Data Recovery at 41BX1798:
The Miraflores Park Bridge Project

San Antonio, Bexar County, Texas

by
Steve A. Tomka
and
Jon J. Dowling

Texas Antiquities Permit No. 5150

Prepared for:
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San Antonio, Texas 78212-3167

Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Report, No. 405

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Abstract:

In January and February of 2009, the Center for Archaeological Research at The University of Texas at San Antonio (CAR-UTSA) conducted archaeological data recovery within the footprint of an abutment for a proposed pedestrian bridge connecting Miraflores Park to Brackenridge Park. Rehler Vaughn & Koone, Inc. was contracted by the Parks and Recreation Department of the City of San Antonio to generate a master plan and design for improvements, necessitating archaeological services. The CAR was previously contracted by Rehler Vaughn & Koone, Inc. to provide archaeological assessment of the areas to be affected by Miraflores Park Improvements under Texas Antiquities Permit No. 4653, and the CAR produced a report summarizing the findings of these assessments. This report recommended the monitoring of future subsurface stripping activities within the park and on the west bank of the San Antonio River during preparation for a pedestrian bridge installation (Ulrich 2008).

In December of 2008, backhoe excavation of the Miraflores Bridge abutment footprint on the west bank of the San Antonio River revealed a Transitional Archaic projectile point and other prehistoric artifacts that were discovered by CAR personnel during archaeological monitoring. The excavation was halted, and a plan to determine the nature of the cultural deposits within the Area of Potential Effect (APE) was quickly devised. Three 1-x-1 meter units were excavated to determine the significance of the cultural materials within the APE, and to gauge site integrity. Artifacts recovered included two Guadalupe tools indicative of the presence of an Early Archaic component. The subsequent extended testing investigations of the APE were conducted under Texas Antiquities Permit No. 5150.

Seven excavation units and three backhoe trenches were excavated within the APE. Kristi Ulrich acted as Principal Investigator, and Jon J. Dowling served as Project Archaeologist. Results indicated the presence of a variety of prehistoric artifacts as well as a limestone water control feature that likely served to redirect water flow around the mouth of the San Antonio Waterworks Raceway. The site was designated 41BX1798. All project associated records and all artifacts recovered during the investigations are curated at the CAR as per Texas Historical Commission requirements.

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Acknowledgements:

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Kimberly Wolf, Cheryl Hicks, and Desiree Salmon of Rehler Vaughn & Koone, Inc., provided a great deal of support and their participation in the CAR's archaeological services is, as usual, greatly appreciated. Subcontractor David Long of Jerdon graciously granted the CAR access to a backhoe, and his operators Rene Perez and Ramiro Salazar performed with valuable precision. Supplemental background information was acquired from Maria Pfeiffer's detailed archival work on Brackenridge Park. Many thanks go to Kristi M. Ulrich, the Principal Investigator, for her involvement in the project. Kay Hindes of the San Antonio Historic Preservation Office visited the site regularly providing valuable insight on the historical background of the area. Laboratory work was overseen by Marybeth Tomka. The author would like to thank CAR Director Dr. Steve A. Tomka for valuable input on lithic tool manufacture, and for his overall guidance throughout the course of the project. Thanks are extended to CAR Assistant Director Dr. Raymond Mauldin for his expertise and support.

Chapter 1: Introduction and Project Setting

This report summarizes the results of archaeological data recovery at 41BX1798. The Center for Archaeological Research at The University of Texas at San Antonio (CAR-UTSA) was initially contracted by Rehler Vaughn & Koone, Inc. (RVK) in 2007 to provide archaeological services associated with the conversion of the once private 4.5-acre Miraflores Park into a public recreational park (Figure 1-1). Under contract with the Parks and Recreation Department of the City of San Antonio, Rehler Vaughn & Koone, Inc. appointed the CAR to conduct archaeological testing to locate and investigate extant but buried architectural elements and cultural deposits to the depth of projected development impacts within the Miraflores Park. Archaeological services within the park itself were completed and summarized in a technical report generated by the CAR (Ulrich 2008). In that report, the CAR recommended that any subsurface stripping activities associated with the project be monitored in case unknown cultural deposits and/or features are exposed.

In December 2008, a portion of the west bank of the San Antonio River across from Miraflores Park was to be cleared of trees and graded for the installation of a pedestrian bridge abutment (Figure 1-2). The specific area is a narrow strip of the west bank of the river bounded by the water's edge and the reconstructed channel of the Upper Labor Acequia, just north of the San Antonio Water Works Company Raceway. First, the area was cleared of dense brush. Next, the trunks of three large pecan trees were sawed near the ground surface. The surface elevation was higher here than that of the Upper Labor Dam located north of the Area of Potential Effect

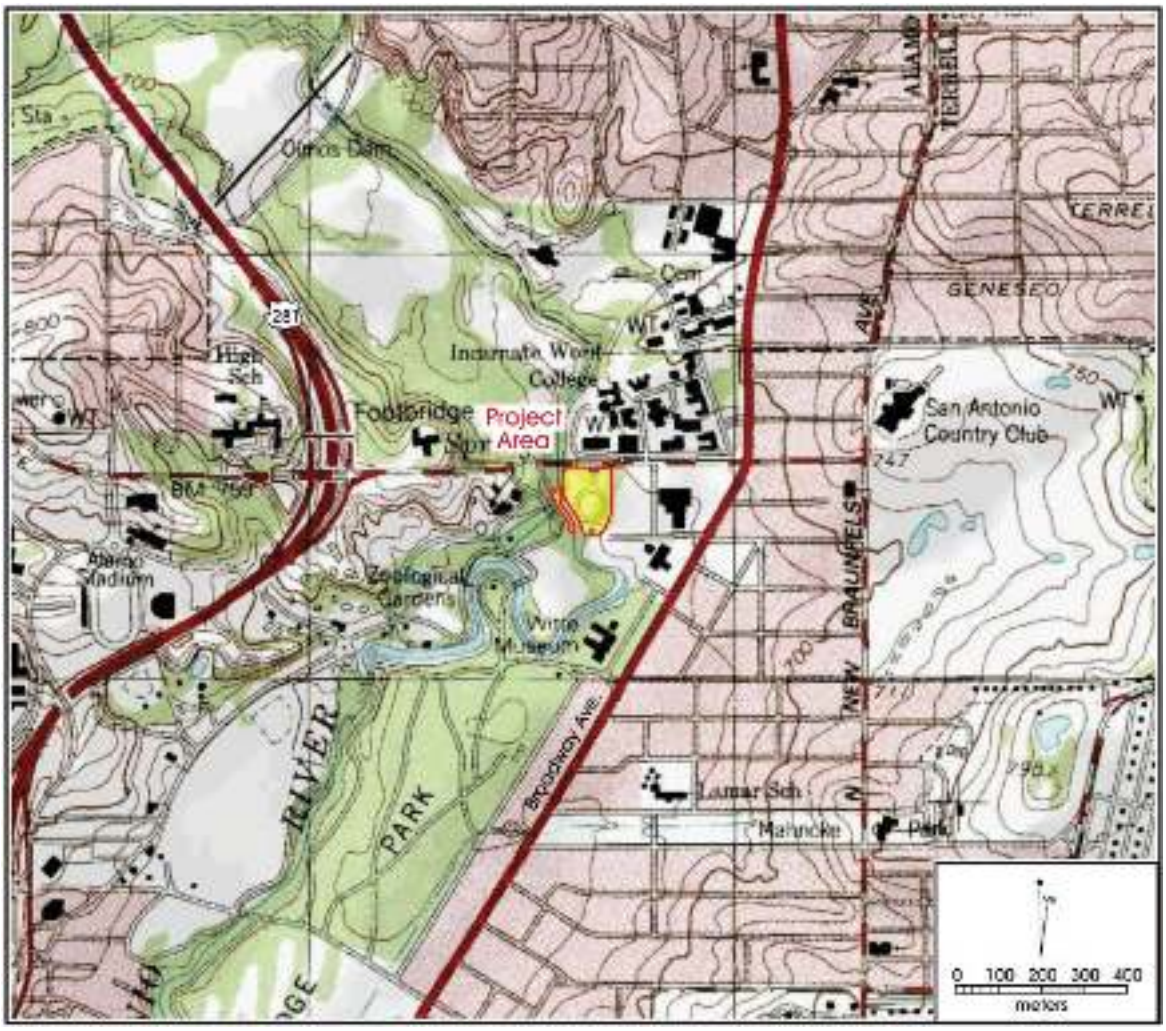

Figure 1-1. *The location of the Miraflores Park project area on the San Antonio East USGS quadrangle map.*

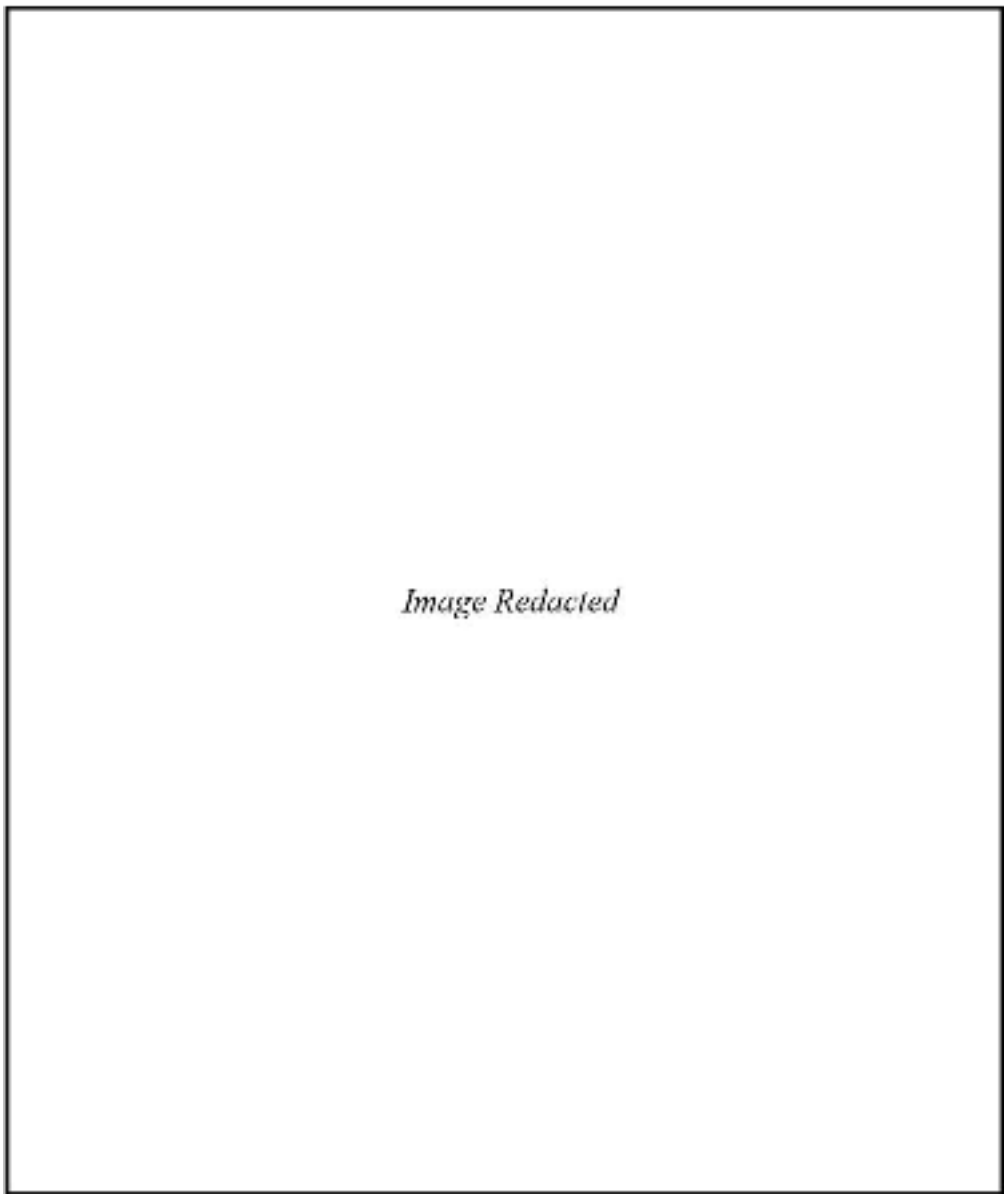

Figure 1-2. *The location of the Area of Potential Effect and 41BX1798.*

(APE) and the large trees suggested that this portion of the bank may not have been disturbed by Spanish Colonial and later construction activities.

The CAR personnel monitoring the excavation within the APE halted the grading activities when a Transitional Archaic Ensor projectile point, a middle-reduction stage biface, a core fragment, an expedient tool and burned rock fragments were exposed, near the northern tip of the landform (Figure 1-3). The Texas Historical Commission (THC), the City Historic Preservation Division and representatives of RVK were contacted and informed of the findings. In consultation with the staff of the THC, a plan was formulated to determine the nature and integrity of deposits found within the APE. In accordance with this plan, three 1-x-1 meter test units were distributed across the APE and excavated to the depth of projected construction impact (Figure 1-4). Burned rock, debitage, Early Archaic (ca. 5,500 year old) Guadalupe tools, and a single animal bone were recovered.

The recovery of Early Archaic materials spurred additional in-field consultation with Mark Denton of the THC. The CAR recommended that additional investigations in the APE would be necessary to determine the vertical and horizontal distribution of any intact buried Early Archaic deposit. The THC concurred with these recommendations and a plan was discussed to place additional 1x1 meter units across the

remaining area, backhoe trench the deposits following the conclusion of hand-excavations and also investigate the specific location designated for the bridge piers on the west bank of the River adjacent the water's edge.

Finally, CAR personnel also monitored the grading of a narrow foot-path leading south from the mouth of the Waterworks Company Raceway for approximately 50 meters along the west-bank of the river (Figure 1-2). All subsurface investigations of the APE were conducted under Texas Antiquities Permit No. 5150 with Kristi M. Ulrich acting as Principal Investigator and Jon J. Dowling serving as Project Archaeologist.

This report is divided into six chapters. The cultural overview and previous archaeology is presented in Chapter 2. Chapter 3 contains the summary of the field and laboratory methodology used during the project and the results of field investigations are discussed in Chapter 4. Chapter 5 presents the results of the artifact analysis, while the summary and recommendations are in Chapter 6. The remainder of this chapter discusses the Area Potential Effect (APE), and its environmental setting.

Figure 1-3. *Cultural material, including Ensor projectile point, observed during archaeological monitoring.*

The Area of Potential Effect

The 4.5-acre Miraflores Park (Figure 1-1) is located near the 800 block of East Hildebrand Avenue, across from The University of the Incarnate Word. Hildebrand Avenue defines the north boundary of the project area, and the San Antonio River delineates the west boundary. The south and east boundaries are demarcated by a fence-line that contains the entire property and separates it from the former AT&T property. The Area of Potential Effect (APE) consists of a small landmass on the west bank of the San Antonio River, adjacent to the Miraflores Park, where an abutment of the proposed pedestrian footbridge is to be constructed (Figure 1-2). This bridge will connect Miraflores Park to Brackenridge Park to the west. The west edge of the bridge abutment will skirt the Upper Labor Acequia, and then slope down at an angle towards the west bank of the San Antonio River falling at the APE's east boundary. The North boundary of the APE is roughly 30 meters north of the San Antonio Waterworks Raceway. The southern edge of the APE extends to an area in the vicinity of where the two gravel footpaths conjoin (Figure 1-2).

Environmental Setting

The geographic region encompassing the project area is referred to as South Texas. This broad and diverse landscape is bounded by the southern edge of the Edwards Plateau to the north, the Rio Grande River to the south, the Gulf of Mexico coastline to the east, and the eastern margin of the Lower Pecos region to the west (Norwine 1995:138). Of the seven biotic provinces of Texas defined by Blair (1950:112), the San Antonio area lies on the southern edge of the Balconian Province. The proximity of the two neighboring provinces, the forested Texan and the arid Tamaulipan, increases the resource variability that would have been available to prehistoric inhabitants.

Geology and Soils

The surface geology of the San Antonio area is the result of the Miocene uplifting that produced the Edwards Plateau and Balcones Escarpment. The Brackenridge Park landscape consists of Quaternary Alluvium and Fluviatile terrace deposits, composed primarily of silts and clays overlying

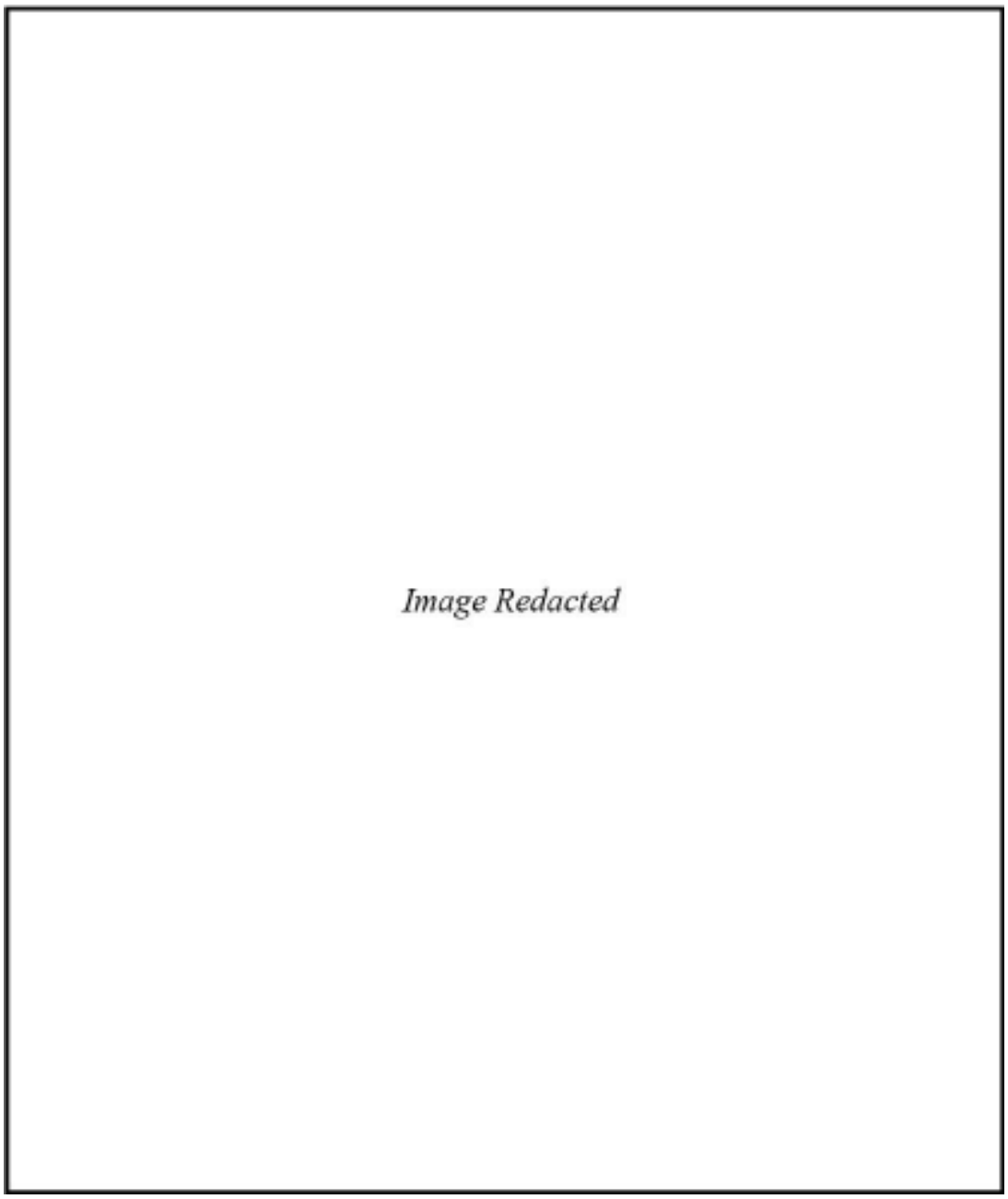

Figure 1-4. *Site map showing the initial placement of test units in the vicinity of the proposed bridge abutment on the west bank of the San Antonio River.*

ancient alluvium (Barnes 1983). Skirting the northwestern section of the park is an upland projection of Austin limestone made up of marl, chalk, and limestone left by the receding sea-line of the upper Cretaceous Period. The limestone was quarried by the Spanish in the 1700s for construction material (Spearing 1992:89), and was used in numerous water control features throughout the city. East and south of the park lay Uvalde gravels that served as important lithic raw materials for prehistoric inhabitants. Also to the east of the park is the Navarro Group and Marlbrook Marl formations comprised of sands, clays, marls, and sandstone. North of the Brackenridge Park area, one mostly finds Edwards Limestone. Within Edwards limestone, chert nodules are common. They served as stone tool resources to prehistoric populations for more than 11,000 years (Banks 1990; Frederick and Ringstaff 1994).

Soil units within this area consist of Trinity, Frio, and Lewisville soils that are calcareous alluvial deposits (Taylor et al. 1991). These soils are usually found on 0-1 percent slopes on riparian terraces. Trinity and Frio soils are characterized

by deep slowly permeable calcareous clays to clay loams with possible gravel layers. The substrate is alluvium, forming a deep profile of fine sediments. Lewisville soils are distinguished by their deep, dark grayish-brown to brown calcareous silty clays. The parent material of Lewisville soils is ancient alluvium on level areas on active floodplains. Profiles usually depict brown, sub-angular, blocky silty clays that overlay a reddish-yellow lower stratum of similar structure and texture with abundant calcium carbonate flecks and nodules.

Vegetation, Hydrology and Climate

The APE is positioned in an area where the Edwards Plateau, Blackland Prairie, and South Texas Plains converge, creating a mosaic of vegetation communities (Gould 1969). The Balcones Escarpment deviates sharply from the thin soiled limestone uplands and the wide coastal plains. Mixed live oak, Ashe juniper woodlands and sporadic grassy openings compose the bulk of upland vegetation. Tree canopy closure is generally low, and Ashe juniper (*Juniperius ashei*) is the most prominent species. Texas oak and cedar elm also occur in low densities. In upland areas, Texas persimmon (*Diospyros texana*), agarita (*Mahonia trifolioata*), prickly pear (*Opuntia lindheimeri*), and mixed grasses are dominant. The Blackland Prairie and South Texas Plains have a gently rolling topography that sustains hickory (*Carya texana*), red oaks (*Quercus texana*), and hackberry (*Celtis occidentalis*) that accompanies an understory of big bluestem (*Andropogon gerardii*), switchgrass (*Panicum virgatum*), Virginia creeper (*Parthenocissu quinquefolia*), and green briar (*Smilax rotundifolia*) (Gould 1969). Prior to development activities, vegetation within the APE primarily included Ligustrum (*Ligustrum japonicum*), Pecan (*Carya illinoensis*), Ash (*Fraxinus texensis*), and Cypress trees (*Taxodium distichum*). However, it should be noted that much of the present flora within and around the Miraflores Park, has been introduced over the years during various landscaping activities. Part of the improvements associated with the present project includes the removal of non-native invasive species and reintroduction of native vegetation communities.

Numerous springs, aquifers, and rivers are interspersed in and around the Balcones Escarpment due to the hinge line faulting along the Paleozoic Ouachita structural belt (Foley and Woodruff 1986). The large underwater reservoir of the Edwards Aquifer lies in west-central Texas where water percolates through Lower Cretaceous limestone that rests on virtually impermeable pre-Cretaceous formations (Barker et al. 1994). Excellent potable water sources arise as a result of this percolation. Springs created from the Balcones Escarpment give birth to several rivers in Bexar County. Such spring-waters are fresh, alkaline in nature as well as very hard, containing primarily calcium bicarbonates (Brune 1981:70). Rivers generated by the Balcones Escarpment springs include the Guadalupe, Comal, San Marcos, Blanco, and San Antonio rivers. Since these rivers do not rely much on rainfall as a water source and drain smaller areas than other rivers in the state, they are shorter and clearer than other rivers in Texas. The San Antonio Springs, just north of Brackenridge Park, is the source of the San Antonio River. The headwaters of the San Antonio River are at the convergence of Olmos Creek with the Blue Hole. The APE rests just south of this locality within an artesian zone crosscut by seasonal drainages. The San Antonio River flows south past the project area, before proceeding to the confluence with the Medina River in Southern Bexar County.

This area of Central Texas has a sub-humid climate as a result of moderate rainfall and fairly warm temperatures (Bomar 1983:208-222). The annual average rainfall for San Antonio is 29.13 inches of precipitation, with the rainiest months being in May, June, and September (Bomar 1983:222). Precipitation in Central Texas stems from the collision of arctic and Gulf of Mexico air masses. Average San Antonio temperatures range from 39.0-61.7 degrees Fahrenheit (January) to 74.3-94.9 degrees Fahrenheit (July).

Chapter 2: Culture History and Previous Archaeology

Regional Chronology and Cultural Background

The project area is situated on the cusp of Central and South Texas. This culture history will reference primarily Central Texas regional patterns, but will also include relevant South Texas trends and developments. The review of the culture chronology is followed by a brief summary of the history of the APE and description of the archaeological work carried out in the vicinity of the project area.

Paleoindian

The arrival of humans in the New World occurred during the Paleoindian period which dates from 11,500-8800 B.P. (Collins 1995). As the Pleistocene period ended, diagnostic Paleoindian materials in the form of Clovis, Folsom, and Plainview projectile points began to enter the archaeological record. These points were lanceolate-shaped and fluted for hafting to wooden spears. Using the launching momentum from atlatls (spear-throwers), large game such as mammoth, mastodons, bison, camel, and horse were frequently taken (Black 1989). In addition to megafauna, Paleoindian groups likely harvested less daunting prey including antelope, turtle, frogs, etc. Stylistic changes in projectile points occurred during the later portion of the period, eventually shifting to Dalton, Scottsbluff, and Golondrina traditions. While widespread in geographic range, these types occurred in high densities in the High Plains and Central Texas (Meltzer and Bever 1995). One of the oldest confirmed Clovis sites in North America is the Aubrey Clovis Site (41DN479) in Denton County, Texas dating to 11,550 B.P. (Ferring 2001). Environmental studies suggest that Late Pleistocene climates were wetter and cooler (Mauldin and Nickels 2001; Toomey et al. 1993), gradually shifting to drier and warmer conditions during the Early Holocene (Bousman 1998).

Archaic

The Archaic period, broadly divided into the Early, Middle, and Late Archaic suB.P.eriods, signifies a more intensive reliance on local floral and faunal resources accompanied by an increase in the number of projectile point styles (Collins 1995). The archaeological record begins to indicate more widespread use of burned rock middens, a wider variety of site functions, and more localized distributions of materials.

Early Archaic

Hester places the Early Archaic between 7950 and 4450 B.P. based on Early Corner Notched and Early Basal Notched projectile points (1995:436-438). Collins' dating of the Early Archaic period to 8800 to 6000 B.P. is founded on un-stemmed point types (1995:383). Around 8000 B.P. styles transitioned to stemmed varieties such as the Martindale and Uvalde (Black 1989), but un-stemmed Early Triangular points continued in use as well (Turner and Hester 1999). As the extinction of megafauna herds took hold, subsistence strategies shifted to heavier reliance on deer, fish, and plants. In the archaeological record, this trend equates to greater densities of ground stone artifacts, fire-cracked rock midden features, and task specific tools such as Clear Fork gouges and Guadalupe tools (Turner and Hester 1993:246, 256). Guadalupe tools are recovered along river basins, and are thought to have been used as woodworking tools and may have served as hide defleshing tools to some degree as well (Steve Tomka, personal communication; Black and McGraw 1985). Many Early Archaic open-campsites are distributed along the eastern and southern margins of the Edwards Plateau in areas with reliable water sources (McKinney 1981). Population densities were relatively low and consisted of small bands of hunter-gatherers with a fairly high degree of mobility (Story 1985:39). Loeve-Fox, Jetta Court and Sleeper sites are all representative of the Early Archaic (Collins 1995).

Middle Archaic

Middle Archaic materials date from about 6000 to 4000 B.P. and are characterized by an increased frequency of multi-use bifacial knives and burned rock middens (Collins 1995:383). Diagnostic points from this period include Bell, Andice, Taylor, Nolan, and Travis. The Tortugas point also appears in Middle Archaic contexts and possibly earlier (Turner and Hester 1999). According to Collins (1995), during the beginning of the Middle Archaic hunter and gatherers hunted bison. However, the climate became much drier towards the end of the Middle Archaic resulting in heavier reliance on sotol and acorn harvesting (Weir 1976:126). An expansion of oak woodlands on the Edwards Plateau and Balcones Escarpment may have been conducive to the intensified exploitation of certain plants (Weir 1976). This period also experienced population increases and it is possible that previously scattered bands of hunter-gatherers began to combine harvesting and processing efforts (Weir 1976:126). Panthers Spring Creek, Landslide, Wounded Eye and Gibson sites contained Middle Archaic components (Collins 1995).

Late Archaic

The last suB.P.eriod of the Archaic falls between 4000-1200 B.P. (Collins 1995:384). Dart point diagnostics of the Late Archaic are somewhat smaller, triangular points with corner notches such as the Ensor and Ellis (Turner and Hester 1993:114,122). Other Late Archaic points include Bulverde, Pedernales, Marshall, and Marcos (Collins 1995). It is not entirely clear whether this period experienced a rise (Collins 1995, Prewitt 1981) or decline (Black 1989) in population numbers, but large cemeteries, grave goods, and exotic trade items are known to occur at this time at sites such as Loma Sandia, Rudy Haiduk, Silo, Ernest Witte, and Morhiss Mound in Central and South Texas. Evidence from the Thunder Valley sinkhole cemetery has suggested that territoriality may have established during the Late Archaic, possibly as a result of population increase (Bement 1989). The frequency of burned rock middens increases and the number of open campsites also appears to increase. Characteristic Late Archaic components are found at the Anthon and Loeve Fox sites (Collins 1995).

Late Prehistoric

There exists some degree of overlap between diagnostic tools that are considered Late Archaic and Late Prehistoric, but the commonly held date for the beginning of this interval is 1200 B.P. A hallmark transition for this period is the introduction of the bow and arrow that enabled prehistoric hunters to harvest prey from greater distances. The use of arrows is indicated by smaller sized projectile points such as Perdiz and Scallorn. Another turning point in the Late Prehistoric period is the first substantial presence of pottery in the northern South Texas Plain and Central Texas (Black 1989, Story 1985). Researchers generally agree that during this period there was a drop in population (Black 1989). Inter-group conflicts between bands of hunter-gatherers may have occurred as indicated by arrow-inflicted deaths seen in human remains from Late Prehistoric cemeteries. Sites with distinct Late Prehistoric components include the Kyle, Smith and Currie sites (Collins1995). The sub-period is divided into the Austin and Toyah phases. Johnson (1994) believes these phases to possibly be two distinct cultures (see Black and Creel 1997).

The Austin Phase of the Late Prehistoric may represent the most intensive use of burned rock middens (Black and Creel 1997), and includes the appearance of diagnostic point types Scallorn and Edwards (Collins 1995; Turner and Hester 1993). During this phase, the use of burned rock middens is still quite widespread and may even be on the rise (Mauldin et al. 2003). The presence of bone-tempered plainware ceramics in Toyah Phase sites suggests interaction between Central Texas and ceramic-producing traditions in East and North Texas (Perttula et al. 1995). Ceramics were in common usage in East Texas by 2450 B.P. but the first Central Texas plainwares did not appear until ca. 650/700 B.P. Other technological traits of this phase include the diagnostic Perdiz arrow point, alternately beveled bifacial knives, and hide scrapers used in the procurement and processing of bison (Ricklis 1992).

Historic

First extended European contact on the Texas coast most likely began with the landing of Cabeza de Vaca and the Narvaez expedition survivors in 1528. Later Spanish incursions recorded insightful information on various Native American tribes like the Payaya, who at one point lived in the area around modern day San Antonio. Late seventeenth century accounts describe these people as family units of hunter-gatherers that resided near streams and springs, in areas conducive to nut harvesting. These camps were revisited on a seasonal basis, allowing interaction with different groups along the way as well as the hunting of bison in open grassland settings (Campbell 1983:349-351, Hester 1989:80). By the eighteenth century, the cultural integrity of the Coahuiltecans, the name given to the numerous group of Native Americans residing in South Texas, was significantly compromised by European settlers and invading Lipan Apache groups. Comanche horsemen, in turn, displaced the Lipan Apache culture, carrying out continuous raids on European and Native American settlements alike throughout Central Texas (Hester 1989:82-83).

In response to the continuous threat of Apache and Comanche raiders, as well as the French incursion into East Texas, a series of Spanish missions and presidios were erected along the San Antonio River during the eighteenth century. The Spanish governor of Coahuila and Texas, Marques de San Miguel de Aguayo, established San Antonio as the focus of Spanish settlement (Cox 1997).

Beginning with the establishment of the first Spanish mission, Mission San Antonio de Valero, in 1718, San Antonio gradually became a somewhat developed provincial town. In 1821, Spain recognized the independence of Mexico. At this time, San Antonio mostly consisted of a group of flat-roofed stone and adobe buildings centered on Main and Military Plazas. Eventually, the newly independent Mexican government began granting impresario contracts to allow more prominent Anglo settlement to facilitate the town's development. Stephen F. Austin, one such settler, spearheaded a movement by Anglo and Mexican settlers against Mexican authority. As a crossroads location, San Antonio de Bexar played an integral role in Texas Independence. At its center stood Mission San Antonio de Valero (known commonly

as the Alamo), which brandished more cannons than any fort west of the Mississippi. Mission Valero changed hands several times during the fight for Texas Independence, falling victim to Mexican siege in 1836. The many battles took a terrible toll in lives and property, leaving San Antonio nearly deserted for some time (Fox 1979). After becoming the Republic of Texas the same year, following the decisive Battle at San Jacinto, the territory later joined the United States in 1845. The town slowly grew from a rustic Mexican villa to a lively and fast-paced commercial center. Still a major crossroads, San Antonio served as a key staging area for General Zachary Taylor's mobilization efforts during the War with Mexico. Despite the large numbers of troops that Texas committed to the American Civil War, the Confederate state of Texas was only involved in five engagements with the Union army. San Antonio's main function during the Civil war was that of a shipping hub for supplies imported from Mexico to be shipped to Confederate lines in the early 1860s (Webb 1952).

This project's APE lies between two public parks with histories deeply rooted in San Antonio and its river: Miraflores Park and Brackenridge Park. A brief review of both will follow, in addition to a summary of archaeological work conducted in the area.

Cultural History of Miraflores Park

Miraflores Park is located in the lands that were portioned off by Don Juan Antonio Perez de Almazan, Alcade Mayor, in 1731. The project area is located within Range 1, Lots 26 and 27. August Lieck purchased Lot 26 in January of 1852 from the City of San Antonio (BCDR S2:549), and then purchased Lot 27 from Thomas Devine the following year (BCDR L1:166). These lots remained in the Lieck family for the duration of the nineteenth century. In August of 1855, August Lieck turned over the property to Gottfried Lieck in exchange for 400 head of cattle and $5000 (BCDR O2:123-124). In 1884, Lot 27 was conveyed to A. J. Fry for $12, to pay for the back taxes of Gottfried Lieck. The land deed for this property indicated that the Lieck family had two years to reclaim the property by paying the taxes and fees that had accrued (BCDR 57:487). A man named Richard Jungbecker then paid A.J. Fry the overdue $65 tax fee in 1887 in order to claim Lots 26 and 27 from the Lieck family (BCDR 57:484). In 1892, R. A. Lieck conveyed portions of the property to his daughter, Theresa Jungbecker, and her husband, Richard Jungbecker (BCDR 116:84). Confusion over the division of R.A. Lieck's property ensued over the years, but land deed records indicate that a settlement between Edmund Lieck and Theresa Jungbecker was eventually reached and Jungbecker received additional portions of Lots 26 and 27 (BCDR 226:281; BCDR 290:121). Richard Jungbecker purchased sections of the lots that bordered the San Antonio River in 1904 from Julius Lieck (BCDR 284:386). This property remained in the Jungbecker side of the Lieck family until 1918. In 1917, Theresa Z. Jungbecker conveyed the property to Margarita Mercado de Alonso and Guillermo Alonso for $11,551.56 (BCDR 544:28). Also in 1917, Julia Herberer of the Jungbecker family sold the Alonso family her portion of the Lieck property for $12,054.87 (BCDR 544:30). Finally, in 1921, the property was sold to Aureliano Urrutia for $30,000 (BCDR 634:268; BCDR 638:202).

Dr. Aureliano Urrutia named the park "Miraflores" and transformed its grounds into a landscape reminiscent of his hometown with elaborate gardens, fountains, architecture, and sculptures. A path from present day Broadway led to his garden that included various sculptures and medicinal plants.

Originally two structures rested on the property. A tower located at the southern end of the garden was reminiscent of a windmill, an evocative literary reference to Don Quito's delusional joust. Fittingly, this structure served as Dr. Urrutia's library. The library tower no longer stands, but its location within the project area was ascertained. The second building located on the premises is a guest house called "Quinta Maria". This structure was built in 1923 and was restored by Southwestern Bell in 1981. An elaborate reflecting pool on the property was connected to a path leading up to a footbridge that crossed the San Antonio River immediately south of this project's APE. It has since been removed.

Urrutia commissioned several artists for sculptures to be displayed in his private park. Dionicio Rodriquez, an artist from Toluca, Mexico, had perfected a process of carving chemically treated concrete to look like realistically textured wood. Several pieces of Rodriguez's work can be found in and around Miraflores Park and Brackenridge Park, and are listed on the National Register of Historic Places (NRHP) (Pfeiffer 2008.). A bridge manufactured to look like fastened logs with realistic bark texture rests between the San Antonio Waterworks channel and the Upper Labor Acequia, immediately west of the APE. Rodriguez's concrete process is still largely a secret, and none are able to accurately recreate his skill.

In 1962, the garden was sold to United States Automobile Association (USAA), and an 8-story office building and parking lot were constructed on the eastern portion of the garden property. In 1974, Southwestern Bell purchased the property and transformed the remaining portion of the garden into a recreation area for special employees. Two open-air pavilions on the southern portion of the property were built, in addition to 23 picnic tables around the park. In 2001, the

Miraflores portion of the property was transferred to The University of the Incarnate Word, who later conveyed it to the City of San Antonio. The University decided to turn the property into a parking lot and soon began the approval process. After a long legal battle, the City of San Antonio reclaimed the property. However, many of its most opulent features have been demolished or relocated.

Cultural History of Brackenridge Park

Brackenridge Park encompasses nearly 320 acres, some of which were part of the original land grant to the City of San Antonio. While it was under Spanish ownership, two major *acequias* channeled water to early settlements between the San Antonio River and San Pedro Creek (Cox et al. 1999). The layout of the *acequias* and the water sources they exploited played a key role in the planning of the City San Antonio. Relying on gravity flow, these channels are still visible on the landscape today. The "Upper Labor Ditch" *acequia*, completed in 1778, still operates, carrying water to animal exhibits in the zoological gardens. A portion of it serves as the west boundary of this project's APE. Once the Upper Labor Acequia turns west from the San Antonio River, it begins to run parallel to a separate channel that feeds into the San Antonio Waterworks building. The Upper Labor's original Spanish Colonial Dam was relocated during archaeological investigations just south of Hildebrand Avenue (Cox et al. 1999), and directly north of the APE. This dam was composed of undressed limestone that was augmented sometime in the nineteenth century by German masons using ashlar-dressed stones. During the 1700s, the second acequia called the "Alamo Madre Acequia" was built to provide water to Mission Valero. The diversion dam is still present in the San Antonio River just north of the Witte Museum. After primarily serving as a water source for the city, the northwest area of the park then became a limestone quarry. Just southeast of this area was a *mercado* that drew city residents to this area regularly for various types of commerce (Brackenridge Park files at the San Antonio Public Library).

During the American Civil War in 1863, the area of Brackenridge Park changed hands from the city to the Confederate States of America for $5,000 to establish a tannery. This Confederate Tannery once stood directly downstream from the project area. Upon conclusion of the Civil War, ownership of the land went to the Bureau of Refugees, Freedmen, and Abandoned Lands of the United States Government. In 1868, this tract of land was sold back to the City of San Antonio for $4,500. In 1874, the area where the tannery stood was subdivided into Koehler Park, Allison Park, and the polo field after a series of auctions. One of the winning bidders was George W. Brackenridge, a major shareholder in the San Antonio Waterworks Company (Brackenridge Park Files at City of San Antonio Historic Preservation Office).

The San Antonio Water Works Company channelized a raceway that began at the San Antonio River within this project's APE between 1877 and 1878 (Figure 2-1). The landscape surrounding the raceway is visibly different today (Figure 2-2), and its channelization in the 1870s likely affected the natural soil deposition in the APE as well. It was roughly 40 feet wide and crossed the old Confederate Tannery property, proceeding 650 feet to the southwest. It ended at a stone pump house with iron sluice gates (Figure 2-2), also erected by the San Antonio Water

Figure 2-1. *The channelized raceway of the San Antonio Water Works Company constructed between 1877 and 1878.*

Figure 2-2. *San Antonio Water Works Company pump house in present state.*

Works Company, where water flow dropped 9 feet to drive its turbines and pumps. Other waterworks facilities were established by the San Antonio Waterworks Company to pump water to an elevated reservoir in the area where the Botanical Gardens are currently situated (*North San Antonio Times*, March 29, 1979). In the late 1800s a cement company, a horse track, an iron bridge over the San Antonio River, a golf course clubhouse, and a rodeo corral occasionally used by the Sheriff's Department were developed (Brackenridge Park Files at City of San Antonio Historic Preservation Office).

In 1899, George W. Brackenridge contributed a large tract of parkland to the City of San Antonio that included almost all park land east of the San Antonio River, west of the river, and south of Craig Avenue. Brackenridge stipulated under contract that the land was to be used as a public park (BCDR, Vol. 185:183-188).

Development soon gave rise to the botanical and zoological gardens, a series of access roads, and picnicking areas. A donkey barn to facilitate tours of the park was eventually remodeled into a Parks and Recreation Administrative Office. In 1912, the Zoological Gardens began development, with a donation of bison and elk herds from George W. Brackenridge. The project eventually grew to become the San Antonio Zoo (Brackenridge Park Files at City of San Antonio Historic Preservation Office).

The Sunken Gardens were created in 1919 in a limestone quarry area using prison labor. Another garden attraction in the immediate area dubbed the "Japanese Tea Garden" was overseen by Japanese proprietors who were forced out of business and relocated to a concentration camp during World War II (Brackenridge Park Files at San Antonio Public Library). The Works Progress Administration built the Sunken Garden for the San Antonio Civic Opera Association in the 1930s, and also stone-lined portions of the San Antonio River. Following that, the Witte Museum and numerous public facilities were erected in the immediate vicinity, including the Joske and Koehler pavilions and several memorial monuments to the Brackenridge family (Brackenridge Park Files at City of San Antonio Historic Preservation Office).

Archaeological Overview of the Project Area

The San Antonio Springs and Olmos Basin area contains rich archaeological deposits that have been subject to numerous investigations. Many of these deposits were destroyed with the construction of Olmos Dam. However, some investigations have yielded Paleoindian and Archaic artifacts ranging from surface hearths, bone beds, lithic tools and human burials (Orchard and Campbell 1954; Lukowski 1988).

Archaeological investigations at Brackenridge Park were carried out by CAR and TARL in the 1970s during several major projects. In 1976, the Center for Archaeological Research conducted an archaeological and historical survey within the boundaries of Brackenridge Park. Four prehistoric sites were recorded over the course of the survey. These included 41BX264, 41BX321, 41BX322 and 41BX323. Site 41BX264 is a prehistoric lithic scatter that may have contained a burned rock midden. The construction of the Polo Field at Brackenridge Park likely destroyed the majority of the site. The area has been graded and covered with grass, but there is a possibility that parts of the site remain. Artifacts noted included hearth features, cores, flakes, faunal remains, choppers, scrapers, burned rock, bifacial blanks and several projectile points (Pedernales, Nolan, and Castroville) (Katz and Fox 1979:7). Site 41BX323 exhibited a prehistoric component with debitage, burned rock, and a projectile point. The prehistoric component of the site was recorded as being Late Prehistoric in age and the site was the subject of numerous subsequent investigations.

The integrity of the archaeological deposits of all four sites had been previously compromised and they were deemed to be in danger of further destruction at the time of the survey. In addition to the recorded sites, eleven "collection localities" were noted that contained prehistoric material but not enough to warrant a site designation. One of these collecting localities was recorded less than 50 meters from this project's APE, just south of Hildebrand Avenue.

Historic features consisted of numerous water control facilities (Spanish acequias and historic canals), and industrial (limestone quarries and lime kilns) and recreational features (Katz and Fox 1979:12). The Upper Labor and Alamo Madre Acequias, and the San Antonio Waterworks channels and buildings were all extensively documented and researched (Katz and Fox 1979:12). Also investigated, were the Garza Mill, Old Lime Kiln, Confederate Tannery, and several limestone quarries. Documented recreational sites included the San Antonio Jockey Club, Joske and Koehler Pavilions, Rodriguez Structures, the Sunken Gardens, and the Municipal Zoo (Katz and Fox 1979:7).

Site 41BX323 was first identified by the CAR in 1979 (Katz and Fox 1979), and listed as a SAL in 2000 when Early Archaic to Late Prehistoric materials were recovered (Miller et al. 1999). SWCA performed archaeological investigations at 41BX323 in 1998 (Miller et al. 1999). These investigations included backhoe trenching and hand- excavations. Burned rock features, a few ceramics, lithic tools, and projectile points were found to be distributed across the site. The results of excavations indicated that Early Archaic thru Late Prehistoric materials were compressed within the first meter of the site's deposits. Miller et al. (1999) determined that 41BX323 was potentially eligible for listing as a State Archaeological Landmark (SAL) and recommended avoidance or mitigation. Similar to 41BX264 and 41BX1798, this site also contained Early and Middle Archaic components.

During the same year, data recovery was conducted by SWCA at 41BX323 to mitigate impacts to the site from the proposed installation of a SAWS pipeline (Houk et al. 1999). Investigations yielded cultural material that appeared to date to the Archaic and Late Prehistoric periods. However, compression and bioturbation had affected the integrity of the deposits. It was thought that the western portion of the site appeared to contain a higher potential for data recovery then the eastern portion (Houk et al. 1999). Mitigation efforts concluded that the deposits dated primarily to the Middle Archaic with lesser occupation in the Late and Transitional Archaic.

In 2001, SWCA returned to Brackenridge Park to conduct a survey of a portion of the park that was to be affected by construction activities. The survey was conducted along 28.3 acres of Brackenridge Park. The western portion of the survey focused on 41BX323. Much of the site produced sparse cultural materials, though a concentration of burned rock, debitage and mussel shell was located along one section. The potential for the site to produce additional information about the prehistoric occupation of the area was once more recognized. Again, 41BX323 was recommended for further testing if impacts were to occur within the site boundaries. In addition to visiting 41BX323, a previous unrecorded site was located along the eastern portion of the project area. Site 41BX1425 was identified as a prehistoric campsite, with a Transitional Archaic and historic component. The prehistoric component contained an Ensor point, burned rock, and debitage. The historic component is at or near the surface, and consists of historic ceramics, glass fragments, and metal objects that date to the 19th and 20th centuries (Houk and Miller 2001).

In September 2007, CAR conducted archaeological investigations within a portion of 41BX323. The work consisted of a pedestrian survey, hand- excavations, and

backhoe trenching. Two components were noted during the investigations along the eastern margin of the site. One component is Late Prehistoric in age, while the deeper deposit may be Early Archaic (Figueroa and Dowling 2008).

In 1996, a portion of the Upper Labor Acequia was exposed in Brackenridge Park prompting the Parks and Recreation Department of the City of San Antonio to contract with CAR to investigate the feature. During the course of the investigation, 41BX1273 was identified and documented. The site includes the location of the Upper Labor Dam. The dam was constructed of limestone blocks in 1776 to divert water from the river to the Upper Labor Acequia. The dam was modified during the 19th century with dressed stone and set at a slightly different angle. A prehistoric component was also revealed during the investigation, located approximately 120 cm below the current ground surface (Cox et al. 1999). The prehistoric component consisted of lithic debitage. Recorded before GPS technology was more widely used, the Texas Site Atlas plots 41BX1273 on the east bank of the San Antonio River according to estimated latitude and longitude coordinates. However, the report illustrates 41BX1273 as falling approximately 35 meters north of this project's APE on the west side of the San Antonio River. The Upper Labor Acequia dam is located in between the prehistoric component of 41BX1273 and 41BX1798. Given that prehistoric materials do not clearly link the two prehistoric components, the two deposits are identified as two distinct sites.

Chapter 3: Field and Laboratory Methods

Field Methods

The CAR's data recovery efforts at site 41BX1798 consisted of seven hand-excavated units and four backhoe trenches (Figure 3-1). These subsurface investigations were initiated when the CAR's archaeological monitor recovered a diagnostic Ensor projectile point, bifacially flaked artifacts, and pieces of burned rock during the first day of grading near the northern end of the APE. To ascertain what other archaeological materials may be present within this portion of the APE, and in consultation with Mark Denton of the Texas Historical Commission and Kay Hindes of the City Historic Preservation Division, three 1-x-1 meter units were to be

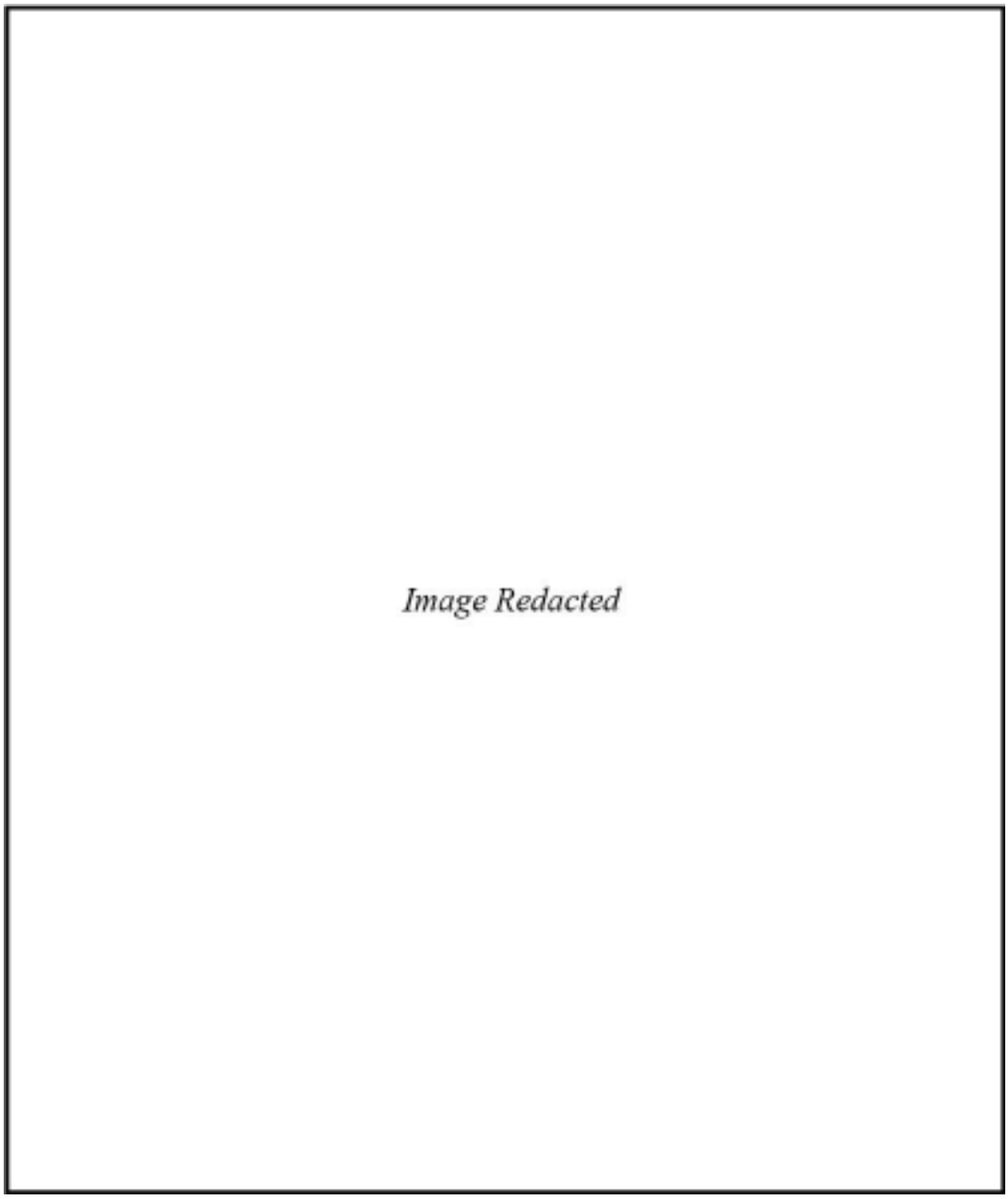

Figure 3-1. *Excavation units, backhoe trenches, and features at 41BX1798.*

hand-excavated along the landmass to a terminal depth coinciding with the depth of construction grading (i.e., approximately 170 cm below ground surface or 190 cm below datum).

These initial units were placed in areas that were relatively devoid of visible tree roots. The units were numbered in ascending order from north to south, Excavation Unit 1 (EU 1) in the north, EU 2 in the center, and EU 3 in the south. Uniformity in controlled excavation was accomplished by establishing all three data at the same elevation of 206.45 meters above mean sea-level, each slightly south of their assigned excavation units (Figure 3-2).

Because the depth of construction impacts and therefore hand-excavations was to exceed 150 cmbs and to comply with Occupational Safety & Health Administration (OSHA) standards, safety benches were excavated off the three units. None of the soil removed during benching was screened and no diagnostic cultural materials were observed during the backhoe excavation of the safety benches. The placement of safety benches was dictated by the limited space available for the backhoe between the San Antonio River and the Upper Labor Acequia.

When Early Archaic diagnostics were recovered from Excavation Unit 2, the decision was made, in consultation with THC, to open three additional 1-x-1 meter excavation units adjoining the first three. Excavation Unit 4 was placed north of and adjoining EU 2. Excavation Unit 5 was positioned south of EU 1 and Excavation Unit 6 was positioned north of and adjoining EU 3. A seventh unit, EU 7, was added to help expose more of a feature encountered in EU 5.

All excavation units were orientated to the cardinal directions. The 1-x-1 meter units were excavated in 10-cm levels by hand and all matrix was screened though ¼ inch hardware cloth. All cultural material was collected and bagged by unit and level. All cultural material was collected and brought back to the CAR laboratory for analysis. Appropriate unit/level forms were completed for each unit, and materials associated with each unit and level were assigned a field sack number. Beginning in Level 3 of each excavation unit, soil samples were obtained from the southwest corners of each unit. The Project Archaeologist maintained daily entries in a field journal. Sketch maps of the site were generated with simple compass-pacing. In addition, the site was surveyed by CAR personnel with a Total Data Station. Digital photographs of all excavation units were taking at numerous stages with a scale and dry-erase board.

Figure 3-2. *Excavations in progress in Units 2 and 3.*

Four backhoe trenches were excavated during this project. One trench was dug within Excavation Unit 5 to locate the base of the historic feature. The second trench was excavated at the very edge of the bank in an area that was to be drilled for one of the bridge piers. The third trench was excavated between EU 5 and the reconstructed channel of the Upper Labor Acequia to locate the western edge of the feature. The fourth and final trench connected the three sets of 1x1 meter units to expose a continuous profile along the elevated landmass.

Figure 3-3. *CAR staff recording soil attributes.*

The west wall of BHT 4 and the east wall EUs 1 and 5 were profiled. Soil colors, textures, structures, and cultural contents within wall faces were noted (Figure 3-3).

Laboratory Methods

All archaeological materials collected during data recovery were fully analyzed, described, and reported. All cultural materials and records obtained and/or generated during the project were prepared for curation in accordance with federal regulation 36 CFR part 79, and THC requirements for State Held-in-Trust collections. Artifacts processed in the CAR laboratory were washed, air-dried, and stored in 4-mm zip locking archival-quality bags. Materials needing extra support were double-bagged. Acid-free labels were placed in all artifact bags. Each label contained provenience information and a corresponding lot number written in archival ink, with pencil or laser printed. Lithic tools were labeled with permanent ink over a clear coat of acrylic and covered by another acrylic coat. Artifacts were separated by class and stored in acid-free boxes. 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.

Chapter 4: Data Recovery Results

This chapter presents the results of archaeological investigations at 41BX1798. Near the completion of the data recovery investigations at the site, CAR staff also monitored the grading of an approximately 50-meter long stretch of the west bank of the river for a footpath that leads from the proposed bridge to an area south the Waterworks Company Raceway (Figure 1-2). The grading was shallow and no undisturbed deposits were impacted.

Archaeological investigations consisted of seven hand-excavated 1-x-1 meter units and four backhoe trenches. All data recovery efforts were performed within the proposed footprint of the west bank abutment of the Miraflores Park pedestrian bridge. The projected depth of construction impact was approximately 190 cm below datum. Excavation units yielded lithic tools and debitage, bone, charcoal, and burned rock. Feature 1, likely an historic diversion dam also was encountered and documented.

Backhoe Excavation

Four backhoe trenches were excavated during this project within the APE (Figure 3-1). BHT 1 was dug within Excavation Unit 5 to locate the base of the historic feature. The trench was only one-bucket-wide and approximately 90-100 cm long cutting through the center of EU 5 in a N-S direction. Its southern end abutted the historic feature (Figure 4-1). The excavation began at 190 cmbd, the terminal depth of the hand-excavation, and stopped when water began percolating into the trench. The base of the dam likely rested just above the water table, but its actual elevation could not be determined since it was obscured by the water table.

BHT 2 was excavated at the edge of the bank in an area that was to be drilled to a depth of approximately 35 feet for the bridge piers. It was one meter wide and 1.5 meters long. The intent of the backhoe trenching was to remove a gravel zone

Figure 4-1. *Short backhoe trench (BHT 1) through base of EU1 exposing deeper portion of historic feature.*

that was interpreted as lining a footpath running along the bank. Following the removal of the gravel lens, a 1x1 meter unit was to be hand-excavated to the depth of the water table to ascertain whether the archaeological deposits seen a few meters to the west extended to the edge of the water. The backhoe excavations exposed a number of limestone cobbles similar to those in the historic feature from the southern end of the unit (Figure 4-2). The tops of these cobbles were buried approximately 20cmbs and the rocks appeared to represent the extreme northern edge of the historic feature. In addition, at a depth of about 40 cm an underground utility conduit was exposed running in a N-S direction. Having ascertained that the deposits are disturbed at this location, the backhoe excavations were terminated without the planned hand-excavations.

BHT 3 was excavated between EU 7 and the reconstructed channel of the Upper Labor Acequia (Figure 4-3). It measured roughly 4.7 meters in length and 80 cm in width. Its goal was to ascertain whether the historic feature continued west of EU 7 and had been cut-through by the reconstructed acequia. It was excavated to a maximum depth of about 70 cmbs, some 40 cms below the top of the historic feature as noted in EU 7. A single layer of cobbles was seen buried about 20 cmbs but once the backhoe removed

Figure 4-2. *Limestone cobbles in south-wall of BHT 2. Cobbles represent northern edge of historic feature (Feature 1).*

Figure 4-3. *BHT 3 roughly paralleling the reconstructed channel of the Upper Labor Acequia.*

them no other rocks were noted. It was concluded that the historic feature did not extend to the reconstructed acequia or if at one point it did, the western edge of the feature was removed at the time of the construction of the original Upper Labor Acequia between 1776-78, its lining with dressed stone around 1875 or sometime thereafter (Cox et al. 1999:1).

BHT 4 connected the three sets of 1x1 meter units to expose a continuous profile along the landmass (Figure 3-1). It was one meter wide and continued 1.5 meters north of EU 1 and connecting all hand-excavated units. The base of the trench coincided with the depth of the anticipated construction impact (approx. 170 cmbs or 190 cmbd). The west wall of the trench beginning at EU 3 and running to the southern edge of the historic feature was profiled. Also profiled was the east wall of EU 1 and EU 5 including the northern edge of the historic feature.

Excavation Units

Seven 1-x-1 meter units were excavated as part of the data recovery project at 41BX1798 (Figure 3-1). These units were

excavated to terminal grade of construction impact, or 190 cm below datum elevation.

Excavation Units 1, 5 and 7

A total of 1.7 m^3 of deposit (16 levels; Level 1=20-40 cmbd) were excavated in EU 1 beginning at 20 cmbd and ending at 190 cmbd. The same volume of deposits (17 levels; Level 1=20-30 cmbd) was excavated in EU 5. Before beginning hand-excavations in EU 7, disturbed deposits as seen in the profile of EU 5, were stripped to a depth of 100 cm below datum. Therefore, only 0.2 m^3 of deposit (2 levels) were excavated in this unit.

Table 4-1 lists the number of artifacts recovered by level from the three excavation units. It is evident that with the exception of Level 3 (50-60 cmbd) in EU 1 and Level 13 (140-150 cmbs), small numbers of lithic debitage are present in each level of each unit. The frequency of debitage ranges from 1 to 18 flakes in EU 1 and 1 to 9 flakes in EU 5. A spike in flake frequencies is present in EU 1 beginning in Level 14 (160-170 cmbd) and continuing through the deepest level. The mean number of flakes per level in the upper 12 levels is 4.1 specimens. In contrast, the mean number of flakes in the three deepest levels of the unit is 14.7 specimens. An increase in the mean number of flakes in the three lowest levels also is evident in EU 5. However, this increase is not nearly as dramatic. The upper 13 levels contain a mean of 3.1 specimens per level while the three deepest levels contain a mean of 5.7 flakes per level.

Pieces of burned rock are present in each level of the three units, except Level 1 (100-110 cmbd) in EU 7. Burned rock weights do not appear to spike in the three deeper levels of EU 1 and 5 in contrast to the debitage. However, a dramatic increase in burned rock is present in Levels 8-10 (100-130 cmbd) in EU 1 and this increase is not reflected in the flake distribution.

Snail shells are intermittently present throughout the deposits while animal bone is infrequent. Lithic tools are infrequent, however, a biface (EU 1, Level 10, 120-130 cmbd) and a possible Tortugas point (EU 5 (Level 12, 130-140 cmbd) were recovered.

The profile of the east wall of EU 1, EU 5, and BHT 4 reveal that the majority of the strata encountered were disturbed

Table 4-1. Artifacts Recovered from EU 1, 5, and 7

Unit	Level	Depth (cmbd)	Count/ Weight	Artifact Category							Totals
				Bone (g)	Burned Rock (g)	Debitage	Chopper	Tortugas Point	Mussel Shell (g)	Snail Shell (g)	
EU 1	1	20-40	count			3					3
			weight (g)	1.1	9					1.9	12
	2	40-50	count			1					1
			weight (g)	0.3	8					2.7	11
	3	50-60	weight (g)		7					1	8
	4	60-70	count			3					3
			weight (g)		62						62
	5	70-80	count			5					5
			weight (g)		24					0.4	24.4
	6	80-90	count			1					1
			weight (g)		20						20
	7	90-100	count			5					5
			weight (g)		73						73
	8	100-110	count		4	8					12
			weight (g)		218						218
	9	110-120	count			4					4
			weight (g)		154					2.4	156.4
	10	120-130	count			3	1				4
			weight (g)		241					6.1	247.1
	11	130-140	count			5					5
			weight (g)		15					6.6	21.6
	12	140-150	count			7					7
			weight (g)		32					4.9	36.9
	13	150-160	count			8					8
			weight (g)		22					1.5	23.5
	14	160-170	count			18					18
			weight (g)		27.2					2.6	29.8
	15	170-180	count			14					14
			weight (g)		41.3						41.3
	16	180-190	count			12					12
			weight (g)		39.2						39.2

Table 4-1. Continued...

Unit	Level	Depth (cmbd)	Count/ Weight	Artifact Category							Totals
				Bone (g)	Burned Rock (g)	Debitage	Chopper	Tortugas Point	Mussel Shell (g)	Snail Shell (g)	
EU 5	1	20-30	weight (g)	0.7						0.6	1.3
	2	30-40	count			2					2
			weight (g)		45					0.4	45.4
	3	40-50	count			1					1
			weight (g)		142.9					1.7	144.6
	4	50-60	count			1					1
			weight (g)		5					0.2	5.2
	5	60-70	count			3					3
			weight (g)		1.7					0.1	1.8
	6	70-80	count			3					3
			weight (g)		7.7						7.7
	7	80-90	count			1					1
			weight (g)		59.5					1.3	60.8
	8	90-100	count			4					4
			weight (g)		11.7						11.7
	9	100-110	count			5					5
			weight (g)		28.6						28.6
	10	110-120	count			8					8
			weight (g)		64.4						64.4
	11	120-130	count			3					3
			weight (g)		15.5						15.5
	12	130-140	count			1		1			2
			weight (g)		10.4					5.9	16.3
	13	140-150	count		1	8				1	10
			weight (g)		84.6	0				4.5	89.1
	14	150-160	count			3					3
			weight (g)		20.4				0.3	0.1	20.8
	15	160-170	count			9					9
			weight (g)		46						46
	17	180-190	count			5					5
			weight (g)		34						34
EU 7	1	100-110	count			1					1
	2	110-120	count			1					1
			weight (g)	0.3	0.4						0.7
Totals				2.4	1575.5	156	1	1	0.3	45.9	

by the construction of the historic feature (Figure 4-4). It is evident that deposits in Zones A-D are cross-cut and much of Zone E has been removed by a vertical cut. This cut may have been made to create a wide working area for the construction of the historic feature. The edge of this cut is clearly evident near the northern edge of EU 1. The position of the northern intrusion boundary indicates that all archaeological materials recovered from EU 5, and the majority of the materials excavated in EU 1, were from a disturbed context. The only intact portions of EU 1 were in the lowest four levels (Level 13-16) beginning at 150 cmbd within Zones D, E, and F. Moving up through the deposits, Levels 12 through 2 sampled gradually smaller and smaller portions of the intact deposits that were situated to the north of EU 1 (i.e., Zones A-D). Also evident in the profile of the two units is the trench (Zone M) that is approximately 65 cm wide that was dug to accommodate the base of the feature. Most of the trench falls in EU 5. The comparison of the data presented in Table 4-1 and the stratigraphic profile (Figure 4-4) indicate the fact that prehistoric materials were encountered in both intact strata (Zones A-F) as well as secondary deposits (Zones G-L). The secondary deposits appear to have been deposited by flood events eroding various surfaces up-stream of the historic feature. The deposits contained archaeological materials that were transported a short distance and re-deposited in the depressed area in front (i.e., up stream-side) of the feature.

Excavation Units 2 and 4

EU 2 and EU 4 were located in the center of the landmass (Figure 3-1). Depths for the two EUs were gauged with Datum 2, established at elevation 206.45 meters above sea level, at 28 cm above ground surface outside the northwest corner of EU 2. The two EUs were excavated in 16 levels beginning at 30 cmbd and terminating at 190 cmbd. A total of 1.6 m^3 of deposit were excavated in each of the two EUs.

Table 4-2 lists the number of artifacts recovered by level from the two excavation units. Lithic debitage is present in

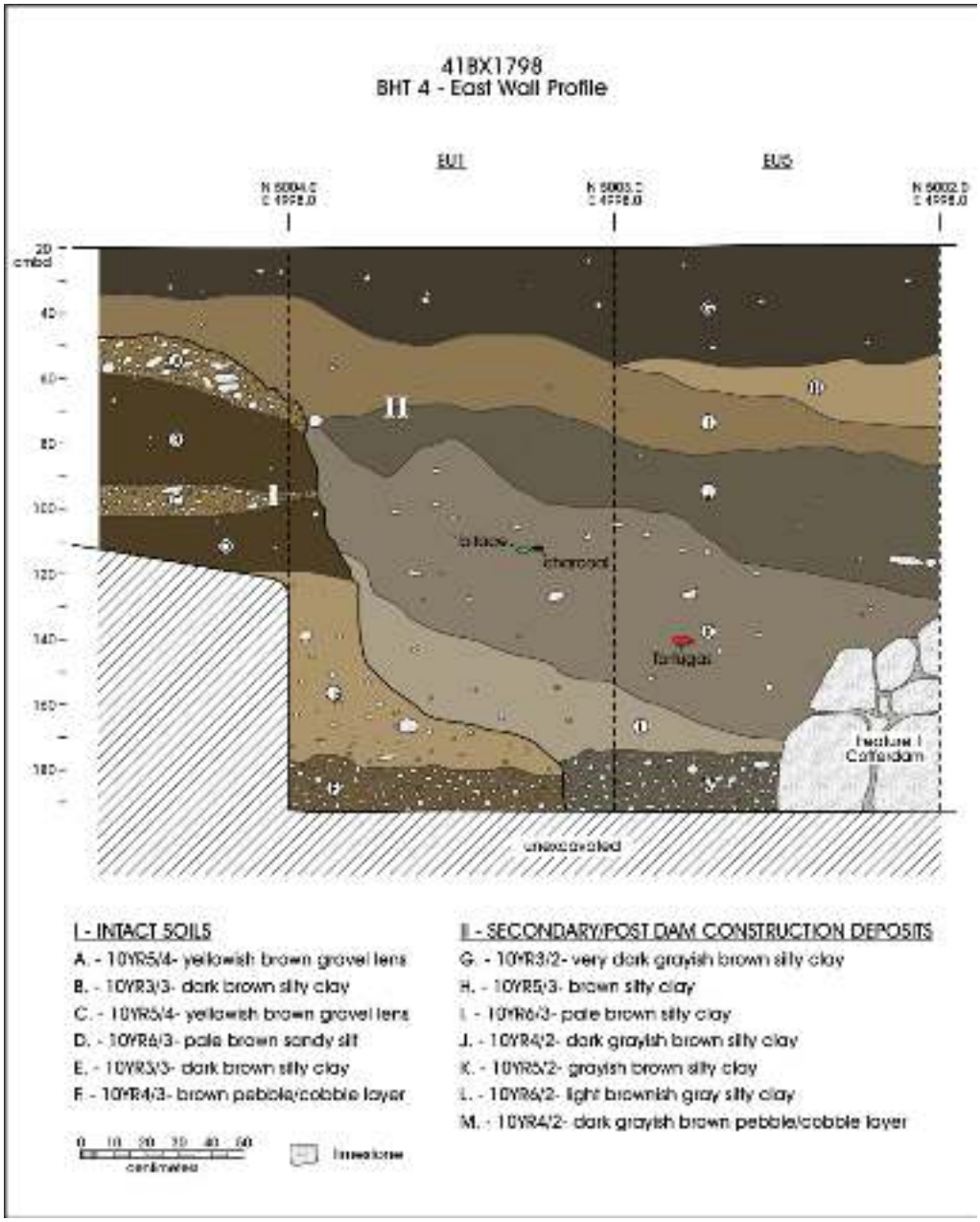

Figure 4-4. *East wall profile of EU 1, EU 5, and the northern end of BHT 4.*

six of the upper nine (67%) levels, however, frequencies are in general low. A gradual increase is evident beginning in Level 10 (120-130 cmbd) and this continues through Level 13 (150-160 cmbd). The upper nine levels (30-120 cmbd) have a mean of 1.3 flakes per level while the lower seven levels (120-190 cmbd) have a mean of 3.7 flakes per level. The distribution of burned rock shows a peak in Level 8 (100-110 cmbs) and another in Level 14 (160-170 cmbs). The pattern in burned rock and debitage distribution is different in EU 4. More burned rock is present in EU 4 and debitage tends to be higher in frequency near the top of the unit compared to EU 2.

Snail shells are present in small amounts and animal bone is entirely absent. Lithic tools and/or cores are infrequent in EU 4, however, two Guadalupe tools and an expedient tool (i.e., edge modified flake) were recovered from EU 2. The Guadalupe tools came from Level 10 and 11 (120-130 and 130-140 cmbs), separated only by 3.5 cm in elevation.

The stratigraphy of the two EUs exhibits a complex depositional sequence consisting of several overlying thin lenses and thick zones (Figure 4-5). In general, the lenses are thin or pinch-out to the north and thicken to the south as one moves away from the feature. EU 4 is

Table 4-2. Artifacts Recovered from EU 2 and EU 4

Unit	Level	Depth (cmbd)	Count/ Weight	Artifact Category					Totals
				Burned Rock (g)	Debitage	Edge Modified Flake	Guadalupe Tool	Snail Shell (g)	
EU 2	1	30-40	count		5				5
			weight (g)	189					189
	2	40-50	count		3				3
	3	50-60	count		1				1
			weight (g)	1					1
	4	60-70	weight (g)					0.5	0.5
	5	70-80	weight (g)					1	1
	6	80-90	weight (g)					0.5	0.5
	7	90-100	count		1				1
			weight (g)	38				1	39
	8	100-110	count		1	1 -retouched			1
			weight (g)	118					118
	9	110-120	count		1				1
			weight (g)	30					30
	10	120-130	count		3		1		4
			weight (g)	18				0.1	18.1
	11	130-140	count		4		1		5
			weight (g)	5				10.2	15.2
	12	140-150	count		7				7
			weight (g)	6				4.2	10.2
	13	150-160	count		5				5
			weight (g)	2				4.8	6.8
	14	160-170	count		3				3
			weight (g)	166				2.9	168.9
	15	170-180	weight (g)	18.6					18.6
	16	180-190	count		4				4
			weight (g)	19				4.6	23.6
EU 4	1	30-40	count		7				7
			weight (g)	40					40
	2	40-50	count		7				7
			weight (g)	84					84
	3	50-60	count		3				3
			weight (g)	659.4				0.6	660
	4	60-70	weight (g)	15.8				0.7	16.5
	5	70-80	count		2				2
			weight (g)					0.8	0.8
	6	80-90	weight (g)	81.1				0.1	81.2
	7	90-100	weight (g)	2.8				3.1	5.9
	8	100-110	weight (g)	10.7				0.5	11.2
	9	110-120	count						0
			weight (g)	9.7				2.6	12.3
	10	120-130	count		2				2
			weight (g)	0.8					0.8
	11	130-140	count		2				2
			weight (g)	9.6				1.2	10.8
	13	150-160	count		1				1
			weight (g)					1.8	1.8
	15	170-180	count		1				1
			weight (g)	2.2				0.1	2.3
	16	180-190	weight (g)	70.6					70.6
Totals				1597.3	63	1	2	41.3	

immediately down-stream face of the historic feature. The deepest zone (I) in this EU is a dark yellowish brown clay that drapes over the face of the feature. It appears to have been deposited by low energy stream flow consistent with water levels that at times spilled over the top of the feature. It is also possible, however, that this zone was artificially placed on this face of the feature to reduce the effects of erosion resulting from floods that spilled over the feature. Zone G consists of pale brown sandy silt with some gravels. It appears to have been the result of high energy deposition spilling over the top of the feature and leading to localized erosion of the top of Zone I. Zone H immediately south of Zone I appears to be a mixture of redeposited materials from Zones I and G. Only a spall portion of it is present in EU 4. The remaining six zones (A-F) that overlie the three deepest depositional units

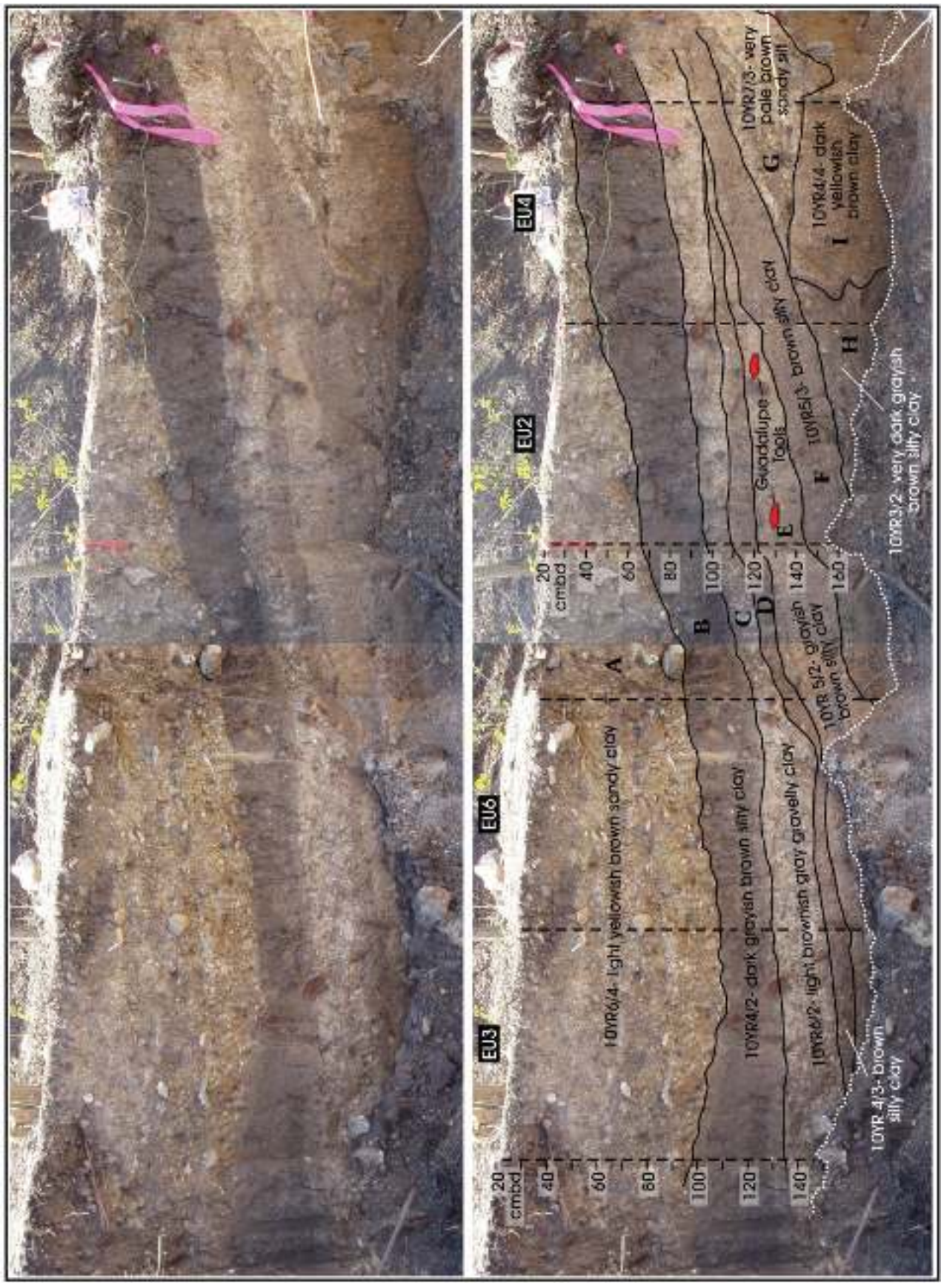

Figure 4-5. *Photo mosaic of portion of west wall of BHT 4.*

(I-H) extend through both units and continue southward through the southernmost two EUs.

The zones consist of a mix of silty and sandy clay with gravel components ranging from less than 10 (Zones D and E) to over 60 (Zone A) percent (Figure 4-5). These zones appear to be the products of flood episodes that topped and eventually buried the historic feature. Zone B consisted of dark grayish brown silty clay that was exposed on the surface above and to the north of the historic feature. This zone may have been the original ground surface. It slopes to the south as most of the underlying zones. Starting in EU, 4 a heavily graveled deposit (Zone A) overlies the silty clay and thickens significantly toward the south. Zone A appears to be modern fill designed to alter the surface contour in the area.

Excavation Units 3 and 6

EU 3 was the southern most unit on the landmass. Depths for EU 3 were gauged with Datum 3, established at an elevation of 206.45 meters amsl, at 5 cm above ground surface outside the southwest corner of the unit. The unit was excavated in 18 levels (8-190 cmbd) to a terminal depth of 190 cmbd. The volume of matrix excavated is 1.82 m^3. EU 6 was excavated in 17 levels (20-190 cmbs) and the total volume of deposits examined amounted to 1.7 m^3.

Table 4-3 lists the number of artifacts recovered by level from the two excavation units. Lithic debitage is present in all excavation levels of EU 3 and all but two of the levels (Level 12 and 14) of EU 6. There is a small jump in debitage frequencies between 90-110 cmbd in EU 3 and flakes seem to be more common in general in the upper six levels (20-80 cmbd; 5.8 flakes/level) of EU 6 than the deeper deposits (1.8 flakes/level 80-190 cmbd). Burned rock fragments are present throughout both units. Other artifact categories are infrequent.

A bifacial chopper was recovered from Level 18 of EU 3. Also within Level 18 of this EU, a weathered artiodactyl long bone fragment was found. Level 13 of EU 6 yielded an

Table 4-3. Artifacts Recovered from EU 3 and EU 6

Unit	Level	Depth (cmbd)	Count/ Weight	Artifact Category								Totals
				Bone (g)	Burned Rock (g)	Debitage	Chopper	Edge Modified Flake	Core	Biface	Possible Early Triangular DP	
EU 3	1	8-20	0p9.4			3						3
			weight (g)		198							198
	2	20-30	count			5						5
			weight (g)		16							16
	3	30-40	count		1	1						2
			weight (g)		77							77
	4	40-50	count			2		1-utilized				2
			weight (g)		5							5
	5	50-60	count			4						4
			weight (g)		22							22
	6	60-70	count			3						3
			weight (g)		83							83
	7	70-80	count			1						1
			weight (g)		17							17
	8	80-90	count			2						2
			weight (g)		13							13
	9	90-100	count			7						7
			weight (g)		10							10
	10	100-110	count			6						6
			weight (g)	12.9	466							478.9
	11	110-120	count			2						2
			weight (g)		388							388
	12	120-130	count			1						1
			weight (g)		398							398
	13	130-140	count			6						6
			weight (g)		66.2							66.2
	14	140-150	count			1						1
	15	150-160	count			3						3
			weight (g)		51.4							51.4
	16	160-170	count			2			1			3
	17	170-180	count			1						1
			weight (g)		117.7							117.7
	18	180-190	count			3	1					4
			weight (g)	19.3	21							40.3

Table 4-3. Continued...

Unit	Level	Depth (cmbd)	Count/ Weight	Artifact Category								Totals
				Bone (g)	Burned Rock (g)	Debitage	Chopper	Edge Modified Flake	Core	Biface	Possible Early Triangular DP	
EU 6	1	20-30	count			4				1		5
			weight (g)		60.1							60.1
	2	30-40	count			11						11
			weight (g)		254							254
	3	40-50	count			2						2
			weight (g)		33							33
	4	50-60	count			8						8
			weight (g)		16.7							16.7
	5	60-70	count			2			1			3
			weight (g)		21							21
	6	70-80	count			8						8
	7	80-90	count			1		1-utilized				1
			weight (g)		88.4							88.4
	8	90-100	count			2						2
			weight (g)		4.4							4.4
	9	100-110	count			3						3
	10	110-120	count			1						1
			weight (g)		10.1							10.1
	11	120-130	count			2						2
			weight (g)		26.6							26.6
	12	130-140	weight (g)		12.7							12.7
	13	140-150	count			6		1-retouched				6
			weight (g)		34							34
	14	150-160	weight (g)		28.6							28.6
	15	160-170	count			3						3
			weight (g)		2.6							2.6
	16	170-180	count			1					1	2
	17	180-190	count			1						1
Totals				32.2	2542.5	108		3	2	1	1	

edge modified flake and a possible Early Triangular projectile point was extracted from Level 16 of the unit.

The stratigraphy of EU 3 and 6 is very similar (Figure 4-5). The lenses that were evident in EU 2 also are present in the southern most two units. Although the deeper zones of EU 3 and 6 are hidden by loose soil in the bottom of the trench, examination of the profile immediately after it was excavated indicated that with the exception of Zone H, all overlying zones are present in EUs 3 and 6. Zones C through F continue dipping to the south. While Zone B also has a southerly dip, it thickens through EU 3. The slight trough along the top of the zone suggests that portion of the zone may have been scoured or eroded prior to the deposition of Zone A that contains large unsorted gravels.

Feature 1

During the excavation of Level 9 in EU 5, limestone cobbles began to emerge within the southern portion of the unit (Figure 4-6). As excavation proceeded, it became evident that the cobbles are stacked and formed an E-W running alignment throughout the unit. To locate the western end of stacked cobbles EU 7 was begun adjoining and slightly offset from EU 5. After having stripped the upper 100 cm of disturbed deposits, the top of the cobbles was encountered at approximately 105 cmbd. The western end of the cobble alignment was not encountered in the unit. To determine how far the alignment extended to the west, BHT 3 was excavated roughly parallel to the reconstructed channel of the Upper Labor Acequia. This trench did not encounter the stacked limestone cobbles suggesting that it terminated immediately west of EU 7. It could not be established whether the alignment was cut through at the time of the reconstruction of the acequia or whether the stacked stones never extended that far to the west.

Large cobbles of limestone were also noted in the bank of the river suggesting that the alignment continued east at least to the edge of the bank. BHT 2 which was situated such that its southern edge intersected the alignment exposed similar limestone cobbles as those seen in EUs 5 and 7 indicating that the alignment was likely to be continuous between the edge of the bank and EU 7. This assumption was confirmed during the grading of the landform that exposed the top of the entire alignment from EU7 to the edge of the bank. Visual inspection of the shallow channel also indicated that limestone cobbles were present in the channel itself. It could not be determined whether they were the remains of the base of the alignment

Figure 4-6. *Exposed top of diversion dam (Feature 1) in EU 5 and EU 7.*

or were in a secondary context. The overlying courses of limestone were more haphazardly arranged, consisting of fewer shaped cobbles than the bottom-most course. In its present state, its dimensions are roughly 12 meters long, and 2 to 3 meters wide. The base of the feature rests just above the water table.

The targeted locality for the drilling of two 30 foot-deep pier shafts falls within and immediately north of the location of BHT 2. This should only minimally impact the base of the feature. During grading to the landform to the base of the construction impacts (190 cmbd), it was necessary to remove some of the upper course of loose limestones from the feature to establish the grade. However, the lower portion of the feature consisting of more orderly fieldstone construction remains intact underground.

At least three possible explanations exist to explain the function of the alignment of limestone cobbles: (1) the feature served to assert some control over flooding episodes within an artesian zone that would have affected areas downstream, such as the Confederate Tannery, (2) the feature served as a temporary coffer dam during the excavation of the raceway itself, or (3) the feature served to slow water flow passed the mouth of the raceway during its operation to reduce erosion.

Given that the Spanish Colonial Upper Labor Dam is located immediately north of the present APE (Cox et al. 1999) and Feature 1, there appears to have been little need for additional flood control at this point in the river during the period the Confederate Tannery was in operation (1863-1867). While we cannot definitively prove this assertion, we suggest that the alignment most likely served either as a temporary or more permanent diversion dam erected in association with the construction of the San Antonio Water Works Raceway.

In 1877, the City Council of San Antonio authorized the construction of a municipal water system (North San Antonio Times, March 29, 1979). J.B. Lacoste and W.R. Freeman oversaw the excavation of the 40 foot wide raceway which spans roughly 650 feet from the San Antonio River's west bank (Pfeiffer 2008). River water flowed southwest through the channelized raceway to reenter the river by means of an elaborate one-story pump house built by the San Antonio Water Works Company. The pump house still stands today as do the two large sluice gates at the base of its eastern façade.

Before reentering the San Antonio River, water entered the pump house and dropped 9 feet, turning turbines and driving pumps within.

The construction of the mouth of the raceway would have been facilitated by the building of a temporary dam to divert water from the area and allow for work to proceed in a relatively dry setting. The implication of this possibility is that the dam was constructed just before the completion of the raceway. Also, the portion of the dam found in the river channel itself may have subsequently been dismantled shortly after the raceway became operational. A related possibility is that the dam continued to serve as a water-diversion feature even after the raceway was open. Such a feature would have been particularly useful if concerns existed over erosion at the mouth of the raceway a need was perceived to slow water flow in front of the raceway.

Chapter 5: Materials Recovered

The majority of cultural materials recovered during this project include burned rock (consisting of fire cracked rock and heat spalls), lithic debitage and tools/cores. Many of the chert artifacts appear to have been made of raw materials resembling the gray, brown, and tan cherts originating from the Edwards limestone formation.

A total of 328 pieces of lithic debitage has been recovered from the seven units excavated. These flakes were distributed throughout the deposits investigated. However, based on our interpretations of the stratigraphic sequences represented in the excavated EUs (see Chapter 4), only a small volume of matrix found in EU 1 (i.e., most of Levels 14, 15 and 16 [160-190 c,mbd, and small portions of overlying levels) represents intact deposits. Because only a small number of items (n=44) derive from these levels (Table 4-1), a detailed debitage analysis was not attempted.

In addition to the chipped lithic debris, burned rock also was consistently recovered from the excavation units. A total of 5,716 grams, or nearly 6 kilograms, of burned rock was recovered from the seven units. The distribution of the burned rock was relatively even throughout the deposits.

Non-debitage Lithic Artifacts

Thirteen chipped stone artifacts other than debitage were recovered during the investigations conducted at 41BX1798. They include four edge modified flakes, two choppers, two Guadalupe tools, two possible projectile points, two cores and one miscellaneous biface. Two of the four edge modified flakes have retouched edges. One of the two has traces of use wear along the edge (Lot 17; EU 2, Level 8) while the second (Lot 91, EU 6, Level 13) is devoid of micro-wear and may be the product of a manufacture failed reduction episode. The other two edge modified flakes retain use wear derived from scraping tasks. One is a large secondary flake (Lot 20, EU 3, Level 4) while the second is a small tertiary flake fragment (Lot 73, EU 6, Level 7).

Two artifacts with bifacially flaked edges and cortex backing also have been recovered. The larger specimen comes from Level 10 of EU 1. It retains some crushing along its bifacial edge that appears to represent use-wear. The second specimen is smaller and has a short pointed bifacially flaked working edge. It was recovered from Level 18 of EU 3. Both specimens are classified as choppers based on the crushing and step fracturing present on their bifacial edges. Two cores (EU 3, Level 16 and EU 6, Level 5) as well as a miscellaneous biface (EU 6, Level 1) also were recovered.

The last four artifacts recovered during excavations of the seven units consist of two Guadalupe tools and two possible projectile points. The two Guadalupe tools (Figure 5-1) were recovered in EU 2. One is a proximal fragment (Figure 5-1a) and the other (Figure 5-1b) is a complete specimen. The proximal fragment was recovered in Level 10 of EU 2. The specimen has a triangular cross-section typical of the tool and has been reflaked following its breakage. The fracture morphology near the distal end is consistent with a snap break that commonly occurs during excessive torque in the process of use. The flint has a light gray color and patches of

Figure 5-1. *Guadalupe tools recovered in EU 2 at 41BX1798.*

calcium carbonate precipitate are present on one face. The complete Guadalupe tool was recovered in Level 11 (130-140 cmbs). The specimen has the typical steep working bit and exhibits several step-fractured resharpening flake scars that are visible in the profile of the artifact (Figure 5-1b). Both specimens are made from typical Edwards chert. The completed specimen does not appear heat treated, but does retain patches of calcium carbonate precipitated onto its surface. The presence of calcium carbonate suggests that the tools were recovered in situ or have not been transported a great distance from their original depositional context. The tool weighs 120.7 grams, has a maximum length of 96 mm and measures 36 mm in maximum width and 33 mm in maximum thickness.

The two projectile points consist of a Tortugas specimen and a possible Early Triangular point. The Tortugas specimen was recovered from EU 5, Level 12; Lot 75). It has a triangular form (Figure 5-2a) and alternate beveling that gives it a twisted longitudinal morphology. The edges of the specimen are serrated and this trait as well as the shape and alternate beveling are typical traits of the type (Turner and Hester 1999:188). The tip retains a large impact fracture scar that removed a portion of one edge. The scar supports the interpretation that the triangular specimen is a projectile point. Tortugas points date to the later part of the Middle Archaic (ca. 3000 B.C.) in this region (Turner and Hester 1999:188).

A complete possible Early Triangular projectile point was recovered from EU 6 within Level 16 (Lot 97, Figure 5-2b). It is a very thin (5.6 mm) bifacial artifact exhibits a small "stack" on one face that resulted from the step-fractured termination of several surrounding flake removals. The specimen is relatively narrow (26 mm) at the base and measures 52.9 mm in length. It is classified as a possible Early Triangular projectile point simply because it is as thin and at least on one face thinned in a manner reminiscent of the point type (Turner and Hester 1999:110). However, since it may not be finished and has no clear evidence of having be used, it is only provisionally identified as this form. Early Triangular dart points date to the Early Archaic suB.P.eriod, circa 3700-3600 B.C. (Turner and Hester 1999:108).

Figure 5-2. *Diagnostic projectile points recovered from 41BX1798: a) Tortugas; b) possible Early Triangular.*

Chapter 6: Discussion and Recommendations

The CAR performed archaeological data recovery in January and February of 2009 within the proposed locality for a bridge abutment on the west bank of the San Antonio River west of Miraflores Park. In addition, the CAR staff also monitored the shallow grading of a foot path along the west bank of the San Antonio River leading from the bridge across the San Antonio Water Works Company Raceway to a point approximately 50 meters south of the bridge. The shallow grading disturbed no intact deposits.

However, during the first day of grading for the bridge abutment, the CAR project monitor identified prehistoric cultural materials falling out of the wall of one of the very first backhoe cuts. The materials consisted of a nearly-complete Transitional Archaic Ensor projectile point, a middle-reduction stage biface, a core fragment, an expedient tool and fragments of burned rock. The CAR staff immediately notified RVK Inc., the San Antonio Historic Preservation Division and the Texas Historical Commission of the finds. Based on the finds, it was agreed upon that systematic investigations of the landform designated for the bridge abutment would be necessary to determine the nature and integrity of deposits found within the APE. Subsequently, three 1-x-1 meter test units were distributed across the portion of the APE to be impacted by the bridge construction. The units were excavated to the depth of projected construction impact, 190 cmbd. Burned rock and debitage were recovered from throughout the three units and two Early Archaic (ca. 5,500 year old; 3,500 B.C.) Guadalupe tools were found at a depth of 130-140 cmbd. Both specimens retained patches of calcium carbonate suggesting that they have been buried for some time prior to their recovery. While the profile of EU 1 indicated that an intrusion had disturbed much of the deposits, the recovery of prehistoric materials throughout the deposits complicated interpretations. Similarly, the stratigraphically superimposed zones identified in EUs 2 and 3 in the middle and southern portions of the landform in combination with archeological materials present throughout the deposits and the finding of two Early Archaic tools, supported the impression that the materials derived from intact deposits.

The CAR staff met on-site with representatives of RVK, the City Historic Preservation Division and the THC as excavations of EUs 1, 2 and 3 were winding down. Based on the findings to date, it was agreed that four additional excavation units would be opened to more fully asses the extent of the Early Archaic deposits suggested by the two Guadalupe tools. The three new units (EUs 4, 5 and 6) would be adjoining EUs 1, 2 and 3 and the fourth would be placed near the channel's edge in the specific area identified for one of the bridge piers. In addition, at least one backhoe trench would be excavated in an N-S direction to expose the stratigraphy of the landform and to make it easier to relate each unit to each other.

Once the excavation of the additional units began, it was decided that prior to locating the unit on the bench of the river, it would be desired to remove gravel fill present at the location. This operation was performed with a backhoe and the unit became a backhoe trench (BHT 2). Three other BHTs were later excavated including BHT 1 through the base of EU 5, BHT 3 roughly paralleling the Upper Labor Acequia and BHT 4, through the center of the site. A seventh hand-excavated unit, EU 7, was placed adjoining EU 1 to expose more of a feature initially noted in EU 5.

All subsurface investigations of the APE were conducted under Texas Antiquities Permit No. 5150. Kristi M. Ulrich served as Principal Investigator and Jon J. Dowling was the Project Archaeologist.

Excavations in all of the units recovered cultural materials consisting of small quantities of lithic debris (debitage), small to moderate weights of burned rock and a total of 13 lithic tools consisting of edge modified flakes, choppers, cores, two Guadalupe tools, a miscellaneous biface, a Tortugas dart point and a possible Early Triangular Dart point. Other materials such as snail shells occurred in small quantities.

A historic feature, Feature 1, also was discovered and documented. Its western edge was located in the vicinity of the reconstructed Upper Labor Acequia and its eastern edge protruded out of the bank of the river. It was oriented to the south-southeast and limestone cobbles noted in the river bed itself suggest that it may have at one point continued into the streambed itself. In its present form, the feature measures roughly 12 meters in length and 2 (top) to 3 (base) meters in width. Its location in relationship to the San Antonio Water Works Company Raceway suggests that it may have been built either to temporarily divert the waters of the river while the mouth of the raceway was constructed or to reduce erosion in the vicinity of the mouth of the raceway. If it is related to the raceway, it would have been built sometime around 1877. If on the other hand, it was built to lessen the effects of flooding of the nearby Confederate Tannery, than its construction would date to between 1863 and 1867. The later interpretation is less likely given the presence of a

Spanish Colonial dam that was already in existence just north of Feature 1.

The top of the feature was at approximately 105 cmbd at its western end and it sloped slightly as it progressed southeast toward the river's edge. During grading of the landform, it was necessary to remove approximately 50-90 cm of the upper courses of stone to reach the depth of construction impact. However, the lower portion of the dam remains intact, still buried in the bank.

The CAR staff was able to inspect the stratigraphy of the deposits in greatest detail only once BHT 4 exposed all of the strata beginning in the southern portion of the landform (EU 3) and continuing north of EU 1 past the last hand-excavated unit. While at this point it became evident that the construction of the historic feature had resulted in significant disturbances to the soils north and south of the feature, the clearest evidence of the disturbances was north of the feature where the edges of two trenches were clearly visible in the profile. The strata found south of the feature (i.e., EU 4 through 3) were for the most part horizontally stacked and lacked major unconformities that would have been noted within individual 1x1 meter units. The most obvious evidence of disturbance was noted in the deepest deposits found abutting the south-face of the feature. It was here that evidence for erosion resulting from flooding over the top of the feature was most prevalent and one could discern the subsequent bedding of flood deposits of lower and higher energy. The fact that the deposits contained archaeological materials, some that appeared to be in situ, complicated interpretations. In addition, the presence of the Upper Labor Acequia immediately at the western edge of the site also represented an obvious disturbance. However, no clear evidence of this historic construction or its later reconstruction was noted in the walls of BHT 4. It is possible that an E-W running trench perpendicular to the route of and abutting the acequia could have revealed deposits derived from the trench.

Once all of the available evidence was combined to interpret the history of this locality, it appears to us that the archaeological deposits excavated south of the historic feature may have been transported by flood deposits from a prehistoric site located just north of the Spanish Colonial dam (41BX1273; Cox et al. 1999:9). They were transported only a short distance, 80-100 meters, and redeposited just south of the historic feature. This reconstruction explains the presence of calcium carbonate on two Early Archaic artifacts and also accounts for the consistent presence of cultural materials throughout the deposits.

In conclusion, multicomponent site 41BX1798 was identified within the APE. Excavation units revealed buried prehistoric cultural materials throughout 170 cm of deposits (120-190 cmbd). The artifacts, the stratigraphy and the presence of a site north of the APE suggest that the soils were brought in by flood deposits from a site located north of the APE. Feature 1, a historic dam that was likely designed to alleviate flow into the San Antonio Water Works Company raceway was documented. It appears to date to the later 19th century and while its upper portion was removed during the grading work in preparation for the construction of the bridge abutments, its base remains intact within the bank. Given the secondary depositional context of the archaeological materials and because the historic feature has been documented, CAR does not recommend additional archaeological investigations of the APE.

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