6	30	negative	0
7	10	negative	0
8	23	negative	0
9	20	negative	0
10	30	burned rock (0-10cmbs)	3
11	28	burned rock (20-30cmbs)	3
12	5	negative	0
13	5	negative	0
14	20	negative	0
15	30	negative	0
16	6	negative	0
17	18	negative	0
18	15	negative	0
19	7	negative	0
20	5	negative	0
Total			8

Only four (20%) of the shovel tests (STs 1, 3, 10 and 11) were positive for cultural material. ST 1 was identified along the north-central portion of the project area. In it, one piece of burned rock was encountered. Seven additional shovel tests (ST's 5, 6, 10, 11, 17, 18, and 19) were excavated in the cardinal directions at 15 m intervals from the positive test. Shovel tests 10 and 11 contained burned rock. Shovel testing revealed that soils in this area varied in depth from 10 to 30 cm in thickness. The burned rock fragments recovered from the three shovel tests in this area were small in size (2 to 3 cm). Based upon the low frequency of burned rock and the lack of any

clearly prehistoric materials, it is our opinion that these shovel tests did not locate a site. It is highly likely that the pieces of burned rock derive from modern brush fires rather than prehistoric activities.

ST 3 was also identified as positive and it was located in the central portion of the project area. ST 3 contained a single piece of burned rock that was recovered from Level 1 (0-10 cmbs), the final depth of the shovel test. Three additional shovel tests were excavated north and south of the shovel test (STs 7, 12, and 20). Placing shovel tests east and west of Shovel Test 3 was not possible due to a trail and exposed bedrock in this portion of the APE. The additional shovel tests extended to 5 to 10 cmbs before encountering bedrock. STs 7, 12 and 20 were negative for cultural material.

Summary

As a result of the pedestrian survey conducted by CAR, 20 shovel tests were excavated. Shovel tests revealed shallow soils across the project area. Most of the ground surface consisted of exposed bedrock. The shallow deposits encountered on the project area only produced a low frequency of burned rock (n=8) and lacked prehistoric or historical material. Because the burned rock in the positive shovel tests could not be unequivocally identified as prehistoric in origin, the cluster of positive STs (#s 1, 10, and 11) were not defined as a site. Since no sites were identified in the project area during the archaeological investigations, further work is not recommended. The proposed construction associated with the Tuscan Heights Elementary school can proceed as planned.

Chapter 5: Conclusions and Recommendations

On October 6, 2008 the Center for Archaeological Research (CAR) of The University of Texas at San Antonio (UTSA) conducted an intensive pedestrian survey for the proposed Tuscany Heights Elementary School. The APE is located west of US 281 and is bounded to the north by Summerglen Way and to the east by Wilderness Oak. The western boundary of the APE is defined by a residential neighborhood.

The archaeological work was conducted for the North East ISD. The project will require several City permits and therefore falls under the oversight of City of San Antonio Unified Development Code, Chapter 35, administered by the San Antonio Historic Preservation Division. The THC, after consultation with the North East ISD, requested a pedestrian survey of the project area prior to construction. The work carried out by CAR exceeded the minimum standards set by the THC. Although the minimum standards called for 12 shovel tests, 20 were excavated in areas that had some soil accumulation and were not in disturbed areas.

Shovel tests revealed shallow and rocky soils in the APE. The maximum depth reached during excavations was 30 cmbs. Four of the shovel tests produced burned rock that likely derives from modern brush fires rather than prehistoric activities. Based on the absence of prehistoric and historic cultural material and the low probability of buried deposits due to shallow soils across the project area, the areas with burned rock were not defined as sites. CAR does not recommend further work on the project area and the proposed Tuscany Heights Elementary School can proceed as planned.

References Cited

Bement, L.C.

- 1989 *Excavations at 41BP19: The Kennedy Bluffs Site, Bastrop County, Texas*. Texas Archeological Research Laboratory, The University of Texas at Austin. Contract Reports in Archaeology, Report No. 5, Highway Design Division, Texas State Department of Highways and Public Transportation, Austin.

Black, S.L. and D.G. Creel

- 1997 The Central Texas Burned Rock Midden Reconsidered. *In Hot Rock Cooking on the Greater Edwards Plateau: Four Burned Rock Midden Sites in West Central Texas*, by Steve Black, Linda W. Ellis, Darrell G. Creel and Glenn T. Goode, pp.269-305. Studies in Archeology 2. Texas Archeological Research Laboratory, The University of Texas at Austin.

Blair, W.F.

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

Chapa, J. B.

- 1997 *Historia del Nuevo Reino de Leon. In Texas and Northeastern Mexico, 1630-1690*. edited by J. Bautista Chapa and W. C. Foster, p. 91. Translated by N. F. Brierly, University of Texas, Austin.

Collins, M.B.

- 1995 Forty Years of Archeology in Texas. *Bulletin of the Texas Archeological Society* 66:361-400.

Hall, G.D., T.R. Hester, and S.L. Black

- 1986 *The Prehistoric Sites at Choke Canyon Reservoir, Southern Texas: Results of the Phase II Archaeological Investigations*. Choke Canyon Series, No. 10. Center for Archaeological Research, The University of Texas at San Antonio.

Hester, T.R.

- 1995 The Prehistory of South Texas. *Bulletin of the Texas Archeological Society* 66:427-459.

Inman, B.J., T.C. Hill, Jr., and T.R. Hester

- 1998 *Archeological Investigations at the Tortugas Flat Site, 41ZV155, Southern Texas*. Bulletin of Texas Archeological Society 69:11-33.

Mauldin, R.P. D.L. Nickels, and C.J. Broehm

- 2003 *Archaeological Testing to Determine the National Register Eligibility Status of 18 Prehistoric Sites on Camp Bowie, Brown County, Texas*. Archaeological Survey Report, No. 334. Center for Archaeological Research, The University of Texas at San Antonio.

- 2004 *Archaeological Survey and Testing of Selected Prehistoric Sites along FM 48, Zavala County, Texas*. Archaeological Survey Report, No. 352, Center for Archaeological Research, The University of Texas at San Antonio, and Archeological Studies Program, Report No. 67, Environmental Affairs Division, Texas Department of Transportation, Austin.
- Mauldin, R. and L. Kemp
 2005 *An Initial Summary of Bison Presence/Absence Associated with Data Recovery at 41ZV202*. Report on file at the Center for Archaeological Research, The University of Texas at San Antonio.
- Meltzer, D.J. and M.R. Bever
 1995 Paleoindians of Texas: An Update on the Texas Clovis Fluted Point Survey. *Bulletin of the Texas Archeological Society* 66:47-81.
- McKinney, W.W.
 1981 Early Holocene Adaptations in Central and Southern Texas: The Problem of the Paleoindian-Archaic Transition. *Bulletin of the Texas Archaeological Society* 52:91-120.
- Nichols, M. and B.W. Farabough
 2006 *Archeological Impact Evaluation of US 281*. Report on file at PBS&J, PBS&J Austin, Texas.
- Nickels, D.L. and R.P. Mauldin
 2001 *The Project Environment*. In *An Archaeological Survey of Twin Buttes Reservoir, Tom Green County, Texas*, edited by R. Mauldin and D.L. Nickels, pp 25-38. Archaeological Survey Report, No. 300, Center for Archaeological Research, The University of Texas at San Antonio.
- Perttula, T.K., M.R. Miller, R.A. Ricklis, D.J. Prikryl, and C. Lintz
 1995 Prehistoric and Historic Aboriginal Ceramics in Texas. *Bulletin of the Texas Archeological Society* 66:175:235.
- Ricklis, R.A.
 1992 The Spread of the Late Prehistoric Bison Hunting Complex: Evidence from the South-Central Coastal Prairie of Texas. *Plains Anthropologist* 37 (140):261-273.
- Story, D.A.
 1985 *Adaptive Strategies of Archaic Cultures of the West Gulf Coastal Plain*. In *Prehistoric Food Production in North America*, edited by R.I. Ford, pp. 19-56. Anthropological Papers No. 75. Museum of Anthropology, University of Michigan, Ann Arbor.
- Taylor, F.B., R.B. Hailey, and D.L. Richmond
 1966 *Soil Survey of Bexar County, Texas* Electronic Version, U.S. Department of Agriculture Soil Conservation Service. The Soil Conservation Service, Washington, D.C. Accessed at <http://soildatamart.nrcs.usda.gov>, October 2008.

Texas Historical Commission (THC)

2008a Texas Archaeological Sites Atlas, <http://nueces.thc.state.tx.us/>, Accessed October 2008.

2008b Texas Archaeological Sites Atlas, <http://nueces.thc.state.tx.us/>, Accessed October 2008.

Turner, S.E. and T.R. Hester

1992 *Stone Artifacts of Texas Indians*. Second Edition. Texas Monthly and Gulf Publishing Company, Houston.

Wade, M.

2003 *The Native Americans of the Texas Edwards Plateau, 1582-1799*, The University of Texas Press, Austin.