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Intensive Cultural Resources Survey for the Pilot Knob Wastewater Interceptor Project, Travis County, Texas

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Prepared for

Brookfield Residential

Prepared by

SWCA Environmental Consultants

SWCA Cultural Resource Report No. 14-641

August 2015

INTENSIVE CULTURAL RESOURCES SURVEY FOR THE PILOT KNOB WASTEWATER INTERCEPTOR PROJECT TRAVIS COUNTY, TEXAS

Prepared for

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ABSTRACT

On behalf of Brookfield Residential, SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources investigation of the proposed Pilot Knob Wastewater Interceptor Project in southeast Austin, Travis County, Texas. The project involves the construction of a roughly 2.1-mile-long wastewater interceptor line with an 80-foot temporary and 40-foot permanent easement, and encompasses 20.0 acres. The project has two components: the initial 1.7-mile-long wastewater interceptor and the additional 0.34-mile-long Phase 2 extension.

The initial project alignment begins at Dee Gabriel Collins Road, located approximately 0.6 mile northwest of the intersection of U.S. Route 183 and Farm-to-Market (FM) 812. The proposed line traverses undeveloped land for 1.7 miles and terminates approximately 0.6 mile east of the intersection of McKinney Falls Parkway and Colton Bluff Springs Road. The Phase 2 additional alignment will extend 0.34 mile north-northeast of Dee Gabriel Collins Road before terminating in an undeveloped tract. The depths of project impacts are currently unknown, but horizontal directional bores are proposed at road and drainage crossings and are not expected to exceed 15–20 feet below ground surface. The area of potential effects (APE) for the project is approximately 2.1 miles long and 80 feet wide, encompassing 20.0 acres. The proposed APE is within a semi-rural setting that is quickly becoming more urbanized.

As portions of the initial project alignment traverse potential waters of the U.S., the project must comply with application requirements for a U.S. Army Corps of Engineers Fort Worth District Section 404 permit in accordance with 33 Code of Federal Regulations (CFR) Part 325, Appendix C (Processing Department of Army Permits: Procedures for the Protection of Historic Properties; Final Rule 1990; with current Interim Guidance Document dated June 24, 2002) and with Section 106 of the National Historic Preservation Act (16 USC 470), and its implementing regulations (36 CFR 800). Portions of the initial project alignment within the 100-year floodplain may also be subject to permitting by the Federal Emergency Management Agency and require Section 106 compliance. Portions of the additional project alignment are on lands slated for ownership by the Pilot Knob Municipal Utility District No. 1, a political subdivision of the State of Texas, as a consequence, the project must comply with the Antiquities Code of Texas in addition to Section 106 of the NHPA and its implementing regulations. Consequently, all work was conducted in accordance with the standards and guidelines of the Antiquities Code of Texas under Antiquities Permit No. 7287.

The goal of the work was to locate all prehistoric and historic archaeological sites within the proposed APE, establish vertical and horizontal site boundaries as appropriate, and evaluate the significance and eligibility of all recorded sites for inclusion to the National Register of Historic Places (NRHP). The investigations were initiated with a background review of previous work, historic map review, and an archival review of the APE parcels. Field work involved an intensive pedestrian survey with shovel testing of the APE. The background review determined that portions of the APE have been previously surveyed and that one archaeological site (41TV2366) is recorded within the APE. Site 41TV2366 is an early-twentieth-century farm complex and is not considered eligible for inclusion to the NRHP or for designation as a State Antiquities Landmark (SAL). Historic maps revealed six possible historic-age structures and one cemetery within or immediately adjacent to the APE.

Field work for the initial alignment was conducted on October 29, 2014, with a total of 19 shovel tests excavated in portions of the APE. Field work for the additional project alignment was conducted on May 21, 2015, with a total of three shovel tests excavated within the APE. The APE exhibits prior modifications from residential and agricultural development and associated utility installations. The investigations revisited site 41TV2366, verified the location of a historic-age cemetery, and recorded site 41TV2480. Site 41TV2366 is a historic-age farm complex and is considered not eligible for inclusion in the NRHP. No avoidance or additional work is required. The historic-age Collins Cemetery is located 93 feet from

centerline and is protected under 711.035(f) and 711.010(a)(b) of the Health and Safety Code of Texas, and as a result, avoidance of the cemetery is required by state law. However, based upon the current alignment, the centerline is over 90 feet north of the cemetery fence and adequately avoids the cemetery. Therefore, the Collins Cemetery will not be impacted by construction activities associated with the Pilot Knob Interceptor Project. As such no additional work is required. Site 41TV2480 is a historic-age circa 1955 residence identified and recorded along the margin of the additional alignment project alignment. No historic-age artifacts associated with 41TV2480 were observed in the current APE, and the residence has been continuously lived in as well as modified compromising its integrity. Based on these factors, site 41TV2480 is recommended as ineligible for inclusion in the NRHP or for designation as an SAL, and no further work is recommended.

In accordance with 36 CFR 800.4, SWCA has made a reasonable and good faith effort to identify cultural resources within the APE. As no properties were identified that meet the criteria for listing in the NRHP, according to 36 CFR 60.4, or for designation as an SAL, according to 13 Texas Administrative Code 26.12, SWCA recommends no further cultural resources investigations are warranted within the project APE.

ACKNOWLEDGEMENTS

Ken Lawrence served as Principal Investigator for the duration of the project, ably overseeing overall logistics and organization, and managing reporting and agency consultation. Alamea Young and Christina Nielsen acted as Crew Chiefs, performing the investigations with the assistance of Field Technician Matthew Carter and Archaeologist Mercedes C. Cody. Carole Carpenter expertly produced all field and report maps for the project, while Lauri Logan provided editorial and technical review.

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INTRODUCTION

On behalf of Brookfield Residential, SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources investigation of the proposed Pilot Knob Wastewater Interceptor Project in southeast Austin, Travis County, Texas (Figure 1). The project involves the construction of an approximately 2.1-mile-long wastewater interceptor within an 80-foot-wide easement and encompasses 20 acres.

The proposed project has two components; the initial 1.7-mile-long wastewater interceptor and the additional 0.34-mile-long Phase 2 extension (see Figure 1). The initial project alignment begins at Dee Gabriel Collins Road located approximately 0.6 mile northwest of the intersection of U.S. Route 183 and Farm-to-Market (FM) 812. This proposed line traverses northwest across Cottonmouth Creek and parallels the northwest side of the creek for approximately 0.7 mile, trending to the southwest. The line then crosses to the southeast side of the creek and continues to the southwest for 0.68 mile across undeveloped land before terminating approximately 0.6 mile east of the intersection of McKinney Falls Parkway and Colton Bluff Springs Road. In October 2014, SWCA performed a cultural resources survey under Section 106 of the National Historic Preservation Act (NHPA) of portions of the initial 1.7-mile-long component (Young and Nielsen 2015). Survey was performed in anticipation of possible permitting requirements by the Federal Emergency Management Agency (FEMA), and as part of the sponsor's compliance with application requirements for a U.S. Army Corps of Engineers (USACE) Fort Worth District Section 404 permit.

The Phase 2 additional alignment will extend 0.34 mile north-northeast of Dee Gabriel Collins Road before terminating in an undeveloped tract (see Figure 1). The additional alignment will be entirely constructed on lands slated for ownership by the Pilot Knob Municipal Utility District (MUD) No. 1, a political subdivision of the State of Texas. Due to the involvement of this political subdivision of Texas, the project must comply with the Antiquities Code of Texas (ACT) and Section 106 of the NHPA. As such, SWCA conducted an intensive pedestrian cultural resources survey of the additional 0.34-mile-long Phase 2 alignment in May 2015.

Overall, the right-of-way (ROW) includes an 80-foot-wide temporary construction easement and a 40-foot-wide permanent easement. The depths of impacts are not known at this time, but are expected not to exceed 8 feet below ground surface. The area of potential effects (APE) for both components is defined as the 2.1-mile-long corridor, totaling 20 acres.

SWCA's cultural resources investigations included a background literature review and an intensive pedestrian survey with shovel testing in Permit Review Areas (PRAs) for the initial project area and 100 percent of the additional project area within lands slated for state ownership. The PRAs are defined by portions of the project area containing waters of the U.S. and areas within the 100-year floodplain and encompass approximately 0.8 mile (7.75 acres). The cultural resources survey was conducted in accordance with the guidelines provided in Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470), and its implementing regulations (36 Code of Federal Regulations [CFR] 800) and the Council of Texas Archeologists (CTA) Guidelines.

Portions of the initial project alignment traversing potential waters of the U.S. and within the 100-year floodplain were surveyed in accordance with Section 106 of the NHPA and its implementing regulations, possible permitting requirements by the FEMA, and as part of the sponsor's compliance with application requirements for a USACE Fort Worth District Section 404 permit in accordance with 33 CFR Part 325, Appendix C (Processing Department of Army Permits: Procedures for the Protection of Historic Properties; Final Rule 1990; with current Interim Guidance Document dated June 24, 2002). The additional project alignment on lands slated for ownership by the Pilot Knob MUD No. 1, a political subdivision of the State of Texas, was surveyed in compliance with the Antiquities Code of Texas under Permit No. 7287, with Ken Lawrence as Principal Investigator, and in accordance with Section 106 of the NHPA and its implementing regulations.

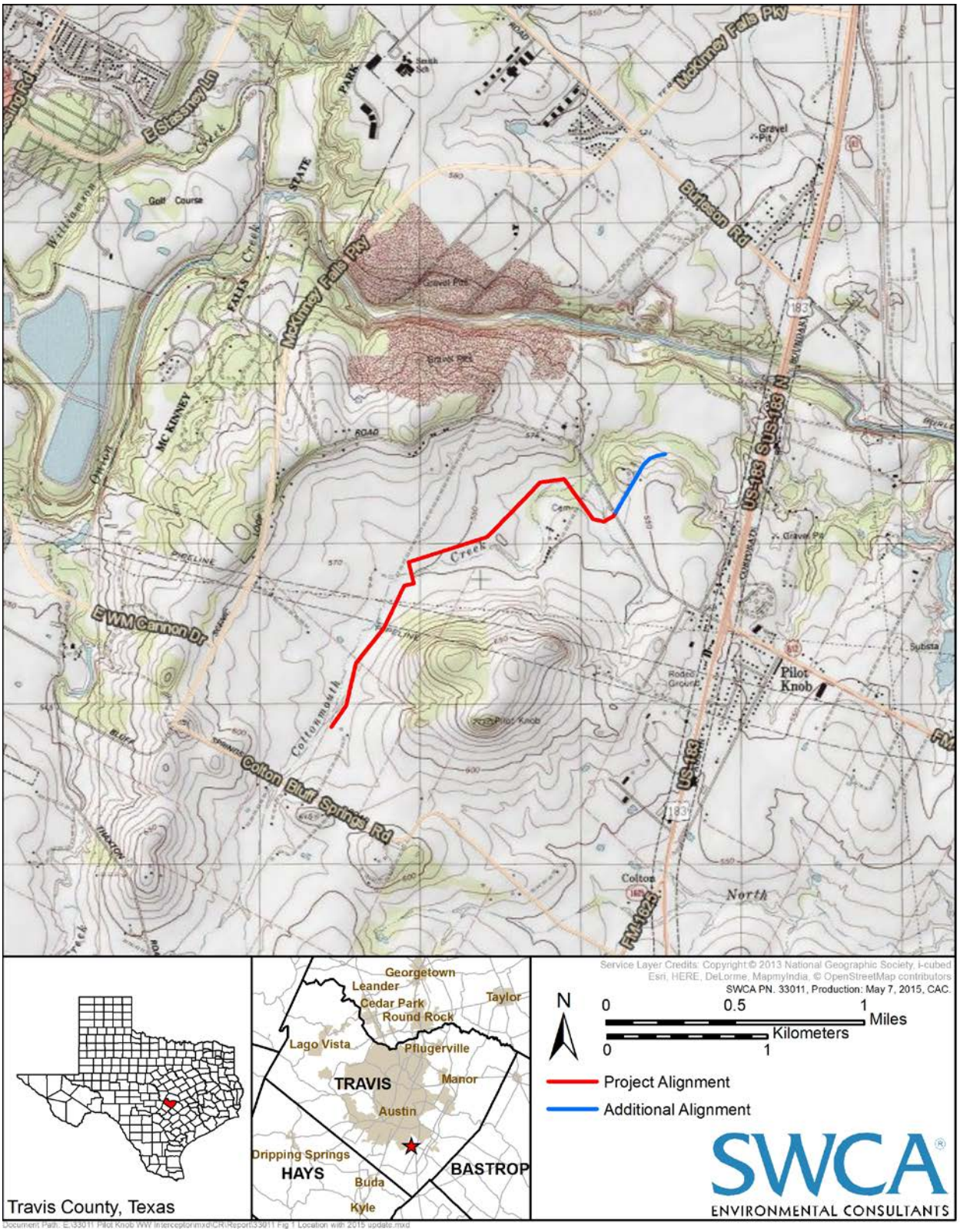

Figure 1. Project location map.

The purpose of the work was to locate and identify all prehistoric and historic archaeological sites in the APE, establish vertical and horizontal site boundaries as appropriate with regard to the APE, and evaluate the significance and eligibility of any site recorded within the APE for inclusion to the National Register of Historic Places (NRHP) or for designation as State Antiquities Landmarks (SALs). Alamea Young served as Crew Chief, conducting survey investigations for the initial project alignment with Field Technician Matthew Carter in October 2014 under SWCA project number 30376. Christian Nielsen served as Crew Chief performing the survey investigations for the additional project alignment with Archaeologist Mercedes C. Cody in May 2015 under SWCA project number 33011.

PROJECT AREA DESCRIPTION

The APE is situated in southern Travis County, specifically southeast Austin, in a semi-rural suburban setting surrounded by rolling, open pastures and intermittent residential development. The overall area slopes southeast.

The APE parallels and crosses Cottonmouth Creek, a northward flowing drainage that empties into Onion Creek roughly 3.0 miles downstream from the project area. The APE meanders across Cottonmouth Creek and the 100-year floodplain, traversing broad, open pastures and agricultural fields as well as some densely wooded areas with scattered oaks and various hardwoods adjacent to the creek. The prominent Pilot Knob is located just south of the APE.

Known disturbances within the APE include vegetation clearing, residential and agricultural activities, and the construction and maintenance of numerous two-track roadways. Other notable disturbances that are evident along the margins of the APE on adjacent properties include grading and clearing activities, utility installations (overhead and subsurface), and residential construction.

ENVIRONMENTAL SETTING

Geology and Soils

Geologically, the entire APE is mapped as Upper Cretaceous-aged Igneous rocks (Ki) a formation localized to Pilot Knob (Barnes 1995). These deposits are described as nontronite and basalt intruded into the pyroclastics (i.e., volcanic materials) of extinct Pilot Knob volcano (Barnes 1995). Notably, portions of the APE are situated along the western slopes of the prominent Pilot Knob, which is a complex of small, rounded hills derived from the core of the extinct volcano that was buried in shallow sea deposits of clay and marl (Spearing 1991:65).

There are four soil units mapped within the APE that, in order of prevalence, include Behring clay (1–3 percent slopes), Behring clay (3–5 percent slopes), Tinn clay, and Ferris-Heiden complex (8–20 percent slopes, severely eroded) (Natural Resources Conservation Service [NRCS] 2014). Behring clay (1–3 percent slopes) is mapped in most of the open pasture areas east and west of Cottonmouth Creek and is characterized as deep, slowly permeable soils derived from shale and clay and found on mostly level uplands (NRCS 2014). Given the in situ development of this soil from shale and clay, it has little to no potential to contain intact buried archaeological material.

Behring clay (1–5 percent slopes) is characterized as deep, slowly permeable soils derived from shale, and situated on nearly level to sloping erosional uplands (NRCS 2014). These soils are mapped along the southeast and northeast margins of the APE along the lower slopes of Pilot Knob. Given the in situ development of this soil from shale, it has little to no potential to contain intact buried archaeological material.

The frequently flooded Tinn clay (0–1 percent slopes) corresponds with Cottonmouth Creek and is characterized as a very deep, well-drained, permeable soil formed in calcareous clayey alluvium. They are situated on floodplains of streams and drainages of the Blackland Prairie (NRCS 2014). Based on the alluvial origin of this soil, it has a potential to contain intact buried archaeological material.

The Ferris-Heiden complex (0–20 percent slopes, severely eroded) is mapped in the far northeast portion of the APE south of Cottonmouth Creek and consists of deep and very deep to mudstone, very slowly permeable soils that formed in clayey residuum weathered from calcareous mudstone (NRCS 2015). These soils are situated on gently sloping to moderately steep backslopes of side slopes, footslopes of base slopes, and shoulders or interfluves of ridges on dissected plains (NRCS 2015). Given the in situ development of this soil from shale and clay, it has little to no potential to contain intact buried archaeological material.

Flora

The APE is situated along the margin of the Edwards Plateau and the Blackland Prairie regions (Everitt et al. 2002; Kutac and Caran 1994). The Edwards Plateau forms a sharp boundary in floral distribution between the thin-soiled limestone uplands and the wide coastal plains. Upland areas are dominated by a mixed live oak (*Quercus virginiana*) and Ashe juniper (*Juniperus ashei*) woodland interspersed with occasional grassy openings. Other tree species present in low densities throughout these areas include cedar elm (*Ulmus crassifolia*) and Texas oak (*Quercus fusiformis*). Shrub density varies between low to dense in upland areas. Species occurring in low densities include Texas persimmon (*Diospyros texana*), agarita (*Berberis trifoliolata*), and prickly pear (*Opuntia* spp.) with thick, mixed grasses in areas (Van Auken 1988). Originally, the uplands of the Edwards Plateau sustained short grasses and the alluvial valleys had deciduous forests (Black 1989:12). The lower elevation areas along the riparian zone often include a dense understory of acacia (*Acacia* spp.), prickly pear, and other brushy species (Petrides 1988; Simpson 1988).

Fauna

Two biotic provinces divide Travis County (Blair 1950). The western portions of Travis County lie within the Balconian biotic province that comprises the Edwards Plateau region (Blair 1950). The eastern portions of the county are within the Texan biotic province, which extends from central Texas to east-central Oklahoma (Blair 1950). The APE is situated within the eastern half of Travis County at the western edge of the Texan biotic province.

The Balconian and Texan biotic provinces are transitional zones from the mesic forests of eastern North America to the xeric grasslands of the central United States. These provinces have a high faunal diversity. Blair (1950) identified at least 49 species of mammals, 57 species of reptiles, and 23 species of amphibians native to the Texan biotic province. The Balconian contains 57 species of mammal, over 42 species of reptile, and 15 species of amphibians (Blair 1950). None of the fauna for the Balconian is restricted solely to this province (Blair 1950).

Some native mammals common to the Texan biotic province include: opossum (*Didelphis virginiana*), eastern mole (*Scalopus aquaticus*), eastern fox squirrel (*Sciurus niger*), pocket gopher (*Geomys breviceps*), fulvous harvest mouse (*Reithrodontomys fulvescens*), white-footed mouse (*Peromyscus leucopus*), hispid cotton rat (*Sigmodon hispidus*), eastern cottontail rabbit (*Sylvilagus floridanus*), swamp rabbit (*Sylvilagus aquaticus*) (Burt and Grossenheider 1976).

Mammals common to both of these provinces include coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), mink (*Mustela vison*), muskrat (*Ondata zibethica*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and white-tailed deer (*Odocoileus virginianus*). Historically, red wolf, bison and black bear ranged into or near these regions (Burt and Grossenheider 1976; Davis and Schmidly 1994; Schmidly 1983).

The general reptilian assemblage for both provinces include the Great Plains rat snake (*Elaphe guttata emoryi*), Eastern yellowbelly racer (*Coluber constrictor flaviventris*), Yellow mud turtle (*Kinosternon flavescens flavescens*), bullfrog (*Rana catesbiana*), southern leopard frog (*Rana utricularia*), and the gulf coast toad (*Bufo valliceps*) (Blair 1950; Conant and Collins 1998; Kutac and Caran 1994; Werler and Dixon 2004).

CULTURAL SETTING

Situated in southern Travis County, the APE lies within the Central Texas archaeological region, as

defined by Collins (1995) and Prewitt (1981). This area is noted by its distinctive environmental conditions, as it is located at the boundary of the moist, humid forests to the east and drier, savannah-like grasslands to the west that greatly influenced cultural development.

The following cultural-historic outline is based on the regional chronologies proposed by Collins (1995) and Johnson and Goode (1994), which build upon the seminal efforts of Suhm (1960) and Prewitt (1981, 1985). Using standard terminology, the cultural sequence is divided into four periods: Paleoindian, Archaic, Late Prehistoric, and Historic. The Archaic period is subdivided into four subperiods: Early, Middle, Late, and Transitional.

Paleoindian Period

Paleoindian artifacts and sites date from about 11,500 to 8800 years before present (B.P.) and are not uncommon in Central Texas (Collins 1995, 2004), but are fairly rare in the APE (Bever and Meltzer 2007). The period begins at the close of the Pleistocene with the earliest evidence of humans in the Central Texas region. Diagnostic artifacts of the period include lanceolate-shaped, fluted projectile points such as Clovis, Folsom, and Plainview types. These projectile points were hafted onto wooden spears, launched from atlatls (spear throwers), and used to hunt a variety of game, including mammoth, mastodons, bison, camel, and horse (Black 1989). During the Paleoindian period, the prominent interpretation suggests a hunter-gatherer adaptation strategy with increased harvesting of flora and small game as the big game died off and the climate warmed following the end of the Pleistocene ice age. Representative Central Texas Paleoindian sites include Kincaid Rockshelter, Wilson-Leonard, Gault, and St. Mary's Hall (Collins 1995).

Archaic Period

As the Paleoindian period came to an end, humans began to harvest more intensively local floral and faunal resources (Collins 1995, 2004). Material culture became more diverse and the use of burned rock middens and ovens became widespread. This period is known as the Archaic period and dates from approximately 8800 to 1200 B.P. in Central Texas (Collins 1995; Johnson and Goode 1994). While Collins (1995) and Johnson and Goode (1994) subdivide the Archaic into Early, Middle, and Late subperiods, we have added the Transitional subperiod after the Late Archaic for reasons discussed below.

Early Archaic

Early Archaic artifacts and sites date from about 8800 to 6000 B.P. (Collins 1995). Once thought to be Paleoindian in age, some unstemmed point types, such as Angostura, have recently been recognized as the first Early Archaic diagnostic styles (Collins 1995). By about 8000 B.P., these points were replaced by stemmed varieties such as Early Split Stem, Martindale, and Uvalde (Black 1989; Collins 1995). Most sites were open campsites although cave sites have been found (Collins 1995). Current site distribution data suggest that Early Archaic peoples were concentrated along the eastern and southern margins of the Edwards Plateau in areas with more stable water sources (Collins 1995; McKinney 1981). Specialized tools, perhaps used in woodworking, known as Guadalupe and Nueces bifaces, were prevalent in this period (Collins 1995). While subsistence data are sparse, it appears that people hunted deer and other small animals, fished, and cooked bulbs in earth ovens (Collins 1995). This strategy evolved, in part, due to the changing climate at the beginning of the Holocene (McKinney 1981).

Middle Archaic

Middle Archaic artifacts and sites date from about 6000 to 4000 B.P. with multi-use bifacial knives becoming more common. Characteristic Middle Archaic projectile points include Bell, Andice, Taylor, Nolan, and Travis, several of which are deeply notched (Black 1989). These artifacts could have served as knives and projectile points. Bison were hunted intensively at the start of the Middle Archaic but, as the climate became drier, a reliance on dry climate plants such as sotol probably became common. The end of the Middle Archaic may have been the most xeric conditions ever in Central Texas (Collins 1995). The climatic change was accompanied by a technological shift as Nolan and Travis points, which are thick and have narrow blades, first appeared in the archaeological record

(Collins 1995). Burned rock middens and earth ovens first appeared ca. 5000 B.P. and became increasingly common, although their exact functions may have varied based on the culture and environment (Johnson and Goode 1994). Representative sites of the Texas Middle Archaic include the Landslide, Wounded Eye, Gibson, and Panther Springs (Collins 1995).

Late Archaic

Late Archaic artifacts and sites date from about 4000 to 2250 B.P. The period began with very xeric conditions but gradually became more mesic (Collins 1995). Characteristic dart point types include Bulverde, Pedernales, Marshall, and Marcos (Collins 1995). Increasingly complex and sedentary cultural manifestations first appeared in the Late Archaic. Sites of the Late Archaic are very common and include burned rock middens, open campsites, and lithic procurement sites. Population increases are evidenced by large cemeteries and grave goods. Also, trade and exchange networks between cultures appear to have increased in complexity as evidenced by exotic goods in sites and cemeteries (Black 1989). Bement (1991) interprets the evidence for group investment in territory due to evidence in the Thunder Valley sinkhole cemetery, dated to 2900 B.P. based on stratigraphy, to indicate that groups were declaring control over a particular territorial range during the Late Archaic. Representative sites of the Central Texas Late Archaic include the Anthon and Loeve Fox sites (Collins 1995).

Transitional Archaic

As Collins (1995:384–385) notes, diverse and comparatively complex archaeological manifestations toward the end of the Late Archaic attest to the emergence of kinds of human conduct without precedent in the area. This period (2250–1250 B.P.), referred to as the Transitional Archaic (Turner and Hester 1999) or Terminal Archaic (Black 1989), is not recognized by all researchers. Other chronologies extend the Late Archaic to 1200–1250 B.P. (Collins 1995; Johnson and Goode 1994) to encompass this later subperiod. Johnson et al. (1962) originally designated the Transitional Archaic as a subperiod of the Archaic because of the similarities between the latest dart point types and the earliest arrow point types. Since then, however, the designation has failed to be universally accepted by researchers. In two chronologies for Central Texas, Collins (1995) does not include the Transitional as a subperiod of the Archaic, and Johnson and Goode (1994) separate the Late Archaic into two subperiods designated Late Archaic I and Late Archaic II. The Transitional Archaic, as it is used here, closely corresponds to Johnson and Goode's (1994) Late Archaic II, but begins after the appearance of the Marcos point type—not with it. In this scheme, the Transitional Archaic coincides with the last two style intervals recognized by Collins (1995:Table 2) for the Late Archaic subperiod.

During the Transitional Archaic, smaller dart point forms such as Darl, Ensor, Fairland, and Frio were developed (Turner and Hester 1999). These points were probably ancestral to the first Late Prehistoric arrow point types and may have overlapped temporally with them (Hester 1995; Houk and Lohse 1993).

Several researchers believe that the increased interaction between groups at the end of the Late Archaic was an important catalyst for cultural change (Collins 1995; Johnson and Goode 1994). This change may have included increased regional stress and conflict between groups as interaction became more frequent (Houk et al. 1997). In Bexar County, for instance, researchers noted a distinct shift in settlement patterns during this period (Houk et al. 1997). Groups apparently used hilltops as camps rather than just lithic procurement locations. These elevated locations would have provided points from which to observe game and other groups of humans as they moved through the surrounding creek valleys and upland prairies (Houk et al. 1997).

Late Prehistoric Period

By the end of the Transitional Archaic, the bow and arrow was introduced, as indicated by the increasingly smaller size of projectile points. The Late Prehistoric period dates from 1250 to 260 B.P. (Collins 1995). Characteristic artifacts include small arrow points such as Perdiz and Scallorn, as well as a variety of specific-use tools. The Austin and Toyah intervals of the Late Prehistoric,

originally recognized by Suhm (1960) and Jelks (1962) remain accepted divisions for the period. These style intervals may represent distinct cultural entities (Johnson 1994), although others challenge this view (Black and Creel 1997).

During the earlier Austin interval, use of burned rock middens may have reached its maximum, based on conclusions by Black and Creel (1997). Characteristic arrow points of the Austin interval include Scallorn and Edwards (Collins 1995; Turner and Hester 1999). By the Toyah interval, plain-ware ceramics appeared, indicating possible influence in the Central Texas region from ceramic producing cultures to the east and north (Perttula et al. 1995). Contrary to bog pollen data (Collins et al. 1993), data from Hall's Cave in Kerr County indicate that the climate of Central Texas began to dry around 1000 B.P. (Toomey et al. 1993). This drying trend may have resulted in a change in vegetation that made Central and South Texas more conducive to bison migration into the area. Bison remains in archaeological sites in the region became common after 750 B.P. (Dillehay 1974; Huebner 1991).

Most Toyah sites have the distinctive Perdiz arrow point type, and some sites also have bison processing tool kits. This technological change has been interpreted by Johnson (1994) as a spread of an ethnic group and by Ricklis (1992) as the spread of technological ideas in response to opportunities provided by increased bison populations in the Late Prehistoric. It is thought that during the Late Prehistoric period subsistence strategies became increasing complex and that human populations were very high (Black 1989; Collins 1995). Representative sites of the Central Texas Late Prehistoric include the Kyle, Smith, and Currie Sites (Collins 1995).

Spanish Colonial/Mexican Independence Period (1630–1820s)

In the early Historic period (A.D. 1630 to present), the period of European contact and settlement in Texas, the general Austin area was inhabited by several aboriginal groups including the Jumano, Tonkawa, Lipan Apache and Comanche (Newcomb 2002). The first Europeans into the area were probably Spanish missionaries who established three missions at nearby Barton Springs in 1730 (Webb 1952). The Spanish mission period in this area was of short duration and failed to colonize or even tame the area south of the Colorado River and north of Onion Creek. An aboriginal presence thus continued in the Austin area into the 1860s.

After Mexico gained independence from Spain, the newly formed country used a policy of land grants to attract Anglos from the United States to help inhabit the sparsely populated northern regions of Mexico. During the 1820s, Stephen F. Austin obtained grants from the Mexican government to settle hundreds of families along the lower Brazos and Colorado Rivers (Webb 1952). This colony, known as the "Old Three Hundred Colony," was successful in pushing the European settlement frontier further west into the Central Texas region. Prior to the Texas Revolution, most of the "Old Three Hundred Colony" settlement was focused south of Bastrop and the old La Bahia Road (Webb 1952).

Republic of Texas / Pre-Civil War (1836–1860)

During the Texas Revolution with Mexico, the area continued to be inhabited only by aboriginal Native Americans. After the war, a growing Texan population led many settlers to move northwards in search of open, profitable land to plant crops and raise cattle. This wave of migration spurned new conflicts with the native groups living in the area, culminating in the Battle of Brushy Creek, near what is today the town of Taylor, in February of 1839. This battle, between the Comanche and the Texas Rangers, resulted in numerous deaths and eventually resulted in the removal of the Native American presence in the area.

The Post-Civil War to Twentieth Century (1865–1950)

Subsequent to the Civil War, Texas entered the Reconstruction period. To begin reconstruction, federal troops, in part, had to spread the word of the Emancipation Proclamation (Campbell 2003:268). In Galveston on June 19, 1865, General Gordon Granger and the Union army spread the word of the slaves' emancipation (Campbell 2003:268). Thus,

this day became known as 'Juneteenth' and has been celebrated by Texas African Americans ever since (Campbell 2003:268).

Lawlessness became a problem during the 1880s, and Central Texas counties experienced a period of "mob rule." Citizens formed an anti-mob organization, but competing groups conducted essentially open warfare. After several people were killed, the Texas Rangers were dispatched to the area and order was eventually restored (Murphy 2007).

Recovery during this period was gradual, but was assisted by a diverse agricultural economy particularly cattle. In the 1870s, several major cattle trails heading to markets passed through Central Texas. One invention that had an effect on Texas and its economy during this time was barbed wire. Barbed wire, first demonstrated in 1871, enabled ranchers to alter land and control cattle in a less-intrusive, more profitable manner, and brought additional commerce and trade to central Texas (NRHP 1976). Though barbed wire was one of the largest influences on Texas in general, the most influential 'invention' on the region was the railroad. The railroads effectively served as a means of transportation and, to varying degrees, generally bolstered growth in the economies of the region.

Throughout the early twentieth century, trade, transportation, and tourism continued to bring economic prosperity to the region. The establishment of military facilities and the activity surrounding World War I and World War II kept the railway system active and commercial activity in the east prospered.

Through the remainder of the twentieth century and into the early twenty-first century, population in Central Texas has increased largely due to expansion and commercial opportunities in urban and rural areas. The construction of public highways and automobiles facilitated the commuting of Central Texas citizens to urban employment.

METHODS

BACKGROUND REVIEW

An SWCA archaeologist conducted a background review and environmental literature search of the APE to determine the locations and content of any previous archaeological surveys and recorded archaeological sites in or near the APE. The investigation used the Texas Historical Commission's (THC) online Texas Historic Sites Atlas (Atlas). This source provided information on the nature and location of previously conducted archaeological surveys, previously recorded cultural resource sites, locations of NRHP districts and properties, sites designated as SALs, Official Texas Historical Markers, Recorded Texas Historic Landmarks, cemeteries, and local neighborhood surveys. As a part of the review, an SWCA archaeologist reviewed the Texas Department of Transportation (TxDOT) Historic Overlay, a mapping/geographic information systems database with historic maps and resource information covering most portions of the state (Foster et al. 2006).

FIELD METHODS

SWCA's investigations consisted of an intensive pedestrian survey with subsurface investigations within portions of the APE. Archaeologists examined the ground surface and erosional profiles and exposures for cultural resources. Subsurface investigations were conducted within the FEMA 100-year floodplain and the additional project alignment APE. The THC/CTA standards require 16 shovel tests per mile, per 100 feet of ROW width for linear surveys. For a linear project of this size (80 feet wide by 2.1 miles long), a minimum of 25 shovel tests is recommended. No shovel tests are warranted in areas that exhibit previous disturbance, have a slope greater than 20 percent, or surface visibility greater than 30 percent.

Shovel tests were approximately 30 centimeters (cm) in diameter and excavated to culturally sterile deposits, bedrock, or impassible basal clay, whichever came first. The matrix from each shovel test was screened through ¼-inch mesh and the location of each excavation was plotted using a hand-held Global Positioning System (GPS)

receiver. Each shovel test was recorded on a standardized form to document the excavations.

SWCA performed a non-collection survey. Artifacts encountered were tabulated, analyzed, and photographed in the field, but not collected.

RESULTS

BACKGROUND REVIEW

The background literature review determined that four previous cultural resources surveys were conducted within and/or immediately adjacent to portions of the APE, with one archaeological site (41TV2366) recorded within it. Additionally, there is one cemetery immediately adjacent to the APE and two cemeteries within a 1-mile radius of the APE. Five cultural resources surveys in addition to the above investigations and 31 archaeological sites are within a 1-mile radius of the APE (Table 1). The archaeological site within the APE and cemeteries are discussed below, along with previously conducted cultural resources surveys. The review of the TxDOT Historic Overlay maps revealed six possible historic-age structures and one cemetery within or immediately adjacent to the current APE (Foster et al. 2006).

An archaeological survey was conducted by Ecological Communications Corporation (ECOMM) in 2010 within portions of the current APE for the City of Austin's South Interstate Highway 35 (IH-35) Water/Wastewater Program Project in Travis County, Texas (Butler and Feit 2010). One cultural resource site (41TV2366) recorded during this investigation falls within the current APE, and another previously recorded cultural resource site (41TV1096) reassessed during the 2010 investigation is east of the current APE, but within a 1-mile radius (see Table 1).

Site 41TV2366 is located north of Colton Bluff Springs Road, just east of Cottonmouth Creek, and southwest of Pilot Knob. The site is a historic 2.4-acre early-twentieth-century farm complex consisting of a wood-frame, single-story house, a garage, a barn, workshop, limestone well, storm cellar, and several outbuildings, at least one of which was likely used as a residence (Butler and Feit 2010). The portion of site 41TV2366 within the IH-35 Waste/Wastewater Program project area was recommended not eligible for inclusion to the NRHP or for designation as an SAL, and no further work was recommended (Butler and Feit 2010). However, ECOMM's report specifically mentions that should the larger property be affected by the proposed William Cannon Road extension, then further research for site 41TV2366 may be warranted, particularly additional shovel testing at the farm complex itself, and possibly additional archival research (Butler and Feit 2010).

In March 2014, SWCA conducted cultural resources investigation of the proposed Easton Park Development Project in southeast Austin, Texas on behalf of Brookfield Residential (Stotts et al. 2014). The project involved the construction of a roughly 2.0-mile-long extension of William Cannon Drive between McKinney Falls Parkway and U.S. Route 183. The investigations revisited sites 41TV2196 and 41TV2366, and documented two new archaeological sites (41TV2458 and 41TV2459) within a 1-mile radius of the current APE (see Table 1). The cultural resources that were encountered are primarily associated with structures that are components of historic homesteads and farmsteads and activities from the early to mid-twentieth century. Based on a variety of factors, none of the archaeological sites recorded or revisited during this survey are recommended for listing in the NRHP or as an SAL (Stotts et al. 2014).

A cultural resources survey was performed along northeast portion of the current APE additional alignment in 1999 (Atlas 2015). The survey was performed on behalf of the USACE Fort Worth District and there are no archaeological sites mapped within the current project area in this survey area (Atlas 2015). Information regarding the survey is very limited on Atlas.

Table 1. Previously Recorded Cultural Resources within a 1-mile Radius of the Project APE

Site Trinomial	Location	Site Type	Time Period	NRHP and SAL Eligibility Status	NRHP and SAL Recommendations	Comments
41TV96	North of Project APE	Prehistoric rockshelter	Unknown	Potentially Eligible	Testing or Preservation	Flint, large limestone rocks, snail shells, charcoal, and bones present.
41TV116	North of Project APE	Prehistoric midden and lithic scatter	Unknown	Not Listed on Site Form	None listed on site form	Burned and black midden dirt containing small choppers, flint chips, and burned rock.
41TV312	Northwest of Project APE	Historic homestead	20th Century	Not Eligible	No further work or research	House site, windmill, and other associated farmstead structures.
41TV315	West of Project APE	Prehistoric lithic scatter	Unknown	Eligible	Further work or research	Lithics and burned rock.
41TV316	West of Project APE	Historic farmstead	Depression era ca. 1920s–1930s	Not Listed on Site Form	None listed on site form	Rotting lumber, wire, bottles, and license plates.
41TV399	West of Project APE	Prehistoric occupation	Unknown	Not Listed on Site Form	Further work or research	One possible eroded fire hearth with sparse lithic scatter.
41TV400	West of Project APE	Prehistoric occupation	Unknown	Not Listed on Site Form	No further work or research	Small rock-lined hearth eroding out of terrace and one flint flake. Remaining portion of site has low research value.
41TV401	West of Project APE	Prehistoric open camp and lithic procurement area	Late Prehistoric	Not Listed on Site Form	Further work or research	Edgewood/Martindale dart point, other lithic tools, groundstone, and fire cracked rock.
41TV402	West of Project APE	Prehistoric occupation and lithic quarry	Unknown	Not Listed on Site Form	Further work or research	Quarry material, lithic debitage, and some burned rock present.
41TV403	West of Project APE	Prehistoric burned rock midden complex	Archaic	Not Listed on Site Form	Further work or research	At least four well-preserved burned rock middens lying along the bluff.
41TV404	Northeast of Project APE	Prehistoric Lithic Scatter	Unknown	Ineligible	No further work or research	SHPO eligibility concurrence 11/27/2013; The sites is a thin but constant scatter of primary lithic debitage.
41TV405	Northeast of Project APE	Prehistoric Lithic Scatter and Historic Farm Complex	Unknown Prehistoric; Late 19th-Early 20th c.	Ineligible within ROW	No further work or research	SHPO eligibility concurrence 11/27/2013; however, historic component including structures is undetermined, but will not be impacted by the current project
41TV406	Northeast of Project APE	Prehistoric Lithic Scatter & Quarry	Unknown	Not Listed on Site Form	None listed on site form	Predominantly quarry sit with slight amount of burned rock. Approximately 40 percent of site destroyed by gravel pit.
41TV407	Northeast of Project APE	Prehistoric Quarry; Historic Cemetery	Unknown Prehistoric; Late 19th c.	Ineligible	No further work or research	SHPO eligibility concurrence 2/10/2003; Prehistoric occupation evidence is sparse. Earliest grave in cemetery is 1882.
41TV411	Northeast of Project APE	Historic Petroglyphs	Unknown	Not Listed on Site Form	None listed on site form	Names and dates have been carved into the limestone. Some are worn, others too buried to read. Those noted were: "J. Cisner '05"; "FEQ [PLUS] KLQ 4/9/39"; "JAR", "OLR", "RR (or AA) Wheeler"; "Frank McA"; "Nino".
41TV436	Northeast of Project APE	Prehistoric Open Camp and Historic Homestead Foundation	Possible Early Archaic; 1930s	Ineligible	None listed on site form	3 test units excavated, recovered debitage, historic debris, 1 clear fork-like uniface, 1 bell like point, 1 crude biface. Earlier site investigation recorded 2 or 3 possible hearth features.

Site Trinomial	Location	Site Type	Time Period	NRHP and SAL Eligibility Status	NRHP and SAL Recommendations	Comments
41TV437	Northeast of Project APE	Prehistoric Buried Terrace	Unknown	Not Listed on Site Form	None listed on site form	Very sparse amount of burned rock and lithic debitage. Only faint traces situated in a gravel bed.
41TV439	North of Project APE	Prehistoric open quarry/campsite	Unknown	Not Listed on Site Form	No further work or research	Hammerstone, cores, and flakes.
41TV1094	Northeast of Project APE	Prehistoric Lithic Scatter & Quarry	Unknown	Ineligible within ROW	No further work or research	SHPO eligibility concurrence 01/15/2003 and 02/10/2003; The sites is a thin but constant scatter of primary lithic debitage.
41TV1095	East of Project APE	Prehistoric lithic scatter	Unknown	Not Eligible	No further work or research	Light lithic scatter lacks diagnostic artifacts.
41TV1096	East of Project APE	Possible prehistoric signal fire, storage or burial site	Unknown	Not Eligible	No further work or research	Originally recorded by TAS in 1985 as a single oval shaped topographic subsidence feature lacking artifactual material. ECOMM revisit in 2010 encountered entire site destroyed.
41TV1698	Adjacent to Project APE	Unknown	Unknown	Unknown	Unknown	No site form on file
41TV1701	North of Project APE	Unknown	Unknown	Unknown	Unknown	No site form on file
41TV1702	Northeast of Project APE	Prehistoric lithic procurement site	Unknown	Not Eligible	No further work or research	Lacks diagnostic artifacts or features. Site may extend further south, southwest, and east outside of McKinney Falls Parkway project area.
41TV2033	Southwest of Project APE	Historic farmstead	ca. 1870s–1930s	Not Eligible	No further work or research	Contains a well and several residential and agricultural structures.
41TV2196	Southwest of Project APE	Prehistoric lithic scatter and procurement site	Unknown	Not Eligible	No further work or research	Lacks diagnostic artifacts or features.
41TV2366	Within Project APE	Historic farmstead	ca. 1930s–1940s	Not Eligible within APE	No further work or research within APE	Includes ten buildings (house, barns, storage shed, storm cellar, etc…) of various ages.
41TV2406	West of Project APE	Prehistoric lithic scatter	Unknown	Not Eligible	No further work or research	Low density lithic scatter lacks diagnostic artifacts or features. Site may extend further north and south outside of Longhorn Pipeline ROW.
41TV2407	West of Project APE	Prehistoric lithic scatter	Unknown	Not Eligible	No further work or research	Low density lithic scatter lacks diagnostic artifacts or features. Site may extend further north and south outside of Longhorn Pipeline ROW.
41TV2458	Southwest of Project APE	Historic farmstead	1920s	Ineligible	No further work or research	House is demolished and a portion of a concrete slab remains. There are fragments of asphalt shingles on the slab. Behind this to the north is a limestone storm cellar, well/pump, shed, coop, stable, barn, and pen.
41TV2459	Southwest of Project APE	Historic homestead	Mid to Late 19th-Early 20th c.	Ineligible	No further work or research	Site consists of the remnants of a mid-late 19th century homestead, later oil/gas exploration features, and associated artifact scatter.

An archaeological survey was conducted by Jacobs Engineering, Inc. in October 2013 for the Phase 1A Pilot Knob 30-inch Wastewater Interceptor, in Travis County, Texas immediately east of the current APE additional alignment (Voellinger 2013). The investigation was performed on behalf of the Pilot Knob MUD No. 1, a political subdivision of the state, in compliance with the ACT and NHPA. The investigations revisited sites 41TV404 and 41TV405 previously recorded in 1978 by the Texas Water Development Board (TWDB) and mapped within a 1-mile radius of the current APE (see Table 1). Site 41TV404, mapped approximately 150 meters north of the current APE, is a prehistoric lithic procurement site and site 41TV405, mapped approximately 400 meters north of the current APE, is a multicomponent prehistoric lithic procurement/historic farmstead (Voellinger 2013). The prehistoric components for both sites were recommended as ineligible for designation as SALs or for listing on the NRHP with no further investigations warranted (Voellinger 2013). The historic component for site 41TV405 is of undetermined eligibility and no further investigations or mitigative measures were recommended as the site was outside of the investigation project area (Voellinger 2013).

The Collins Cemetery (also known as the Alexander or Alexander-Collins Cemetery) is located approximately 140 feet south of the current APE on Cotton Mouth Road. The cemetery is approximately 1-acre in size and contains late nineteenth to early twentieth century graves. The cemetery was listed as a Historic Texas Cemetery in 2004 (TV-C188) and is reported to contain African American graves (Atlas 2014). Individuals interred at the cemetery include those from the Collins and Bremond families. The oldest known interment is that of Mollie Bremond; born January 16, 1894, and died January 18, 1894 (Pitman and Pitman 2014).

In addition to the above investigations, another five cultural resources surveys have been conducted within a 1-mile radius of the current APE. In 2003, SWCA conducted a cultural resources survey south of Colton Bluff Springs Road southwest of the current APE. Investigators identified a historic farmstead (41TV2033) with historic features (e.g., residence structure and well) and scattered artifacts within a 1-mile radius of the current project area (see Table 1; Houk et al. 2003). The historic farmstead (41TV2033) is interpreted as dating from late nineteenth to mid-twentieth centuries and was recommended not eligible for inclusion to the NRHP and no further investigations were recommended (Houk et al. 2003). Site 41TV2033 is located 0.4 mile west of the APE and is depicted on the 1896, 1932, and 1955 U.S. Geological Survey (USGS) topographic maps.

In 2006 and 2007, a cultural resources survey was performed by Halff Associates for the McKinney Falls Parkway Expansion Project southwest of the current APE between East William Cannon Drive and Thaxton Road in Travis County, Texas (Leezer 2007). Two archaeological sites (41TV2196 and 41TV2197) were identified during the survey within a 1-mile radius of the current project area (see Table 1). Both sites are dispersed prehistoric lithic scatters primarily consisting of tested cobbles, cores, and primary stage debitage (Leezer 2007). Based on the natural and artificial impacts to the sites, as well as the lack of diagnostic artifacts, both were recommended not eligible for inclusion to the NRHP or for designation as an SAL, and no further work was recommended (Leezer 2007).

Information regarding the remaining three surveys is rather limited on Atlas. A large cultural resources survey of lower Onion Creek was conducted in 1979 on behalf of the U.S. Environmental Protection Agency (EPA) and the Texas Department of Water Resources (TDWR) north of the current project area (Atlas 2014). The investigations resulted in the documentation of numerous cultural resource sites some of which are within a 1-mile radius of the current project area (see Table 1). Finally, two archaeological surveys were performed in 1987, one immediately south of the 1979 survey and one west/southwest of the current project area. There are no cultural resource sites mapped within these areas on the Atlas (Atlas 2014).

In addition, to the Collins Cemetery there are two more cemeteries with a 1-mile radius of the APE. The Charles F. Austin Cemetery (Cemetery Number TV-C0007) is located approximately 0.42 mile east/southeast of the current project area (Atlas 2015) The cemetery it is also known as the Martin-

Brownow-McAgnus Cemetery according to the cemetery form and the dates of burials within the cemetery range from 1900-1945 and 1975 to present although there are unmarked graves present as well (Atlas 2015). The Caperton Family Cemetery (Cemetery Number TV-C005) is roughly 0.79 mile southwest of the current project area (Atlas 2015). According to the cemetery form, it is also known as the Caperton-Perry-Thaxton Cemetery and the dates of the burials range from mid-nineteenth to early twentieth centuries (Atlas 2015).

HISTORIC MAP REVIEW

The review of the TxDOT Historic Overlay maps revealed approximately six possible historic-age structures and one cemetery within or immediately adjacent to the APE (Foster et al. 2006). The 1932 Travis County map depicts three structures east of Cottonmouth Creek at the south terminus of the APE, two of which are present on the current topographic map (Figure 2; Foster et al. 2006). These three structures are most likely part of historic-age site 41TV2366 discussed above.

Two of the structures associated with 41TV2366 are depicted on the 1955 (Figure 3) and 1966 Montopolis USGS maps (Foster et al. 2006). An additional structure is depicted along an unnamed two-track road in the northern section of the APE approximately 0.35 mile west-northwest of the north terminus for the initial project alignment; however, this structure is not depicted on current topographic maps or aerial imagery. Finally, a cemetery, presumably Collins Cemetery, is depicted along Cottonmouth Road on both of these maps. Additionally, the 1955 and 1966 USGS maps also depict two historic-age structures roughly midway along the additional current project alignment (see Figure 3; Foster et al. 2006). The two structures are present through present time on maps.

SWCA conducted a review of historic maps from HistoricAerials.com to determine if any historic-age built resources were located within the project area, and to develop an idea of land development over time. A review was conducted of topographic maps dated to 1896, 1897, 1910, 1921, 1943,1956, 1965, 1967, 1970, 1975, 1984, 1985, 1988, and 1992, and historic aerial maps dated to 1964, 1965, 1966, 1973, 1985, 1986, 1995, 2004, and 2012. The same structures as previously discussed are depicted on these maps. The complex of buildings associated with site 41TV2366 is depicted on maps by 1956. The northern structure and nearby two-track road are depicted on the 1956 map; however, by 1967 both structure and road are gone. The Collins Cemetery also first appears on the 1956 topographic map and is consistently represented in the remainder of topographic maps. Additionally, the two structures midway along the additional current project alignment are present on current topographic and aerial maps.

FIELD SURVEY

October 29, 2014 Field Investigations

On October 29, 2014, SWCA archaeologists conducted an intensive pedestrian survey of the 1.7-mile-long initial project alignment APE with subsurface investigations conducted in PRAs located in the FEMA 100-year floodplain, totaling roughly 0.98 mile. The 100-year floodplain flanks both sides of Cottonmouth Creek and was investigated for anticipated compliance with application requirements for a USACE Fort Worth District Section 404 permit and FEMA permitting. The THC minimum survey standards for projects of this size require 16 shovel tests per mile. Overall, a total of 19 shovel tests were excavated within the APE in support of the current project, which exceeds the recommended coverage (Figure 4).

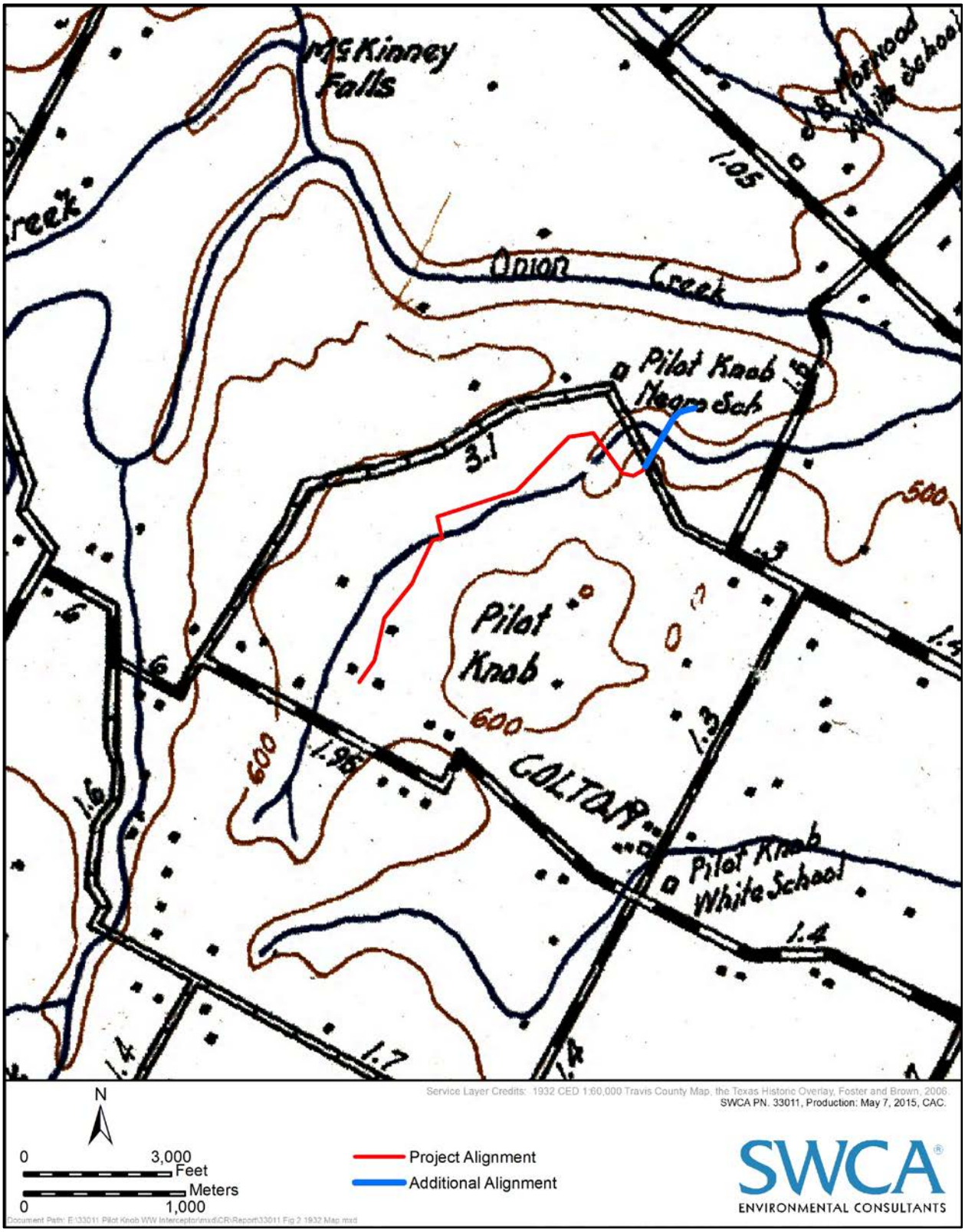

Figure 2. Project area on 1932 Travis County map.

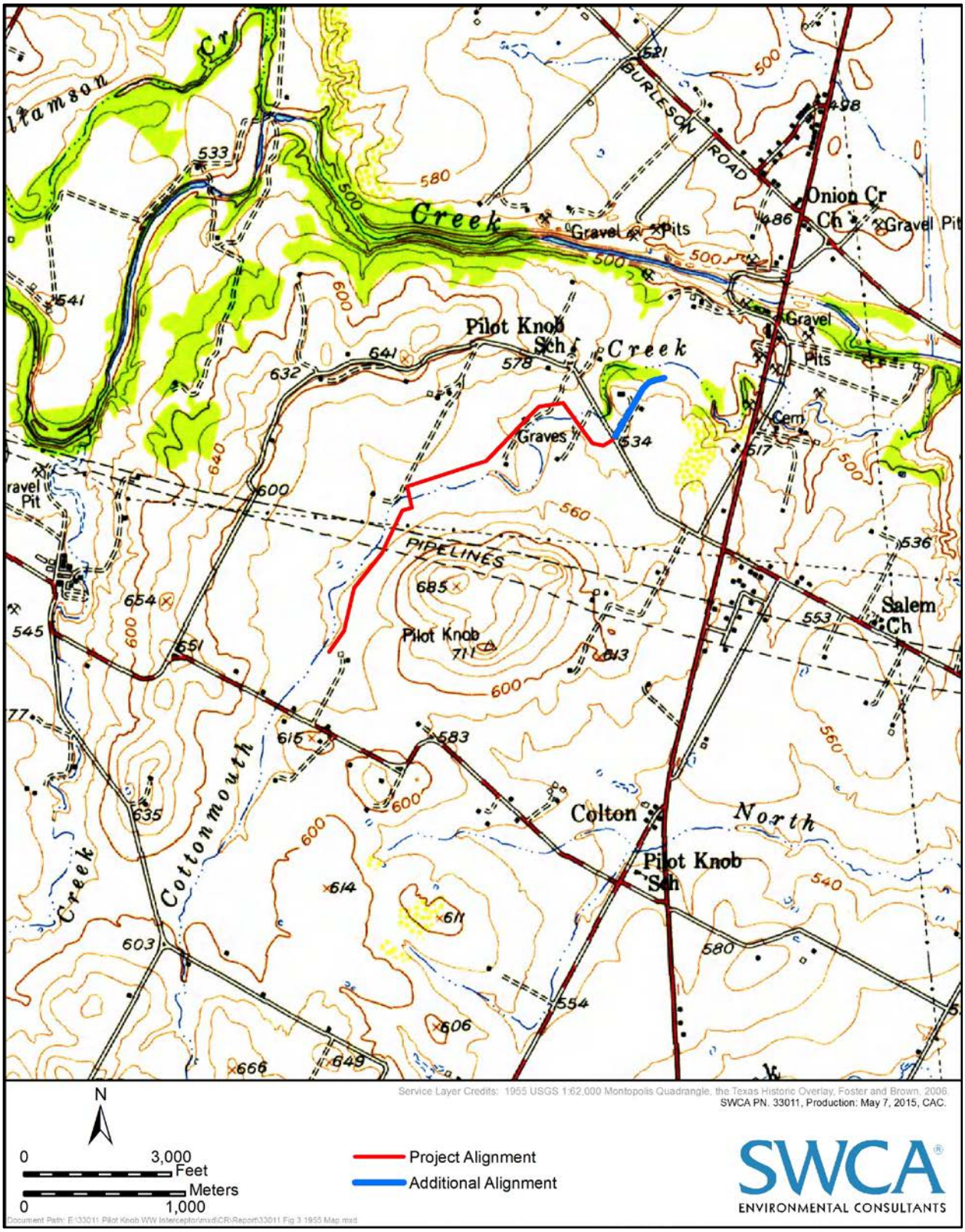

Figure 3. Project area on 1955 Montopolis USGS map.

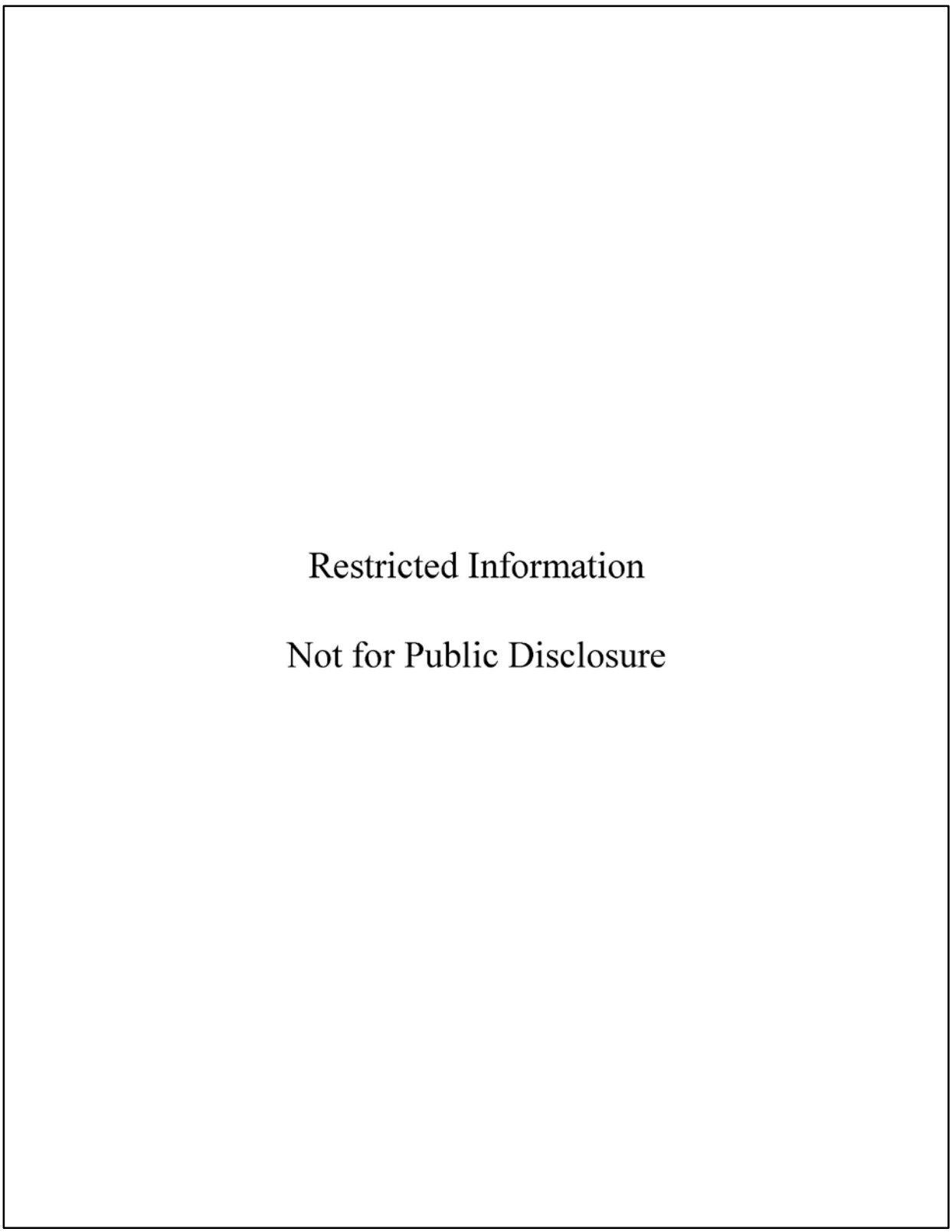

Figure 4. Survey results map for the initial project alignment APE.

Field investigations encountered broad, gently sloping creek floodplains. The APE traverses open agricultural fields and pastures as well as moderately wooded areas with vegetation including mature hackberry and cedar trees with abundant green briar and poison ivy. The initial alignment APE begins at Dee Gabriel Collins Road and trends northwest then southwest around Pilot Knob, a Late-Cretaceous Period volcano, the peak of which is located 0.6 mile east of the south terminus of the APE. Overhead and buried utilities were observed throughout the APE as well as disturbances associated with road and fence construction and agricultural activities (Figure 5).

Subsurface excavations encountered deep, dark yellowish brown clay with dense chert gravels and cobbles. Shovel tests were terminated due to impassable gravel or an absence of Holocene-age deposits and cultural material (Table 2). In the southern half of the APE igneous basalt resulting from eruptions at Pilot Knob is present across the surface. Surface visibility remains low across the APE, averaging 10 to 20 percent.

Figure 5. Overhead utility and buried pipeline crossing APE, facing northwest.

Table 2. Shovel Test Data for Initial Project Alignment APE

ST ID	Site	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Inclusions	Comments/Reason For Termination
AY01		0–50	10YR2/2	very dark brown	clay loam	2% chert cobbles	No cultural material encountered. Terminated due to compact soil.
AY02		0–40	10YR4/3	brown	clay loam	rare chert gravels	No cultural material encountered.
		40–55	10YR4/4	yellowish brown	clay loam	calcareous gravels and micro–gravels	No cultural material encountered. Terminated due to compact soil.
AY03		0–30	10YR4/2	dark grayish brown	clay	5% chert cobbles and gravels on surface and subsurface	No cultural material encountered. Terminated due to dense cobbles.
AY04		0–30	10YR4/2	dark grayish brown	clay	roots; rootlets; organics; many chert and limestone cobbles	No cultural material encountered. Terminated due to dense cobbles.
AY05		0–50	10YR4/2	dark grayish brown	clay	roots; rootlets; organics; chert and limestone cobbles; increasing slickensides	No cultural material encountered. Terminated due to compact soil.
AY06		0–30	10YR4/2	dark grayish brown	clay loam	1% chert cobbles; 10YR6/4 mottles	No cultural material encountered.
		30–35	10YR6/4	light yellowish brown	clay loam	micro-gravels; iron concretions	No cultural material encountered. Terminated due to compact soil.

ST ID	Site	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Inclusions	Comments/Reason For Termination
AY07		0–40	10YR4/2	dark grayish brown	clay	roots; few large chert cobbles/boulders	No cultural material encountered. Terminated due to compact soil.
AY08		0–30	10YR4/2	dark grayish brown	clay	many chert cobbles; rootlets; insect and worm burrows	No cultural material encountered. Terminated due to dense cobbles.
AY09		0–20	10YR4/2	dark grayish brown	clay loam	50% chert and volcanic rock fragments	No cultural material encountered. Terminated due to dense cobbles.
AY10		0–20	10YR4/2	dark grayish brown	clay loam	50% chert and volcanic rock fragments	No cultural material encountered. Terminated due to dense cobbles.
MC01		0–35	7.5YR3/3	dark brown	clay	onion bulbs; rare gravels and cobbles	No cultural material encountered.
		35–40	2.5YR3/1	dark reddish gray	clay		No cultural material encountered. Terminated due to compact soil.
MC02		0–40	10YR4/6	dark yellowish brown	clay	4 chert cobbles	No cultural material encountered. Terminated due to compact soil.
MC03		0–40	10YR4/6	dark yellowish brown	clay	few chert cobbles	No cultural material encountered. Terminated due to compact soil.
MC04		0–40	10YR4/6	dark yellowish brown	clay	10% gravels	No cultural material encountered. Terminated due to compact soil.
MC05		0–35	10YR3/2	very dark grayish brown	clay	few iron concretions	No cultural material encountered.
		35–40	7.5YR3/3	dark brown	clay		No cultural material encountered. Terminated due to compact soil.
MC06		0–30	10YR3/2	very dark grayish brown	clay	30% angular stones	No cultural material encountered. Terminated due to compact soil.
MC07		0–30	10YR3/2	very dark grayish brown	clay		No cultural material encountered.
		30–35	10YR4/6	dark yellowish brown	clay		No cultural material encountered. Terminated due to compact soil.
MC08		0–25	10YR4/6	dark yellowish brown	clay		No cultural material encountered.
		25–30	10YR5/8	yellowish brown	clay		No cultural material encountered. Terminated due to compact soil.
MC09	41TV2366	0–15	10YR4/6; 10YR5/8	dark yellowish brown; yellowish brown	clay		No cultural material encountered. Terminated due to disturbance.

One barn was observed in the APE situated at the edge of a pipeline corridor approximately 0.66 mile north east of the E. William Cannon Drive and McKinney Falls Parkway intersection. The building is located near the base of a gentle west-trending slope just 250 feet east of Cottonmouth Creek. Vegetation consists of hackberry and mesquite trees with tall grasses and weeds.

The large barn measures roughly 40 feet northeast-southwest and 35 feet northwest-southeast (Figure 6). The barn is wooden-framed with a corrugated metal gambrel roof and centrally located cupola. The exterior is clad in metal sheets and horizontally laid milled lumber. The barn has a wide central passageway inside. Broad barn doors are located on the north and south facades to provide access to this central passage. One animal stall is located in the northeast corner of the building. A built-in ladder is centrally located and leads to a large hay loft. The north and south façades each contain large balcony windows from the hay loft. In addition, the north and west façades contain two smaller windows each.

The barn contains historic elements but appears to have been continuously altered over time as the structure is composed of materials ranging in age. The barn has been propped up by cinder blocks and wooden blocks indicating that it was not built at the current location but moved (Figure 7). In addition, no historic-age artifacts or additional features were observed in association with the barn. Two negative shovel tests (AY09–10) were excavated around the barn and revealed very gravelly, dark grayish brown clay loam terminating at impassable gravel at 20 centimeters below surface (cmbs) (Table 2).

A review of HistoricAerials.com was conducted to determine when the structure was moved to its current location. Aerial maps dating to 1964–1966, 1973, 1985–1986, and 2004 were reviewed. The structure is absent on early maps with its first appearance on the 1986 aerial. Therefore, the barn was likely moved to its current location between 1985–1986.

As previously mentioned, the barn contains some historic elements; however, the original construction date and location are unknown. The barn has been continuously altered over time, and no historic-age artifacts or additional historic resources were observed in association with the structure. Based on the lack of historical associations, lack of distinctive architectural characteristics, and lack of integrity, the barn does not warrant designation as an archaeological site and is not likely to provide any further information.

Figure 6. North façade of barn, facing southwest.

Figure 7. Cinder blocks and wooden blocks under barn, facing southwest.

Site 41TV2366

Site 41TV2366 is a historic farm complex located south of Cottonmouth Creek, 980 meters (m) east of McKinney Falls Parkway and 430 m north of Colton Bluff Springs Road (See Figure 4). The site lies at the base of a rising upland landform, southwest of Pilot Knob. The area is largely within open agricultural fields with short grass and hardwoods around the home and dense secondary growth surrounding the tenant house to the north.

The site consists of a 1920s to 1930s farmstead containing 11 extant resources. The site was investigated by Butler and Feit in 2010 and their report provides a detailed description of the farmstead. SWCA revisited the site in March 2014 and recorded two additional resources, a 2-room, wooden tenant farmer house and wooden outhouse 200 m to the north. The site measures 310 m northeast to southwest by 130 m northwest to southeast.

The 2010 investigations at 41TV2366 determined the site is not eligible for inclusion to the NRHP or for designation as an SAL. Based on the 2014 revisit, SWCA concurred with the original findings and recommended no further work.

The current proposed APE skirts north of the site boundary before terminating just inside the southwest corner of the site. No historic-age artifacts or structures were observed within the APE. In addition, active construction associated with the Easton Park Development Project has greatly disturbed the portion of the APE located within the site boundary (Figure 8). One negative shovel test (MC09) was excavated within the site boundary and revealed yellowish brown clay with mixed gravel terminating at 15 cmbs due to disturbance (see Table 2).

As no artifacts or structures associated with 41TV2366 are present within the current proposed APE, and nothing was observed in the current investigations to alter the previous recommendations; SWCA concurs with the previous findings and recommends no further work.

Collins Cemetery

Collins Cemetery is located on the west side of Cottonmouth School Road approximately 0.15 mile northwest of its intersection of Dee Gabriel Collins Road. The cemetery is situated within a wooded lot between two gravel driveways approximately 93 feet southwest of the current proposed centerline (Figure 9). The general environment surrounding the cemetery is composed of gently undulating uplands with cleared pastures and some clusters of dense vegetation. The cemetery is located on a gentle north-trending slope with modern residences to the north and south. The cemetery is covered with dense vegetation including hackberry trees, green briar, and poison ivy. The ground surface is covered with thick leaf litter allowing for low visibility.

The cemetery is composed of six headstones and two metal placards lacking legible inscriptions. The headstones are loosely grouped in two separate areas. Group 1 is located 85 feet west of Cottonmouth School Road. Three plots are clearly marked and all face east with interment dates ranging from the late nineteenth to early twentieth century. A decorative iron fence is located within 20 feet north and trends roughly east-west.

Figure 8. Active construction in site 41TV2366, facing southwest.

Figure 9. Location of Collins Cemetery.

Group 2 is 35 feet south of Group 1 and 50 feet northwest of Cottonmouth School Road. Two plots are located within a small fenced area, while the third plot is located just outside the enclosure to the south. The plots follow no specific orientation, and generally date to the early twentieth century. The headstones are overgrown with vegetation and most are tilted or leaning. In addition, one illegible, metal placard was observed adjacent to a formal granite headstone. Whether the placard marks an additional plot or represents the same plot before a formal headstone could be acquired is unknown.

Group 1 contains members of the Bremond family. Research conducted on the Findagrave.com website indicates that Vinie Bremond was born Vinie Collins. The other two members in Group 1 include Ben F. Bremond, husband of Vinie Bremond, and their child Mollie.

Group 2 contains the headstone for Newton Isaac (N.I.) Collins, Sr., a freed slave who moved to Texas from Alabama in 1863 (Sanders 2010). Collins Sr. was born into slavery in Alabama and later freed before travelling to Texas. He settled near Manor and was re-enslaved until the end of the Civil War. Collins, Sr. used money he earned as a carpenter to buy and trade land in east Austin, ultimately acquiring 506 acres near Pilot Knob in 1891 (Sanders 2010). Dee Gabriel Collins, the son of N.I. Collins Sr., is also included in the second grouping as well as the infant child of Newton Isaac Collins, Jr.

In addition, a second illegible metal placard was observed approximately 75 feet west-southwest of Group 1 (Figure 10). The placard is located next to a mature hackberry tree, and no additional indication of a burial plot was observed.

A review of historic aerial maps from HistoricAerials.com was also conducted in order to help determine the limits of the cemetery. Aerial maps dated 1964, 1965, 1966, 1973, 1985, 1986, and 2004 were reviewed. Unfortunately, no prominent fence lines or cemetery boundaries were depicted on the maps. The only boundary indication is the aforementioned decorative fence located north of Group 1; however, the cemetery contains mature hackberry trees which are not present to the north or northwest past the fence (Figure 11). In addition to the drastic vegetation change, extensive land modification associated with a modern residence to the north indicates that the cemetery does not extend to the north.

The cemetery is protected under 711.035(f) and 711.010(a)(b) of the Health and Safety Code of Texas. As a result, avoidance of the cemetery is required by state law. However, based upon the current alignment, the centerline is over 90 feet north of the cemetery fence and adequately avoids the cemetery. Therefore, the Collins Cemetery will not be impacted by construction activities associated with the Pilot Knob Interceptor Project. As such no additional work is required.

Figure 10. Illegible placard at west end of Collins Cemetery, facing southwest.

Figure 11. Mature hackberry trees lining Collins Cemetery beyond disturbed secondary growth, facing southwest.

May 21, 2015 Field Investigations

On May 21, 2015, SWCA archaeologists conducted an intensive pedestrian survey of the entire 0.34-mile-long additional project alignment APE with subsurface investigations. The project area is just south of Cottonmouth Creek and was investigated for compliance with the Antiquities Code of Texas under Permit No. 7287. The additional alignment extends north-northeast of Dee Gabriel Collins Road before terminating in an undeveloped tract. The majority of the additional project alignment from Dee Gabriel Road trending northeast to a residential complex is situated along a disturbed setting consisting of a divided gravel driveway that has been impacted by clearing and grading resulting in a heavily modified landscape (Figures 12 and 13). Additionally, overhead and buried utilities were observed throughout the APE as well as disturbances associated with fence construction and agricultural activities. Subsurface excavations (n=3) encountered shallow dark gray and grayish brown mottled compact and/or cobbly clays (Table 3). These excavations terminated due to impassable gravels, compact soil, and/or degrading bedrock and were all negative for cultural materials. Surface visibility across the APE ranged from 10 to 70 percent.

Table 3. Shovel Test Data for Additional Project Alignment APE

ST ID	Site	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Inclusions	Comments/Reason For Termination
MC01		0–30	10YR4/2 mottled with 7.5YR 5/8 and 10YR 3/1	dark grayish brown mottled with strong brown and very dark gray	clay	80–90% chert cobbles and gravels	No cultural material encountered. Terminated due to impassable gravels.
MC02	FS01	0–30	10YR4/1	dark gray	clay	5% limestone gravels	No cultural material encountered.
		30–45	10YR5/2	grayish brown	clay		No cultural material encountered. Terminated due to compact soil.
TN01		0–30	10YR3/2 with 10YR 4/6 mottles	very dark grayish brown with yellowish brown mottles	clay loam	2% limestone gravels; rare limestone cobbles 5–10 cm in diameter	No cultural material encountered. Degrading limestone/caliche at base. Terminated due to caliche bedrock.

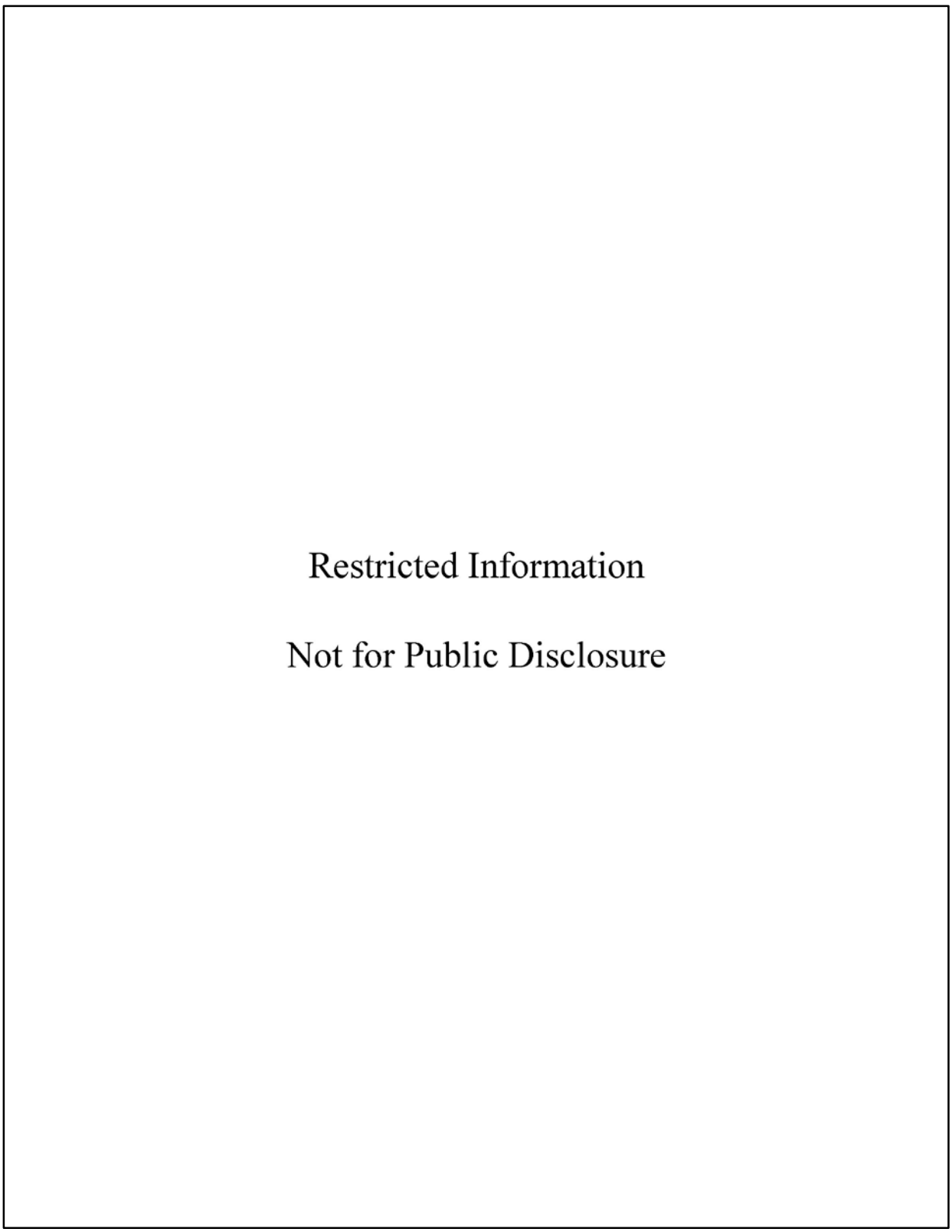

Figure 12. Survey results map for the additional project alignment APE.

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Figure 13. Overview of disturbed southern portion of additional project alignment APE.

Figure 14. Isolated primary chert flake along the southwestern margin of the additional project alignment APE.

Figure 15. Sewer line within additional project alignment APE and in the vicinity of primary chert flake isolated find.

An isolated find consisting of a primary chert flake was observed on the ground surface along the southwestern margin of the alignment APE (Figure 14). No additional cultural materials were identified within shovel test MC01 or on the ground surface in the area. Disturbances including clearing and a sewer line have impacted the area (Figure 15). This isolated flake may be associated with the previously recorded site (41TV404) located about 150 m north of the current APE.

Site 41TV2480

The investigations encountered a residential complex at the end of the previously mentioned gravel driveway. The complex consists of roughly three residences and three associated outbuildings. A portion of one residential structure designated as site 41TV2480 is located along the APE, while the others are located in the immediate vicinity, but outside of the APE (Figure 16). The residential structure is along the easement portion of the APE, but outside the actual project alignment.

Site 41TV2480 is a historic-age residence consisting of a wood-frame, single story house with an associated shed (Figures 17 and 18). The structure is square and measures roughly 65 by 65 feet (20 by 20 m). There is a large open field immediately east of the residence and the riparian zone along the southern bank of Cottonmouth Creek is just north of the site. The structure is likely associated with structures that are components of a historic homestead/farmstead from the mid-twentieth century.

SWCA reviewed Texas Historic Overlay maps and HistoricAerials.com topographic maps dating to 1896, 1897, 1910, 1921, 1943, 1956, 1965, 1967, 1970, 1975, 1984, 1985, 1988, and 1992, and aerial maps dating to 1964, 1965, 1966, 1973, 1985, 1986, 1995, 2004, and 2012. The structure first appears on the maps beginning in 1955.

No historic-age artifacts associated with 41TV2480 were observed in the current APE, and the residence has been continuously lived in as well as modified, compromising its integrity. Based on these factors, site 41TV2480 is recommended as ineligible for inclusion to the NRHP or for designation as an SAL, and no further work is recommended.

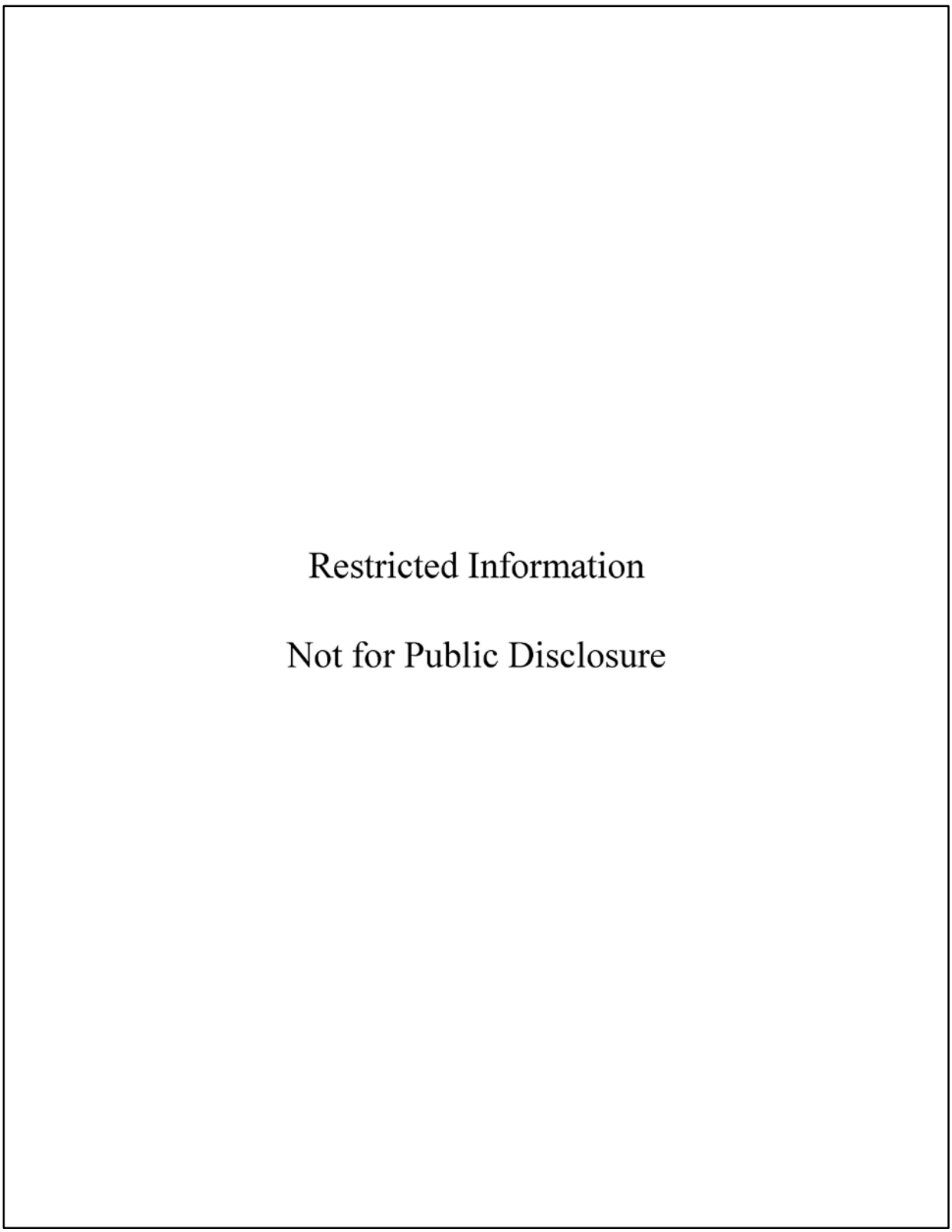

Figure 16. 41TV2480 site map.

Figure 17. Overview of site 41TV2480 along the margin of the additional project alignment APE.

Figure 18. Overview of site 41TV2480 along the margin of the additional project alignment APE.

SUMMARY AND RECOMMENDATIONS

SWCA conducted an intensive cultural resources survey on behalf of Brookfield Residential for the proposed Pilot Knob Wastewater Interceptor Project in southeastern Travis County. The APE is defined as a 2.1-mile-long corridor with an 80-foot-wide temporary and a 40-foot-wide permanent easement that encompass about 20.0 acres. The depths of project impacts are currently unknown, but horizontal directional bores are proposed at road and drainage crossings and are not expected to exceed 15 to 20 feet below ground surface. The proposed project has two components: the initial 1.7-mile-long wastewater interceptor initial project alignment and the additional 0.34-mile-long (Phase 2) extension project alignment.

Because the project in its entirety will be constructed on land owned by the Pilot Knob MUD No. 1, a political subdivision of the State of Texas, the cultural resources survey of the APE was conducted in accordance with the guidelines provided in Section 106 of the NHPA (16 USC 470), and its implementing regulations (36 CFR 800) and the ACT under Antiquities Permit No. 7287. In addition to the ACT, all work was performed in accordance with Section 106 of the NHPA, in anticipation of possible permitting requirements by the FEMA, and as part of the sponsor's compliance with application requirements for a USACE Ft. Worth District Section 404 permit in accordance with 33 CFR Part 325, Appendix C (Processing Department of Army Permits: Procedures for the Protection of Historic Properties; Final Rule 1990; with current Interim Guidance Document dated June 24, 2002).

The purpose of the work was to locate and identify all prehistoric and historic archaeological sites in the APE, establish vertical and horizontal site boundaries as appropriate with regard to the APE, and evaluate the significance and eligibility of any site recorded within the property for inclusion to the NRHP. The investigations included a background review of previous work, historic map review, and an intensive pedestrian survey with shovel testing of portions of the APE.

The background review determined that portions of the APE have been previously surveyed with one cultural resources site documented in the APE (41TV2366). The historic map review revealed approximately six possible historic-age structures within or immediately adjacent to the property.

During the cultural resources survey, SWCA archaeologists examined the ground surface and erosional profiles and exposures for cultural resources. Subsurface investigations were conducted within the FEMA 100-year floodplain and the additional project alignment APE. The THC/CTA standards require 16 shovel tests per mile, per 100 feet of ROW width for linear surveys. For a linear project of this size (80 feet wide by 2.1 miles long) a minimum of 25 shovel tests is

recommended. Overall, the current investigations excavated 22 shovel tests, which is slightly below the recommended amount. However, disturbances from road and fence construction, utilities (buried and overhead), and agricultural activities decreased the amount of intact areas warranting investigation. In general, the APE consists of broad, open pastures and agricultural fields as well as some densely wooded areas adjacent to Cottonmouth Creek.

The SWCA investigations revisited site 41TV2366 and verified the location of the Collins Cemetery. As no historic-age artifacts or structures associated with 41TV2366 were observed in the current APE and nothing was observed to change the previous findings, SWCA recommends no further work. The historic-age Collins Cemetery is 93 feet southwest of the current proposed centerline. The cemetery is protected under 711.035(f) and 711.010(a)(b) of the Health and Safety Code of Texas. As a result, avoidance of the cemetery is required by state law. However, based upon the current alignment, the centerline is over 90 feet north of the cemetery fence and adequately avoids the cemetery. Therefore, the Collins Cemetery will not be impacted by construction activities associated with the Pilot Knob Interceptor Project. As such no additional work is required. In addition, site 41TV2480 a historic-age circa 1955 residence was identified and recorded along the margin of the additional alignment project. No historic-age artifacts associated with 41TV2480 were observed in the current APE, and the residence has been continuously lived in as well as modified compromising its integrity. Based on these factors, site 41TV2480 is recommended as ineligible for inclusion to the NRHP or for designation as an SAL, and no further work is recommended.

In accordance with the ACT and 33 CFR 800.4, SWCA has made a reasonable and good faith effort to identify cultural resources within the APE. As no properties were identified that meet the criteria for listing on the NRHP, according to 36 CFR 60.4, SWCA recommends no further cultural resources investigations within the current project APE.

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