An Intensive Pedestrian Archaeological Survey of Five Northeast Independent School District Campuses in San Antonio, Bexar County, Texas

By
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with a contribution by
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Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Report, No. 413

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Texas Antiquities Committee Permit No. 5619

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Abstract:

From May to June 2010, the Center for Archaeological Research (CAR) of The University of Texas at San Antonio (UTSA) conducted an intensive pedestrian archaeological survey of project areas for five proposed campuses at four separate locations in San Antonio, Texas to fulfill contract requirements with the Northeast Independent School District. The campuses include Vineyard Ranch Elementary School (23 acres), Rosehart Elementary School (22 acres), Knights Crossing Elementary School (30 acres), Bulverde Ranch Elementary School (26 acres), and Bulverde Ranch Middle School (45 acres). The survey was conducted under the requirements of the Texas Antiquities Code. The survey was performed under Texas Antiquities Permit No. 5619, with Dr. Steve Tomka, CAR Director, serving as Principal Investigator and Cynthia Moore Munoz serving as Project Archaeologist. The work was conducted in advance of proposed improvements to the property.

The principal goal of the pedestrian survey was to identify and document all prehistoric and/or historic archaeological sites that may be impacted by the construction of the new campuses. A pedestrian reconnaissance, and 151 shovel tests were used to search for cultural resources on the project areas. Twenty isolated surface finds, including debitage, tools, cores, and burned rock and six new sites, 41BX1864-41BX1869, were documented on the project areas. This report summarizes the results of the fieldwork and provides recommendations regarding the management of cultural resources located on the project area.

The six sites, one located on Vineyard Ranch, two on Knights Crossing, and three on the Bulverde Ranch project areas, consisted of surface scatters of lithic debitage, tools, cores, and burned rock with no associated staining or charcoal. No features were noted on the sites. No sites were located on the Rosehart property. Two sites, 41BX1867 and 41BX1868, were documented on the Knights Crossing property and one, 41BX1869, on the Vineyard Ranch property. One diagnostic artifact, an untypeable dart point, was recovered from the surface of site 41BX1867 placing the site into the Late Archaic. The lack of material depth, features, and the low density scatter of artifacts, in conjunction with evidence that the properties have been subjected to some clearing in the past, suggest that sites 41BX1867, 41BX1868, and 41BX1869 possess low research potential. Therefore, the CAR recommends that these three sites be considered ineligible for listing on the National Register of Historic Places (NRHP) and that they do not warrant formal designation as State Archeological Landmarks (SAL). The CAR also recommends that the construction of the new NEISD campuses on the Vineyard Ranch, Knights Crossing, and Rosehart properties proceed as proposed.

Site 41BX1864, a high density surface scatter on the Bulverde Ranch project area, was originally documented as four separate concentrations of artifacts. However, upon closer inspection, it was noted that cultural material continued between the concentrations, although at a lower density. Artifact collections from twenty-one four meter diameter dogleashes spread across the site suggest that three artifact clusters exist within the site. Sites 41BX1865, a high density surface scatter, and 41BX1866, a low density surface scatter, are located 495 and 310 meters west of 41BX1864, respectively. The undisturbed condition of the Bulverde Ranch property along with the close proximity of the three lithic scatter sites, 41BX1864, 41BX1865, and 41BX1866, and the separate concentrations of artifacts on 41BX1864 suggest research potential related to patterns in spatially clustered lithic procurement sites. The CAR recommends that the sites be considered potentially eligible for listing on the NRHP and formal designation as SALs. In order to investigate the spatial patterning the CAR suggests controlled surface collections at 41BX1864, surface collections at both 41BX1865 and 41BX1866, and subsequent artifact analysis. These methods would also result in reduction of the surface visibility of the sites making them less obvious targets for future collection. The CAR also suggests the development of a teaching module to be used by 7th grade Texas history classes at the proposed Bulverde Ranch Middle School. The module would include a detailed background of the previous owners of the property, the Steubing and Classen families, the ranching history of the property, as well as instruction on the prehistory of sites 41BX1864-41BX1866, potentially utilizing artifacts collected from the sites.

Following laboratory processing and analysis, and in consultation with both the NEISD and the THC, all sediment samples were discarded. This discard was in conformance with THC guidelines. All remaining archaeological samples collected by the CAR, along with all associated artifacts, documents, notes, and photographs, were prepared for curation according to THC guidelines and are permanently curated at the CAR at UTSA. The CAR requested and was assigned the following trinomials for the newly documented sites: 41BX1864, 41BX1865, 41BX1866, 41BX1867, 41BX1868, and 41BX1869). The TexSite records are on file at The Texas Archeological Research Laboratory (TARL).

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Acknowledgements:

The successful completion of this project is owed in a large part to the able and hard-working field crew. They included the following individuals from the Center for Archaeological Research: Kelley Denham, Nathaniel DeVito, Lindy Martinez, Cody Miller, Jason Perez, Steve Smith, and Lynn Wack. Thank you all. Dr. Steve Tomka, CAR Director, served as principal investigator on the project and provided comments on the report. Cyndi Dickey assisted with the identification of soil colors. Bruce Moses and Rick Young drafted the figures and produced the final manuscript. Jennifer Thompson produced the final report layout in InDesign. The author thanks Jorge Cabello and Delfino E. Villarreal Jr. of the Northeast Independent School District for their assistance. The author would also like to thank Darlene Dague for allowing the crew access to her property and for providing information and photographs on the history of the Steubing and Classen families.

Chapter 1: Introduction

The Center for Archaeological Research (CAR) of the University of Texas at San Antonio (UTSA) was contracted by the Northeast Independent School District (NEISD) to conduct an intensive pedestrian archaeological survey on four project areas covering 156 acres (63.1 ha) for five proposed campuses in San Antonio, Texas. The NEISD initiated coordination with the Texas Historical Commission (THC) to address cultural resource protection in these areas. The survey, conducted in advance of proposed improvements, occurred in May and June 2010. The campuses will consist of four elementary schools and one middle school. The principal goal of the pedestrian survey was to identify and document all prehistoric and historic archaeological sites that may be impacted by the proposed construction. The land impacted by the project is owned by the NEISD, a legal entity of the State of Texas. As such, the project has to comply with State Historic Preservation laws and specifically the mandates of the Antiquities Code of Texas. The archaeological survey was performed under Texas Antiquities Permit No. 5619, with Dr. Steve Tomka, CAR Director, serving as Principal Investigator and Cynthia Moore Munoz serving as Project Archaeologist.

All five of the new schools will be located on the far north side of San Antonio, north of North Loop 1604 between Huebner and Bulverde Roads (Figure 1-1). The first of the five proposed campuses, Vineyard Ranch Elementary School, is bounded by North Loop 1604 West to the south, Huebner Road to the west, urban neighborhoods to the north, and undeveloped private property to the east. The project area and the undeveloped property to the east are separated by a tributary to Panther Springs Creek. Panther Springs Creek lies approximately 1,678 meters (1 mile) east of the project area. The 22.5 acre (9.1 ha) project area, approximately 304 meters (east-west) by 386 meters (north-south), is on the Castle Hills U.S.G.S. Quadrangle map. A comparison of aerial and quadrangle maps indicates that the land has undergone extensive clearance in the past potentially impacting any surface or shallowly buried cultural remains.

Knights Crossing Elementary School will be built on 30.3 acres (12.3 ha). An additional 10.7 acres (4.3 ha) of land adjacent to the project area was purchased by the NEISD with the original intent as a road extension from Huebner Road to the elementary school campus. Since the purchase, the City of San Antonio has committed to the extension of Hardy Oak Boulevard. Hardy Oak is currently split by the Steubing Ranch. Because the NEISD will not develop the 10.7 acre parcel, the CAR did not survey this portion of the project area. The project area, located in the Stone Oak subdivision north of Huebner and east of Stone Oak Parkway, is adjacent to an urban neighborhood to the north and bounded by the Steubing Ranch to the east, south, and west. A drainage on the southwest boundary of the property eventually merges with Mud Creek approximately 2,325 meters (1.5 miles) to the southeast. The project area, roughly 488 meters (east-west) by 330 meters (north-south), is on the Bulverde U.S.G.S Quadrangle map. As noted on the above property (Vineyard Ranch), a comparison of the aerial and quadrangle maps suggests that much of the area was wooded in the past but some clearing has left only scattered oaks and mesquites dotting the landscape.

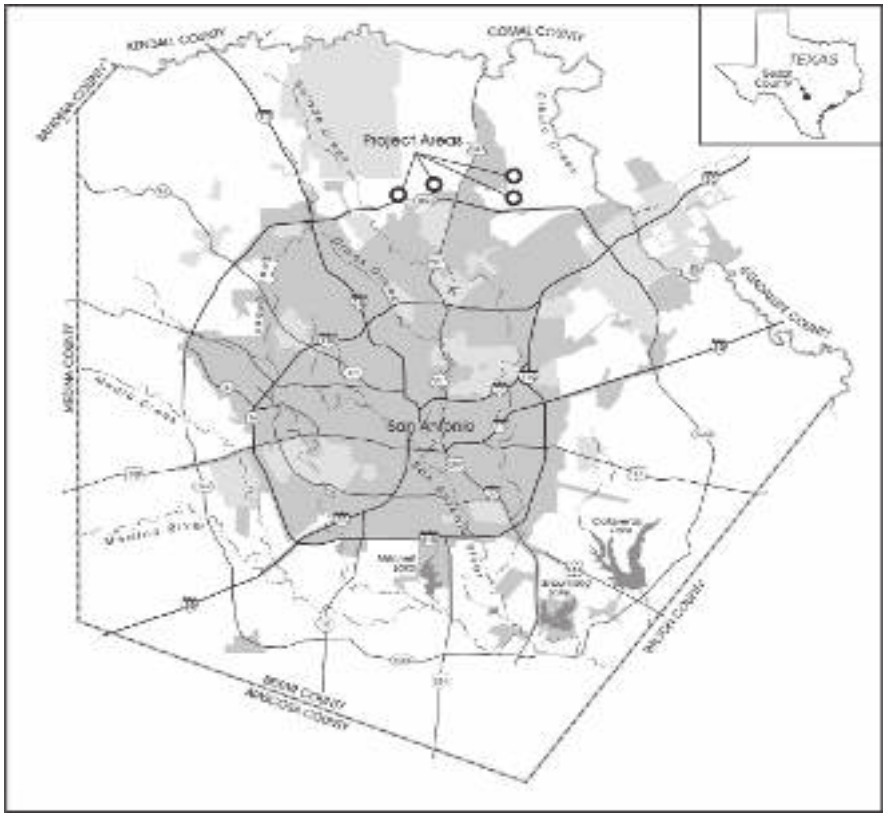

Figure 1-1. *Location of the project areas in Bexar County.*

The third campus, Rosehart Elementary School, will be constructed on the east side of Bulverde Road roughly 1,847 meters (1.2 miles) north of North Loop 1604 West. It is bounded by Rosehart Road on the north and undeveloped private property to the east and south. The 21.8 acre (8.8 ha) project area, approximately 356 meters (east-west) by 364 meters (north-south), is on the Longhorn U.S.G.S. Quadrangle map. A comparison of aerial and quadrangle maps suggests that the property has not been recently cleared of vegetation. Therefore, any surface or shallowly buried cultural deposits on the property may be in situ.

The last two campuses, Bulverde Ranch Elementary School and Bulverde Ranch Middle School, will both be located on a single project area. The elementary and middle school will be built on adjoining acreage, 25.8 acres (10.4 ha) and 45 acres (18.2 ha), respectively. An additional 10 acres (4.1 ha) on the property is designated as a green area. The property is located 340 meters east of Bulverde Road and roughly 4,145 meters (2.6 miles) north of North Loop 1604 West. Two proposed drives will extend from Bulverde Road onto the campuses. The property is adjacent to urban neighborhoods to the north and south and is bounded by undeveloped private property to the east and west. Long Creek is immediately adjacent to the project area on the east. Drainages to this creek are located on the property's west boundary and on the northeastern portion of the property. The project area, approximately 775 meters (east-west) by 430 meters (north-south) is on the Bulverde U.S.G.S. Quadrangle map. A comparison of aerial and quadrangle maps indicates that only the portion of the property that abuts Bulverde Road, the future location of the campus entry ways, has been cleared of the prevailing woody vegetation. Therefore, any surface or shallowly buried cultural material on the location of proposed campus construction may be undisturbed.

The archaeological survey consisted of a one hundred percent pedestrian reconnaissance of the four properties accompanied by shovel testing. The survey included the hand excavation of 151 shovel tests and the documentation of surface cultural material on 25 dogleashes, each 4 meters in diameter. In the process of conducting the survey, six new prehistoric sites were identified (41BX1864 - 41BX1869) and twenty isolated surface artifacts, including debitage, tools, cores, and burned rock were documented.

Three of the sites consisted of small surface scatters of lithic material. Two, 41BX1867 and 41BX1868, were documented on the proposed location of Knights Crossing Elementary School. The seven shovel tests excavated to delineate 41BX1867 were all negative. One diagnostic, an untypeable dart point, dating the site to the Late Archaic, was noted on exposed bedrock and collected. No features were associated with the site. Surface artifacts consisted of debitage (n=3), bifaces (n=2), and a core. No burned rock was evident. Site 41BX1868 was also delineated with seven shovel tests. All the tests were negative and suggested shallow soils. The site is located on a sloping area of exposed bedrock. No diagnostics or features were noted. Material on the surface included debitage (n=3) and bifaces (n=3). The third site, 41BX1869, was noted on the proposed location of Vineyard Ranch Elementary School. Seven shovel tests were excavated to delineate the boundaries and depth of this site. All seven were negative. Artifacts noted on the surface included a core, debitage (n=3), a biface, and burned rock with no evidence of charcoal or staining (n=3). No diagnostics or features were noted. Because of the low artifact densities, lack of features, lack of material depth, and evidence of recent property clearings suggesting probable disturbance of surface cultural material, the CAR recommends that sites 41BX1867, 41BX1868, and 41BX1869 be considered ineligible for listing on the NRHP.

Three prehistoric archaeological sites, 41BX1864, 41BX1865, and 41BX1866, were documented on the proposed locations of the Bulverde Ranch Middle and Elementary Schools. 41BX1864 is a large surface site located on generally sloping terrain (approximately 75% of site) near a drainage associated with Long Creek. Of the 39 shovel tests excavated to delineate site boundaries and depth of cultural material, 7 were positive. All shovel test artifacts were recovered from Level 1 (0-10 centimeters below surface (cmbs)) and consisted of debitage (n=7), a biface fragment, burned rock (n=4), and heat spalls (n=2). No charcoal or staining was noted with the burned rock, no diagnostic artifacts were noted, and no features were associated with the site. Surface artifacts included debitage, cores, and tools. The cultural material observed on 41BX1864 appeared to be spatially clustered into four concentrations. However, because some areas of this site have high visibility due to erosion and animal trails while other areas have low visibility from heavy leaf litter, the possibility exists that the clusters are artificial. To examine the possibility of artifact clusters 21 dogleashes were spread across the site. Artifacts were not collected but were recorded in the field. Cultural material, including debitage (n=198), cores (n=15), bifaces (n=12), one uniface, and retouched flakes (n=6), was noted. The data gathered from the dogleashes suggest that the cultural material on 41BX1864 is spatially clustered into three concentrations.

Nine shovel tests were used to delineate site 41BX1865. Cultural material consisting of a biface fragment and one

specimen of burned rock was recovered from Level 1 in two of the nine tests. Artifacts documented on the surface included debitage (n=16), bifaces (n=3), and a core. No diagnostics or features were noted on the site. Two dogleashes examined on the site resulted in the documentation of ninety artifacts including debitage (n=80), cores (n=5), bifaces (n=2), and retouched flakes (n=3). The final archaeological site on the Bulverde Ranch property, 41BX1866, was evident from a small surface scatter of debitage and cores. None of the eight shovel tests excavated to delineate site boundaries and depth of cultural material were positive. No diagnostics or features were evident on the site. Two dogleashes put in on the site resulted in a single specimen of debitage.

Comparisons of aerial and quadrangle maps suggest that the cultural material on or near the surface on the Bulverde Ranch property may be in primary context. Based on this possibility in conjunction with the spatial clustering of cultural material, the CAR recommends that sites 41BX1864, 41BX1865, and 41BX1866 be considered potentially eligible for listing on the NRHP. Additional work, specifically controlled surface collections along with an analysis of the collected artifacts, should answer questions related to artifact densities and patterning across the Bulverde Ranch property area.

The CAR recommends that construction of the new campuses at the Rosehart, Vineyard Ranch, and Knights Crossing properties proceed as proposed. However, the CAR recommends that sites 41BX1864, 41BX1865, and 41BX1866 should be tested to determine their NRPH eligibility and SAL designation status. Recommendations will be discussed in detail in Chapter 5.

This document summarizes the results of the fieldwork and provides recommendations regarding the management of cultural resources located on the project areas. This report is organized into five chapters. Chapter 2 provides a brief overview of the project area and summarizes the archaeological knowledge about the region. Chapter 3 discusses the fieldwork and laboratory methodology used during the project. The results of the archaeological survey are presented in detail in Chapter 4. Chapter 5 summarizes the work and provides recommendations for the NEISD new campus construction projects.

Chapter 2: Project Overview

This chapter characterizes the environs and culture history of the NEISD project areas. The chapter concludes with a summary of previous archaeological work conducted in the vicinity of the properties. A summary of the historic background of the project areas is presented in Appendix A.

Project Environs

The four project areas, consisting of a total of 156 acres in northern Bexar County, are on the southeastern margins of the Edwards Plateau. Bexar County lies in the transition zone between the northern border of the South Texas Plains portion of the Gulf Coastal Plain and the southern edge of the Edwards Plateau Escarpment. The escarpment edge is characterized by large eroding limestone uplifts and light, calcareous soil. The Edwards Plateau is made up of Cretaceous-age sandstone, shale, dolomite, and limestone deposits. During the Cretaceous Period (66-144 million years ago) shallow seas covered the plateau. As calcareous animals died and sank to the sea floor, thick layers of limestone formed which gradually built immense sedimentary rock formations (Spearing 1991). Elevations on the Edwards Plateau range from roughly 183 m above mean sea level (amsl) on the eastern side to roughly 610 m amsl on the western side. Elevations on the immediate project areas, Vineyard Ranch, Knights Crossing, Rosehart, and Bulverde Ranch, range from 293-308 m amsl, 305-317 m amsl, 271-287 m amsl, and 296-310 m amsl, respectively.

The surface geology for all four properties consists of Lower Cretaceous Edwards Limestone undivided. The Edwards Limestone formation contains abundant medium gray to grayish brown chert (Barnes 1983). The plateau contains a diverse system of aquifers, springs, and rivers. Water percolates through the Lower Cretaceous limestone into the Edwards Aquifer, which lays under 67,200 km^2 of west-central Texas. The outcomes of this process are springs, creeks, and rivers (Barker et al. 1994).

The project areas are located in what McGraw (1985) and Potter et al. (1995) term the Upper Salado watershed. The Upper Salado is defined as the portion of the Salado system that consists of first- and second-order streams (Potter et al. 1995). First-order streams are those supplied completely by runoff from surrounding land, whereas, second-order streams drain local runoff but also include increasing inputs of water from upstream (Hulke 1978). The Upper Salado consists of approximately 22 linear km from the start of five first-order streams (Mud, Long, Elm, Panther Springs Creeks and the portion of the Salado Creek above the Panther Spring confluence) to the confluence of Mud and Salado Creeks. This portion of the Salado has a relatively steep gradient compared to the Middle and Lower systems resulting in a relatively straight stream course with narrow floodplains (Potter et al. 1995). The Upper Salado meanders through the Balconian Biotic Province (Blair 1950). The Balconian Province covers most of the Edwards Plateau and is characterized by a general vegetation region known as the Juniper-Oak-Mesquite Savanna (Arbingast 1976).

The project areas support a diverse assemblage of flora (Figure 2-1) including three vegetation types, Live Oak-Ashe Juniper Parks, Live Oak-Ashe Juniper Woods, and

Figure 2-1. *Typical vegetation of the Edwards Plateau on the project areas.*

Live Oak-Mesquite-Ashe Juniper Parks, as defined by the Texas Parks and Wildlife Department (2010; Figure 2-2). These are found on gently rolling uplands and ridge tops, on shallow limestone soils on hills and escarpments, and on level to gently rolling uplands and ridge tops, respectively (TPWD 2010). Plants found on the project areas from all three vegetation types include Texas oak (*Quercus texana*), shin oak (*Quercus sinuate var. breviloba*), cedar elm (*Ulmus crassifolia*), saw greenbriar (*Smilax bonanox*), Texas wintergrass (*Stipa leucotricha*), little bluestem (*Schizachyrium scoparium var. frequens*), curly mesquite (*Hilaria belangeri*), Texas grama (*Bouteloua rigidiseta*), cedar sedge (*Carex planostachys*), and mat euphorbia (*Euphorbia serpens*). Plants commonly associated with both Live Oak-Ashe Juniper Parks and Live Oak-Mesquite-Ashe Juniper Parks include, netleaf hackberry (*Celtis reticulata*), flameleaf sumac (*Rhus lanceolata*), agarito (*Berberis trifoliolata*), Mexican persimmon (*Diospyrost texana*), Texas prickly pear (*Opuntia lindheimeri*), kidneywood (*Eysenhardtia texana*), Halls panicum (*Panicum hallii*), purple three-awn (*Aristida purpurea*), hairy tridens (*Tridens hirsuta*), two-leaved senna (*Cassia roemeriana*), and rabbit tobacco (*Evax prolifera*). Types associated with Live Oak-Ashe Juniper Woods include evergreen sumac (*Rhus virens*), escarpment cherry (*Prunus serotina var. eximia*), mescal bean (*Sophora secundiflora*), poison oak (*Rhus toxicodendron*), twistleaf yucca (*Yucca rupicola*), elbowbush (*Forestiera pubescens*), Neally grama (*Bouteloua uniflora*), meadow dropseed (*Sporobolus asper var. hookeri*), pellitory nosebum (*Tragia ramosa*), spreading sida (*Sida filicaulis*), and woodsorrel (*Oxalis spp*.; TPWD 2010).

Fifty-seven species of mammals, one turtle, sixteen species of lizard, thirty-six species of snakes, and fifteen frog and toad species have been documented on the Balconian Province (Blair 1950). Extant mammals commonly found in the area include white-tailed deer (*Odocoileus virginianus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteous*), opossum (*Didelphis virginiana*), nine-banded armadillo (*Dasypus novemcinctus*), black-tailed jackrabbit (*Lepus californicus*), raccoon (*Procyon lotor*), and deer mouse (*Peromyscus maniculatis*). Bison (*Bison bison*), mountain lion (*Felis concolor*), and black bear (*Ursus americanus*) were in the area prehistorically (Davis and Schmidly 1994). The Balconian Province is the main breeding area for the golden-cheeked warbler (*Dendroica chrysoparia*) and the black-capped vireo (*Vireo atricapillus*; Kutac 1994).

Climate in this general area is classified as subtropical-subhumid with hot summers and mild winters. Rainfall averages approximately 31 inches per year. The average minimum and maximum temperature for the region is 39°F in January and 96°F in July, respectively. The growing season averages 265 days annually (Handbook of Texas Online 2010).

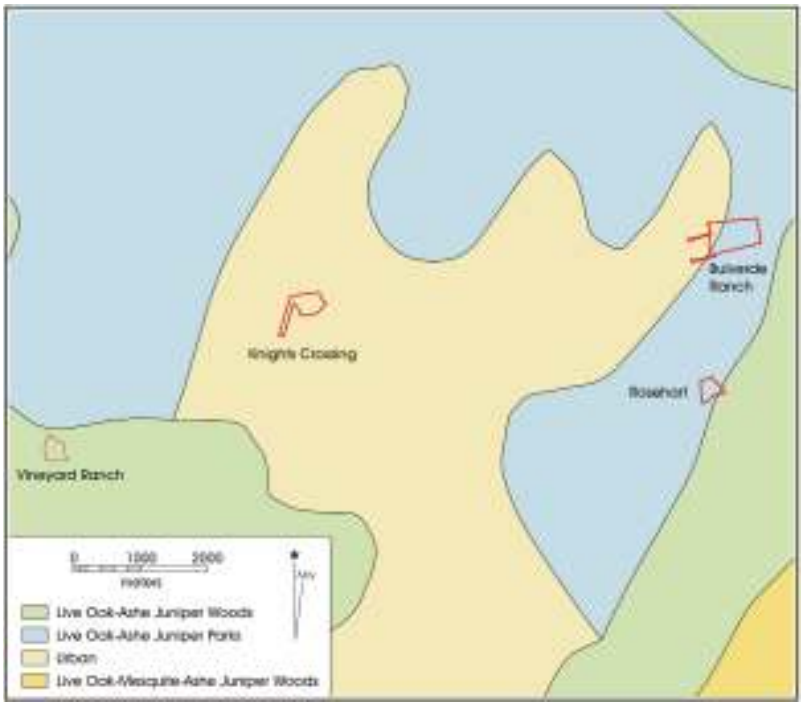

Figure 2-2. *Map showing vegetation types on the project areas.*

The project areas contain three soil units: Crawford and Bexar stony soils (Cb) and Eckrant cobbly clays (TaB and TaC; Figures 2-3 and 2-4). Crawford and Bexar Stony soils consist of soils that are stony clay (limestone and chert) in texture and are shallow to moderately deep over hard limestone. These soils exist as relatively flat, large areas forming an almost continuous band from the northeastern part of Bexar County to slightly south of the city of Helotes. Crawford soils consist of stony clay from the surface to bedrock (86 to 127 cmbs). Bexar soils contain cobbly clay loam to 46 cmbs underlain by 23 cm of cobbly clay. Crawford and Bexar stony soils cover approximately 6% of the Vineyard Ranch, 32% of Knights Crossing, 100% of Rosehart, and 94% of the Bulverde Ranch project areas (Soil Survey Staff 2010; Taylor et al. 1962).

Both Eckrant cobbly clays 1-5% slopes (TaB) and Eckrant cobbly clays 5-15% slopes (TaC) are found on the project areas. These soil types are identical with the exception of the slope degree. Type TaB

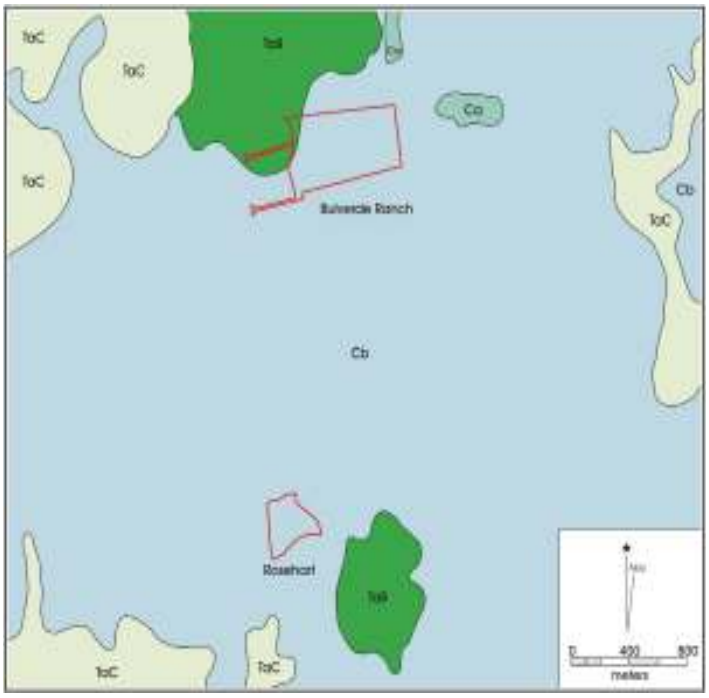

Figure 2-3. *Map showing soil units on the Rosehart and Bulverde Ranch project areas.*

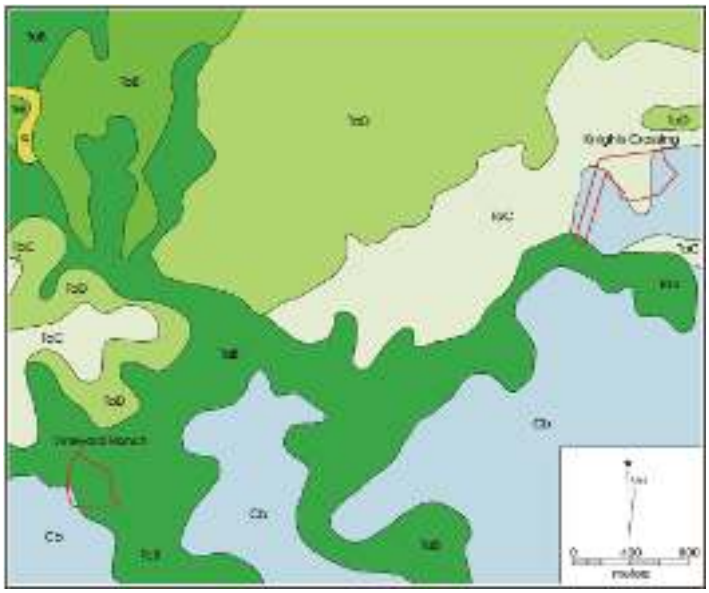

Figure 2-4. *Map showing soil units on the Vineyard Ranch and Knights Crossing project areas.*

occurs on nearly level and gently sloping areas of plateau and prairie topography while Type TaC contains complex, strongly convex or rounded slopes often containing draws and deep canyons. Both soil types develop over hard limestone and are dark colored, clayey, calcareous, and very shallow. The soils consist of cobbly clay to 25 cmbs followed by 21 cm of extremely stony clay loam over bedrock. Type TaB soils are found on roughly 94% of the Vineyard Ranch and 6% of the Bulverde Ranch project areas. Type TaC soils cover approximately 68% of the Knights Crossing property (Soil Survey Staff 2010; Taylor et al. 1962).

Culture History

In Central Texas, researchers have been able to document a long prehistoric sequence that can be broken down into four major time periods: Paleoindian, Archaic, Late Prehistoric, and Historic (Black 1989; Collins 1995; Johnson and Goode 1994; Prewitt 1981). These periods are further divided into sub-periods that are based on particular subsistence strategies and material culture. A brief description of each period follows to illustrate the archaeological potential of the region.

Paleoindian

The Paleoindian Period (11,500-8800 BP) is divided into early and late sub-periods, each characterized by particular projectile point styles and subsistence patterns (Collins 1995). The period begins at the close of the Pleistocene with the earliest evidence of humans in the Central Texas region. Clovis and Folsom point types, and bifacial Clear Fork tools and finely flaked end scrapers characterize the early Paleoindian Period (Black 1989). The first stemmed points (i.e., Wilson), as opposed to lanceolate points (i.e., Angostura and Golondrina), begin to appear during the late Paleoindian Period. In the past, Paleoindian populations have generally been characterized as hunter-gatherers ranging over wide areas in pursuit of now extinct megafauna, such as mammoth and *Bison antiquus*. However, research from the Wilson-Leonard site in Central Texas (Collins 1998) and other perspectives on Paleoindian adaptations (Tankersley and Isaac 1990) indicate that the diet of these early inhabitants may have been much broader. Although exploiting Late Pleistocene megafauna may have constituted a part of Paleoindian subsistence, these peoples are perhaps better characterized as more generalized hunter-gatherers, exploiting a wide variety of plants and animals including large herbivores like deer and bison and small animals such as turtles, alligators, rabbit, and raccoons (Collins 1995; Nickels 2000).

In Central Texas, many of the sites containing Paleoindian materials are found on high terraces, valley margins, and upland locations (Black 1989). This seems to fit with a broader pattern of Paleoindian site distributions where sites are located on landforms providing views of the surrounding landscape, are centered on critical resource zones, or are found in highly productive resource areas (Tankersley and Isaac 1990). Paleoindian artifacts are commonly recovered as isolated finds or from lithic scatters lacking good stratigraphic context including kill, quarry, cache, camp, ritual and burial sites (Collins 1995).

Archaic

The Archaic Period (8800-1200 BP) is identified as a period of intensification of hunting and gathering and a move toward greater exploitation of local resources. As a result, a broadening of the material culture is evident, including the "extensive use of heated rock" in cooking (Collins 1995:383). Food processing technologies appeared to have broadened as features such as hearths, ovens, and middens increase in frequency during this time (Black and McGraw 1985). During this period, large cemeteries were formed indicating an increasing population and the subsequent establishment of territories (Black and McGraw 1985).

The Early, Middle, and Late Archaic subperiods correspond with changes in climatic conditions and resource availability and are distinguished by differences in diagnostic projectile points (Collins 1995; Johnson and Goode 1994). During the Early Archaic (8800-5000 BP), a variety of Early Corner-Notched (Uvalde, Martindale, Baker) and then later Early Basal-Notched (Bell, Andice) points appeared across Central Texas. Early Archaic sites are often recorded on river terraces or on hills overlooking valleys (Hester 1995:439). A new set of temporally diagnostic artifacts are associated with the onset of the Middle Archaic (5000-2400 BP) including Pedernales, Langtry, Kinney, and Bulverde point types as well as triangular bifaces and tubular stone pipes (Black 1989; Hester 1995). In addition to the upland setting, Middle Archaic campsites are commonly located on floodplains, low terraces, and natural levees. The Late Archaic (2400-1200 BP) is characterized by the presence of Shumla, Montell, and Marcos point types and a diminution of projectile point sites near the end of the subperiod (i.e. Ensor, Ellis, Figueroa). Late Archaic sites are usually located near modern stream channels and occur in all topographic settings (Black 1989; Hester 1995). The Late Archaic subperiod is divided into the Initial and Terminal segments.

Late Prehistoric

The Late Prehistoric Period (1200-350 BP) in Central Texas marks a distinctive shift from the use of the atlatl and dart to the use of the bow and arrow (Black 1989; Collins 1995; Hester 1995). The Late Prehistoric is subdivided into early and late subperiods termed Austin and Toyah Phases, respectively. Temporal diagnostics including Scallorn and Edwards arrow points define the Austin Phase (1200-650 BP, Prewitt 1981). It appears that the use of burned rock middens may have reached its peak during this phase (Black and Creel 1997). The subsequent Toyah Phase spans 650-350 BP and includes the first occurrence of pottery in South Texas (Black 1989). Characteristic artifacts of this phase include Perdiz and Cliffton arrow points (Black 1986). Material culture associated with the Late Prehistoric Period points to increasing complexity in subsistence patterns and to very large prehistoric populations (Black 1989; Collins 1995).

Historic

The Historic Period in Texas begins with the arrival of Europeans. Although the Historic Period theoretically begins in Texas with the shipwreck of the Narvaez expedition along the Texas coast in 1528, the majority of the inhabitants of Texas were Native Americans until the late eighteenth century. From AD 1550 to the late 1600s, European forays into South and Central Texas were infrequent. René Robert Cavelier, Sieur de La Salle, established a French settlement, Fort St. Louis, along Matagorda Bay on the Texas coast in 1685. Hunger, disease, and escalating hostilities between the French and the Karankawas, subsequently destroyed the colony (Foster 1998). The first Europeans settled in the region in early AD 1700 (Taylor 1996). The southward incursion of the Comanche and Apache and the northward expansion of Spanish influence led to the displacement of many of the area's indigenous groups. Decimated by disease brought by Europeans, many of the remaining groups sought refuge in the numerous Spanish missions established early in the eighteenth century. The move to the missions significantly impacted the hunter-gatherer way of life and the material culture. Artifacts from the Historic Period reflect European influences and include metal, glass, and ceramics along with pre-Hispanic Goliad wares and lithic arrow points, tools, and gunflints (Taylor 1996).

Previous Archaeological Investigations

A review of the Texas Archeological Site Atlas revealed an abundance of recorded archaeological sites in Bexar County; 1,863 sites as of April 2010 (Texas Historical Commission 2010). Although no previously recorded sites are recorded within the project areas, there are recorded sites within an approximately one to two mile radius of each campus. The majority of these are shallow, lithic scatters with little to no research potential and scant temporal information.

Knights Crossing Elementary School Campus

Eight sites are recorded near the proposed Knights Crossing Elementary School Campus, in an area within a one and one half mile radius of the property (Texas Historical Commission 2010). Six of these sites (41BX751, 41BX752, 41BX753, 41BX755, 41BX756, and 41BX757) were recorded by a volunteer group organized by Thomas Hester under the name Friends of Archaeology. These six sites were recorded on the Texas Archeological Sites Atlas under the project name Stone Oak Survey, which occurred in advance of housing development in the area in 1987. All the sites are eroded, lithic scatters with Early to Late Archaic dart points, debitage and some burned rock. Controlled surface collections occurred but only

of temporally diagnostic artifacts, tools, and "selected" debitage. A similar lithic scatter near this project area, 41BX449, was recorded by Fox and Chadderdon in 1974 as part of a Salado Creek survey. This site consisted of a small surface scatter of debitage and cores. All artifacts were collected (Hester et al. 1974). Site 41BX777, a light surface scatter of debitage, was recorded by the State Department of Highways and Public Transportation (SDHPT) in 1987 as part of the 281 Survey. This large site, approximately 300 m in diameter, is similar to the others in that it is a prehistoric site impacted by erosion, years of agricultural practices, and construction.

Vineyard Ranch Elementary School Campus

Eighteen archaeological sites are recorded within a one and one half mile radius of the Vineyard Ranch Elementary School Campus project area (Texas Historical Commission 2010). The CAR recorded six of these sites in 1977 as separate lithic quarry areas noting hundreds to thousands of specimens of chert artifacts. These sites include 41BX406, 41BX409, 41BX410, 41BX411, 41BX412, and 41BX413. In 2001 as part of the Camp Bullis Survey, these sites were reevaluated by Prewitt and Associates and all but one, 41BX406, were thought to be one large site. Site 41BX411 was the only site in this group to be considered eligible for listing on the NRHP by the CAR. Some of these sites contained hearth features and all contained large amounts of chert materials, either naturally occurring or as artifacts. The depth of the deposit is very shallow with bedrock exposed and in many cases military activities and erosion had impacted the archaeological deposits. No temporal periods were recorded on the sites forms. The only tool types listed were from 41BX409, which included a Gower and Darl point and a Guadalupe tool.

Roughly half a mile south of the previous six sites, site 41BX1700 was recorded by Thomas Hester and Harry Shafer in 2006 prior to the Blanco Crossing Development at the request of the City of San Antonio. They described a burned rock midden, lithic scatter, and a thin sheet of burned rock. No temporal assignment was made. The site was tested with backhoe trenches. Hester and Shafer documented instances of looting in the burned rock midden as well as evidence of disturbances from feral hogs.

Five archaeological sites (41BX9, 41BX22, 41BX875, 41BX878, and 41BX879) lie to the northwest of the Vineyard Ranch Elementary School property. Archaeological site 41BX9 was recorded in 1970 by Paul McGuff and Bill Fawcett after a property owner excavated a stone pendant in a small rock shelter. No formal archaeological work was conducted on the site. In 1972 Mardith Scheutz of the Witte Museum along with avocational archaeologists documented site 41BX22 as part of the San Antonio Historic Survey. Recovered artifacts were kept by the amateurs who completed the work. The site was designated a stratified campsite. 41BX22 was subsequently revisited by Dan Fox and Glenn Goode as part of the Salado Creek Pipeline project. Finally, in 2008, the CAR revisited the site as part of the North Loop 1604 Improvements Project. Shovel tests were excavated on the portion of the site falling across the area of potential effect (APE). No cultural material was recovered in the tests or on the surface. It was determined that the portion of 42BX22 located on the APE was not eligible for the NRHP.

In 1990, Geo-Marine conducted a survey for a planned sewer line as part of the Salado Creek Pipeline project and recorded sites 41BX875, 41BX878, and 41BX879. All three consisted of shallow surface lithic scatters with no temporally diagnostic artifacts. Modern, dilapidated structures in association with broken glass and trash were also observed on sites 41BX875 and 41BX879.

Five sites were documented to the southeast of the Vineyard Ranch project area. Site 41BX65 was recorded during a survey of Loop 1604 in 1971. At that time large quantities of natural chert were noted. Artifacts included large "roughed out" bifaces. The site was thought to have been used as a short-term camp site. In 2008, 41BX65 was revisited by the CAR, but no evidence of the site was found. Site 41BX357 was recorded in 1977 by the CAR as a knapping station. Artifacts observed on the surface included cores, flakes, scrapers, and some burned rock. No features were documented. Burned rock, cores, and debitage were noted in a rock shelter site (41BX363) recorded by the CAR in 1974 during the Salado Creek project (Hester et al. 1974). The CAR revisited the site in 1980 and documented lithic debris, biface fragments, and a Pandale-like projectile point. The CAR staff also recorded 41BX364 during the 1974 survey (Hester et al. 1974). The site was described as a burned rock and lithic scatter. The final site located to the southeast of the project area, site 41BX501, was recorded by Thomas Hester in 1978. Artifacts noted include flakes, core fragments, and quarry blank fragments buried in shallow soil, and lying on limestone bedrock. A limited sample of artifacts was collected.

Site 41BX1737, located to the northwest of the Vineyard Ranch property, was recorded by David L. Calame, Sr as part of the THC Steward program in 2007. 41BX1737 was described as a hill top lithic procurement setting with scattered lithic debitage. The site was considered to have little research potential.

Rosehart Elementary School Campus

Sixteen archaeological sites fall within a one and one half mile radius of the project area for the Rosehart Elementary School Campus (Texas Historical Commission 2010). The CAR surveyed sites 41BX111 and 41BX120 in 1977 as part of the Encino Park project. Both sites are located northwest of the proposed campus. The sites, consisting of cores, debitage, bifaces, and burned chert, were described as deflated lithic scatters (McGraw et al. 1977). Site 41BX1821 was surveyed by SWCA in 2009 as part of the Bulverde Road Improvement project. The site was subjected to a pedestrian survey with shovel testing. All shovel tests were negative. No artifacts were collected but tested chert cobbles, early stage reduction cores, primary and secondary flakes, and debitage were observed on the ground surface.

As a part of the FM 1604 Survey in 1971, UT Austin documented sites 41BX66, southeast of the Rosehart campus, and 41BX68, southwest of the campus. 41BX66 consisted of multiple hearths, surface debitage, and tools. Further testing was recommended. 41BX68 was documented as a highly eroded surface scatter with cores and debitage. The CAR revisited 41BX68 in 1974 noting a heavy concentration of debitage, cores, and tools on the surface. Both 41BX66 and 41BX68 were revisited in 2008 by the CAR as part of the North Loop 1604 Improvements project. No subsurface testing was performed on 41BX66 due to a cement drainage berm across the portion of the site on the APE. Although the berm also affected a portion of the APE on 41BX68, the CAR was able to excavate four shovel tests. All contained road fill. The berm likely destroyed or displaced any cultural material on both sites within the APEs.

Three additional archaeological sites fall to the southeast of the Rosehart property area (41BX301, 41BX1786, and 41BX1787). In 1975 the CAR surveyed site 41BX301 as part of a Salado Creek survey. The site was determined to be an extensive quarry/knapping site based on the large number of quarry blanks, bifaces, and debitage. The CAR recommended a controlled collection at the site. As part of the 2008 Bulverde Marketplace Survey the SWCA documented two new prehistoric sites, 41BX1786 and 41BX1787. Work consisted of pedestrian surveys with shovel testing and backhoe trenching. Both sites were determined to be surficial lithic scatters consisting of debitage and tools. A Frio projectile point was recovered from a shovel test on 41BX1787 dating the site to the Terminal Late Archaic.

The remaining eight sites within one and one half miles of the Rosehart property are located to the southwest of the campus. In 1974 the CAR documented five sites (41BX427, 41BX454, 41BX455, 41BX456, and 41BX457) as part of a Salado Creek project. 41BX427, 41BX455, and 41BX457 are listed as campsites containing lithic scatters with debitage, cores, tools, and burned rock. Of the three, two are documented as containing possible hearths. Site 41BX454 contained a light scatter of debitage and cores and was determined to be a chipping station. 41BX456, a quarry and campsite, consists of a scatter of cores, debitage, tools, and burned rock (Hester et al. 1974). Of the five sites, one (41BX427) was revisited by the CAR in 1977 in advance of the construction of a damn on Salado Creek. Artifacts including bifaces, unifaces, retouched flakes, and debitage were collected from the surface and from shovel tests. No further work was recommended (Brown et al. 1977). Two sites, 41BX904 and 41BX905, were documented in 1990 by C.K. Chandler, an archaeological steward. The first was based on information by a landowner about a pothole that produced over 120 pieces of debitage approximately 0.6 meters below surface lying on top of the bedrock. No surface scatter was evident. 41BX905 consists of a surface scatter of cores, tools, and debitage. Chandler documented the site as a quarry location. Finally, the Texas Site Atlas shows site 41BX1459 on a location map approximately 2,310 meters (1.4 miles) to the southwest of the Rosehart Elementary School project area; however, no information on the site can be found.

Bulverde Ranch Middle School and Elementary School Campuses

Eleven archaeological sites have been documented within a one and one half mile radius of the Bulverde Ranch project area, ten to the west and one to the east (Texas Historical Commission 2010). Of the ten to the west, nine were part of the Encino Park Survey conducted by the CAR in 1977. These nine are 41BX110-41BX112 and 41BX115-41BX120. Sites 41BX111 and 41BX120 were briefly summarized in the preceding Rosehart Elementary School Campus section. The remaining seven sites were described as lithic scatters that included bifaces, cores, scrapers, and debitage. Only 41BX110 and 41BX118 was recommended for further testing or additional survey (McGraw et al. 1977). Site 41BX1821 was surveyed by SWCA in 2009 as part of the Bulverde Road Improvement project. The results of this survey were summarized in the preceding Rosehart Campus section.

One site dated to the Late to Middle Archaic subperiod, 41BX1551, is located to the east of the Bulverde Ranch property. This site was documented by the Archaeological and Cultural Sciences Group (ACSG) in 2003 as part of the Cibolo Canyon Development Project. The project, consisting of a pedestrian survey with shovel testing, revealed intact deposits between 20 and 36 cmbs limited to an area of one meter diameter. Cultural material documented on the site includes debitage, bifaces, point performs, and a Pedernales and a Tortuga projectile point. The site contained a highly disturbed burned rock midden. No further work was recommended.

Chapter 3: Field and Laboratory Methods

As part of the archaeological services provided to the NEISD of Bexar County, and in accordance with the THC guidelines, the CAR was contracted to conduct the following fieldwork: 1) complete an intensive pedestrian survey of 100 percent of all five campus locations accompanied by shovel testing; 2) document any newly discovered archaeological sites; and 3) make recommendations regarding the NRHP and State Archeological Landmark (SAL) eligibility of newly documented sites. This chapter presents the field and laboratory methods used during the archaeological investigations of the NEISD project.

Field Methods

The project areas consist of a combined 156 acres of undeveloped property. The archaeological methodology was consistent across all five campuses, consisting of intensive pedestrian surveys accompanied by shovel testing. To fulfill THC minimum survey standards for non-linear properties of 11 to 100 acres (1 shovel test per 2 acres) 80 shovel tests were distributed along transects across the 156 acres, 11 on Vineyard Ranch (22.5 acres), 16 on Knights Crossing (30.3 acres), 11 on Roseheart (21.8 acres), and 42 on Bulverde Ranch Elementary and Middle schools (80 acres). UTM coordinates for these 80 locations were determined and uploaded into Trimble Geo XT GPS units prior to the CAR's commencement of fieldwork. Shovel tests were located in the field using the GPS map feature. No shovel tests were excavated in areas exceeding 20 percent slopes due to the likely secondary depositional context of such materials. If a predetermined location fell on a slope, the project archaeologist determined a new location for the shovel test. The location of every excavated shovel test was recorded with Trimble Geo XT GPS units.

Shovel tests were 30 cm in diameter and when possible extended to a depth of 60 cm below surface (cmbs). They were excavated in 10 cm increments and all soil from each level was screened through ¼-inch hardware cloth. All encountered artifacts were recovered with appropriate provenience for laboratory processing, analysis, and curation. A 20-x-30 mm bag of soil was recovered from each level. A shovel test form was completed for every excavated shovel test. Data collected from each shovel test included the final excavation depth, a tally of all materials recovered from each 10 cm level, and a brief soil description (texture, consistency, and inclusions). Any additional observations considered pertinent were included as comments on the standard shovel test excavation form.

The pedestrian survey of three of the four properties, Vineyard Ranch, Knights Crossing and Bulverde Ranch, revealed six surface scatters of lithic artifacts. Seventy-one additional shovel tests were excavated to determine the depth of the artifacts and to delineate the boundaries of the cultural material concentrations, six on one scatter at Vineyard Ranch, fifteen on two scatters at Knights Crossing and fifty at three lithic scatters at Bulverde Ranch. Overall, the pedestrian survey of the project areas resulted in the hand excavation of 151 shovel tests, 17, 31, 11, and 92 each on Vineyard Ranch, Knights Crossing, Rosehart, and Bulverde Ranch, respectively (Figures 3-1, 3-2, 3-3, and 3-4).

Twenty-five four meter diameter dogleashes were used to systematically record surface material on the three scatters at Bulverde Ranch. The dogleashes were located on the site using the GPS map feature. A stake was driven into the center of each location to facilitate relocating the dogleashes if additional work is called for. Each four meter diameter dogleash (12.6 m^2) was divided into quadrants, i.e. northwest, northeast, southeast, and southwest. The ground surface was picked over and each artifact was recorded by quadrant. The artifacts were categorized (debitage, cores, bifaces, unifaces, and retouched flakes) and were examined for the presence or absence of patination and percent cortex. No diagnostic artifacts were observed.

The survey also included a 100 percent pedestrian reconnaissance of the 156 acre property areas. The CAR field crew traversed the project area along north-south (Bulverde Ranch) or east-west (Rosehart, Vineyard and Knights Crossing) transects, spaced approximately 30-meters apart, using aerial photographs and hand-held compasses. This resulted in 62 transects. Surface features and artifacts were noted and recorded with Trimble Geo XT GPS units. All surface artifacts (n=20) not associated with a site were recorded as isolated finds.

Site Recording and Identification

For the purposes of this survey, newly encountered archaeological sites were defined as locations containing a certain number of cultural materials or features that are at least 50 years old within a given area. The definition of a site used for this project was as follows: (1) Five or more surface artifacts within a 15 meter radius (ca. 706.9 m^2), or (2) a single cultural feature, such as a hearth, observed on surface or exposed in shovel testing, or (3) a positive shovel

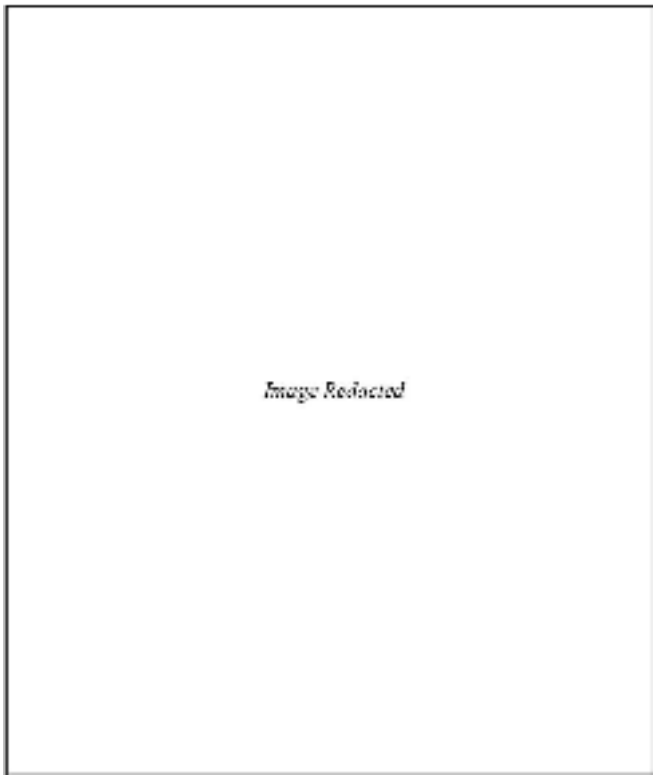

Figure 3-1. *The location of shovel tests on the Vineyard Ranch project area.*

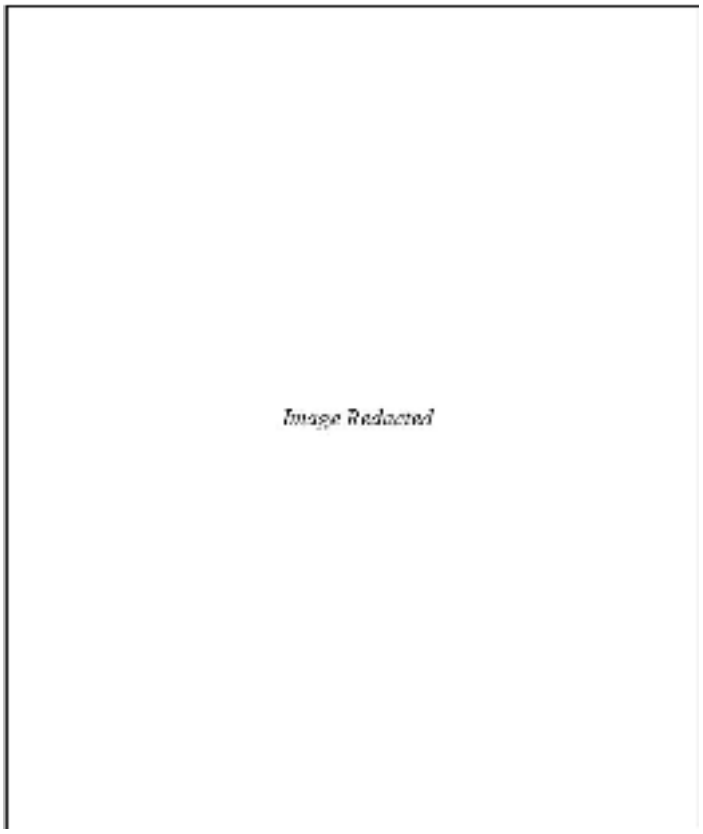

Figure 3-2. *The location of shovel tests on the Rosehart project area.*

Figure 3-3. *The location of shovel tests on the Knights Crossing project area.*

test containing at least three artifacts within any given 10 cm level, or (4) a positive shovel test containing at least five total artifacts, or (5) two positive shovel tests located within 30 meters of each other.

If cultural materials meeting the minimum criteria for an archaeological site were encountered in a shovel test or on the surface, a minimum of six shovel tests were excavated at close intervals to define the extent of the distribution. The site boundaries were then plotted on aerial photographs and a topographic quadrangle map and location data was collected with a GPS unit. The location of any cultural features, surface artifact densities, and any temporally diagnostic artifacts were plotted with the GPS. Digital photographs were taken of each site and Texas Site Forms were prepared for all new sites. Artifacts encountered that did not meet the minimum requirements for a site were treated as isolated finds. These artifacts were recorded with a GPS unit and their locations were plotted on the maps and aerials. All artifacts recovered from shovel tests and all diagnostic artifacts documented on the surface were collected.

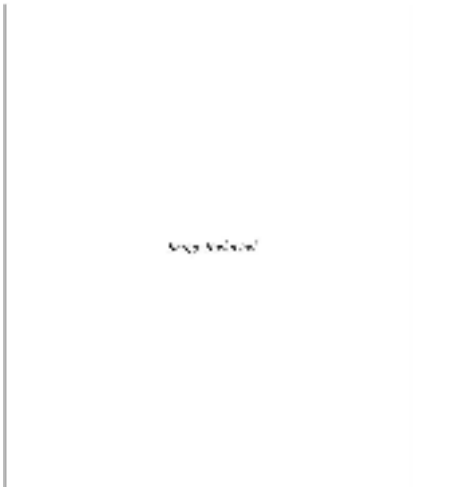

Figure 3-4. *The location of shovel tests on the Bulverde Ranch project area.*

Archaeological Laboratory Methods

Cultural materials and records obtained and/or generated during the project were prepared 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 TARL. Digital photographs were printed on acid-free paper and labeled with archivally appropriate materials and placed in archival-quality sleeves. All field forms were completed with pencil. Field notes, forms, photographs, and drawings were printed on acid-free paper and placed in archival folders. A copy of this survey report and all computer disks pertaining to the investigations were stored in an archival box and curated with the field notes and documents. Following laboratory processing and analysis, and in consultation with both the NEISD of Bexar County and the THC, all sediment samples were discarded. This discard was in conformance with THC guidelines. Upon completion of the project, all remaining materials and records will be permanently curated at the CAR facility.

Chapter 4: Survey Results

The survey of the NEISD project areas was completed in June 2010. This chapter discusses the results of the pedestrian survey. The fieldwork consisted of an intensive pedestrian survey accompanied by shovel testing (n=151), dogleashes (n=25), and a 100 percent pedestrian reconnaissance of the four project areas (156 acres) slated for construction of five NEISD campuses. The pedestrian survey and shovel testing of the project areas revealed no evidence of historic artifacts and, with the exception of the Bulverde Ranch property, no instances of subsurface prehistoric cultural material. Six scatters of surface artifacts were documented and designated as archaeological sites 41BX1869, 41BX1867, 41BX1868, 41BX1864, 41BX1865, and 41BX1866. Isolated finds, consisting of debitage (n=12), tools (n=4), cores (n=3), and burned rock (n=1) were noted on all but one of the project areas (Rosehart). This chapter presents the results of the archaeological survey for each project area.

Vineyard Ranch Elementary School Campus

The pedestrian survey of the Vineyard Ranch Elementary School project area (22.5 acres) included the excavation of 17 shovel tests and the pedestrian reconnaissance of 13 transects. One new archaeological site, 41BX1869, was documented. All of the 17 shovel tests were terminated before the target depth of 60 cmbs due to the exposure of bedrock (Table 4-1). Termination depths ranged from 8 to 42 cmbs. All but one of the shovel tests was negative for cultural material. One heatspall was uncovered in Level 2 (10-20 cmbs) in Shovel Test (ST) 10. The soils from the 17 shovel tests were for the most part a consistently black (10YR 2/1) silty clay containing 5-25% limestone pebble inclusions to termination. Three of the tests, STs 3, 6, and 14 consisted of a very dark grayish brown (10YR 3/2) silty clay with 5-25% limestone pebble inclusions in the first two levels (0-20 cmbs) turning in ST 14 to a dark reddish brown (5YR 3/2) heavier clay with fewer pebble inclusions in Levels 3 and 4 (20-40 cmbs).

In addition to the shovel testing the survey consisted of a 100 percent pedestrian reconnaissance of the 22.5 acre project area. The CAR field crew traversed the project area along transects evenly spaced 30 meters apart. During the reconnaissance, two surface artifacts, both cores, were recorded as isolated finds at two isolated spots on the property. These artifacts were not found in concentrations meeting the CAR's definition of an archaeological site (i.e., five or more surface artifacts within a 15-meter radius). A lithic scatter qualifying as a site was also documented and is discussed in the following section.

Table 4-1. Results and Termination Depths of Shovel Tests on the Vineyard Ranch Project Area

Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results
1	3	21	Bedrock	Negative
2	2	18	Bedrock	Negative
3	2	16	Bedrock	Negative
4	3	21	Bedrock	Negative
5	5	42	Bedrock	Negative
6	2	18	Bedrock	Negative
7	3	29	Bedrock	Negative
8	1	10	Bedrock	Negative
9	3	24	Bedrock	Negative
10	2	22	Bedrock	1 heatspall in Level 2
11	1	8	Bedrock	Negative
12	3	26	Bedrock	Negative
13	2	18	Bedrock	Negative
14	4	38	Bedrock	Negative
15	4	38	Bedrock	Negative
16	3	29	Bedrock	Negative
17	2	17	Bedrock	Negative

Archaeological Site 41BX1869

In the process of conducting the Vineyard Ranch campus survey, one new archaeological site, 41BX1869, was identified (Figure 4-1). The site, consisting of a sparse surface scatter of lithic debitage (n=3), a biface (Figure 4-2), a core, and burned rock (n= 3) not associated with charcoal or staining, is located on the northwestern quadrant of the project area. The terrain is fairly level and consists of patches of prickly pear, grasses, wildflowers, and roughly 40% exposed bedrock (Figure 4-3). Visibility is approximately 75%. Seven shovel tests, one located in the scatter and six on the edges of the scatter, were excavated to determine the depth of the site and to delineate the site's boundary. All shovel tests were negative. Based on the visible edges of the scatter, the site covers 705 m^2. No diagnostic artifacts or features were noted. Because of the low quantity of cultural material, lack of material depth, features, and diagnostics, the potential for future research value is low.

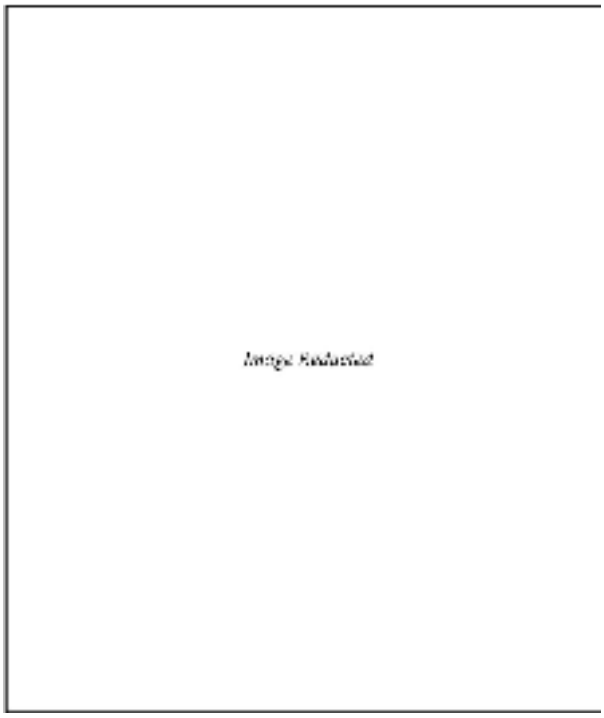

Figure 4-1. *Aerial map of 41BX1869, site boundary (blue), location of shovel tests (red) and location of surface artifacts (yellow).*

Knights Crossing Elementary School Campus

Thirty-one shovel tests were excavated and eleven transects were walked on the Knights Crossing project area (30.3 acres). Two new archaeological sites, 41BX1867 and 41BX1868, were recorded. Three of the thirty-one shovel tests (10%) were excavated to 60 cmbs (Table 4-2; Figure 4-4). The remaining 28 shovel tests were terminated at depths ranging from 5 to 52 cmbs due to large roots (4%) and bedrock (96%; Figure 4-5). All of the shovel tests were negative. With three exceptions, STs 1, 17, and 19, the soils in the shovel tests were black (10YR 2/1) in the upper levels turning to a very dark grayish brown (10YR 3/2) in the 20-40 cmbs range, then a dark reddish brown (5YR 3/2) at roughly 40 to 60 cmbs. Shovel Tests 1, 17, and 19 were all located in a 750 m^2 area on the northwest quadrant of the project area. The soils were a dark reddish brown to termination (20 cmbs) in ST 1, were brown

Figure 4-2. *Biface location on 41BX1869.*

Figure 4-3. *Overview of site 41BX1869 on the Vineyard Ranch project area.*

Table 4-2. Termination Depths of Shovel Tests on the Knights Crossing Project Area

Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination		Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination
1	2	20	Bedrock		17	3	29	Bedrock
2	3	29	Bedrock		18	6	52	Bedrock
3	2	15	Bedrock		19	3	28	Bedrock
4	1	8	Bedrock		20	1	9	Bedrock
5	1	7	Bedrock		21	4	36	Bedrock
6	1	5	Bedrock		22	6	60	Complete
7	4	31	Bedrock		23	6	60	Complete
8	4	34	Bedrock		24	4	40	Bedrock
9	1	8	Bedrock		25	2	16	Bedrock
10	6	60	Complete		26	2	15	Bedrock
11	2	11	Bedrock		27	3	28	Bedrock
12	2	16	Bedrock		28	3	22	Bedrock
13	6	52	Bedrock		29	3	30	Bedrock
14	4	35	Bedrock		30	2	15	Bedrock
15	2	16	Bedrock		31	3	24	Large root
16	3	26	Bedrock					

Figure 4-4. *Termination of Shovel Test 23 and 60 cmbs on the Knights Crossing project area.*

Figure 4-5. *Termination of Shovel Test 24 at 40 cmbs upon exposing bedrock on the Knights Crossing project area.*

to 10 cmbs turning to dark reddish brown to termination (29 cmbs) in ST 17, and were dark reddish brown in the first two levels (0-20 cmbs) becoming dark grayish brown to termination (29 cmbs) in ST 19. Across the project area, sediments were consistently composed of silty clay with small to medium-sized limestone pebble inclusions (15-65%).

The CAR field crew walked the project area along 11 transects evenly spaced 30 meters apart. During the reconnaissance, four surface artifacts, two pieces of debitage, one core, and one wedge tool, were recorded as isolated finds on the property (Table 4-3). The wedge is not diagnostic (Figure 4-6). These artifacts were not found in concentrations meeting the CAR's definition of an archaeological site (i.e., five or more surface artifacts within a 15-meter radius). Two lithic scatter qualifying as sites were also documented and are discussed in the following section (Figure 4-7).

Figure 4-6. *Wedge tool recorded as an isolated find on the Knights Crossing project area.*

Table 4-3. Isolated Surface Artifacts on the Knights Crossing Project Area

Property Quadrant	Surface Provenience	Tool	Debitage	Core
SW	Southeast of ST 7	1		
NW	West of ST 5		1	
NE	West of ST 9			1
SE	East of ST 8		1	
Totals		1	2	1

One small sinkhole with a diameter of approximately 0.3 meters was documented near the eastern border of the project area (Figure 4-8). Although caves and sinkholes can be sites of prehistoric interments (Potter et al. 2005), the small opening of this feature makes it an unlikely burial site. Sinkhole burials do not usually occur in association with archaeological deposits (Perttula 2001). Two similar small sinkholes were brought to the attention of the CAR by personnel with the NEISD but were not documented by the CAR during the pedestrian reconnaissance.

Figure 4-8. *Sinkhole located near eastern boundary of the project area (note that the diameter is .3 meters).*

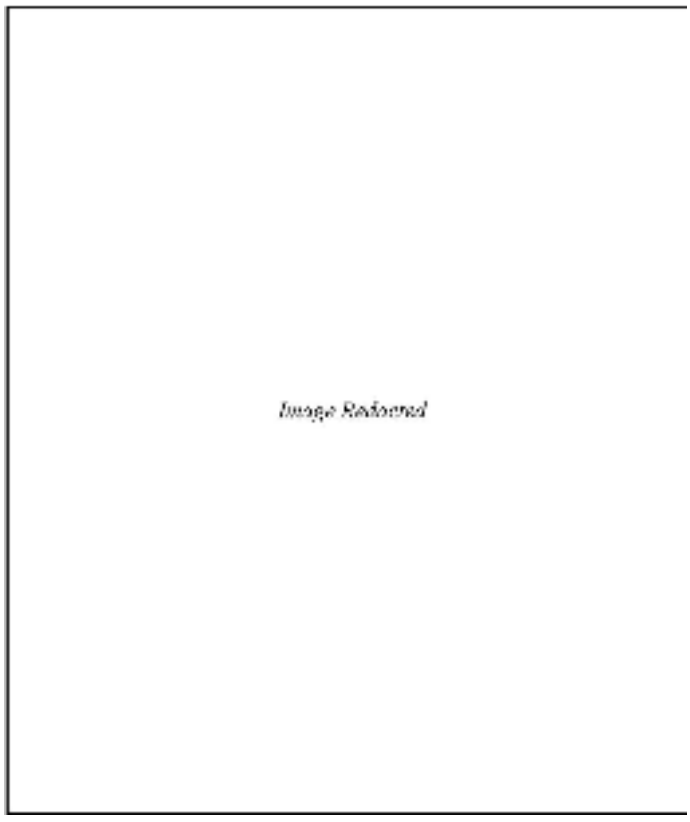

Figure 4-7. *Map of Knights Crossing project area showing 41BX1867, 41BX1868, and isolated finds.*

Archaeological Sites 41BX1867 and 41BX1868

In the process of conducting the Knights Crossing campus survey, two new archaeological sites, 41BX1867 and 41BX1868, were identified. Site 41BX1867 is a small surface scatter of lithic debitage (n=3), bifaces (n=2), a core, and an untypeable Late Archaic dart point (Figure 4-9). Although the site, located on the northwestern quadrant of the project area, is 300 meters northwest of a drainage, the area is fairly level. Vegetation on the site consists of patches of grasses, wildflowers, prickly pear, and oak trees. A large portion of 41BX1867, approximately 50%, is exposed bedrock (Figure 4-10) Surface visibility is approximately 50%. Eight shovel tests, one located in the scatter and seven on the edges of the scatter, were excavated to determine the depth of the site and to delineate the site's boundary. All shovel tests were negative. No features were noted. Based on the visible edges of the scatter, the site covers 922 m^2 (Figure 4-11). Because of the low quantity of cultural material, lack of material depth,

Figure 4-9. *Untypeable Late Archaic dart point recovered from 41BX1867 on the Knights Crossing project area.*

Figure 4-10. *Overview of site 41BX1867 on the Knights Crossing project area.*

and lack of features, the potential for future research value is low.

The second archaeological site, 41BX1868, consists of a small surface scatter of lithic debitage (n=3) and bifaces (n=3). The site, located on the south central portion of the Knights Crossing property, is situated on a slope with roughly 75% exposed bedrock. Vegetation consists of short grasses, prickly pear, wildflowers and a stand of oaks and cedar at the top of the slope (Figure 4-12). Ground visibility is roughly 90%. Seven shovel tests, six on the edges of the scatter and one in the middle, were excavated to delineate the boundary of 41BX1868 and to determine the depth of cultural material. All shovel tests were negative and no features or diagnostic artifacts were noted. The surface scatter covers an area of 705 m^2 (Figure 4-13). The potential for future research value is low based on the low density scatter of artifacts, the

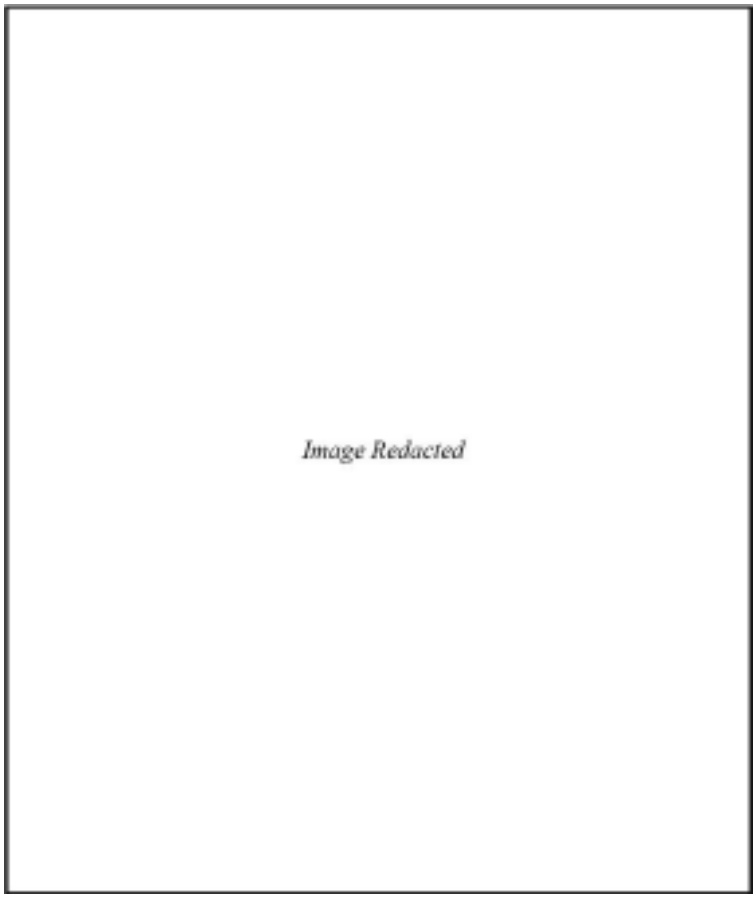

Figure 4-11. *Aerial map of 41BX1867 showing site boundary (blue), location of shovel tests (red), and location of surface artifacts (yellow).*

Figure 4-12. *Overview of site 41BX1868 on the Knights Crossing project area.*

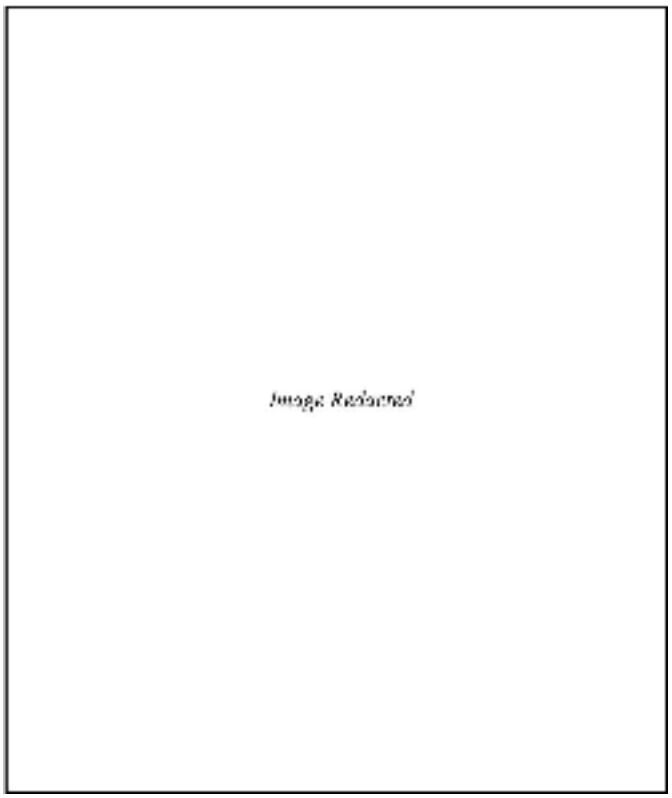

Figure 4-13. *Aerial map of 41BX1868 showing site boundary (blue), location of shovel tests (red), and location of surface artifacts (yellow).*

lack of material depth, and the lack of diagnostics and features.

Rosehart Elementary School Campus

The pedestrian survey of the Rosehart project area (21.8 acres) consisted of the excavation of 11 shovel tests and the pedestrian reconnaissance of 13 transects. No archaeological sites were documented on the property. All 11 of the shovel tests excavated on the property were terminated before the target depth of 60 cmbs due to the commencement of bedrock. Termination depths ranged from 12 to 44 cmbs (Table 4-4). All of the shovel tests were negative. Soil colors ranged from black (10YR 2/1) to very dark brown (10YR 2/2) to dark brown (7.5YR 3/2) from the surface to bedrock in all shovel tests levels except for Level 3 (20-30 cmbs) in ST 4 and Levels 3 and 4 (20-35 cmbs) in ST 6 where the color changed to a dark reddish brown (5YR 3/2). Sediments on the project area were made up of compact silty clays with medium to large-sized limestone pebble inclusions (10-80%). The clay content increased in the dark reddish brown sediment noted in STs 4 and 6.

In addition to the shovel testing the survey consisted of a 100 percent pedestrian reconnaissance of the project area. The CAR field crew traversed the project area along transects evenly spaced at 30 meters. Surface visibility varied across the project area with some areas heavily vegetated and others open with exposed bedrock (Figure 4-14). No surface artifacts or features were noted during the reconnaissance. No evidence of cultural activity was evident on the Rosehart project area.

Figure 4-14. *The Rosehart Elementary School project area.*

Table 4-4. Termination Depths of Shovel Tests on the Rosehart Project Area

Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination
1	3	23	Bedrock
2	3	25	Bedrock
3	3	26	Bedrock
4	3	30	Bedrock
5	4	40	Bedrock
6	4	35	Bedrock
7	5	44	Bedrock
8	3	30	Bedrock
9	2	12	Bedrock
10	3	21	Bedrock
11	5	42	Bedrock

Bulverde Ranch Elementary and Middle School Campuses

A total of 92 shovel tests were excavated, 25 dogleashes were recorded, and 25 transects were walked on the Bulverde Ranch project area. Three new archaeological sites were recorded on the property: 41BX1864, on the proposed green area, and 41BX1865 and 41BX1866 on the site of the proposed elementary school campus (Figure 4-15). Of the 92 shovel tests, 3 (3%) were excavated to the target depth of 60 cmbs (Table 4-5). The remaining 89 shovel tests were terminated at depths ranging from 5 to 56 cmbs due to large roots (6%), bedrock (93%), or commencement of the water table (1%; Figure 4-16). Shovel Test 12 was abandoned before reaching 60 cmbs due to a shallow water table. This test was located in a low area near a stagnant pond. Eleven of the ninety-two shovel tests were positive. Cultural material, consisting of 2 biface fragments, 1 minimally retouched flake, and 6 specimens of debitage; 3 heat spalls; and 4 pieces of burned rock were recovered from 8 of the 11 shovel tests. The remaining three shovel tests contained one piece of burned rock each (Table 4-6). All material was encountered in Level 1 (0-10 cmbs). Of the 11 positive tests, 9 were documented as part of additional shovel testing of three archaeological sites recorded during pedestrian reconnaissance of the project area. These sites are discussed subsequently.

Figure 4-16. *Termination of Shovel Test 12 at 45 cmbs on the Bulverde Ranch project area.*

The soil color and depth from the shovel tests corresponded for the most part to the terrain on the project area (Figure 4-17). Soils where the topography commenced sloping to drainages on the eastern half of the property and near the western property border tended to be a black (5YR 2.5/1) silty clay containing 5-50% limestone pebble inclusions to termination. Soils near the eastern drainage averaged 29 cm to bedrock with a range of 18-43 cm, while soils near the western drainage averaged 34 cm to bedrock with a range of 9-50 cm. In contrast, the more level terrain between the drainages consisted of a dark brown (7.5YR 3/2) or a dark reddish brown (5YR 2.5/2) silty clay with 5-80% limestone inclusions to termination. Sediment depth in this area averaged 40 cm to bedrock with a range of 17-60 cm.

Figure 4-15. *Map of Bulverde Ranch project area showing 41BX1864, 41BX1865, 41BX1866, and isolated finds.*

Table 4-5. Results and Termination Depths of Shovel Tests on the Bulverde Ranch Project Area

Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results		Shovel Test	Termination Level	Depth (cmbs)	Reason for Termination	Results
1	3	30	Bedrock	Negative		47	2	17	Bedrock	Negative
2	3	26	Bedrock	Negative		48	2	17	Bedrock	Negative
3	4	40	Bedrock	Negative		49	2	20	Bedrock	Positive
4	4	34	Bedrock	Positive		50	4	38	Bedrock	Positive
5	3	30	Bedrock	Negative		51	2	18	Bedrock	Negative
6	4	38	Bedrock	Negative		52	3	29	Bedrock	Negative
7	4	38	Bedrock	Negative		53	3	27	Large Root	Negative
8	3	30	Bedrock	Negative		54	4	34	Bedrock	Negative
9	1	9	Bedrock	Negative		55	5	46	Bedrock	Negative
10	2	13	Bedrock	Negative		56	6	60	Complete	Negative
11	5	50	Bedrock	Negative		57	6	56	Bedrock	Negative
12	5	45	Water	Negative		58	5	50	Large Root	Negative
13	2	17	Bedrock	Negative		59	6	60	Complete	Negative
14	5	42	Bedrock	Negative		60	3	27	Large Root	Positive
15	4	33	Large Root	Negative		61	4	33	Bedrock	Negative
16	6	56	Bedrock	Negative		62	3	29	Bedrock	Negative
17	2	20	Bedrock	Negative		63	5	45	Bedrock	Negative
18	4	38	Bedrock	Negative		64	4	31	Bedrock	Negative
19	6	54	Bedrock	Negative		65	4	35	Bedrock	Negative
20	6	60	Complete	Negative		66	4	34	Bedrock	Negative
21	4	31	Bedrock	Negative		67	3	26	Bedrock	Positive
22	3	21	Bedrock	Negative		68	5	42	Bedrock	Negative
23	5	43	Bedrock	Negative		69	2	20	Bedrock	Negative
24	2	15	Bedrock	Negative		70	4	35	Bedrock	Negative
25	2	15	Bedrock	Negative		71	4	38	Bedrock	Positive
26	5	45	Bedrock	Negative		72	2	15	Bedrock	Negative
27	3	22	Bedrock	Negative		73	3	28	Bedrock	Negative
28	6	52	Bedrock	Negative		74	1	5	Bedrock	Negative
29	4	39	Bedrock	Negative		75	1	9	Bedrock	Positive
30	5	43	Bedrock	Negative		76	3	22	Bedrock	Negative
31	6	54	Bedrock	Negative		77	4	37	Bedrock	Positive
32	5	43	Bedrock	Negative		78	3	29	Bedrock	Positive
33	6	53	Bedrock	Positive		79	4	37	Bedrock	Negative
34	4	34	Bedrock	Negative		80	4	39	Bedrock	Negative
35	4	33	Bedrock	Negative		81	3	23	Large Root	Negative
36	2	18	Bedrock	Negative		82	4	39	Bedrock	Negative
37	4	36	Bedrock	Negative		83	3	23	Bedrock	Negative
38	4	35	Bedrock	Negative		84	2	18	Bedrock	Negative
39	4	36	Bedrock	Negative		85	1	8	Bedrock	Negative
40	2	18	Bedrock	Negative		86	2	17	Bedrock	Positive
41	3	24	Bedrock	Negative		87	4	32	Bedrock	Negative
42	4	35	Bedrock	Negative		88	3	28	Bedrock	Negative
43	2	14	Bedrock	Negative		89	2	19	Bedrock	Negative
44	2	18	Bedrock	Negative		90	3	26	Bedrock	Negative
45	1	8	Bedrock	Negative		91	4	31	Bedrock	Negative
46	5	43	Bedrock	Negative		92	2	19	Bedrock	Negative

Table 4-6. Bulverde Ranch Shovel Test Results

Shovel Test	Level	Burned Rock	Heat Spall	Debitage	Tool	Totals
33	1	1				1
49	1		1		1	2
50	1	1				1
60	1			1		1
67	1	2			1	3
71	1		1		1	2
75	1	2	1	2		5
77	1			1		1
78	1			1		1
86	1			1		1
4	2	1				1
Totals		7	3	6	3	19

Table 4-7. Isolated Surface Artifacts on the Bulverde Ranch Project Area

Property Quadrant	Surface Provenience	Tool	Debitage	Burned Rock
NE	West of ST 21	1		
NE	Southeast of ST 3		1	
NE	East of ST 3	1		
NE	North of ST 22		1	
NE	Southwest of ST 81		1	1
NW	Northwest of ST 12		1	
NW	Northwest of ST 12		1	
SE	Southeast of ST 35		1	
SE	Northeast of ST 35		1	
SE	West of ST 25		1	
SE	Southwest of ST 22		2	
SW	East of ST 41	1		
Totals		3	10	1

In addition to the shovel testing, the survey consisted of a 100 percent pedestrian reconnaissance of the 80 acre project area. The CAR field crew traversed the project area along transects evenly spaced 30 meters apart. During the reconnaissance, 14 surface artifacts (10 specimens of lithic debitage, 3 tools, and one piece of burned rock) were recorded as isolated finds on the property (Table 4-7). None of the isolated artifacts were diagnostics. These artifacts were not found in concentrations meeting the CAR's definition of an archaeological site (i.e., five or more surface artifacts within a 15-meter radius). Three lithic scatters qualifying as sites were also documented and are discussed in the following section.

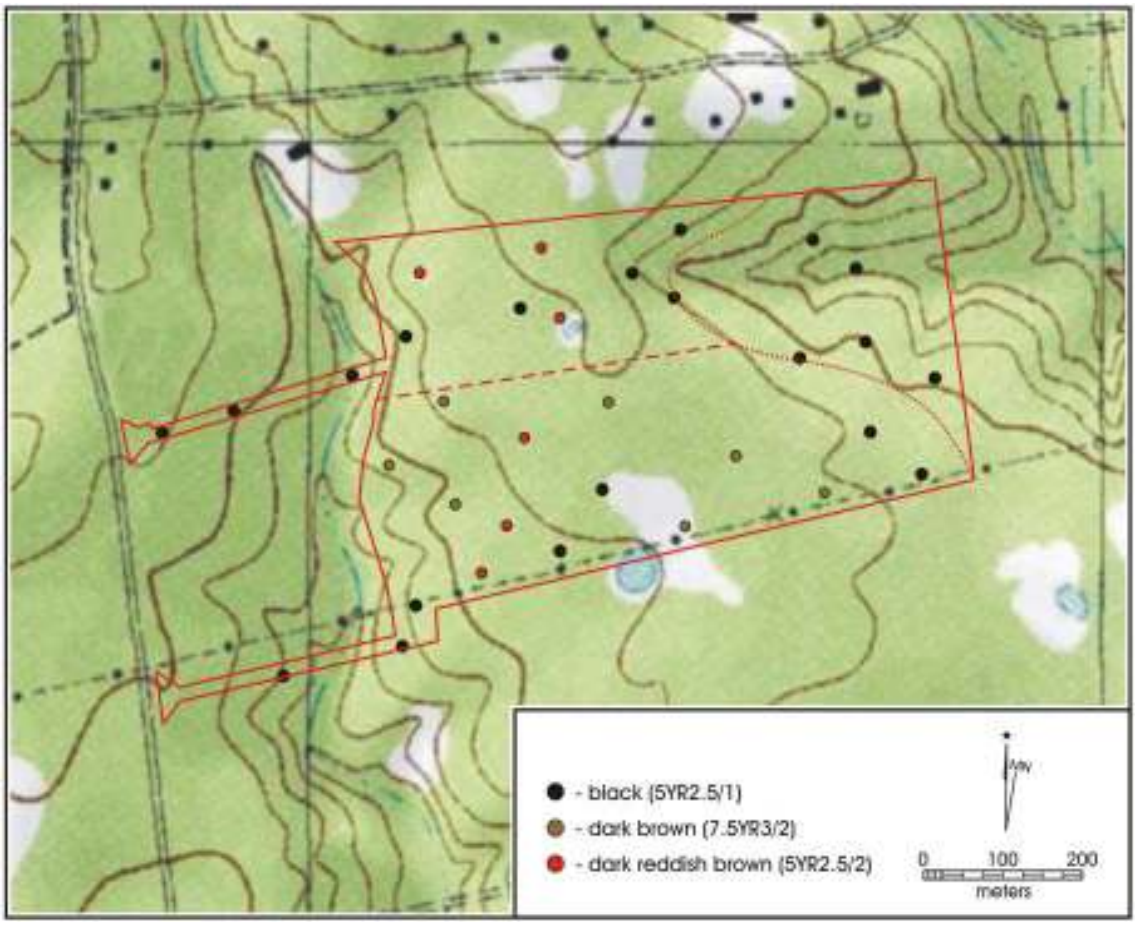

Figure 4-17. *Soil colors from Level 1 of the shovel tests on a quad map of the Bulverde Ranch project area.*

Archaeological Sites 41BX1864, 41BX1865, and 41BX1866

In the process of conducting the Bulverde Ranch campus survey, three new archaeological sites, 41BX1864, 41BX1865, and 41BX1866, were identified. Site 41BX1864 is a large surface scatter of lithic debitage, tools, cores, and burned rock (Figure 4-18). The site, located in the northeastern corner of the project area, likely continues across the northern and eastern boundaries onto privately owned properties. The site, discovered during the pedestrian survey, originally appeared to be four separate concentrations of artifacts, however upon closer inspection it was noted that cultural material continued between the concentrations, although at a lower density. Because a drainage to Long Creek runs through the site, much of 41BX1864 (approximately 75%) consists of sloping ground with large outcroppings of exposed bedrock. In several instances the exposed bedrock was noted to contain chert nodules. The area is heavily treed with cedar and to a lesser extent oak. Some understory vegetation is present but due to the heavy canopy the ground is mostly covered with leaf litter. Surface visibility varies across the site ranging from approximately 10 to 100% (Figure 4-19).

Figure 4-18. *Large Stage 2 biface located on the surface of site 41BX1864 on the Bulverde Ranch project area.*

A total of 39 shovel tests were excavated on 41BX1864, 6 as part of the project area survey and 33 to determine the depth of the site and to delineate the site's boundary. Of the 39 tests, 23 were located in the scatter and 16 on the edges of the scatter (Figure 4-20). Eight of the thirty-nine shovel tests were positive. All material (six pieces of debitage, a biface fragment, a minimally retouched flake, two heat spalls, and five specimens of burned rock), was recovered from Level 1 (0-10 cmbs). Although the presence of burned rock indicates

Figure 4-19. *An example of the vegetation and ground surface at 41BX1864.*

that hearths may have once been present, no evidence of charcoal or staining was noted in association with the burned rock recovered from shovel tests or the burned rock noted on the surface. No diagnostic artifacts or features were noted. Based on the visible edges of the scatter, the site covers 38,820 m^2.

The undisturbed condition of the project area in conjunction with the high density of cultural material on the surface of the site and the possibility of spatial clustering of artifacts suggest that archaeological site 41BX1864 possesses potential for future research. To further explore the density and patterning of cultural material on the site, surface artifacts noted on 21 dogleashes were recorded. The dogleashes were distributed on a grid across 41BX1864, with 11 in and 10 in-between the four concentrations noted above. UTM coordinates for the 21 locations were determined and uploaded into GPS units.

Data gathered from the dogleashes suggest that the cultural material on 41BX1864 is spatially clustered into three concentrations (Figure 4-21). Cluster 1, consisting of 23 artifacts, (96% debitage and 4% cores) is located around Dogleash 17 (Table 4-8). The artifact density is 2/m^2. Cluster 2, containing Dogleashes 13, 14, and 25, includes 76% debitage, 13% cores, 2% bifaces, and 9% retouched flakes. Based on the three dogleashes the concentration contains 1 artifact/m^2. Cluster 3 includes 115 artifacts (87% debitage, 4% cores, 6% bifaces, 1% unifaces, and 2% retouched flakes). Five dogleashes (1, 4, 7, 8, and 9) included in the cluster resulted in an artifact density of 2/m^2. Nonclustered artifacts (n=49) from the remaining dogleashes (n=12) include 86% debitage, 6% cores, and 8% bifaces (Table 4-9). Artifact density outside the clusters is 0.3/m^2.

Figure 4-20. *Aerial map of 41BX1864 showing property boundary (yellow), site boundary (blue), positive shovel tests (blue), and negative shovel tests (red).*

A comparison of percentages of each category of artifact suggests differences in lithic strategies at each cluster with an absence of tools in Cluster 1, a higher number of less expensive tools, i.e. retouched flakes, in Cluster 2, and more expensive tools, i.e. bifaces and unifaces in Cluster 3. Note that the artifact pattern in Cluster 3 is similar to the pattern in the nonclustered dogleashes with 87% and 86% debitage, 4% and 6% cores, and 7% and 8% biface/unifaces, respectively. An examination of the patination on the debitage from the dogleashes at 41BX1864 points to a similarity between Cluster 3 and the nonclustered dogleashes (Table 4-10). Of the 100 specimens of debitage in Cluster 3 and the 42 pieces in the nonclustered dogleashes, 24% and 26% are patinated, respectively; whereas 41% of the 22 pieces in Cluster 1 and 38% of the 34 specimens in Cluster 2 are patinated. The higher percentages of patinated debitage in Clusters 1 and 2 suggest older material then the material in Cluster 3 and in the nonclustered areas of 41BX1864. Archaeologists working with lithic materials have repeatedly concluded that chert patination is related to material age. Patination appears to be progressive (Frederick et al. 1994).

Two of the clusters (1 and 2) have higher percentages of cortical material. Primary flakes have the dorsal face completely covered by cortex, secondary flakes have some cortex on their dorsal side, and tertiary flakes have no cortex. High frequencies of primary flakes are assumed to be indicative of early reduction, and high frequencies of tertiary flakes are assumed to reflect late reduction. The amount of cortex should be less on late reduction specimens and greater on early reduction pieces (Andrefsky 1998). Based on this assumption, the debitage assemblage located on 41BX1864 appears to be the result of early stage reduction. The material in Cluster 3 and in the nonclustered dogleashes contains a higher percentage of noncortical material in comparison to Clusters 1 and 2.

The distribution and description of the surface material from 41BX1864 suggests that at least two and possibly three periods of occupation are present. The higher degrees of patination in the Cluster 1 and 2 debitage suggests that this material may be earlier than the material in Cluster 3 and in the nonclustered areas of the site, however, how much earlier is unclear. The debitage from Clusters 1 and 2 reflect earlier reduction with a higher frequency of cortical flakes when compared to Cluster 3 and the nonclustered material. Both the nonclustered and the Cluster 3 materials suggest a reduction strategy focused on bifacial tools.

Figure 4-21. *Aerial map showing the three artifact clusters (red) on 41BX1864.*

Table 4-8. Artifact Clusters Documented from Dogleashes on Site 41BX1864

Cluster #	Dogleash #	Artifact counts					Total
		Debitage	Cores	Biface	Uniface	Retouched Flake	
1	17	22	1	0	0	0	23
Total		22	1	0	0	0	23
2	13	13	0	1	0	1	15
2	14	13	1	0	0	2	16
2	25	8	5	0	0	1	14
Total		34	6	1	0	4	45
3	1	17	2	5	1	0	25
3	4	18	1	0	0	2	21
3	7	33	1	1	0	0	35
3	8	15	0	0	0	0	15
3	9	17	1	1	0	0	19
Total		100	5	7	1	2	115
Total Artifacts		156	12	8	1	6	183

Table 4-9. Nonclustered Artifacts Documented from Dogleashes on Site 41BX1864

Dogleash #	Artifact counts			Total
	Debitage	Cores	Biface	
2	6		1	7
3				0
5	11	1		12
6				0
10	4			4
11	6	1	1	8
12	2			2
15	6			6
16	1		1	2
18	1	1		2
19	5		1	6
20				0
Total Artifacts	42	3	4	49

The second archaeological site recorded on the Bulverde Ranch project area, 41BX1865, consists of a small surface scatter of lithic debitage (n=16), bifaces (n=3; Figure 4-22) and a core. The site, located on the northwestern quadrant of the property adjacent to the northern boundary of the project area, is situated on level terrain containing oak, cedars, understory trees, patches of grass, prickly pear, and heavy leaf litter. (Figure 4-23). Ground visibility is roughly 50%. Nine shovel tests, six on the edges of the scatter and three in the middle, were excavated to delineate the boundary of 41BX1865 and to determine the depth of cultural material. Two of the three shovel tests put in the middle of the scatter contained cultural material (a biface fragment and one piece of burned rock) in Level 1 (0-10 cmbs). The remaining tests were negative. No features or diagnostic artifacts were noted. The surface scatter covers an area of 926 m^2 (Figure 4-24). Two four meter diameter dogleashes placed on the site resulted in the documentation of 90 surface artifacts including 80 pieces of debitage, 5 cores, 2 bifaces, and 3 retouched flakes (Table 4-11). Based on the area of the two dogleashes an artifact density for 41BX1865 is estimated to be 4/m^2. Although 41BX1865 demonstrates a lack of material depth, and a lack of diagnostics and features, its high density scatter in conjunction with its proximity to 41BX1864 and 41BX1866 (discussed in the following paragraph) suggests that it may be part of a pattern of spatial clusterings of lithic material. Therefore, as with 41BX1864 (see preceding paragraph), there is a potential for future research on 41BX1865 when looked at as one cluster in a larger clustering of lithic scatters.

The final site recorded on the Bulverde Ranch property, 41BX1866, is a small surface scatter containing a few specimens of debitage and cores (Figure 4-25). The site is

Table 4-10. Cortex and Patination on Debitage from Dogleashes on Site 41BX1864

Cluster #	Debitage (n)	Patinated		Noncortical		Cortical		1-50 % Cortex (n)	50-99 % Cortex (n)	100 % Cortex (n)
		n	%	n	%	n	%			
1	22	9	41	5	23	17	77	12	5	0
2	34	13	38	5	15	29	85	14	14	1
3	100	24	24	27	27	73	73	35	30	8
Nonclustered	42	11	26	12	29	30	71	21	6	3

Figure 4-22. *Stage 2 bifaces located on the surface of site 41BX1865 on the Bulverde Ranch project area.*

adjacent to the northern boundary of the project area approximately 184 meters east of 41BX1865 and is situated on fairly level ground containing large oak trees, cedar, grasses, and heavy leaf litter. To delineate the site boundary and to determine the depth of cultural material eight shovel tests were excavated, five on the edges of the lithic scatter

Figure 4-23. *An example of the vegetation and ground surface at 41BX1865.*

and three in the center. All shovel tests were negative. No diagnostic artifacts or features were noted. Based on the visible edges of the scatter, the site encompasses 1,072 m^2 (Figure 4-26). Two four meter diameter dogleashes placed on the site resulted in the documentation of one specimen of debitage. Site 41BX1866 lacks the potential for future research. It consists of a low density scatter of artifacts, a

Figure 4-24. *Aerial map of 41BX1865 showing the property boundary (yellow), site boundary (blue), and negative shovel tests (red).*

lack of material depth, diagnostics and features. However, when considered as part of a cluster of artifact scatters, its research value increases. The site's proximity to 41BX1864 and 41BX1865 (discussed above) suggests that it may be part of a larger pattern of spatial clusterings of lithic procurement sites.

Summary of the Archaeological Survey

The survey of the NEISD project areas used an intensive pedestrian survey accompanied by shovel testing to investigate four project areas (156 acres) proposed for construction of five new campuses. One hundred and fifty-one shovel tests were excavated resulting in the removal of approximately

Table 4-11. Artifacts Documented from Dogleashes on Site 41BX1865

Dogleash #	Artifact counts				Total
	Debitage	Cores	Biface	Retouched Flake	
23	35	1	1	0	37
24	45	4	1	3	53
Total Artifacts	80	5	2	3	90

Figure 4-25. *Debitage scatter located on the surface of site 41BX1866 on the Bulverde Ranch project area.*

Figure 4-26. *Aerial map of 41BX1866 showing the property boundary (yellow), site boundary (blue), and negative shovel tests (red).*

3.2 cubic meters of sediment (0.3 m^3 at Vineyard Ranch, 0.6 m^3 at Knights Crossing, 0.2 m^3 at Rosehart, and 2.1m^3 at Bulverde Ranch). The survey uncovered no evidence of historic artifacts, and with the exception of one project area, Bulverde Ranch, no occurrence of subsurface prehistoric cultural material. The subsurface materials were all recovered from Level 1 (0-10 cmbs) of the shovel tests. Twenty isolated surface finds, consisting of debitage, tools, burned rock, and cores, were recorded on all but one of the project areas (Rosehart). Six new archaeological sites consisting of surface scatters of lithic debitage, tools, cores, and burned rock with no associated staining or charcoal were recorded on three of the project areas, 41BX1864, 41BX1865, and 41BX1866 on Bulverde Ranch, 41BX1867 and 41BX1868 on Knights Crossing, and 41BX1869 at Vineyard Ranch. No features were noted on the sites. One diagnostic artifact was recovered from site 41BX1867 on the Knights Crossing property dating the site to the Late Archaic Period. The lack of material depth, features, and the low density scatter of artifacts, in conjunction with evidence that the properties have been subjected to clearing in the recent past suggests that sites 41BX1867 and 41BX1868 on the Knights Crossing project area and site 41BX1869 on the Vineyard Ranch property possess low potential for future research. The undisturbed (previously not cleared) condition of the Bulverde Ranch property along with the close proximity of the three lithic scatter sites, 41BX1864, 41BX1865, and 41BX1866, and the separate concentration areas of artifacts on 41BX1864 suggests a potential for future research involving patterns in spatially clustered lithic procurement sites.

Chapter 5: Summary and Recommendations

Summary

The Center for Archaeological Research of the University of Texas at San Antonio conducted an intensive pedestrian archaeological survey in advance of the construction of five new campuses on four project areas (156 acres) in San Antonio, Texas for the Northeast Independent School District. The campuses include Vineyard Ranch Elementary School, Rosehart Elementary School, Knights Crossing Elementary School, Bulverde Ranch Elementary School, and Bulverde Ranch Middle School. The principal goal of the pedestrian survey was to identify and document all prehistoric and/or historic archaeological sites that may be impacted by the proposed construction. This report discussed the survey of these properties conducted in May and June of 2010.

The archaeological survey consisted of a 100 percent pedestrian reconnaissance of the combined 156 acres with shovel testing. The survey included the hand excavation of 151 shovel tests resulting in the removal of approximately 3.2 cubic meters of sediment. The survey uncovered no evidence of historic artifacts, and with the exception of one project area, Bulverde Ranch, no occurrence of subsurface prehistoric cultural material. The subsurface materials from Bulverde Ranch were all recovered from Level 1 (0-10 cmbs) of the shovel tests. Twenty isolated surface finds, including debitage, tools, burned rock, and cores, were recorded on three of the four project areas. No features were observed on any of the properties.

In the process of conducting the NEISD survey six new sites, 41BX1864 – 41BX1869, were identified. The sites, located on the Vineyard Ranch, Knights Crossing, and Bulverde Ranch project areas, consisted of surface scatters of lithic debitage, tools, cores, and burned rock with no associated staining or charcoal. No features were noted on the sites. Two sites, 41BX1867 and 41BX1868, were documented on the Knights Crossing property and one, 41BX1869, on the Vineyard Ranch property. One diagnostic artifact, an untypeable dart point, was recovered from the surface of site 41BX1867 placing the site into the Late Archaic. The lack of material depth, features, and the low density scatter of artifacts, in conjunction with evidence that the properties have been subjected to clearing in the past suggests that sites 41BX1867, 41BX1868, and 41BX1869 possess low potential for future research value.

Site 41BX1864, a high density surface scatter, on the Bulverde Ranch project area was originally documented as four separate concentrations of artifacts, however upon closer inspection, it was noted that cultural material continued between the concentrations, although at a lower density. Subsequent controlled documentation of surface artifacts via four meter diameter dogleashes suggests three separate clusters of cultural materials. Sites 41BX1865 and 41BX1866, both surface scatters, are located 495 and 310 meters west of 41BX1864, respectively. The undisturbed condition of the Bulverde Ranch property along with the close proximity of the three lithic scatter sites, 41BX1864, 41BX1865, and 41BX1866, and the separate concentrations of artifacts on 41BX1864 suggest a potential for future research involving patterns in spatially clustered lithic procurement sites.

Recommendations

The intensive pedestrian survey of the NEISD project areas was completed in accordance with State Historic Preservation laws and the mandates of the Antiquities Code of Texas. Six new sites, 41BX1864 – 41BX1869, were documented during the pedestrian survey. The lack of material depth, features, and the low density scatter of artifacts, in conjunction with evidence that the properties have been subjected to clearing in the past suggests that sites 41BX1867 and 41BX1868 on the Knights Crossing project area and site 41BX1869 on the Vineyard Ranch property possess a low potential for future research value, therefore the CAR recommends that the three sites be considered ineligible for listing on the NRHP. The CAR recommends that the construction of the new NEISD campuses on the Vineyard Ranch, Knights Crossing, and Rosehart properties proceed as proposed.

The undisturbed condition of the Bulverde Ranch property along with the close proximity of the three lithic scatter sites, 41BX1864, 41BX1865, and 41BX1866, and separate concentrations of artifacts on 41BX1864 suggest a potential for future research involving patterns in spatially clustered lithic procurement sites. The CAR recommends that the three sites be considered potentially eligible for listing on the NRHP. The CAR recommends further work at the three Bulverde Ranch sites focused on determining their NRHP/SAL eligibility. The investigations should focus on discerning artifact procurement patterns from upland surface-manifested raw material localities. The CAR suggests controlled surface collections on the three concentrations at 41BX1864 and surface collections at both 41BX1865 and

41BX1866. An analysis of the material collected should enable a determination of the extent of spatial patterning as well as a better understanding of lithic reduction techniques on the project area. An added benefit of these collections would be the reduction of the surface visibility, or archaeological signature, of these sites and therefore lessen the probability that surface artifacts will be removed from them over time.

In addition to a controlled surface collection, the CAR suggests the development of a teaching module to be used by 7th grade Texas history classes at the proposed Bulverde Ranch Middle School. As demonstrated by the information compiled in Appendix A, the area north of Loop 1604 has a rich history of occupation and historic ranching. Therefore, the module could include a detailed background of the previous owners of the property, the Steubing and Classen families, the ranching history of the property, as well as instruction on the prehistory of sites 41BX1864-41BX1866, potentially utilizing artifacts collected from the sites.

The THC concurred with the CAR's recommendations. See Appendix B for a copy of the THC comments letter. However, following the transmission of the THC review letter to the Northeast Independent School District, Construction Planning and Design officials informed the CAR that plans had changed for the Bulverde Ranch campus. Instead of the campus housing both a Middle and an Elementary School, the APE was going to be the site of only one school. This change would of course affect the types and locations of specific impacts associated with the planned construction. Unfortunately, the re-design of the single school campus had not been completed by the time of this report's publication. Therefore, discussions regarding the implications of the THC comments in relation to the redesign will have to occur after the printing of this report.

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Appendix A: Archival Research of the NEISD Project Areas

Appendix A: Archival Research of the NEISD Project Areas

by Kristi Miller Ulrich

Three of the properties proposed to be the locations of the NEISD school campuses, Knights Crossing, Rosehart, and Bulverde Ranch Estates, appear to be interlinked in early ownership. Deed research traces the ownership of the properties back to two prominent families in the area during the late 1800s: the Steubings and the Classens. Both families had large land holdings in Bexar County. A marriage connected the two families and resulted in the exchange of property. The two family histories are discussed in the following section. Much of the information concerning the Steubing and Classen families was collected from family documents, pictures, and newspaper articles loaned to the author by Mrs. Darlene Dague. Interviews with Mrs. Dague also provided additional information.

The Steubings

Johann Heinrich Steubing was born in Nassau, Germany in September 1791. Steubing likely arrived in Texas ca. 1845, as several groups from Nassau arrived that year. Johann Heinrich Steubing was married to Wilhelmina Bove (Buve), and had eight children. All eight of the children were born in Germany prior to their immigration. Of the eight children, two died before the family moved to Texas. The children accompanying Steubing and his wife were Catherine Steubing (born March 15, 1824), Johann George Steubing (born October 26, 1826), Carl Steubing (born July 1, 1829), Heinrich Steubing (born April 6, 1832), Susanna Steubing (born April 10, 1835), and Wilhelm Steubing (born March 6, 1838).

Circa 1852, Johann and Wilhelmina's third child, Carl, married Anna Marie Weil who was born in Prussia, Germany. The two were living in Comal County during the 1860s. For a brief time, they lived in Guadalupe County, but returned to Comal County by 1900. Carl and Anna had ten children, all born in Texas. Carl died in July 1908. His wife lived with one of their daughters after his death.

One of Carl and Anna's sons was Wilhelm (William) Steubing. Wilhelm was born in January 1863. Family documents indicate that Wilhelm was residing with one of his sisters (most likely Katherine) and his brother-in-law somewhere in Bexar County in 1880. He later married Louise Wenzel, likely in 1889 or 1890, because their first child was born in 1890. They had three children: Thelka Sophie Emma Marianna, Richard Albert, and Erna Hulda (Figure A-1). Louise Steubing is believed to have died of a burst appendix in 1924. Richard Albert Steubing, born on April 25, 1892, married Helen Thekla Classen, born in September 1894. Helen was part of another prominent family in the area that held much of the land to the north of present day US Hwy 281. During their marriage, Helen's father, William Classen, conveyed a large portion of property to her. William Classen, the son of Johann H. Classen, added to his already substantial landholdings given to him by his father throughout his lifetime. It appears that he divided his property among his three children. Helen and her husband, Richard, kept the bulk of the property throughout their lives, only selling or donating what they chose. Over the years, pressures were put on the Steubing family to sell their properties due to the ever expanding City of San Antonio.

Figure A-1. *Richard Albert Steubing with his son Leslie Steubing.*

Richard and Helen were married on October 9, 1915, at the Steubing Ranch. After their wedding, the couple took a trip to California by train as their honeymoon. Richard and Helen Steubing had three children, two sons and a daughter (Figures A-2 and A-3). The oldest, Leslie, was born in 1916, while the youngest, Wilton, was born in 1924. The daughter, Ellyn Steubing, was born in May of 1918. The children were given large portions of the family land holdings in 1954 by their parents. Ellyn received a large portion of land that was located to the west of Hwy 281 and south of Loop 1604. She donated a portion of her property for the creation of Loop 1604. She later sold portions which are known today as the Hollywood Park and Hill Country Village.

Figure A-3. *Richard Albert Steubing with his mother, grandmother and son Leslie.*

Figure A-2. *Leslie Steubing and Ellyn Steubing circa 1920.*

Property that contains a portion of the project areas was conveyed to Leslie William Steubing. Leslie married Gladys Renz in 1940, and he and his wife set up their residence at the William Classen Ranch, which is known also as the Steubing Ranch. Leslie and Gladys had two daughters, Darlene Ann and Karen Lou (Figure A-4). Darlene married David Dague in June of 1967. The couple resided within the Steubing Ranch, at a home they had built. Several generations have occupied the Steubing Ranch simultaneously over the years. Along with the Dague family, Leslie Steubing continued to live within the boundaries of the Ranch. Also, Helena Classen (Tante) was situated at one of the homesteads on the Ranch. Darlene recalled that her great aunt used to make soap and go egg hunting at the ranch.

The Steubing Ranch was an extremely active ranch throughout the late 1800s and into the 2000s (Figures A-5 to A-9). Polled Herefords were the livestock of choice for their hardy nature and good beef quality. The stock that was raised at the Steubing Ranch had a pedigree, and people from all over would come to purchase the Steubing cattle for breeding purposes. Leslie Steubing was raised on the ranch, and participated in its daily operations until 2002. Leslie knew his cattle very well, and was able to determine which calf belonged to which cow by their markings. In the early years of the ranch, the cattle were rounded up with horses. Trucks were later used for the job. The cattle would come to the trucks when the horn was honked because they knew that the feed was in the bed. In 2002, Leslie Steubing was knocked down by one of the cattle during feeding time and injured his back. After that incident, Leslie's grandson-in-law took over

Figure A-4. *Karen Lou and Darleen Ann Steubing in 1947.*

the operations, although Leslie was still involved in the less physical activities. Leslie Steubing spoke three languages; his native German, English, and Spanish to aid in the running of his ranch. Many of the hands that were hired spoke Spanish, and Leslie taught himself to speak the language to be able to communicate with them. Leslie passed away at the age of 92 in 2009 (obit).

Another of Carl and Anna's children was Theodore Steubing. Theodore was born in 1866 and resided in Comal and Bexar Counties throughout his lifetime. Theodore married Ida Dierks, who was born in 1872. The two had four children who all appear to have survived well into the 20th Century. The eldest child, Walter Adolph Herman Albert Steubing, was born in 1891. The youngest, Elgin Steubing, was born in 1897. Both Walter and Elgin served in the military during WWI. Theodore purchased parcels of land to increase his holdings. Similar to his brother William, he conducted ranching activities on his properties, raising goats and cattle. Theodore Steubing died sometime prior to 1930, but his landholdings remained in the possession of Ida until her death in 1949. At Ida's death, the property was divided into four portions and given to the children. Elgin Steubing received property that contains a portion of the project areas.

The Classens

Johann Hubert Classen (Glassen) arrived in Texas at the age of thirty-five via the Port of Galveston in November of 1857 (BCSA C:511-512). In August of 1867, he declared allegiance to the United States of America and renounced the King of Prussia as his leader before the court in Kendall County, Texas (BCSA C:513-514). It appears that Classen was able to purchase a large portion of property in Bexar County

Figure A-5. *The cistern and pump house on the Steubing Ranch in May 2010.*

Figure A-6. *The horse barn (crica 1918) on the Steubing Ranch in May 2010.*

Figure A-7. *The loading chute on the Steubing Ranch in May 2010.*

Figure A-8. *Stone wall located on the Steubing Ranch in May 2010.*

Figure A-9. *The William Classen Homestead on the Steubing Ranch in May 2010.*

from the State of Texas in 1885. Classen received the land in three separate deeds, totaling over 1,500 acres of land. It appears that soon after arriving in San Antonio, Classen had obtained approximately 54,000 acres of land throughout the Hill Country. Johann used much of his land in his ranching business, likely raising goats, cattle, and horses. Though a deed or grant is not found, evidence of J.H. Classen occupying land in the vicinity of Mudd Creek is found in the register of his brand. Classen registered his horse brand on March 11, 1867 (BCSA Brands D:18).

Johann had seven children who later inherited portions of his holdings. He died June 10, 1916 (BCDR 1491:544-545). The seven children were named in an affidavit in 1934: Peter J., Johanna, William, Helena, John G., Elise, and Ida. At least two of his sons, as well as one daughter, further increased the Classen family ownership of property within Bexar and Comal Counties. Daughter Helena is noted to have been a *femme sole* who never married (BCDR 1491:544-545; BCDR 1497:312-314), yet she was very active in the purchasing and selling of property throughout San Antonio. Deed records indicate that she took over unpaid promissory notes that were between her father and her siblings at the time of his death.

One son, William, added to his inheritance by purchasing additional parcels of land in the area. William married Hulda Weidner in October of 1863 (Figure A-10). Hulda was 21 and William was 29 at the time. They had two daughters and one son within three years of their marriage. Hulda died in December of 1896, just a month after the birth of her last son Walter. After his wife's death, William's sister, Helena, helped raise his children. Helena played a very active role in the children's lives and resided at the Classen Ranch throughout this time.

Helen Thelka and her fraternal twin sister, Louise (Lulu), were born to William and Hulda on September 16, 1894. Helen married Richard Albert Steubing. They were married in October of 1915 at home on the ranch. Upon returning from their honeymoon in California, they lived in Bracken for a year, and then moved to the William Classen Ranch, where Helen's father still resided. The marriage united these branches of the Classen and Steubing families. When William Claussen married his second wife, Elfrieda Vogel Voges, he moved to her farm located east of Bulverde, Texas. William conveyed a large portion of his property to Helen and her husband, including the William Classen Ranch house in which they resided during their lifetime (Figure A-11). Richard continued the ranching business that both families were involved in. Helen's aunt, Helena, resided with them at the Classen Ranch, and was affectionately referred to as "Tante" by the family. Helen and Richard had three children

Figure A-10. *William and Hulda Weidner Classen.*

over the course of their marriage. Leslie William was the first born, in September of 1916. Daughter, Ellyn Louise, was born in May of 1918. The third child was Wilton Richard, born in August of 1924.

Another son of Johann Classen, Peter J. Classen, also added property to his inheritance by purchasing properties along Cibolo Creek. Peter and William purchased land throughout San Antonio, and used much of it in their ranching businesses. Peter registered his brand on July 3, 1883 (BCSA Brands H:460). Eventually, Peter sold a portion of his holdings to Theodore Steubing, connecting this branch of the two families.

Deed Roll of the Properties

Knights Crossing Elementary School

The earliest deed records found concerning the ownership of the parcel of property slated for the Knights Crossing Elementary School were a series of grants executed by the State of Texas to J. H. Classen giving him a total of 1,571 acres of property in Bexar County. All three were executed on February 17, 1885 (BCDR 40:109-112). J.H. Classen divided his extensive holdings in a deed dated February 18, 1898 between two sons, Wilhem (William) and Johann (John)

Figure A-11. *Helen Classen Steubing.*

George Classen (BCDR 172:140-153). In 1901, John G. Classen sold a portion of his property to William Classen for a sum of $12,322 (BCDR 199:187-189). William Classen is the father of Helena (Helen) Thelka Classen. In 1935, Helen purchased the property from her father after taking on the promissory note of $6,000 that was to be paid by her brother, Walter (BCDR 1489:485-486).

Helen Classen married Richard A. Steubing, and deeds recorded in 1954 indicate that their two sons were given portions of the property (BCDR 3513:145-149). Leslie W. Steubing received the parcel of land on which the Knight's Crossing Elementary School campus will be built, but was required to allow the Grantors (his parents) use of the well for as long as they wished. The portion of the property that contains the proposed location of the Knights Crossing Elementary School was sold to the NEISD in December 2008 by the Steubing Ranch Limited Partnership. The Steubing Ranch Partnership was overseen by Leslie Steubing and his daughters, Darlene Dague and Karen Schlortt.

Rosehart Elementary School

The location of the proposed Rosehart Elementary School is recorded to have been in the possession of Peter J. Classen, a son of Johann Classen. In 1900, Theodore Steubing purchased a large parcel of property from Peter Classen, part of which contained the proposed campus (BCDR 184:396). Theodore and his wife Ida kept the entirety of the property throughout their lives. Theodore preceded Ida in death, and she retained the rights to the property for the remainder of her life. At her death in 1949, the family holdings were divided equally between her two sons, Walter and Elgin (BCDR 2649:347). Elgin's portion contained the current APE. Elgin Steubing held on to the property until his death. In December 1995, the Elgin Steubing Estate conveyed the property to the Steubing/ Poerner Associates LLC (BCDR 6622:451). The Steubing/ Poerner Limited Partnership conveyed a portion of the property to Bulverde Road Properties in February of 2001 (BCDR 9140:964-987). In March 2002, Steubing/Poerner sold a parcel of the land to Indian Springs LTD (BCDR 9303:632). Indian Springs LTD immediately conveyed the property to the Bulverde Investment Properties Limited Partnership (BCDR 9289:2064-2116). Bulverde Investment held onto the property until 2007, at which time they sold it to Capital Foresight (BCDR 12656:730). Capital Foresight sold the property to NEISD in October 2008 (BCDR 13712:2082).

Bulverde Ranch Middle and Elementary Schools

The property slated for the Bulverde campuses was part of the parcel of land inherited by Elgin Steubing from his father Theodore Steubing, as noted in the preceding Rosehart Elementary School section. After Elgin's property was transferred to the Steubing/Poerner Limited Partnership, it was sold, in February 2001, to Bulverde Road Properties LTD for a sum of $13,050, 000 (BCDR 8747:1414). In October 2001, the NEISD purchased a parcel of the property from Bulverde Properties LTD for the proposed Bulverde campuses (BCDR 9110:1823).

Vineyard Ranch Elementary School

The property intended for the construction of the Vineyard Ranch campus was purchased by the NEISD in December 2009. The property was purchased from the Loop 1604 Group which was represented by Johnny W. Stevens of the Stevens Texas Limited Partnership.

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Bexar County Spanish Archives (BCSA)
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Appendix B: THC Comments Letter

TEXAS HISTORICAL COMMISSION
real places telling real stories

September 2, 2010

Steve A. Tomka, Ph.D.
Center for Archeological Research
University of Texas at San Antonio
One UTSA Circle
San Antonio, TX 78249-0658

Re: Project review under the Antiquities Code of Texas, Antiquities Permit #5619, Survey of Five Proposed Northeast ISD School Development Projects, Draft Report (NEISD)

Dear Dr. Tomka:

Thank you for your correspondence concerning the above referenced project. This letter presents the comments of the Executive Director of the Texas Historical Commission (THC), the state agency responsible for administering the Antiquities Code of Texas.

We have completed our review of the Draft Report for Antiquities Permit #5619, and with the exception that references to federal involvement in these school development projects need to be removed from the report, the report is acceptable. We will await receipt of the final copy of the report with the above referenced changes, the two tagged PDF format copies of the report, on an archival quality CD or DVD, and a completed copy of the THC Abstract in Texas Archeology Form, and a signed copy of the THC Curation Form.

We also concur that sites 41BX1867, 1868, and 1869 are not eligible for listing on the National Register, nor warrant official State Archeological Landmark (SAL) designation, and we concur that sites 41BX1864, 1865, and 1866 are potential eligible and potentially warrant official SAL designation. Furthermore, we have determined that all of the proposed development tracts besides the "Bulverde Ranch Tract" may be developed without further archeological investigations, or notice to the THC relative to our jurisdiction under the Antiquities Code of Texas.

The THC fundamentally concurs with UTSA's proposed treatment plan for the three sites recorded within the Bulverde Ranch Tract, but we have the following clarifications. If the sites recorded within the Bulverde Ranch Tract cannot be preserved and protected from school construction activities or future pedestrian traffic, further archeological investigations will be warranted to mitigate the potential loss of those resources. If substantive portions of these sites can be preserved and protected, we believe the recommendation for surface collecting and educational site interpretation is an excellent idea. We will therefore, await word from you or representatives of the Northeast ISD as to how they would like to proceed with development of the Bulverde Ranch Tract, and we believe a meeting to discuss options and alternatives would be a good idea.

Thank you for your cooperation in this state review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions please contact Mark H. Denton, of our staff at (512) 463-5711.**

Sincerely,

for
Mark Wolfe
Executive Director

MW/mhd