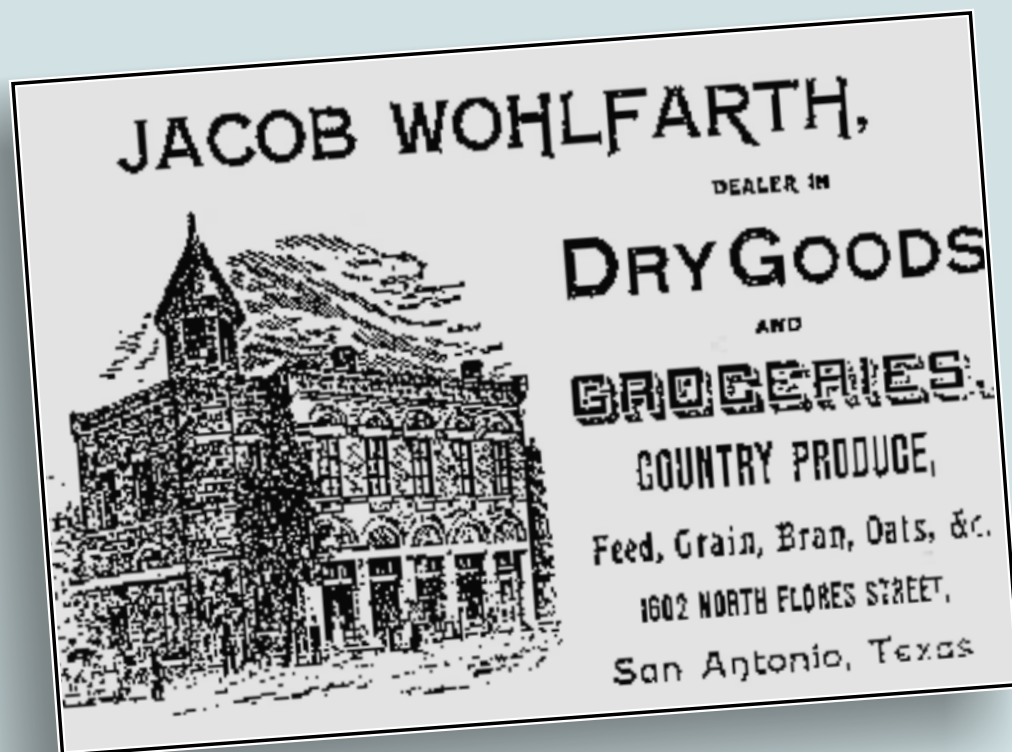


Investigations on the Site of Wohlfarth's Mercantile and the Search for the *Arocha Acequia*, San Antonio, Bexar County, Texas

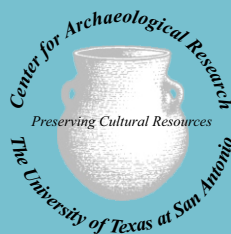


by
Clinton M. M. McKenzie

Principal Investigator
Raymond P. Mauldin

Texas Antiquities Permit No. 7102

Prepared for:
VIA Metropolitan Transit Authority
Fleet & Facilities
1702 North Flores Street
San Antonio, Texas 78212



Prepared by:
Center for Archaeological Research
The University of Texas at San Antonio
One UTSA Circle
San Antonio, Texas 78249
Technical Report, No. 63

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Abstract:

In August 2014, the Center for Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) excavated five backhoe trenches within the confines of New City Block 1917, Lots 6 and 12. This work was performed for VIA Metropolitan Transit Authority (MTA) and under the review of the Texas Historical Commission (THC). The work was conducted pursuant to Texas Antiquities Permit No. 7102, with Dr. Raymond P. Mauldin serving as Principal Investigator and Clinton M. M. McKenzie as Project Archaeologist. CAR determined the locations for five backhoe trenches, monitored their excavation, and drew profiles of each trench in an effort to determine if the Spanish Colonial *Arocha Acequia* was present within the project area and to see if any prehistoric materials were present beneath the surface. No Spanish Colonial elements were identified, nor was there any evidence of prehistoric occupation on the site.

No artifacts were collected. Records generated during the project were prepared for curation according to THC guidelines. They are permanently curated at CAR at UTSA.

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Acknowledgements:

The archaeological investigations undertaken in this report were carried out by Colt Dresser and Clinton M. M. McKenzie, both of the Center for Archaeological Research at The University of Texas at San Antonio. Clinton M. M. McKenzie directed the fieldwork as Project Archaeologist, Colt Dresser assisted with the monitoring and recording, and Dr. Raymond P. Mauldin served as Principal Investigator. Thanks are extended to Laura Carbajal and Rick Young for their drafting assistance and to Kelly Harris for her manuscript editing skills. Thanks to property owner Candida Ramirez for her insight and assistance with the history of the property. Thanks is also given to Ray Smith of Frisch Construction who provided drawings and specifications and helped facilitate the monitoring. A special thanks to Abigail K. Rodriguez and Charles Haile of the VIA MTA staff for their assistance with site access and planning.

Chapter 1: Introduction

Project Summary

The Center for Archaeological Research (CAR) at The University of Texas at San Antonio (UTSA) was contracted by VIA Metropolitan Transit Authority (VIA MTA) in August of 2014 to provide archival and archaeological services related to New City Block (NCB) 1917, Lots 6 and 12. VIA MTA acquired the lots that are adjacent to their headquarters to expand the current bus station and provide additional surface parking as well as landscape features on the site. The project area is located on the Southton 7.5-minute series USGS quadrangle map (Figure 1-1). The CAR conducted subsurface investigations by excavating five backhoe trenches at various locations on the project property.

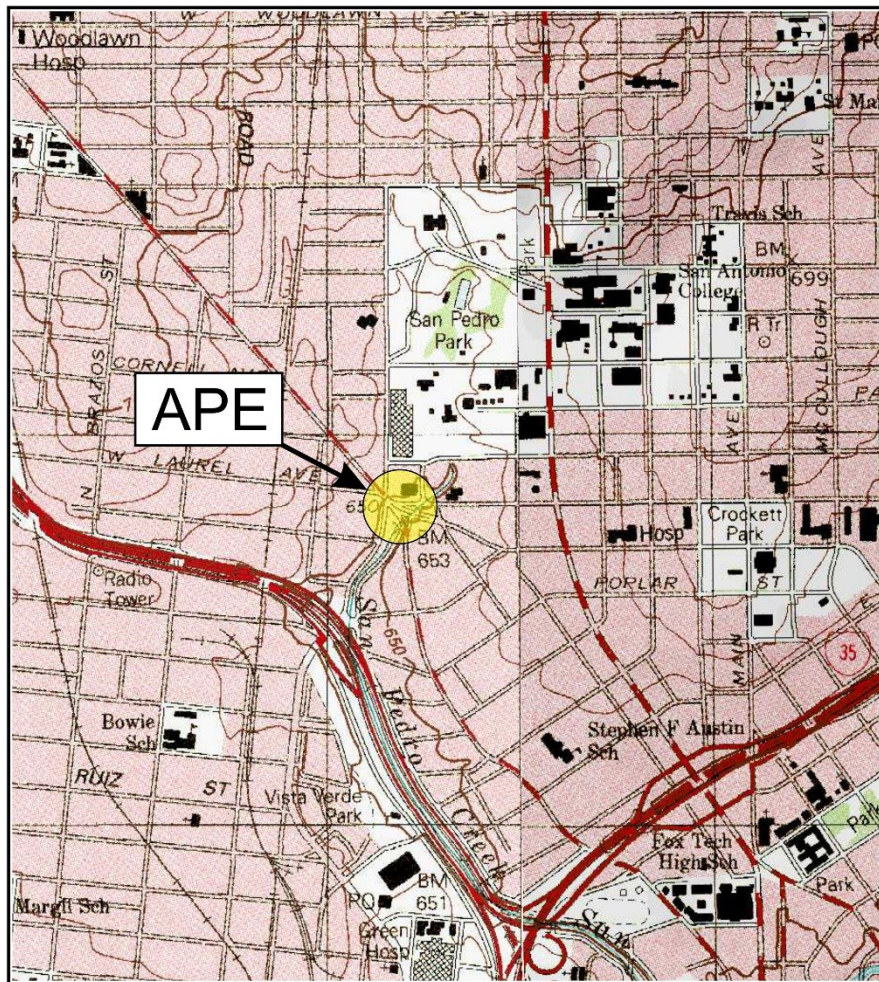


Figure 1-1. Location of project area on the San Antonio East 7.5-minute series USGS quadrangle map.

The land is still under the control of the Ramirez and Osterwiech heirs. The project is sponsored by VIA MTA, a quasi-governmental entity. VIA MTA anticipates any future work on the site will have to comply with both Section 106 of the National Historic Preservation Act of 1966 and the Texas Antiquities Code. The work reported herein was coordinated by and through the Texas Historical Commission (THC) and services were performed under Texas Antiquities Permit No. 7102 with Dr. Raymond P. Mauldin, CAR Acting Director, serving as Principal Investigator and Clinton M. M. McKenzie serving as Project Archaeologist.

This document, UTSA CAR Technical Report, No. 63, presents the results of the investigations. In addition to the brief summary of the work conducted, this chapter includes an overview of the Area of Potential Effect and the environmental setting. Chapter 2 presents the cultural setting of the project and reviews previous archaeological investigations in the area. Chapter 3 discusses the methods employed by CAR during field monitoring. Chapter 4 addresses the results of the field investigations followed by a project summary and recommendations in Chapter 5.

Area of Potential Effect (APE)

The Area of Potential Effect (APE) consists of two contiguous lots, 6 and 12, within NCB 1917, and is bounded by North Flores Street on the west, La Harpe Street on the east, NCB 1917 Lots 5 and 11 on the north, and Fredericksburg Road on the south (see Figure 1-2 and Figure 1-3). The project lots front onto the Five Points intersection. The lots, combined, have an east-west distance of approximately 85 meters (m) and north-south distance of approximately 21 m. The corners and edges of the southern property are truncated. Ownership of the lots is vested in the City of San Antonio and VIA MTA. The City owns a 330 m², irregular portion of Lot 6, fronting onto North Flores Street and Fredericksburg Road, and VIA MTA is seeking ownership of the remaining irregular portion of Lot 6 and all of Lot 12 for a total of 1315 m².



Figure 1-2. General view of the APE facing north.

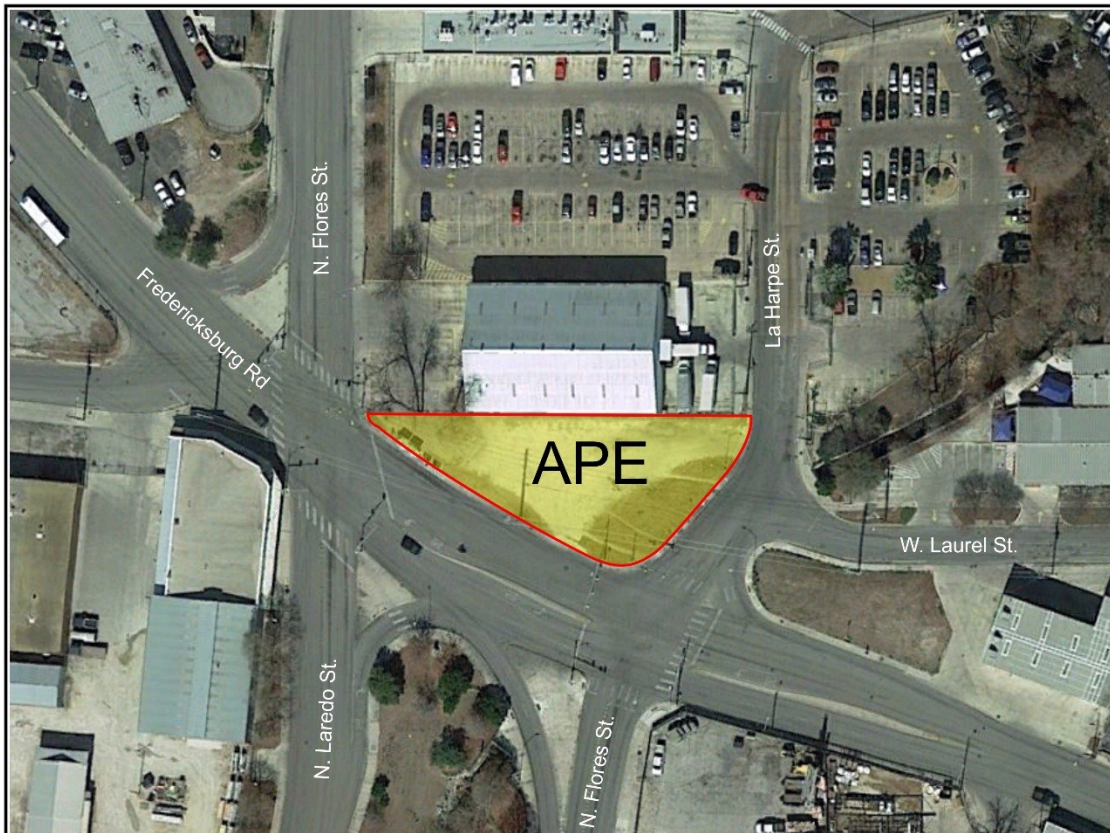


Figure 1-3. The APE overlaid on an aerial image of the north side of the Five Points intersection.

Environmental Setting

The project area is located approximately a third of a kilometer (km) south of San Pedro Park and is adjacent to San Pedro Creek that borders the APE on the east side, albeit in an underground channel. The property is bordered by North Flores Street on the west, La Harpe Street on the east, and Fredericksburg Road on the south. The property is on the north side of the Five Points intersection (see Figure 1-1). The APE lies on the north side of the intersection.

Climate in Bexar County is defined as "...subtropical-subhumid, with mild winters and hot summers. Temperatures in January range from an average low of 39°F to an average high of 62° and in July from 73° to 96°. The average annual rainfall is thirty-one inches.... The growing season averages 265 days a year, with the last freeze in early March and the first freeze in late November" (Long 2010).

The topography in the vicinity of the APE is flat and alluvial with slopes of three to five percent. The project area itself lies within the Branyon Clay series soils, specifically designated as HtB (Figure 1-4). Branyon Clay soils have a slope of three to five percent and are described as "very deep, moderately well drained, very slowly permeable soils that formed in calcareous clayey alluvium derived from mudstone of Pleistocene age. These nearly level to very gently sloping soils occur on treads of stream terraces on river valleys. Slope ranges from 0 to 3 percent" (United States Department of Agriculture, Natural Resources Conservation Service 2013).



Figure 1-4. Soil series map of project area.

Chapter 2: Culture History and Previous Archaeological Investigations

Culture History

San Antonio and Bexar County are located in the Central Texas archaeological region. Cultural chronology for this region is divided into five broad culture periods: Paleoindian, Archaic, Late Prehistoric, Protohistoric, and Historic.

Paleoindian Period (12,000-9000 BP)

The Paleoindian period is divided into early and late phases. Numerous sites dating to these periods are found within Bexar County. Paleoindians were highly mobile bands who hunted both large and small game and, in the early phase Pleistocene, megafauna. Evidence from sites such as Wilson-Leonard suggests that these populations utilized various flora resources (Bousman et al. 2004; Collins 1998).

The early period (12,000-10,000 BP) is typified by Clovis and Folsom tool kits and the hunting of megafauna (Bousman et al. 2004). Clovis cultural materials are found throughout Texas ranging from Texas Panhandle sites on the High Plains sites to now inundated Coastal sites.

The late period (10,000-9000 BP) is typified by St. Mary's Hall, Plainview, Golondrina, and Barber lanceolate projectiles and associated tool kits (Bousman et al. 2004; Prewit 1981; Turner et al. 2011). Late Paleoindian sites are also widely distributed across the state. All identified forms of late Paleoindian artifacts are found in the Bexar County area. The late Paleoindian period demonstrates a shift in subsistence from megafauna to smaller game animals (Bousman et al. 2004).

Archaic Period (9000-1200 BP)

The Archaic is divided into an Early, Middle, and Late phase (Black 1989; Bousman et al. 2004; Mauldin et al. 2013). The Archaic as a whole is characterized by a profusion of projectile point types and the adoption of ground and pecked stone tools. It is posited that the diversity of tools demonstrates diffusion within the landscape and a greater reliance on and exploitation of local environments (McGraw and Hinds 1987; Story 1985).

Early Archaic (9000–6800 BP)

Early Archaic sites are often of very small scale. This suggests that populations were highly mobile and of low density (Peter et al. 2006; Prewit 1985; Weir 1976). Burned rock middens, hearth features, and lithic procurement sites become more common during the terminal Early Archaic (Collins 1998). Faunal resources include bison, deer, rabbits, turtle, fish, and fresh water mussel (Collins 2004). The period exhibits a greater utilization of floral resources, such as prickly pear, and geophytes, such as sotol, and agave.

Middle Archaic (6800–4200 BP)

Like the preceding Early Archaic period, the Middle Archaic is typified by a profusion of new projectile points. These include Bell, Andice, and Taylor for the early Middle Archaic and Nolan, La Jita, and Travis during the late Middle Archaic (Turner et al. 2011). A notable Middle Archaic site in Bexar County is the Granberg site (Munoz et al. 2011). Well documented Early Archaic sites near to Bexar County include the Gatlin site in Kerr County (Houk et al. 2009; Oksanen 2008) and the Jonas Terrace site in Medina County (Johnson 1995).

Subsistence during the early Middle Archaic appears to be associated with the exploitation of bison and a variety of floral resources (Black 1989; Collins 2004; Johnson and Goode 1994). Burned rock middens that served as earth ovens begin to accumulate in the Central Texas region during this period (Black and Creel 1997). These features were used to process plants such as tubers, bulbs, and caudex roots, as well as faunal resources (Mauldin et al. 2013).

Late Archaic (4200–1200 BP)

The Late Archaic also exhibits a great diversity of projectile points. These include Pedernales, Marshall, Castroville, Montell, Marcos, Fairland, Frio, Ensor, and Darl (Collins 2004). Additionally, corner-tanged knives, biface caches, marine shell ornaments, and cylindrical stone pipes appear during this period (Collins 2004; Hall 1981; Hester 2004). Notable Late Archaic sites include Panther Springs (Black and McGraw 1985) in Bexar County, Onion Creek (Ricklis and Collins 1994) in Hays County, as well as sites in the Lower Pecos (Turpin 2004), such as Bonfire Shelter (see Dibble 1967; Dibble and Lorrian 1968).

Formal cemetery complexes are also common in Central and South Texas during this period, including Olmos Dam (Lukowski 1988) in Bexar County and Loma Sandia in Live Oak County (Taylor and Highley 1995). A review by Munoz et al. (2011) of 32 burials in the Central Texas area (41KR241, 41BX1, 41BX26, and various Hayes County sites) were divided temporally into groups for comparison. Early Late Archaic averages compared to those from the close of the Middle Archaic suggest a similar overall diet, with a slight increase in C_4 /CAM proteins that may reflect an increased use of C_4 feeding bison. Isotopic data from the end of the Late Archaic isotopic data reflect an increased dependence on C_3 resources, such as deer, relative to C_4 /CAM protein sources, such as bison (Munoz et al. 2011). In addition to the potential shift from C_4 to C_3 protein resources, subsistence in the Late Archaic continued to include reliance on plant resources (Black 1989).

Prehistoric Period (1200-500 BP)

The Late Prehistoric period is characterized by the introduction of bow and arrow technology and the introduction of ceramics. The Late Prehistoric is divided into two main periods: Late Prehistoric I and Late Prehistoric II. The Late Prehistoric I period (1200-800 BP) is associated with Scallorn and Edwards arrow

points and tools, such as Pipe Creek bifaces (Turner et al. 2011). Faunal resources during this period appear to shift from bison to deer. This shift is assumed to be a presence/absence choice as a result of declining bison populations (Collins 2004). There are indications of social conflict and stress between or within tribal groups as evidenced by burials with embedded or closely associated Edwards and Scallorn arrow points (Prewitt 1974). Perdiz and Cuney arrow points, bone tempered ceramics and formal tools, such as end scrapers, beveled knives, and Gahagan bifaces typify the material culture assemblage of the Late Prehistoric II (Turner et al. 2011).

Proto-historic Period (500–325 BP)

The Proto-historic period represents the time period from first European contact to formal exploration and/or colonization (ca. 500-300 BP for Texas and the San Antonio area). The Proto-historic ends around 1650 to 1700. The first formal *entrada*, or expedition, into the valley of San Antonio was that by Domingo Teran de los Rios in June of 1691 (Foster 1995). The expedition of Isidro Félix de Espinosa, Antonio de San Buenaventura y Olivares, and Pedro de Aguirre of 1709 passed through San Antonio on the way to the Tejas who were believed to be living on the Colorado River (Chipman 1992).

Numerous *entradas* and other Spanish explorations of the sixteenth and seventeenth century document interactions with Native Americans in Texas, their geographic locations, associations with other native groups, and some of their life ways, languages, and material culture. The Proto-historic is characterized by interaction predominantly with the Spanish and to a lesser degree the French; however, Native American cultures still maintained their own economies during this period (Arnn 2012; Hester 1995). While Europeans interacted periodically with indigenous peoples, they did not otherwise directly affect the day-to-day lives of most Native Americans. The greatest impacts Europeans had on native cultures were through disease and the introduction of old world domesticates such as cattle, horses, and pigs.

Colonial Historic Period (ca. 1718 to 1821)

The Colonial Period in San Antonio runs from 1718 to 1821. Following the Domingo Teran de los Rios *entrada* of 1691 and the Espinosa, Olivares, Aguirre expedition of 1709, a formal decision to found a mission and presidio at San Antonio was made (Habig 1968). The Spanish Governor Alarcon subsequently created the civil settlement of *San Fernando de Bexar* and the religious settlement of *San Antonio de Valero* in early May of 1718. By 1732, there were six missions in San Antonio. Three missions from east Texas were re-located along the San Antonio River to protect them from the French (Chipman 1992). During the period from 1718 to 1790, these missions took in numerous Native American tribes and dramatically altered their culture and way of life through assimilation and domination (Cargill 1996). The Spanish altered the landscape through land clearance and by the construction of irrigation canals and the diversion dams. These canals, known as *acequias*, expanded the arable land and provided drinking water (Cox 2005). Between

the early 1790s and 1820, the missions were secularized, and their lands were distributed among the remaining missionized Native Americans (Chabot 1937).

Archival Summary

Archival Review

The lot history for the parcel containing the APE extends back to the Spanish Colonial period. The original parcel of four *solars* was donated by the City Council to Francisco Jose de Arocha on April 24, 1743 (Bexar County Archives, Land Grant Sales). The lands on the east side of the San Pedro Creek were watered during this period by the *Acequia de San Pedro*, and its head gate was in what is now San Pedro Park. There were nine major *acequia* systems built during the Spanish Colonial period. These irrigation canals provided water for *suertes*, parcels of arable and irrigated farm lands, assigned by lottery (Chabot 1937). Land without *acequia* privileges had no irrigable water and as a result crops were dependent solely rainfall and dry land farming practices. As there was no *acequia* on the west side of the creek, Francisco Arocha constructed a private *acequia* whose head gate was on San Pedro Creek and then traversed his property along the western boundary line (Figure 2-1). The surmised date of construction for the *Arocha Acequia* is 1743 to 1745 following his acquisition of the property. This *acequia* was one of two private irrigation canals, the other being the *Navarro Acequia* (Cox 1986:10, 1992:26).

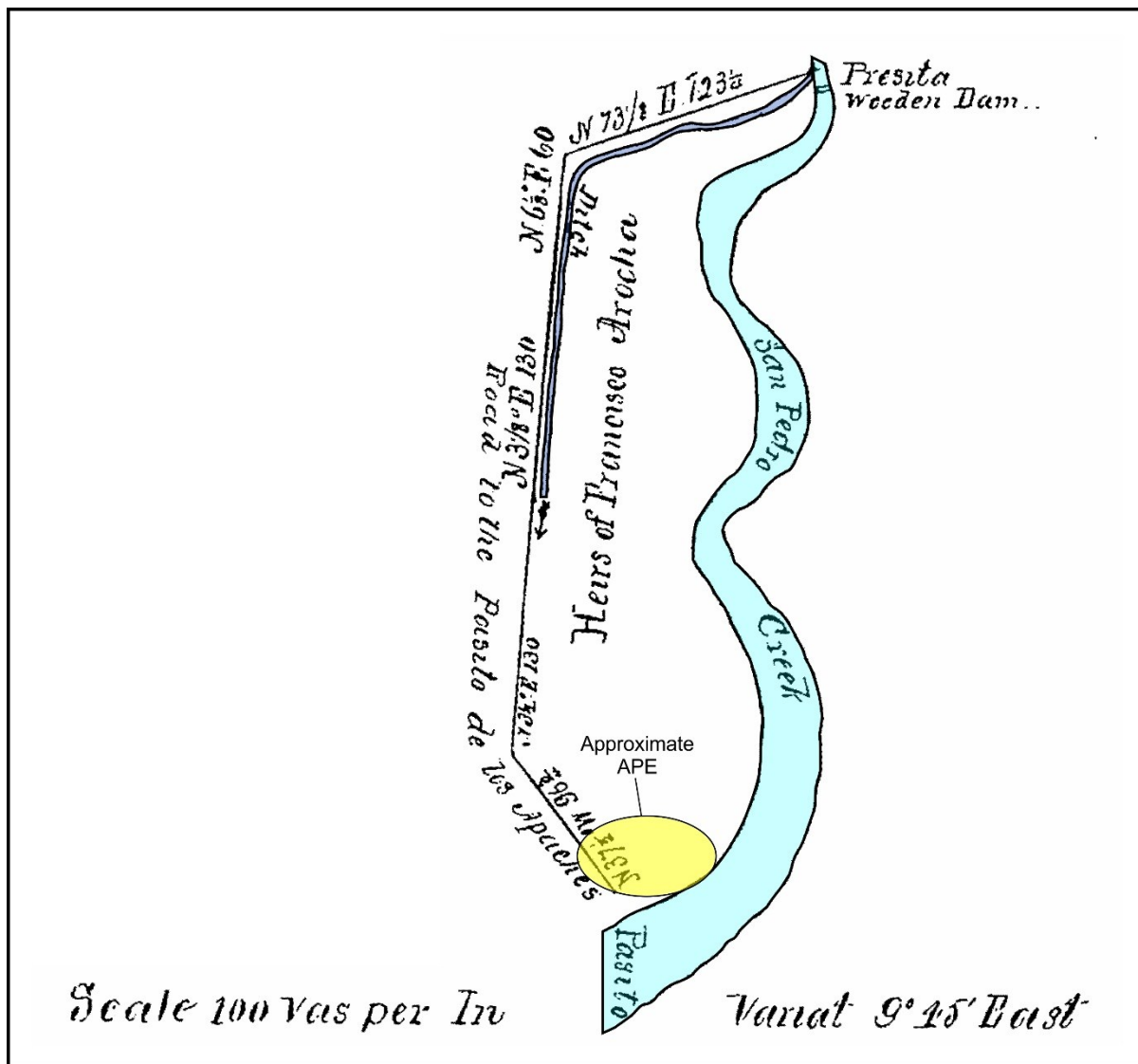


Figure 2-1. Plat of Arocha Property in 1850. N.B.: the approximate location of the APE is highlighted in yellow and marks the southern portion of the original Arocha parcel, bounded by the Pasito de los Apaches and San Pedro Creek. Also, note that the Arocha Acequia, highlighted in blue, is shown on the plat and notated as "Ditch."

The property remained in the Arocha family until 1851 when it was awarded by Court Decree to the City of San Antonio (Cox 1986; Crook 1967). The City undertook this action to recover the two leagues of land granted to the municipality by the King of Spain and subsequently confirmed in 1827 by the Mexican Congress of *Coahuila y Tejas*. The City, affirmed in its ownership by the Texas Supreme Court in the case of *Lewis et al. v. San Antonio*, and then sold much of the land to private individuals. The only parcel of property retained by the City until the present is the area that is San Pedro Park.

The City of San Antonio sold the Arocha tract (replatted as Lots 2 and 3, Range 4, and District 3 of the 1852 Survey) in 1852 to Sam Smith (BCDR L1:93). Smith served as Mayor of San Antonio in 1847 and

subsequently as both Bexar County Clerk and District Clerk (Buck 1980:285; Chabot 1937:275; Cox 1986:10). Smith then sold the lots to William Lange in January of 1865 (BCDR T1:326). Lange in turn sold the lots to Martin Meüinch in 1872 (BCDR W2:295). Meüinch divided the large Lot 2 into “town tracts” numbered 1 through 11 (Figure 2-2). The APE is part of what was Meüinch’s Lot 2.



Figure 2-2. Meüinch’s 1872 replat of Lot 2 into Lots Number 1 to 11. The APE, highlighted in yellow, is located in Lot 1 on this map. N.B.: the Arocha Acequia is not shown on this plat.

Meüinch sold the renumbered Lots 1, 2, and 3 to Peter Jonas in 1876 (BCDR 7:16). Jonas operated the Star and Crescent Saloon on Austin Street (Appler’s City Directory 1892). He subsequently served as Bexar County Judge from February 19, 1897, to December 31, 1900 (Bexar County Commissioner 2014). Jonas replatted the lots into 17 smaller residential tracts in 1884 (Figure 2-3) along with the dedication of a street for access (Jonas Street, subsequently renamed La Harpe). Jonas sold the lots piecemeal over the course of the following decade (for a discussion of Lots 1, 2, and 3, see Cox 1986:10). Lots 6 and 12 were conveyed in April of 1884 to Jacob Wohlfarth (BCDR 37:20). Wohlfarth erected a two-story, wood-framed store and associated camp yard (Figure 2-4).

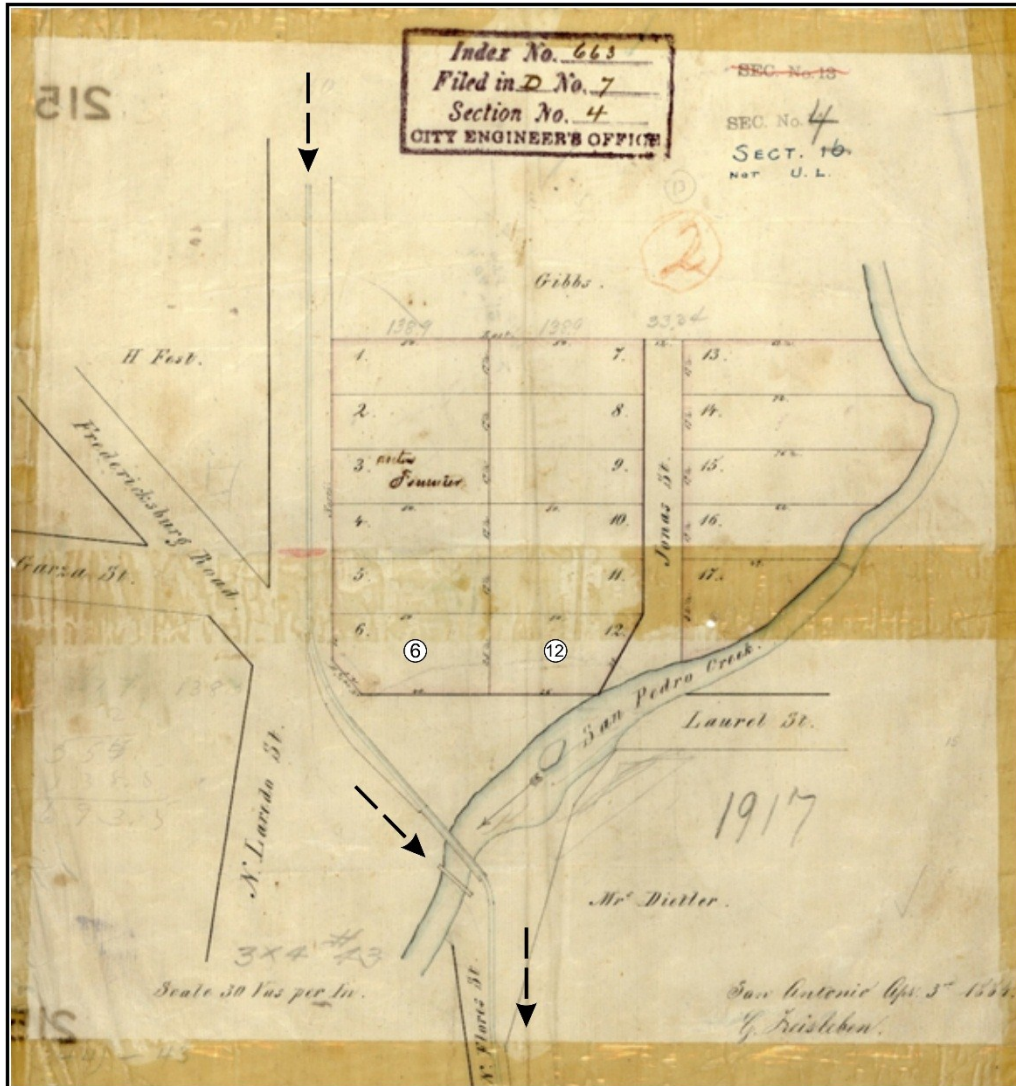


Figure 2-3. April 1884 plat of lots by Peter Jonas (City Engineer's Book Index No. 663, D7, Section 4). Black arrows indicate possible alignment of Arocha Acequia.

This store, much modified during its long history, stood on the site until the early 1990s when it was demolished. During Wohlfarth's thirty-nine year ownership a number of structures were built on Lots 6 and 12, the first of which was "Wohlfarth's General Merchandise" addressed variously at 1602 North Flores Street or 823 West Laurel Street and an adjacent residence. The Sanborn's Fire Insurance Map of 1896 shows Wohlfarth's wood framed mercantile structure on the corner of Lot 6 at North Flores Street and West Laurel Street/Fredericksburg Road (Figure 2-5). Immediately adjacent to the store is a small dwelling, and there are a number of other privies and outbuildings along the northern property line of Lots 6 and 12. Wohlfarth operated his store and resided on the property. His residence adjacent to the store was converted to storage by 1904, and it appears that he then resided at 103 Jonas Street on the corner of Lot 12 until 1923.

JACOB WOHLFARTH,
DEALER IN
DRY GOODS
AND
GROCERIES.
COUNTRY PRODUCE,
Feed, Grain, Bran, Oats, &c.
1602 NORTH FLORES STREET,
San Antonio, Texas

A detailed black and white illustration of a large, multi-story building, likely the store of Jacob Wohlfarth. The building features a prominent tower on the left side with a pointed roof. The facade is characterized by numerous arched windows and doorways, suggesting a grand and historic structure. The building is surrounded by a street scene with some smaller figures and structures, indicating its location in a city.

Figure 2-4. Image of Wohlfarth's General Merchandise in 1892 City Directory.

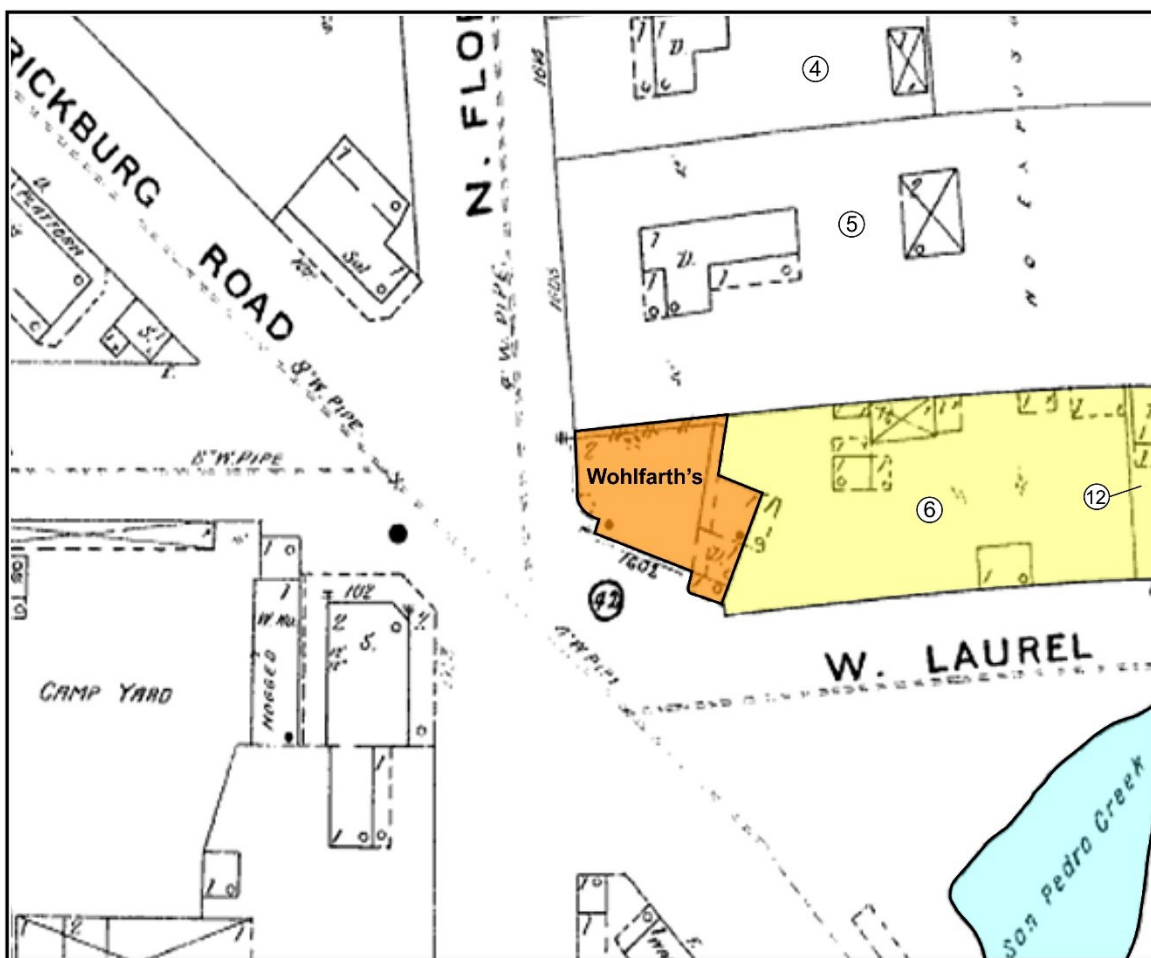


Figure 2-5. Sanborn Fire Insurance Map of 1896 (partial) showing NCB 1917 with Lots 4, 5, and 6 and a portion of Lot 12. N.B.: the possible acequia shown in the 1884 plat is no longer extant by 1896.

Wohlfarth sold Lots 6 and 12 in 1923 to Dr. R. Stuart Adams (BCDR 749:208). The 1924 Sanborn Fire Insurance Map (Figure 2-6) demonstrates that San Pedro Creek has narrowed and the large pool shown in the 1896 map is gone.

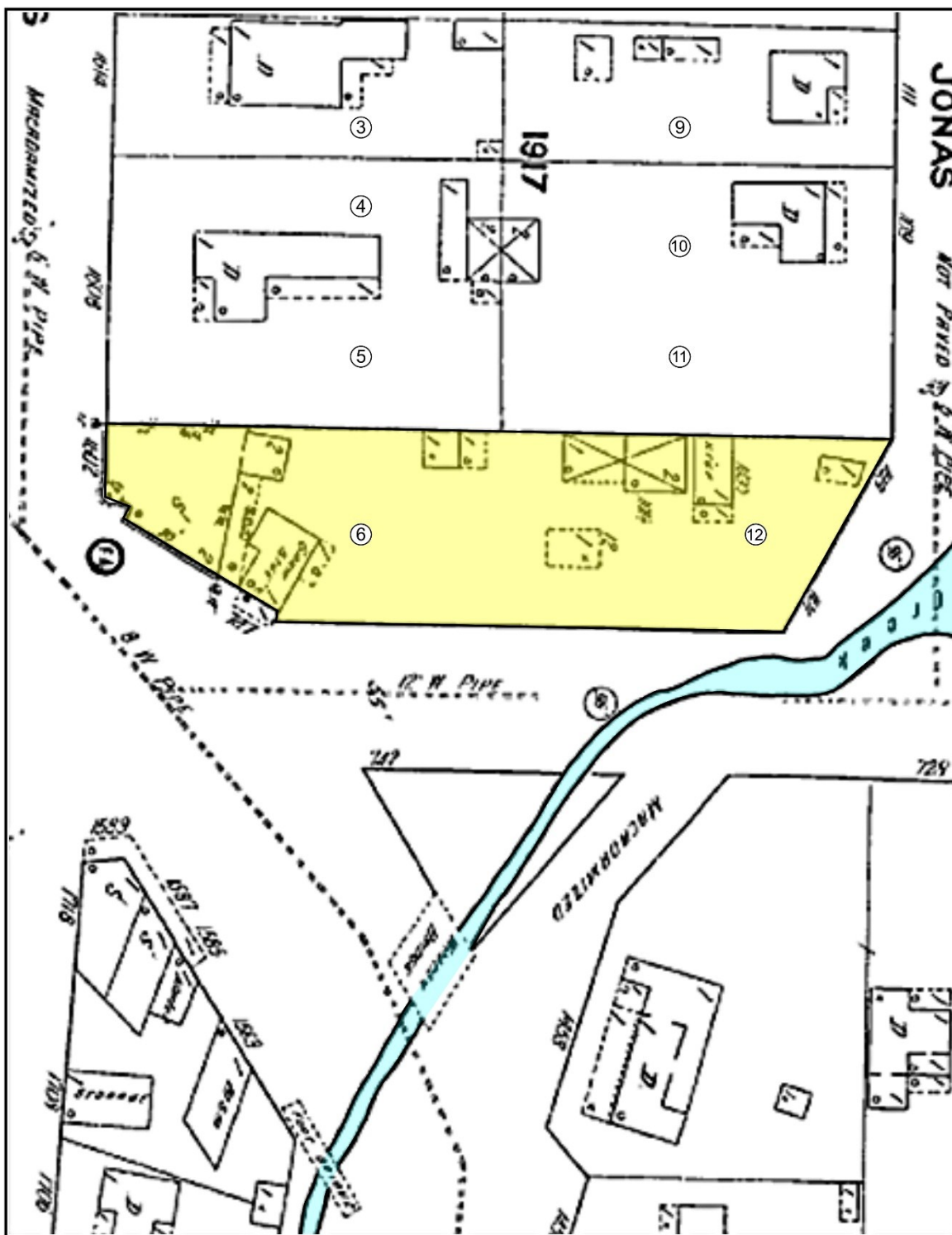


Figure 2-6. Sanborn Fire Insurance Map of 1924.

Dr. Adams sold both lots in 1936 to Nella T. Evans (BCDR 1537:400). Evans held the property for 17 years at which point she donated it to the Baptist Foundation of Texas (BCDR 3364:211) that immediately resold the two lots to Anna Alicia Ramirez and Anna Maria Ostrewich in 1953 (BCDR 3364:214). The property remains under the control of the heirs of Ramirez and Ostrewich pending their conveyance to VIA MTA. The Sanborn Fire Insurance Map of 1952 (Figure 2-7) indicates that Lot 12 was clear of structures at that time and that San Pedro Creek had been covered over and ran beneath the Five Points intersection.

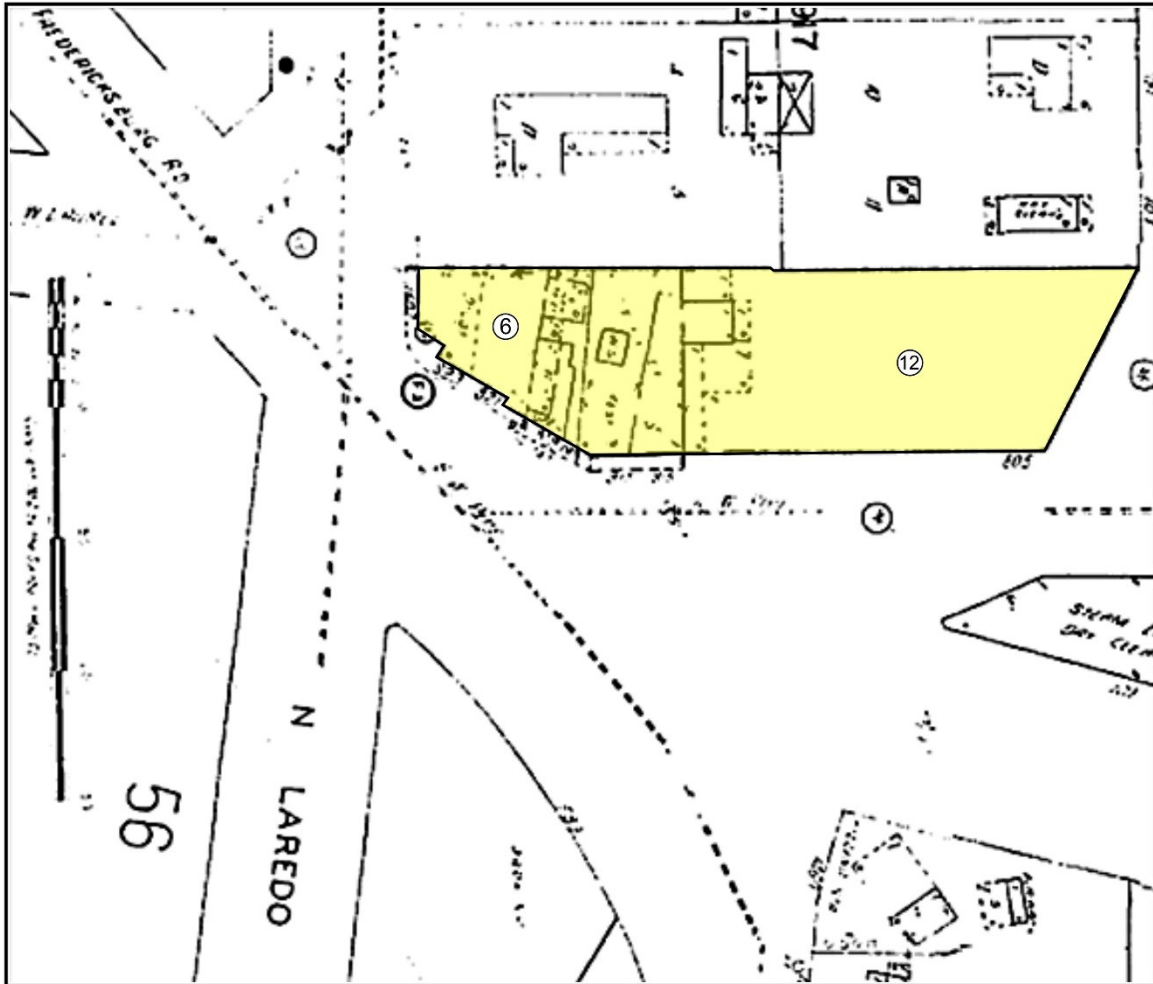


Figure 2-7. Sanborn Fire Insurance Map of 1951-1952 showing persistence of structures on Lot 6. Lot 12 is clear at this time.

A short lot ownership synopsis is provided in Table 2-1 listing the name and date of acquisition.

Table 2-1. Synopsis of Lot Ownership

1743	Land donated to Francisco Jose Arocha by City Council
1850	Heirs of Francisco Arocha Survey and Record Property
1851	City sues and obtains land via Texas Supreme Court decision
1852	City of San Antonio to Sam Smith
1865	Sam Smith to William Lange
1871	William Lange to Martin Meünch
1876	Martin Meünch to Peter Jonas
1884	Peter Jonas replats, and the three large lots are subdivided into 17 smaller lots
1884	Peter Jonas to Jacob Wohlfarth (Lots 6 and 12)
1923	Wohlfarth to R S Adams (Lots 6 and 12)
1936	R. Stuart Adams to Nella T. Evans (Lots 6 and 12)
1953	Nella T. Evans to Baptist Foundation of Texas (Lots 6 and 12)
1953	Baptist Foundation to Anna Alicia Ramirez and Anna Maria Ostrewich (Lots 6 and 12)
1964	Anna Alicia Ramirez and Pedro Ramirez to RAMOST* (Lots 6 and 12)
1991	RAMOST to Candida Ramirez and Patricia Ramirez
1991	Candida Ramirez and Patricia Ramirez convey a portion of Lot 6 to City of San Antonio

* RAMOST is an incorporation of Ramirez and Ostrewich.

Previous Archaeological Investigations in NCB 1917

In the summer of 1985, VIA MTA contracted with CAR to perform subsurface investigations within Lots 1, 2, 3, 7, 8, and 9 of NCB 1917. These six lots are part of the Jonas Subdivision of 1884 and lie within the same block and directly north of the APE (Lots 6 and 12). The purpose of these excavations was to determine if any subsurface remains of the *Arocha Acequia* could be identified. A total of five backhoe trenches, labeled BHT 1 to BHT 5, with a combined length of 112.3 m, were excavated (Figure 2-8). No definitive trace of the *Arocha Acequia* was identified (Cox 1986:110-12).

The 1985 excavations identified various house foundations and associated features and noted that the eastern portion of the project area had considerable fill to bring the eastern side of NCB 1917 property up to grade. Based on artifacts and construction debris, it appears that this fill episode occurred ca. 1980 (Cox 1986:12).

In the fall of 1989, CAR was contracted by the San Antonio River Authority (SARA) to perform archival and historical research in advance of proposed channel improvements planned for the San Pedro Creek. The research included all of NCB 1917, Lots 1-12. This report documented that the only standing structure at that time of possible merit for inclusion on the National Register of Historic Places was the Wohlfarth Building at 1602 North Flores Street. The report also emphasized the high probability of buried prehistoric

cultural materials because of the close geographic proximity to San Pedro Creek and recommended archaeological coordination occurs prior to implementation of improvements (Uecker and Cox 1991:14).

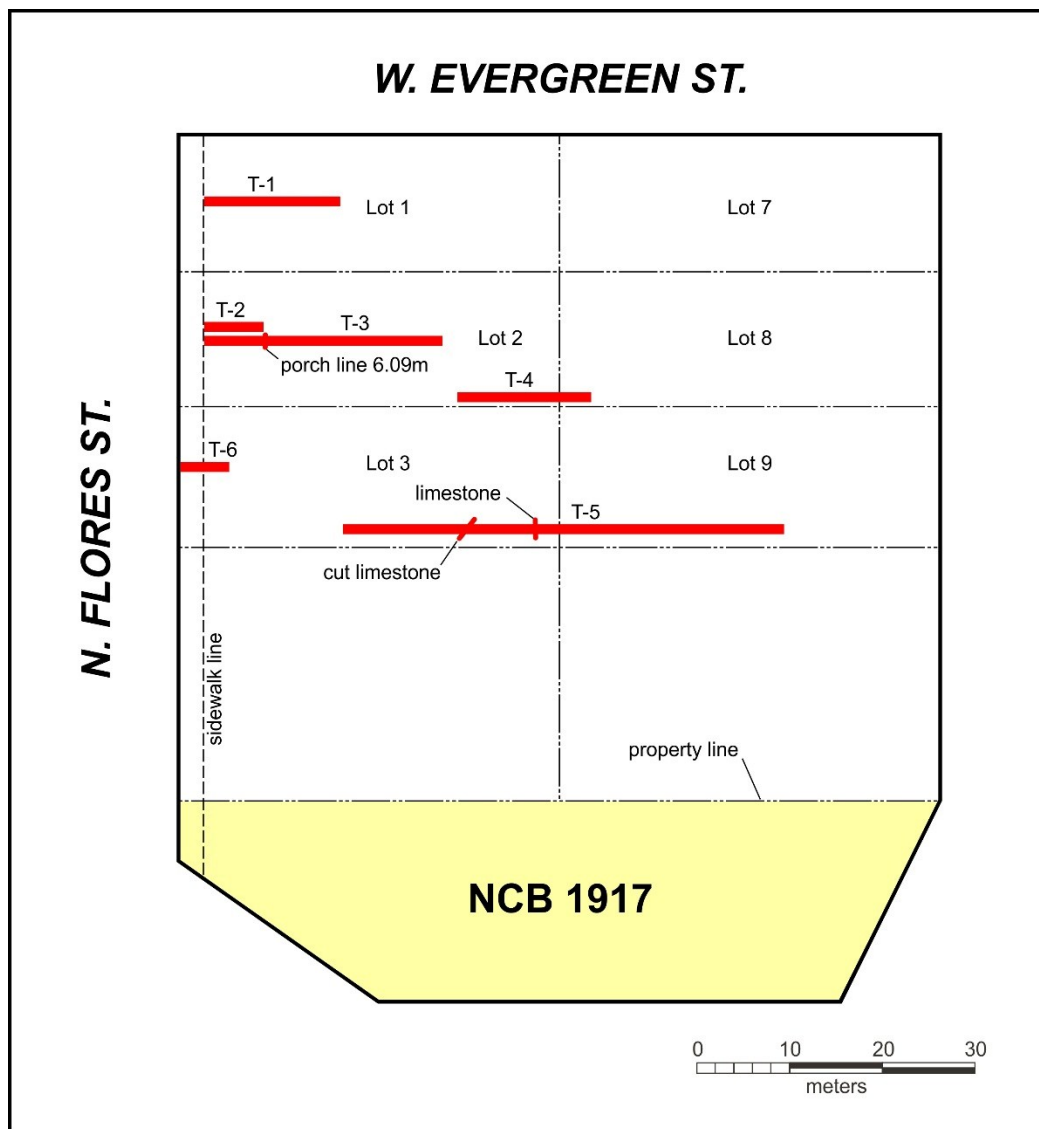


Figure 2-8. 1985 excavations, T-1 through T-6, by CAR, NCB 1917, Lots 1, 2, 3, 7, 8, and 9. Figure adapted from Figure 3 of the 1986 Cox report.

Confusion Surrounding the Exact Location of the Arocha Acequia Route

Francisco Arocha's construction of an *acequia* sometime around 1743-1745 that ran through NCB 1917 is not in doubt, however, its exact route through the property and its persistence over time are shrouded in confusion within the archival record. The only definite depiction in the archival record occurred in 1850 when the Arocha heirs had the property surveyed. That survey (see Figure 2-1) clearly shows an *acequia* starting at the northern property line where it engages the west bank of San Pedro Creek, running along the western property line, and *presumably* returning to San Pedro Creek at its conjunction with the southern

property line. On the 1850 survey, the ditch is shown stopping mid-way along the western property line, and Cox in his research assumed this to indicate a termination (Cox 1986:10). Cox's recommendations from the 1986 report include the following observation:

Our excavations in NCB 1917 indicate that there does not appear to be any remaining evidence of the Arocha Acequia in this block. In all probability this acequia was always a shallow channel, and the little evidence of its existence seems to indicate that it was abandoned as early as 1850. The episode of fill observed in Trench 6 near the center of the block would lead one to believe that it was obliterated when the block was leveled, probably when construction began in 1884 [Cox 1986:15].

However, another possible interpretation is that the only reason the full length of the *acequia* is not shown was that there was no room on the survey to do so as the space was taken up with call notes for minutes, degrees, and *varas* (Spanish measurement unit equal to 0.8 m). A close inspection of the 1850 survey shows that where the *Arocha Acequia* appears to terminate there is a small arrow indicating the alignment continues and in the space the ditch would occupy call notes are written in that space instead (Figure 2-9).

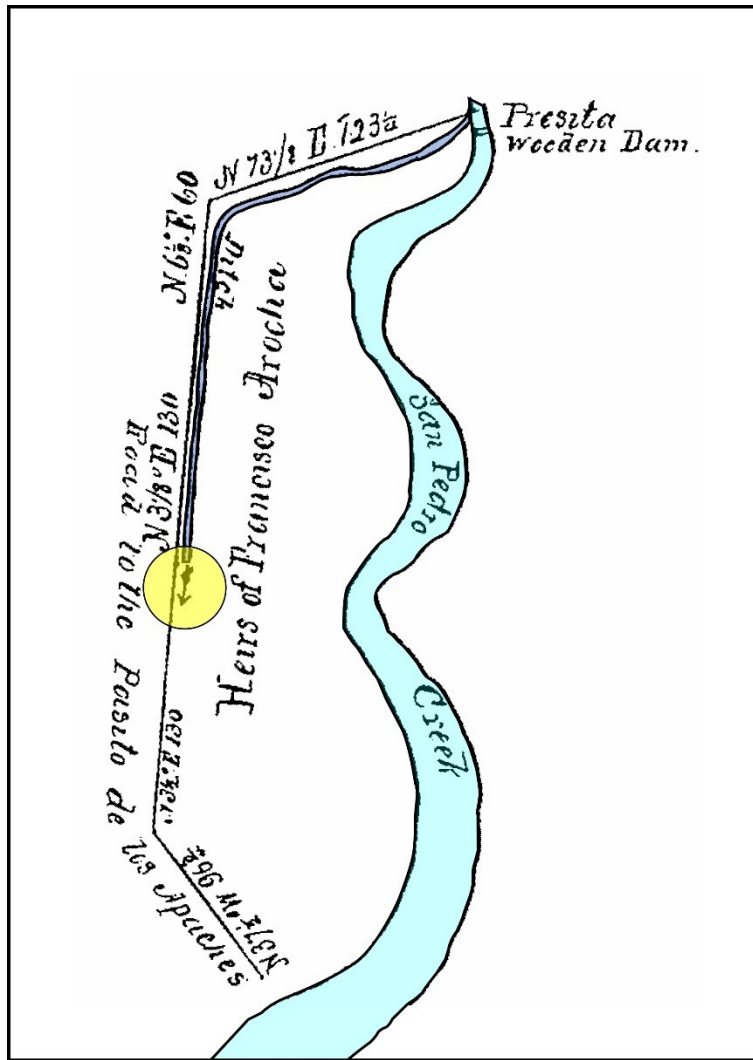


Figure 2-9. Close-up of 1850 survey. The arrow, highlighted in yellow, shown on that survey possibly demonstrating that the acequia does in fact continue down the western property line.

Jonas' 1884 plat (Figure 2-10) shows what appears to be a ditch feature running south down North Flores Street, then crossing the San Pedro Creek, and continuing its southern course down North Flores Street. This feature is tinted blue to indicate water, like San Pedro Creek, and might represent the *Arocha Acequia*. The alignment of this feature corresponds *generally* with the alignment on the 1850 plat. However, if this is the *Arocha Acequia*, then any remnants of it are in the North Flores Street right-of-way (ROW) with the possible exception of where it turns southeast to cross San Pedro Creek.



Figure 2-10. Close-up of Jonas' 1884 survey showing what appears to be a water feature running parallel to the western lot line. This may be the Arocha Acequia.

A series of *acequia* maps were produced by I. Wayne Cox for the City of San Antonio in the late 1980s utilizing available archival resources. These maps have proven reliable over time, and the map showing the *Arocha Acequia* (Figure 2-11) clearly shows the route passing through the middle of NCB 1917. Undoubtedly, Cox utilized this map when undertaking archaeological investigations in 1985.

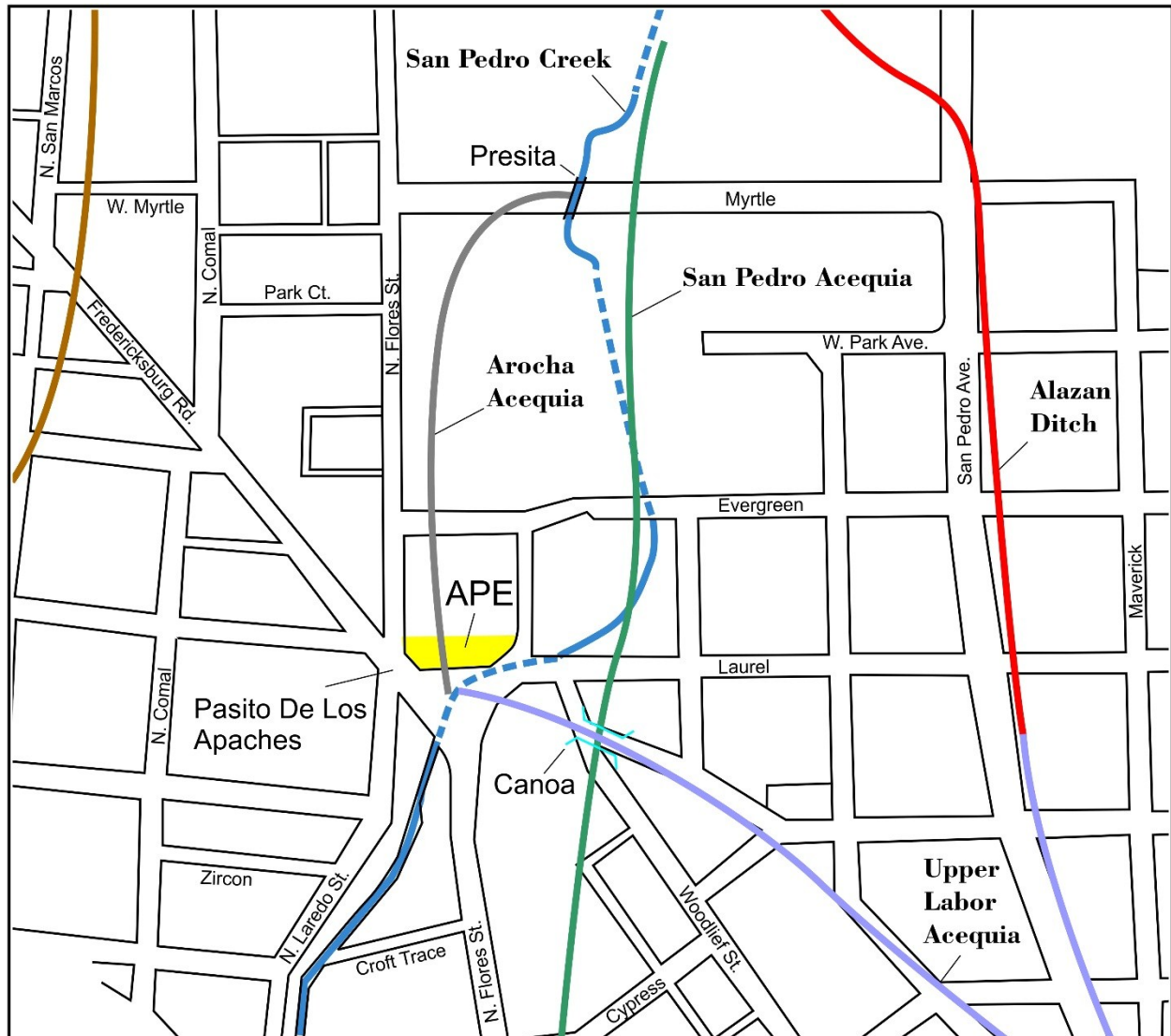


Figure 2-11. City Acequia Map showing route of the Arocha Acequia passing through NCB 1917 per Cox 2004.

Several possible interpretations can be drawn from the archival record and the archaeological record regarding the possible location of the *Arocha Acequia*:

1. Cox's 1985 excavations did not encounter the *Arocha Acequia* because it is not within NCB 1917; rather, it is within the ROW of North Flores Street as evidenced by the 1884 Jonas plat.
2. The *Arocha Acequia*, or remnants of that *acequia*, is within NCB 1917 but was missed in the test trenches excavated by Cox in 1985.
3. The *Arocha Acequia*, or remnants of that *acequia*, was within NCB 1917, and Cox found no evidence of the feature in 1985 because it was previously destroyed by construction activity impacting Lots 1, 2, 3, 7, 8, and 9.

Chapter 3: Field and Laboratory Methods

Field Methods

The scope of work (SOW) was prepared to accompany the Antiquities Permit Application submitted to the THC's Department of Antiquities Protection. The APE consisted solely of Lots 6 and 12 of NCB 1917.

CAR conducted archaeological monitoring of the excavation of five backhoe trenches within the APE. All trenches were profiled, and a 20 liter sample of the back dirt from each trench was screened through ¼-inch mesh. Any artifacts found in the screen were noted and, if significant, collected.

Laboratory Methods

All records obtained and/or generated during the portion of the project that occurs on public property have been prepared in accordance with federal regulations 36 CFR Part 79 and THC requirements for State Held-in-Trust collections. Field forms were printed on acid-free paper and completed with pencil. No artifacts were collected or brought to the CAR laboratory. Project documentation, such as field notes, forms, photographs, or drawings, will be placed in labeled archival folders. Digital photographs were printed on acid-free paper and labeled with archival-quality page protectors to prevent accidental smearing due to moisture.

Chapter 4: Results of Field Investigations

There were two primary archaeological concerns, one historic and the other prehistoric, that required advance investigation to satisfy the requirements of the THC and City Office of Historic Preservation (COHP). The historic concern was the potential documentation of the *Arocha Acequia*. This *acequia* persisted for at least 100 years, and while its construction more than likely consisted of a simple excavated ditch, it had high potential of being identified in the ground, much like the numerous other dirt-lined *acequias* of San Antonio. The *Arocha* is one of only two known private *acequias*, and its short route necessarily means that opportunities to document the feature are severely limited.

The potential for buried prehistoric cultural materials was also very high within the APE. Cox (1986) and Uecker and Cox (1991) recommended that any future work within the area have advance archaeological investigations. The APE is adjacent to San Pedro Creek and proximal to San Pedro Springs—both locales of known Native American occupation for thousands of years. Therefore, it was anticipated that some evidence of Native American occupation was present within the APE.

To address these concerns by THC and the COHP, five backhoe tests were performed within the within the APE to attempt to document the presence or absence of both the *Arocha Acequia* and/or buried prehistoric cultural materials. These five trenches were excavated using a mini-excavator with spoil visually inspected by CAR staff. CAR staff also visually inspected the trench spoil and randomly screened samples in 10 liter buckets run through ¼-inch mesh screen. The first four of these trenches, labeled Backhoe Trenches (BHT) 1 through 4, were excavated on January 5, 2015, while BHT 5 was excavated on January 24, 2015. These trenches were placed strategically on the north, south, west, and east sides of the APE as well as in the middle and off-center (west) in an attempt to find any subsurface evidence of the *Arocha Acequia* (Figure 4-1). The trenches were first excavated to an average depth of 150 cm below the surface (cmbs), and the walls were cleaned to reveal the profile and any features. The center area of the each trench was then excavated an additional 50 cm to check for the presence or absence of buried prehistoric materials. These five trenches will be discussed in numerical order of excavation.

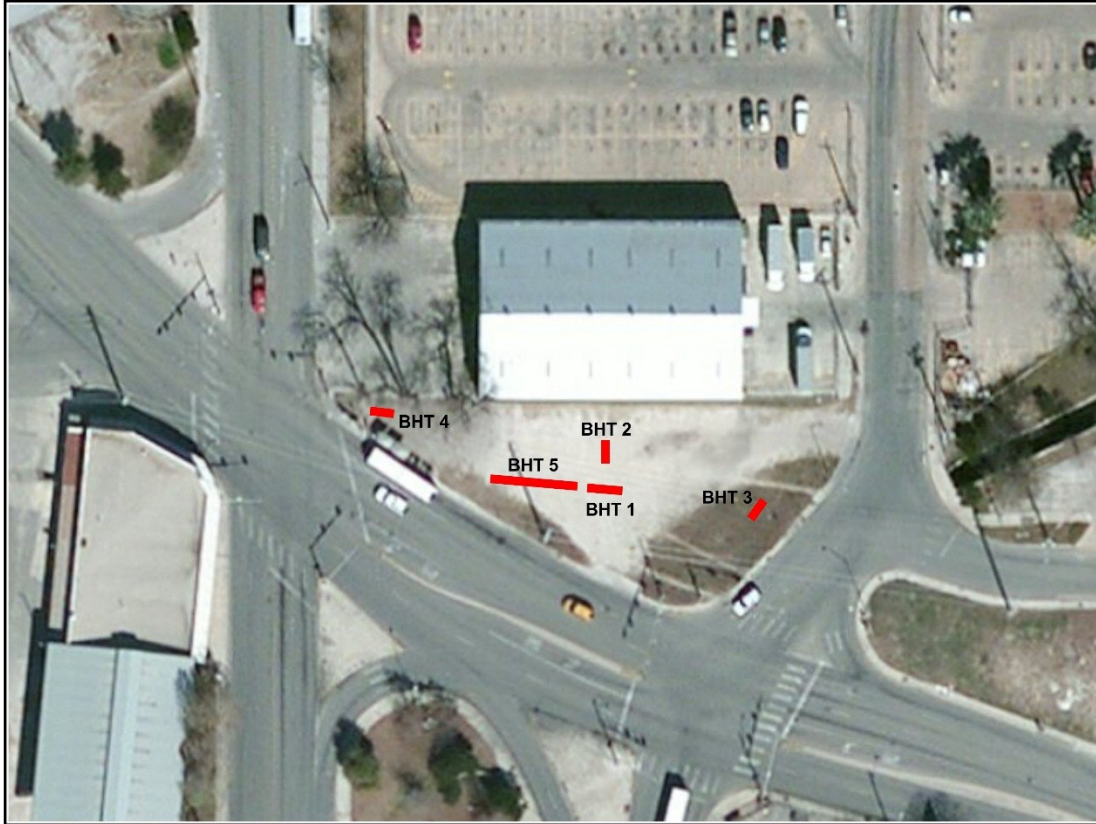


Figure 4-1. *Locations of BHTs 1 through 5 within the APE.*

Backhoe Trench 1

This roughly east-west oriented trench was 6-m long and reached a maximum depth of ca. 175 cmbs. The trench exhibited a complex stratigraphy consisting of 12 discrete soil horizons (Figure 4-2). BHT 1 was stratigraphically similar to BHT 2 and BHT 5. Discounting the upper zones of relatively modern fill represented by Zones 1, 2, and 3, the Stratigraphic Zones 4, 6, and 9 represent layers of fine caliche interspersed with dark soil with crushed cultural materials and charcoal in Zones 5, 7, and 10. This layering of cultural zones capped with caliche undoubtedly represents the use of this space as a wagon yard ancillary to Wohlfarth's Mercantile. The caliche layers represent resurfacing of the yard, and the cultural layers most likely represent a combination of accumulation as well as an intentional raising of the yard surface over time. Stratigraphic Zone 8 consists of a rough limestone pavement that represents an intentional surface constructed by Wohlfarth ca.1885-1890. The probable explanation is that this material was laid down to stabilize a wet or muddy surface and provide greater traction for wagons entering and leaving the yard. Considering that the modern water table is less than 50 cm below this surface, it is likely that inundation and waterlogged soils were a recurrent problem on the lower portions of Lots 6 and 12. Two discrete features were encountered in the southern profile. Feature 1 (F 1) appears to be a posthole to the east of the

limestone surface. It may be that this represents a fence or gate alignment for the wagon yard as it appears this feature was intruded through the original caliche surface of Zone 9 and originated within Zone 7. Feature 2 (F 2) is a utility trench making a perpendicular crossing of BHT 1 that was intruded from Zone 3 and contains an abandoned sewer pipe that is 15 cm in diameter. Underlying the stratigraphic zones exhibiting cultural materials (Zones 1 through 10) are two paleosols represented by Zones 11 and 12. Zone 11 is a light gray (Munsell 10YR 8/1) clay with high moisture content. Zone 12 is a continuation of the same light gray clay with the admixture of flinty stream gravels that comprise approximately 50 percent of the total soil volume. The gravel represents a relict channel of the San Pedro Creek. No prehistoric cultural materials were identified in the Zones 11 or 12.

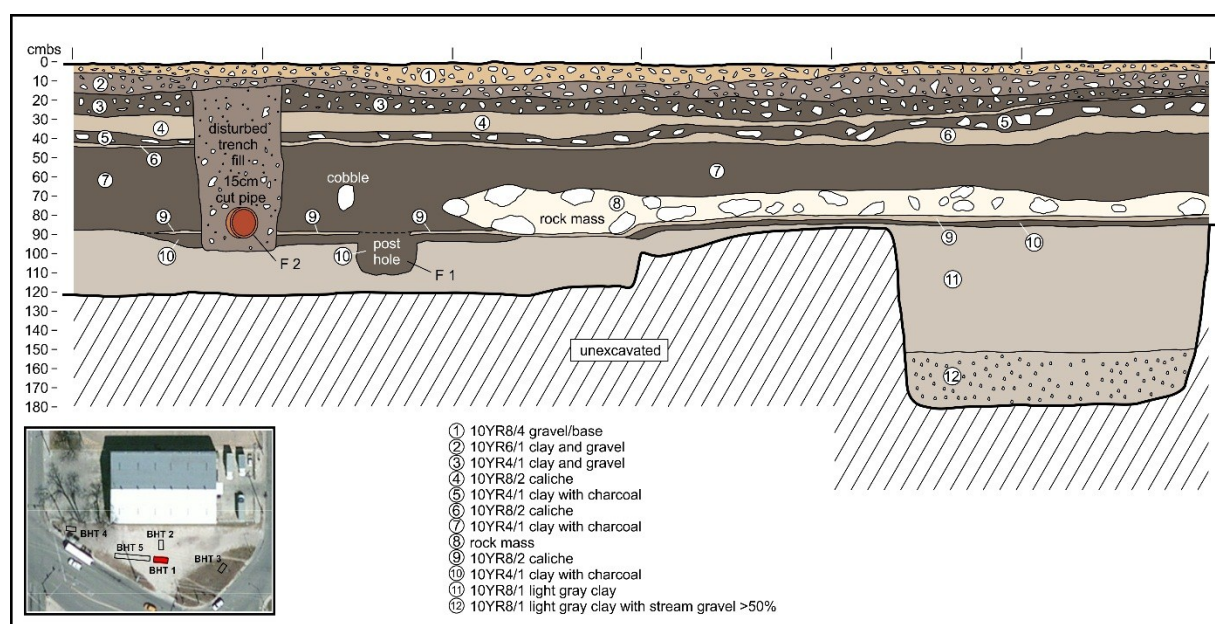


Figure 4-2. South wall profile of BHT 1. N.B.: depth below 120 cm represents secondary excavation for presence or absence of prehistoric materials.

Backhoe Trench 2

This 3-m long trench was oriented north-south and 3.5 m north of BHT 1. This trench reached a maximum depth of 195 cmbs at which interface the water table was encountered (see Figure 4-3). BHT 2 exhibited nearly identical stratigraphy to BHT 1 with the exception of the absence of a limestone pavement lens (BHT 1, Zone 8). The same layering of caliche surfaces overlying darker cultural material deposits persists in BHT 2 with similar abundances and conditions of artifacts—crumbled bits of metal and glass with small amounts of charcoal and fragmentary bone. Zone 11 of BHT 2 is identical to Zone 12 of BHT 1 but was excavated to a slightly greater depth (195 cmbs vs. 175 cmbs). The modern water table is encountered at 185-190 cmbs. Like the results from BHT 1, no prehistoric cultural materials were encountered in Zones 10 and 11 of BHT 2.

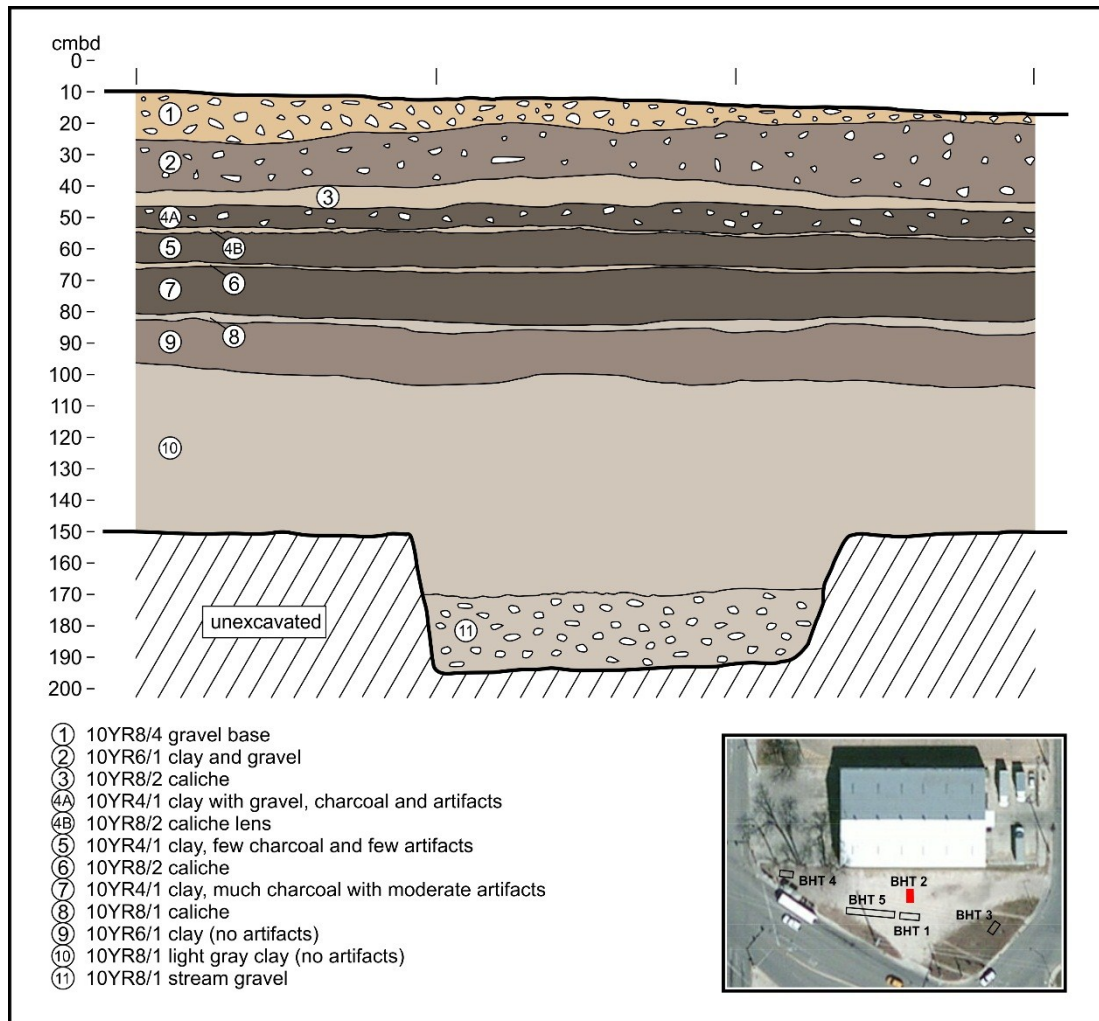


Figure 4-3. West profile of BHT 2. N.B.: depth below 150 cm represents secondary excavation for presence or absence of prehistoric materials.

Backhoe Trench 3

BHT3 was a 3-m long trench running southwest to northeast and parallel to La Harpe Street. Aside from the thin humic deposit overlying a lens of base gravel (Zones 1 and 2), the entirety of the remaining profile was a uniform deposit of mixed soil persisting below 210 cmbs (Figure 4-4). The disturbed Stratigraphic Zone 3 indicates major modifications have been made along this portion of Lot 12 that might be related to the City's reconstruction of the Five Points intersection in the early 1990s for flood control purposes. Modern cultural materials are present in the disturbed fill. Like BHT 2, the water table was encountered in BHT 3 between 185-190 cmbs. No prehistoric material culture was present in the excavation.

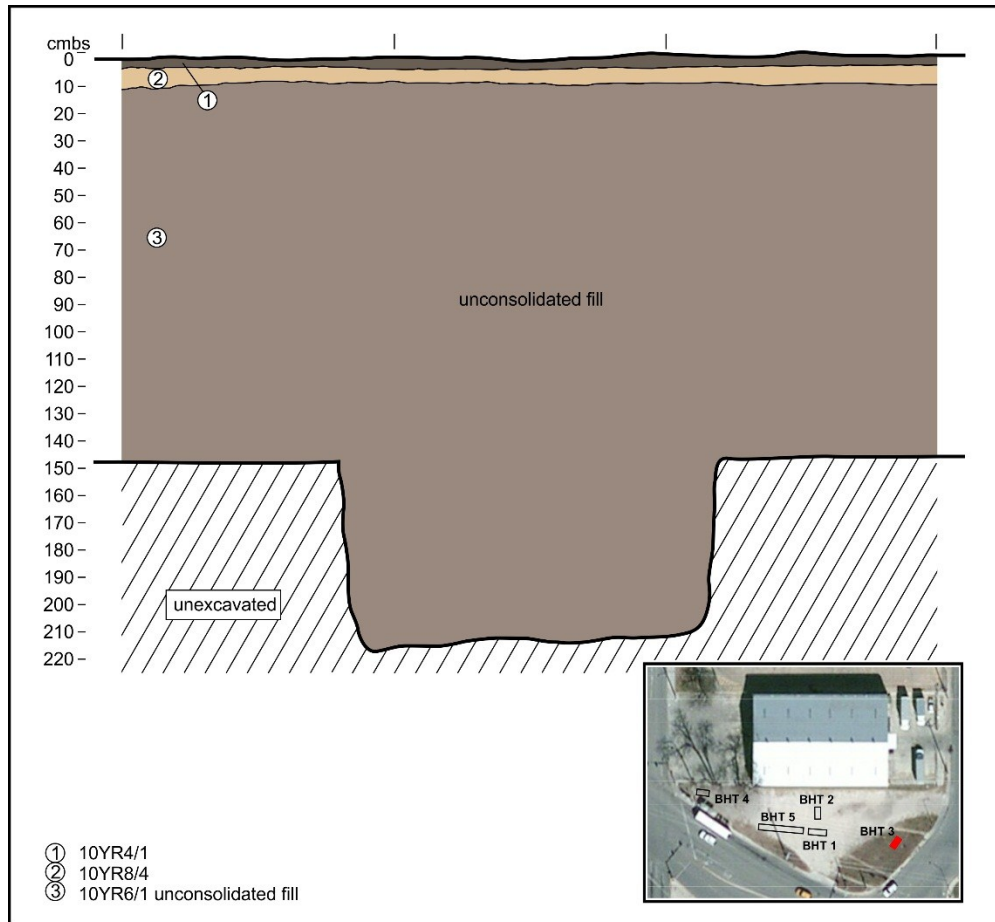


Figure 4-4. West profile of BHT 3. N.B.: depth below 150 cm represents secondary excavation for presence or absence of prehistoric materials.

Backhoe Trench 4

This east-west trench was slightly over 3-m long, opened along the northern property line, and excavated to an average depth of 175 cms (Figure 4-5). This trench encountered the rough ashlar limestone block foundation of Wohlfarth's General Merchandise at approximately 50 cmbs. The southern profile (not drawn) corresponds to the northern profile with the exception that, rather than stone, the natural humic topsoil and buried paleosol are present and undisturbed since construction of the building in 1885. As would be expected, there are no caliche layers or cultural materials in these buried soils that were essentially capped and protected by Wohlfarth's Store from 1885 to 1991. Visual inspection and random sampling of the back dirt encountered no prehistoric cultural materials.

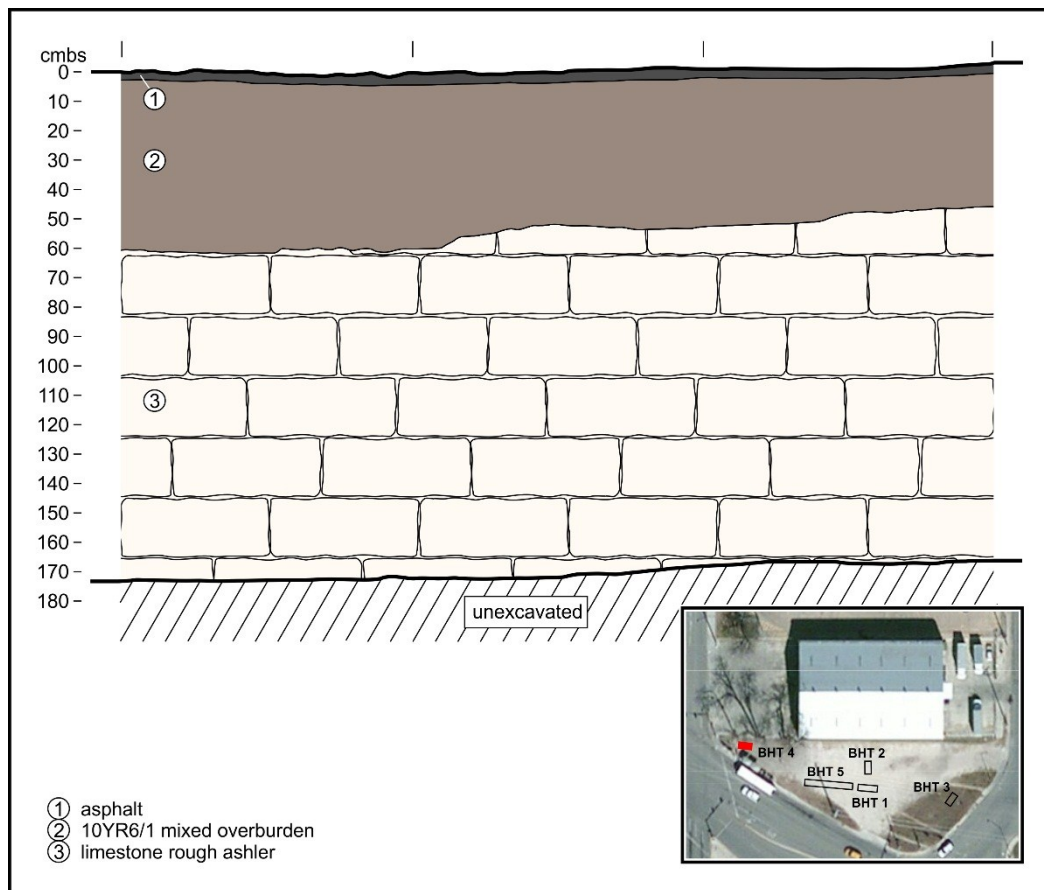


Figure 4-5. North wall profile of BHT 4. N.B.: stone patterning is illustrative only.

Backhoe Trench 5

BHT 5 was excavated on January 24, 2015, as an additional attempt to locate the remains of the *Arocha Acequia*. Utilizing the projection of the Cox map provided by the COHP (see Figure 2-11), BHT 5 was opened along the same east-west alignment as BHT 1 for a length of 12 additional meters and an average maximum depth of 125 cm (Figure 4-6). No evidence of the *Arocha Acequia* was encountered in BHT 5. The profile did document that Wohlfarth's wagon yard did extend across this area, and the same caliche layers overlying cultural material zones persisted. The limestone pavement encountered in the western portion of BHT 1, Zone 8, continued into the eastern end of BHT 5. Two features were encountered in the profiles. Feature 1 is a trench obliquely crossing from southeast to northwest and is composed of mixed fill intruded from Zone 5. Feature 2 is a large pit or hole back filled with dark soil and scattered late nineteenth-century artifacts intruded from the top of Zone 7. The top of Feature 2 exhibited a dark charcoal lens (as noted on the profile). Like BHT 1 through BHT 4, no prehistoric materials were identified.

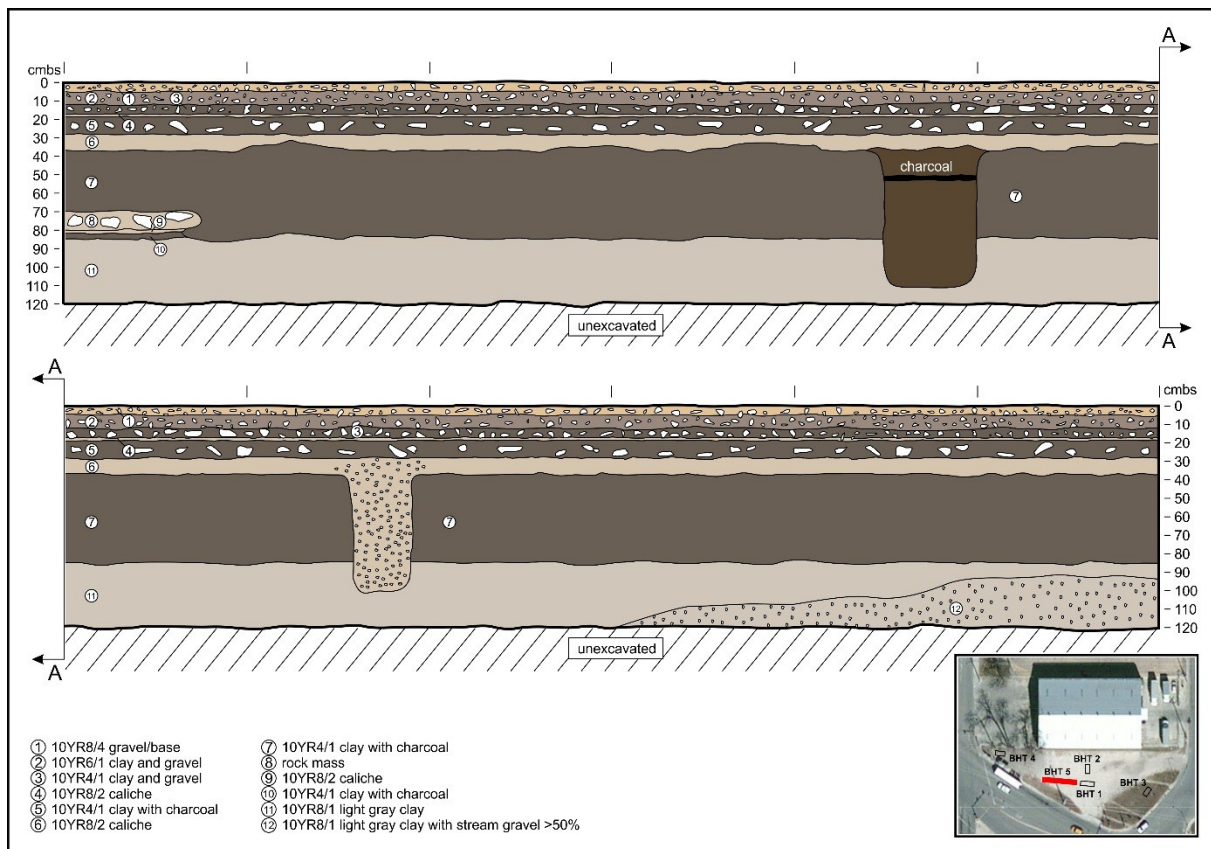


Figure 4-6. South profile of BHT 5.

Chapter 5: Summary and Recommendations

Despite excavation of 27 m of trenches (slightly in excess of 20 m³) within the APE, no evidence of the *Arocha Acequia* nor prehistoric material culture were identified. Backhoe trenches 1 and 5 were strategically placed so that, were the *Arocha* present and soils undisturbed, it *should* have been evident in the profiles. The lack of evidence for the *Arocha* suggests that Cox's supposition of the alignment of the *acequia* might be incorrect and that the estimation of its location based on the 1850 *Arocha Survey* (Figure 2-1) placed its alignment too far east of its actual location, or the absence of evidence might indicate the *acequia* did not traverse the entirety of the perimeter of the property and return to San Pedro Creek. Irrespective of either interpretation, it is evident from the work performed that the *Arocha Acequia* is not present in the excavations nor where it was projected to be by Cox. It may very well be that the 1884 Peter Jonas Plat (Figure 2-3) accurately plots the alignment of the *acequia* as it runs down the middle of North Flores Street before turning southeast to cross San Pedro Creek. Any future work within the North Flores Street footprint should be closely scrutinized for opportunities to verify the presence or absence of this ephemeral feature.

While no evidence of the *Arocha* was found, the trench excavations clearly documented the use of the property under Wohlfarth's ownership. The profiles of both Trench 1 and 5 clearly indicate that the original paleosol is buried beneath nearly a meter of deposition dating from 1885 to the present. The majority of this deposition is directly related to Wohlfarth's use of the eastern portion of Lot 6 and majority of Lot 12 as a wagon yard in the late nineteenth and early twentieth century. The interpretations of the profiles in BHTs 1, 2, and 5 reveal Wohlfarth raised the level of the yard in at least three successive events that are evidenced by thin layers of caliche used as surfacing material with thicker layers containing late nineteenth-century artifacts in between. These artifacts consist of small fragmentary bits of metal, glass, bone, and charcoal, and their condition is concomitant with the use of the space as a wagon yard. It is conjectured that the first of these resurfacing events occurred early in Wohlfarth's ownership as an attempt to get the yard above the water table and intermittent springs that undoubtedly created a morass for his clientele. The limestone pavement found in Zone 8 of BHTs 1 and 5 most likely represents an early attempt of the raising, stabilizing, and leveling of the lot by Wohlfarth.

CAR recommends that any future work within the confines of NCB 1917 Lots 6 and 12, as currently configured, be allowed to proceed without further archaeological review or subsurface investigation. Previous archaeology in the project block, coupled with the current excavations, demonstrate that no evidence of the *Arocha Acequia* is extant nor are there any indications of prehistoric occupation. CAR does recommend archaeological testing and monitoring of any subsurface work within the current footprint of

North Flores Street between Park Court on the north and the Five Points intersection on the south as this appears to be the most likely candidate for any remains of the *Arocha Acequia* to be discovered.

References Cited:

Appler, J. A.

1892 *General Directory of the City of San Antonio, 1892-1893*. San Antonio.

Arnn, J.W., III

2012 *Land of the Tejas*. University of Texas Press, Austin.

Bexar County Archives, Land Grant Sales

1743 Donation of Land to Francisco Joseph de Arocha. April 24. Translation in office of Bexar County Archives, Bexar County Courthouse, San Antonio, Texas.

Bexar County Commissioners Court

2014 Bexar County Commissioner Precinct 4, Tommy Adkisson. Electronic document, http://home.bexar.org/adkisson/county_judges.html, accessed November 2014.

Bexar County Deed Records (BCDR)

2014 On file at Bexar County Courthouse, San Antonio, Texas. Electronic documents, <http://gov.propertyinfo.com/TX-Bexar/Default.aspx>, accessed September, October and November 2014.

Black, S.L.

1989 Central Texas Plateau Prairie. In *From the Gulf Coast to the Rio Grande: Human Adaptation in Central, South, and Lower Pecos Texas*, edited by T.R. Hester, S.L. Black, D.G. Steele, B.W. Olive, A.A. Fox, K.J. Reinhard, and L.C. Bement, pp. 17-38. Research Series No. 33. Arkansas Archeological Survey, Fayetteville.

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

1997 The Central Texas Burned Rock Midden Reconsidered. In *Hot Rock Cooking on the Greater Edwards Plateau: Four Burned Rock Midden Sites in West Central Texas*, edited by S.L. Black, L.W. Ellis, D.G. Creel, and G.T. Goode, pp. 446-515. Studies in Archeology No. 22. Texas Archeological Research Laboratory, Austin.

Black, S.L., and A.J. McGraw

1985 *The Panther Springs Creek Site: Culture Change and Continuity in the Upper Salado Creek Drainage, South-Central Texas*. Archaeological Survey Report, No. 100. Center for Archaeological Research, The University of Texas at San Antonio.

Bousman, C.B., B.W. Baker, and A.C. Kerr

2004 Paleoindian Archeology in Texas. In *Prehistory of Texas*, edited by T.K. Pertulla, pp. 15-97. Texas A&M Press, College Station.

Buck, S.M.

1980 *Yanaguana's Successors, The Story of the Canary Islanders' Immigration into Texas in the Eighteenth Century*. Originally published 1949, Naylor Publishing Company, San Antonio, Texas.

Cargill, D.

1996 Stable Isotope Analysis at Mission San Juan de Capistrano, San Antonio, Texas. Unpublished Master's thesis, Department of Anthropology, The University of Texas at San Antonio.

- Chabot, F.C.
1937 *With the Makers of San Antonio*. Privately published, San Antonio.
- Chipman, D.E.
1992 *Spanish Texas, 1519–1821*. University of Texas Press, Austin.
- Collins, M.B.
2004 Archeology in Central Texas. In *The Prehistory of Texas*, edited by T.K. Perttula, pp. 205-265. Texas A&M University Press, College Station.
- Collins, M.B. (editor)
1998 *Wilson-Leonard: An 11,000 Year Archaeological Record of Hunter-Gatherers in Central Texas*. 5 vols. Studies in Archeology No. 31. Texas Archeological Research Laboratory, Austin.
- Cox, I. W.
1986 *Excavations of Portions of the San Pedro Acequia (41BX377) and a Search for the Arocha Acequia, San Antonio, Texas*. Archaeological Survey Report, No. 161. Center for Archaeological Research, The University of Texas at San Antonio.
- 1992 *Archaeological Monitoring for the Tri-Party Improvements Project, San Antonio, Bexar County, Texas*. Archaeological Survey Report, No. 204. Center for Archaeological Research, The University of Texas at San Antonio.
- 2005 *The Spanish Acequias of San Antonio*. Maverick Publishing Company, San Antonio.
- Crook, C.E.
1967 *San Pedro Springs Park*. Privately published, San Antonio.
- Dibble, D.S.
1967 Excavations at Arenosa Shelter, 1965-66. Manuscript on file, Texas Archeological Salvage Project, The University of Texas at Austin.
- Dibble, D.S., and Lorrian, D.
1968 *Bonfire Shelter: A Stratified Bison Kill Site, Val Verde County, Texas*. Miscellaneous Papers 1. Texas Memorial Museum, The University of Texas at Austin.
- Foster, W.C.
1995 *Spanish Expeditions into Texas, 1689-1768*. University of Texas Press, Austin.
- Habig, M.A.
1968 *San Antonio's Mission San José, State and National Historic Site 1720-1968*. Naylor, San Antonio.
- Hall, G.D.
1981 *Allen's Creek: A Study in the Prehistory of the Lower Brazos River Valley, Texas*. Research Report No. 61: Texas Archeological Survey, The University of Texas at Austin.
- Hester, T.R.
1995 The Prehistory of South Texas. *Bulletin of the Texas Archeological Society* 66:427-459.

- 2004 The Prehistory of South Texas. In *The Prehistory of Texas*, edited by T.K. Perttula, pp. 127-154. Texas A&M University Press, College Station.
- Houk, B.A. K.A. Miller, and E.R. Oksanen
- 2009 The Gatlin Site and the Early to Middle Archaic Chronology of the Southern Edwards Plateau, Texas. *Bulletin of the Texas Archeological Society* 80:51-75.
- Johnson, L., Jr.
- 1995 *Past Cultures and Climates at Jonas Terrace, 41ME29, Medina County, Texas*. Office of the State Archeologist Report No. 40. Texas Department of Transportation and Texas Historical Commission, Austin.
- Johnson, L., Jr., and G. Goode
- 1994 A New Try at Dating and Characterizing Holocene Climates, as well as Archeological Periods on the Eastern Edwards Plateau. *Bulletin of the Texas Archeological Society* 65:1-15.
- Jonas, P.
- 1884 Plat of lots. City Engineer's Book Index, No. 663, D7, Section 4, On file at City of San Antonio, Archives Division.
- Long, C.
- 2010 Bexar County. Handbook of Texas Online. Texas State Historical Association. Electronic document, <http://www.tshaonline.org/handbook/online/articles/hcb07>, accessed September 30, 2014.
- Lukowski, P.
- 1988 *Archaeological Investigations at 41BX1, Bexar County, Texas*. Archaeological Survey Report, No. 135. Center for Archaeological Research, The University of Texas at San Antonio.
- Mauldin, R.P., R.J. Hard, C.M. Munoz, J.Z. Rice, K. Versotick, D. Potter, and N. Dollar
- 2013 Carbon and Nitrogen Stable Isotope Analysis of Hunter-gatherers from the Coleman Site, a Late Prehistoric Cemetery in Central Texas. *Journal of Archaeological Science* 40:1369-1381.
- McGraw, A.J., and Hindes, V.K.
- 1987 *Chipped Stone and Adobe: A Cultural Resource Assessment of the Proposed Applewhite Reservoir, Bexar County, Texas*. Archaeological Survey Report, No. 163. Center for Archaeological Research, The University of Texas at San Antonio.
- Munoz, C.M., R.P. Mauldin, J.L. Thompson, and S.C. Caran
- 2011 *Subsistence Strategies. In Archaeological Significance Testing at 41BX17/271, the Granberg Site: a Multicomponent Site along the Salado Creek in Bexar County, Texas*. Environmental Affairs Division, Archeological Studies Program, Report No. 140, pp. 105-130. Texas Department of Transportation and Archaeological Report No. 393, Center for Archaeological Research, The University of Texas at San Antonio.
- Oksanen, E.R.
- 2008 Archeological Investigations at the Icehouse Site, 41HY161: A Revaluation of Early Archaic Technology, Subsistence and Settlement along the Balcones Escarpment and Central Texas. Master's thesis, Department of Anthropology, Texas State University, San Marcos.

- Peter, D., Kuehn, D., Allday, S., Tine, A., Hunt S., and Freeman M.
 2006 *Archeological Assessment of the Potential Impact of the San Antonio River Improvement Project, Mission Reach, on Historic Properties*. Geo-Marine, Inc., Plano, Texas.
- Prewitt, E.
 1974 *Archeological Investigations at the Loeve-Fox Site, Williamson County, Texas*. Research Report No. 49. Texas Archeological Survey, The University of Texas at Austin.
 1981 Cultural Chronology in Central Texas. *Bulletin of the Texas Archeological Society* 52:65-89.
 1985 From Circleville to Toyah: Comments on Central Texas Chronology. *Bulletin of the Texas Archeological Society* 54:201-238.
- Ricklis, R.A., and Collins, M.B.
 1994 *Archaic and Late Prehistoric Human Ecology in the Middle Onion Creek Valley, Hays County, Texas*. 2 vols. Studies in Archeology Number 19. Texas Archeological Research Laboratory, Austin.
- Sanborn Map and Publishing Company, Ltd.
 1896 San Antonio, Texas, Insurance Map, Volume 1, Sheet 77. New York, New York. Digital Sanborn Maps 1867-1970. Electronic document, sanborn.umi.com, accessed October 2014.
 1904 San Antonio, Texas, Insurance Map, Volume 1, Sheet 79. New York, New York. Digital Sanborn Maps 1867-1970. Electronic document, sanborn.umi.com, accessed October 2014.
 1952 San Antonio, Texas, Insurance Map, Volume 1, Sheet 45. New York, New York. Digital Sanborn Maps 1867-1970. Electronic document, sanborn.umi.com, accessed October 2014.
- Story, D.A.
 1985 Adaptive Strategies of Archaic Cultures of the West Gulf Coastal Plain. In *Prehistoric Food Production in North America*, edited by R.I. Ford, pp. 19-56. Anthropological Papers No. 75. Museum of Anthropology, University of Michigan, Ann Arbor.
- Taylor, A.J., and C.L. Highley
 1995 *Archeological Investigations at the Loma Sandia Site (41LK28): A Prehistoric Cemetery in Live Oak County, Texas*. Studies in Archeology No. 20. Texas Archeological Research Laboratory, Austin.
- Turner, E.S., Hester, T.R., and McReynolds, R.
 2011 *Stone Artifacts of Texas Indians*. Taylor Trade Publishing, Lanham, Maryland.
- Turpin, S.A.
 2004 The Lower Pecos River Region of Texas and Northern Mexico. In *Prehistory of Texas*, edited by T.K. Pertulla, pp. 266-282. Texas A&M Press, College Station.
- Uecker, H.G., and Cox, I.W.
 1991 *Archival and Historical Research for the San Pedro Creek Channel Improvement Project: The 1989-1990 Investigations*. Archaeological Survey Report No. 199. Center for Archaeological Research, The University of Texas at San Antonio.

United States Department of Agriculture, Natural Resource Conservation Service
2013 Web Soil Survey. Electronic document,
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed September 26, 2014.

Weir, F.A.
1976 The Central Texas Archaic. Unpublished Ph.D. dissertation, Washington State University,
Pullman.