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Cultural Resources Investigations of the Lively Sewer Line Extension Project, Williamson County, Texas

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Prepared for

Sentinel Land Company

Prepared by

SWCA Environmental Consultants

Texas Antiquities Permit 7027

SWCA Cultural Resources Report No. 15-36

March 2015

CULTURAL RESOURCES INVESTIGATIONS OF THE LIVELY SEWER LINE EXTENSION PROJECT, WILLIAMSON COUNTY, TEXAS

Prepared for

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ABSTRACT

On behalf of Sentinel Land Company and a Municipal Utility District (MUD), SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey for the proposed Lively Sewer Line Extension Project in Williamson County, Texas. The project area is located between the communities of Leander and Georgetown, Texas, approximately 3 miles southeast of the State Highway (SH) 29 and Ronald Reagan Boulevard intersection. In anticipation of U.S. Army Corps of Engineers (USACE) permitting regulations, the proposed project is subject to review in accordance with Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470) and its implementing regulations (36 CFR 800). In addition, the project area includes property owned or managed by a MUD, a political subdivision of the state; therefore, the work will require compliance with the Antiquities Code of Texas (ACT). SWCA conducted investigations under Antiquities Permit Number 7027.

The proposed project involves the construction of a 2.5-mile-long sewer line extension. During construction, the proposed sewer line extension will use a 50-foot-wide (15-meter[m]-wide) temporary easement and will extend for approximately 13,200 feet (2.5 miles), encompassing 15.2 acres. The utility corridor will shrink to have a 30-foot-wide (9-m-wide) permanent easement after installation. In addition to the proposed sewer line, there are approximately 3.85 miles of proposed access roads. Approximately 5,545 linear feet (1.05 miles) or about 2.5 acres are proposed new access roads. The remaining 2.8 miles of additional access roads will use existing dirt roads and gravel roads and were not proposed for survey due to previous impacts. Additionally, there are six 500-foot-diameter (culminating in 27.0 acres) spoil lay down areas for the soil generated during the construction trenching. The depth of impacts would be roughly 7 to 10 feet below surface along the alignment. The exceptions consist of six bore pits that would flank the river at the three crossings and would extend approximately 20 feet below ground surface. Therefore, the area of potential effects (APE) encompasses roughly 44.7 acres.

The investigations included a background review and an intensive pedestrian survey with shovel testing of the project area boundaries. The background review determined that portions of the project area have been previously surveyed and three previously recorded sites, 41WM459, 41WM113, and 41WM114, are located within or directly adjacent to the project area. Site 41WM459 is along one of the proposed access roads, while sites 41WM113 and 41WM114 are along the proposed pipeline. The historic map review determined there are no historic-age properties within the APE. The review identified an historic cemetery (Whitley Cemetery) within 985 feet (300 m) of the proposed sewer line.

The field investigations consisted of 43 shovel tests, one backhoe trench, and extensive examination of exposed profiles. During these investigations, SWCA newly recorded one archaeological site (41WM1278) and revisited one previously recorded site (41WM459). Due to the ubiquity of the site type in the region, the low density of diffusely scattered artifacts, the absence of any temporally diagnostic artifacts or cultural features, and the lack of overall integrity across the site, the parts of 41WM459 within the project area have limited potential to yield new or important information concerning regional prehistory. SWCA recommends therefore that the parts of 41WM459 within the current project area are not eligible for inclusion in the NRHP nor do they warrant designation as an SAL; the remainder of the site outside of the project area is of undetermined eligibility. Based on these data, no further work or avoidance is recommended for the parts of site 41WM459 within the current project area. However, should the proposed project design change and require impacts to other parts of 41WM459, those areas would require additional survey.

Given the possibility that site 41WM1278 is associated with the Whitley Cemetery that is approximately 100 feet to the southwest, and without the ability to determine the age, and context of the stonewall feature, SWCA recommends that eligibility for inclusion in the NRHP and SAL designation is undetermined for 41WM1278. However, the use of the roadway for the project will not detrimentally affect the site. Accordingly, no further field investigations are recommended for the site. Should construction activities be

altered and affect the rock wall, archival research is recommended to determine the age and significance of the wall as it may relate to Whitley Cemetery.

In accordance with 33 CFR 800.4, SWCA has made a reasonable and good faith effort to identify cultural resources properties within the APE. As no properties were identified that may meet the criteria for listing in the NRHP according to 36 CFR 60.4 or for designation as an SAL, according to 13 TAC 26.10, SWCA recommends no further cultural resources work within the project area.

ACKNOWLEDGEMENTS

Ken Lawrence served as Principal Investigator and Geoarchaeologist for the duration of the project, ably overseeing overall logistics and organization, managing reporting and agency consultation, as well as contributing his geoarchaeological expertise to the project. Brandon Young served as Project Manager, while Christina Nielsen, Matthew Carter, and Ken Lawrence conducted field work on January 8–9, 2015. Carole Carpenter expertly produced all field and report maps for the project.

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INTRODUCTION

SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey of the proposed Lively Sewer Line Extension Project in Williamson County, Texas (Figure 1). The project area is located between the communities of Leander and Georgetown, Texas, approximately 3 miles southeast of the State Highway (SH) 29 and Ronald Reagan Boulevard intersection

The work was conducted on behalf of a Municipal Utility District (MUD). In anticipation of U.S. Army Corps of Engineers (USACE) permitting regulations, the proposed project is subject to review in accordance with Section 106 of the National Historic Preservation Act (NHPA) (16 USC 470) and its implementing regulations (36 CFR 800). In addition, the project area will include property owned or managed by a MUD, a political subdivision of the state; therefore, the work will require compliance with the Antiquities Code of Texas (ACT).

The investigations consisted of an intensive archaeological survey with shovel testing and limited backhoe trench excavation of the proposed APE. All investigations were conducted in accordance with Texas Historical Commission (THC) and Council of Texas Archeologists (CTA) standards, as well as the guidelines provided in Section 106 of the NHPA (National Park Service 1983).

The cultural resources survey efforts were conducted by SWCA archaeologists Christina Nielsen, Matthew Carter, and Ken Lawrence on January 8–9, 2015. Ken Lawrence served as Principal Investigator under Texas Antiquities Permit No. 7027.

PROJECT AREA DESCRIPTION

The project primarily involves the installation of a 2.5-mile-long sewer pipeline extension with associated access roads and six spoil pile areas. During construction, the proposed sewer line extension will use a 50-foot-wide (15-meter[m]-wide) temporary easement and will extend for approximately 13,200 feet (2.5 miles), encompassing 15.2 acres. The utility corridor will shrink to have a 30-foot-wide (9-m-wide) permanent easement after installation.

In addition, there are approximately 20,330 linear feet (3.85 miles) of proposed access roads. The project proposes to construct approximately 5,545 linear feet (1.05 miles) or about 2.5 acres of new access roads. The remaining 2.8 miles of access roads will utilize existing two-track dirt and gravel roads and were not projected to have extensive modifications, and therefore were not proposed for survey. Finally, six separate 500-foot-diameter spoil lay down areas are planned for the project. The spoil areas (culminating in 27 acres) are intended for the temporary storage of soil generated during the construction trenching.

The depth of project impacts would be roughly 7 to 10 feet (2–3 m) below surface along the alignment. The exceptions consist of six bore pits that would flank the river at the three crossings and would extend approximately 20 feet below ground surface. Therefore, the area of potential effects (APE) is interpreted to be roughly 44.7 acres.

The proposed sewer pipeline alignment appears on a portion of the *Leander, TX* (3097-321) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map, and is located along the north and south banks of South Fork of the San Gabriel River. The project area is located between the communities of Leander and Georgetown, Texas, which is quickly filling with residential and commercial development. Based on current aerial photography, the project area is mainly surrounded by pasture and undeveloped land and is in a semi-rural setting (Figure 2).

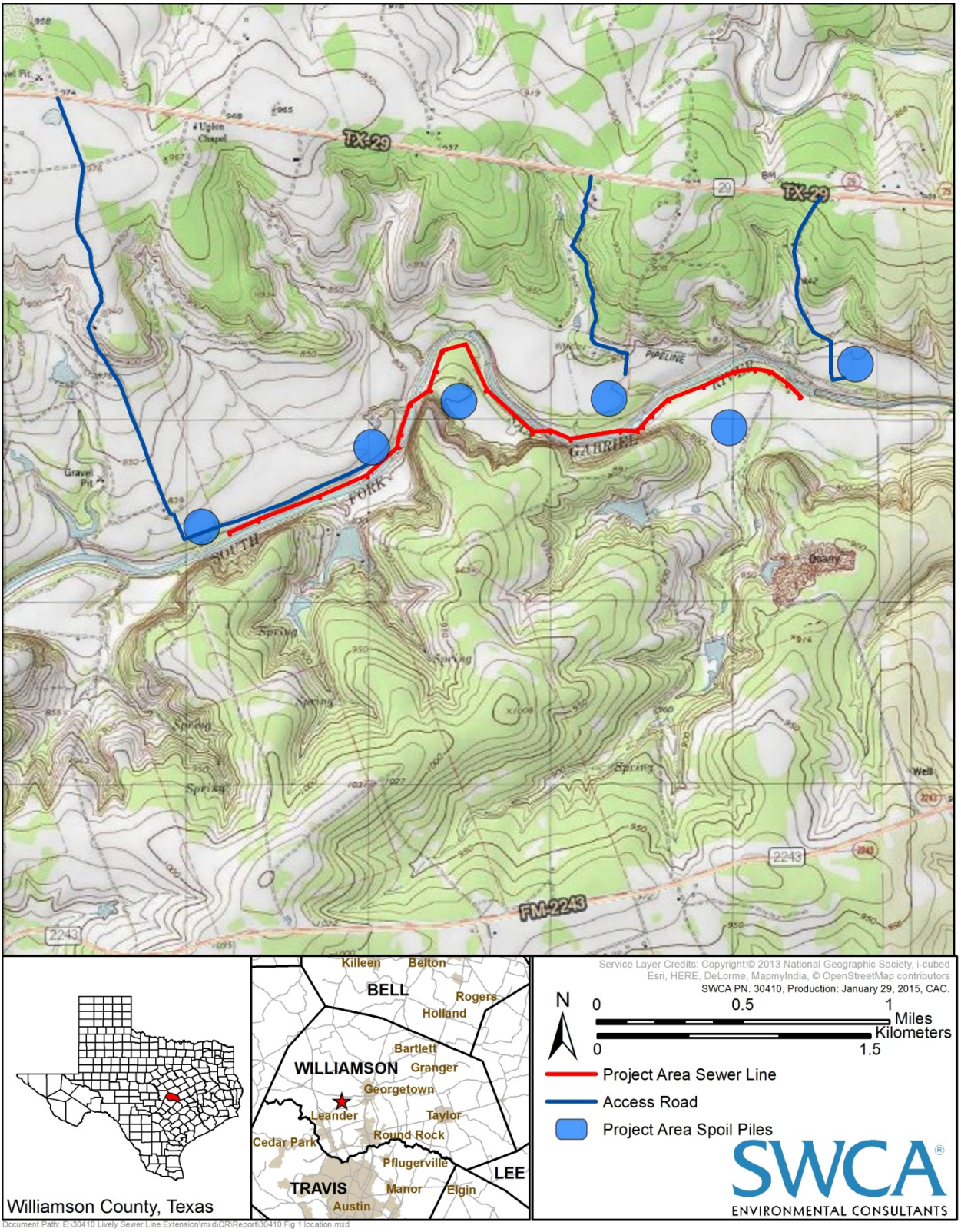

Figure 1. Project location map.

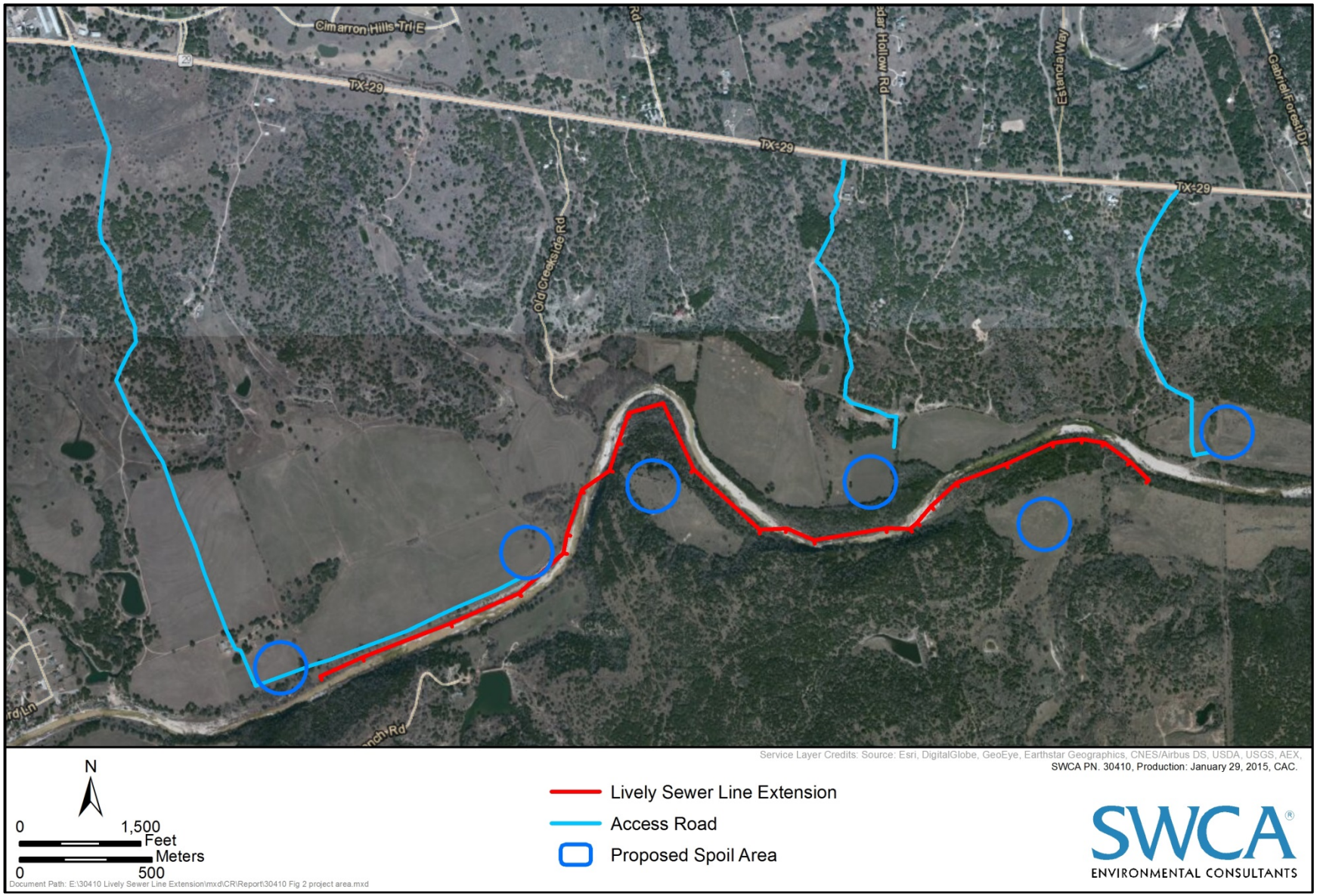

Figure 2. Project area.

GEOLOGY

The underlying geology throughout the APE consists of recent (Holocene) Quaternary alluvium along the river and limestone in the adjacent uplands that will be traversed by the proposed access roads. Quaternary alluvium consists of clay, silt sand, and gravel floodplain and low terrace deposits with well-preserved fluviatile morphology in point bars, oxbows, and abandoned channels. Due to the alluvial origin and Holocene age of the deposit, it has a good potential for containing buried cultural resources.

The limestone deposits within the project area include Lower Cretaceous Edwards Limestone and Comanche Peak Limestone of the Fredericksburg Group. The Edwards Limestone consists of fine-grained grayish to brown limestone, dolomite, and chert that forms in flat areas and plateaus bordered by scarps comprising Comanche Peak Limestone, which is described as gray, fine to very fine grained and nodular with a thickness of up to 80 feet (Barnes 1974). Given the age and physical properties of the limestone, it has no potential to contain buried archaeological resources.

SOILS

The overall project area soils are mapped as 66 percent Oakalla soils with 0 to 1 percent slopes, followed by 34 percent Sunev silty clay loam with 1 to 3 percent slopes (Natural Resources Conservation Service [NRCS] 2014; Taylor et al. 1991).

The Oakalla series consists of soils that are very deep. These well-drained soils formed in loamy alluvium derived from limestone of Cretaceous age. These soils are on nearly level to gently sloping on floodplains on perennial streams in river valleys. They are subject to flooding by overflow from streams for short periods after heavy rains. (NRCS 2014). Based on the origin of these soils, they have a potential for containing buried cultural materials.

The Sunev series consists of very deep, well-drained soils that formed in loamy alluvium. These soils are on nearly level to moderately steep stream terraces or footslopes of valleys and ridges (NRCS 2014). Given the alluvial origin of this soil series, it has a good potential to contain deeply buried cultural materials.

CULTURAL BACKGROUND AND SETTING

Williamson County is on the eastern edge of the Edwards Plateau and near the eastern margins of the Central Texas archaeological region, as defined by Collins (2004), Prewitt (1981, 1985), Suhm (1960), and other researchers. The Central Texas archaeological region is an artificial construct, and its boundaries are somewhat arbitrary (Collins 2004:102). As Collins (2004:103) points out, it is unlikely that any group in the past 11,000 years had their key resources, geographic range, or political sphere conform to these boundaries. It is worth noting that Perttula (2004:Fig 1.1) extends the boundaries of Central Texas much farther east than many researchers. Nevertheless, situated as it is on the Edwards Plateau's margins, the sites identified within the project area share many traits in common with "classic" Central Texas sites (i.e., those above the Balcones Escarpment).

As noted above, the project area is near the eastern edge of the Central Texas archaeological region. Its occupants likely ranged west, deeper into the Edwards Plateau, and east, onto the rolling Blackland Prairie. Inhabitants of the area, therefore, were influenced by cultural developments taking place in Central Texas, as well as to the east. Regardless of the intensity or nature of influences from off the plateau, we rely on more developed chronologies from Central Texas to summarize the cultural history of the area. Following standard chronological divisions, we divide the prehistoric cultural sequence into three periods: Paleoindian, Archaic, and Late Prehistoric. The Archaic period is commonly subdivided into three subperiods (Early, Middle, and Late), although, as this report addresses, various labels have been applied to the last few centuries of the Archaic. To avoid straying too far down a tautological maze, we generically call the period from approximately 600 B.C. to A.D. 700 "the end of the Archaic."

PALEOINDIAN PERIOD

The Paleoindian period, which includes the earliest known peoples in the area, began during the close of the Pleistocene. The presence of Paleoindian artifacts and sites, dating from about 11,500–8800 B.P., are not considered uncommon in Central Texas (Collins 2004). Two of the more important Paleoindian sites in Texas are near the project area: the Wilson-Leonard site (41WM235) on Brushy Creek in southern Williamson County, and the Gault site (41BL323) in adjacent Bell County.

Diagnostic artifacts of the period include lanceolate-shaped and fluted projectile points such as Clovis, Folsom, and Plainview. These projectile points were hafted onto wooden spears and often used to hunt big game such as mammoth, mastodon, bison, camel, and horse (Black 1989; Bousman et al. 2004). Recent research has demonstrated that Paleoindian people relied on a more diverse subsistence base than previously thought, exploiting a variety of plants and small fauna in addition to the larger animals (Bousman et al. 2004). Paleoindian lifeways gradually transitioned to a more Archaic-style adaptation (increasing reliance on plants and smaller game, better-defined and smaller group territories, and regional diversification in projectile point styles) as the big game died off and the climate warmed following the end of the Pleistocene ice age (Bousman et al. 2004).

ARCHAIC PERIOD

As the Paleoindian period came to an end, humans began to more intensively harvest local floral and faunal resources. Material culture became more regionally diversified, and the use of burned rock middens and ovens became widespread. This period is known as the Archaic period and dates from approximately 8800–1200 B.P. in Central Texas (Collins 2004; Johnson and Goode 1994).

EARLY ARCHAIC

The Early Archaic is commonly dated to ca. 8800 to 6000 B.P. (Collins 2004:119). Research suggests that Early Archaic people became increasingly reliant on local resources and residential mobility decreased (Prewitt 1981:73; Suhm et al. 1954:18). Early Archaic populations utilized base camps for longer periods, perhaps seasonally, and hunted a diverse array of small (e.g., snakes, turtles, rodents, rabbits), medium (e.g., opossums and raccoons), and large (e.g., deer and antelope) game, fished local rivers, and cooked wild plant bulbs in earth ovens. It is likely that the reduction in residential mobility was related to a variety of factors including diminished bison populations, population increase, tribal territoriality issues, and climatic change. By the start of the Early Archaic, well-established resident populations lived in every biogeographical region of Texas.

Collins (2004:120) and McKinney (1981) observe that a large number of Early Archaic sites are documented along the eastern and southern margins of the Edwards Plateau. They argue that if our current understanding of Early Archaic site distribution reflects prehistoric land use, then the Early Archaic was a time period when people were living in the better-watered parts of the Edwards Plateau. With very low population densities across the state at the beginning of the Archaic, it makes sense that the environmentally desirable zones, such as the well-watered ecotone along the margins of the Edwards Plateau, would be the first areas to have been more heavily settled.

During the Early Archaic, projectile points became more regionally diversified, and stemmed forms replaced the lanceolate points of the Paleoindian period. This technological shift may have been due, in part, to the development of a more localized, broad-based hunting and gathering economy that necessitated differing point types for different game (Johnson and Goode 1994; Story 1985). Early Archaic populations supplemented their hunting diet with a diverse assemblage of processed plant foods. This is most evident through the use of hot rock cooking technologies, which become commonplace at Early Archaic sites. Early Archaic burned rock features are most often small- to medium-sized hearths, with minimal evidence of reuse. However, at a few Early Archaic sites (e.g., Wilson-Leonard and Loeve), larger earth ovens have been documented (Collins et al. 1998; Prewitt 1982); these are believed to be the precursors to burned rock middens.

A burned rock midden is a large, dense feature of burned rocks and ash-stained soil that accumulates from use and reuse as a thermal cooking feature (Black et al. 1997; Mahoney et al. 2003; Suhm 1960). The number of burned rock middens increased throughout the Archaic period and it seems clear that their technological roots lie in the first earth ovens of the Early Archaic (Black et al. 1997; Collins et al. 1998; Decker et al. 2000). Burned rock midden technology appears to have first developed in the eastern plateau around 8,500–8,000 years ago and gradually spread into the western plateau ca. 6,500–5,000 years ago (Decker et al. 2000:301). These large features vary greatly in size and form, but share the common functional purpose of serving as an earth oven or similar cooking device (Black et al. 1997; Weir 1976).

Work completed on the Gatlin site, 41KR621, in southern Central Texas highlighted the complexity and diversity in the Early Archaic settlement system noted by previous researchers (Houk et al. 2008). As Johnson (1991:159) states, "people acquired different foods at different suitable places," meaning that certain sites were visited repeatedly on a seasonal basis. Johnson (1991:160) speculated that people in the eastern part of Central Texas may not have had large base camps, instead they traveled from site to site in small groups; the Gatlin site data for the Early Archaic period supports this hypothesis. In fact, based on a study conducted as part of the Gatlin site analysis, only the Wilson-Leonard site was classified as an Early Archaic base camp out of 16 well-documented Early Archaic components in Central Texas. The other sites all represent short-term, specialized activity sites (Houk et al. 2008).

MIDDLE ARCHAIC

The Middle Archaic is commonly dated to ca. 6000 to 4000 B.P. (Collins 2004:120) During the beginning of the Middle Archaic, from approximately 5750–5250 B.P., Johnson and Goode (1994:73) contend that a brief warm and dry period arose. Hudler (2000) also documents a major climatic shift towards warmer and drier conditions ca. 5300 B.P., followed by a very brief wet interval. Johnson and Goode (1994:73) also believe this dry period was followed by a short period of climatic amelioration between 5250–4600 B.P. with moderately wet and cool conditions.

The Middle Archaic is marked by a significant increase in archaeological sites on the Edwards Plateau. It is difficult to determine if this increase is due to a larger, denser population or an increase in residential mobility (Turpin 2004). In either case, there is abundant evidence that settlement and subsistence became more regionally specialized during this time. Burned rock hearths, scatters, and concentrations are common at Middle Archaic sites; however, none of these features is more pronounced than the burned rock midden, the use of which proliferated during the Middle Archaic (Black et al. 1997; Prewitt 1981, Shafer 1988). There is widespread evidence supporting an increased reliance on the processing of geophytes and succulent plant bulbs such as sotol, yucca, and lechuguilla in burned rock middens (Dering 1999). Three distinct types of burned rock middens documented during the Middle Archaic are (1) sheet middens, (2) dome middens, and (3) annular middens (Mahoney et al. 2003). Sheet middens are loose accumulations of displaced and mixed burned rocks, usually derived from several burned rock features. The rock displacement may be caused by natural or cultural processes, including erosion, flooding, feature maintenance, and/or reuse. Dome middens are round, dome-shaped accumulations of burned rock that can be several feet thick. Dome middens form through repeated feature use and maintenance, thus resulting in a massive, dense accumulation of burned rock. Annular middens (also called crescent, ring, or donut middens) are circular or semicircular-shaped accumulations of burned rock with a centralized depression. Like dome middens, they may be several feet thick.

Early Triangular dart points appear in the beginning of the Middle Archaic subperiod, around 5300 B.P. at the Gatlin site (Houk et al. 2008:Figure 13.2). This unstemmed type co-occurs with Bell and Andice points, which are basally notched, stemmed point forms (Mahoney et al. 2003; Sorrow et al. 1967). Wyckoff's (1995) research suggests that Bell and Andice points (also known as Calf Creek points) are intrinsically linked to bison hunting. Their appearance at the beginning of the Middle Archaic is presumably related to the return of bison to the area ca. 5000 B.P. Nolan and La Jita points,

which have square to rectangular stems with weak, rounded, or abrupt shoulders, appear in the Central Texas archaeological record ca. 4800 BP and persist into the beginning of the Late Archaic (Houk et al. 2008:Figure 13.2).

LATE ARCHAIC

The Late Archaic began around ca. 4000 B.P. and lasted until ca. 1200 B.P., ending when the bow and arrow was introduced into Central Texas (Collins 2004:121). Late Archaic sites are more numerous than earlier Archaic period sites (Black 1989; Collins 2004), and some researchers argue that population increased during the Late Archaic (Johnson and Goode 1994; Prewitt 1981; Weir 1976). Increasingly complex cultural manifestations are characterized in the Late Archaic archaeological record, and increased population size may have contributed to this complexity (Johnson and Goode 1994).

Territoriality issues may have also been more commonplace in the Late Archaic. This argument is somewhat supported by the development of more formal cemeteries in many areas of Texas (Hall 1981; Lukowski 1987; Taylor and Highley 1995). Burials from these cemeteries often contain grave goods such as marine shell ornaments (from the Texas coast), boatstones (from Arkansas), and corner tang knives (from the Edwards Plateau). The presence of these items ultimately suggests that plateau populations participated in some form of a trade system during the Late Archaic (Hall 1981).

Compared to previous subperiods, an extremely diverse assemblage of projectile point forms was utilized during the Late Archaic. Pedernales, Kinney, and Tortugas points appeared at the beginning of the period. Pedernales points have bifurcated stems and a narrow to broad, often leaf-shaped blade (Turner and Hester 1999). Montell, Lange, Marshall, Williams, Marcos, Castroville, and Shumla points appear slightly later and for the most part are all broad-bladed points that generally have expanding stems and prominent, barbed shoulders. Many of these early Late Archaic points were apparently used for bison hunting (Dibble and Lorrain 1968).

Hot rock cooking technologies developed in previous periods continued to be employed during the Late Archaic, and burned rock middens are a very common Late Archaic site feature. Many of the burned rock middens that formed during the Middle Archaic continued to be used by Late Archaic peoples (Black et al. 1997).

THE END OF THE ARCHAIC AND THE BEGINNING OF THE LATE PREHISTORIC

As Collins (2004:122) notes, "diverse and comparatively complex archaeological manifestations toward the end of the Late Archaic attest to the emergence of types of human conduct without precedent in Texas." As is discussed in detail elsewhere in this report, various labels—Transitional Archaic (Johnson et al. 1962; Turner and Hester 1999), Terminal Archaic (Black 1989), and Late Archaic II (Johnson and Goode 1994)—have been applied to the end of the Archaic period. While the names differ, these competing schemes generally begin after Marcos points appear in Central Texas, encompass the Fairland-Ensor-Frio point style intervals, and end with the Darl point type. The succeeding Late Prehistoric period began ca. 1200 B.P. with the introduction of the bow and arrow into Central Texas; the first widespread arrow point type was Scallorn, and it is commonly associated with the Austin phase/interval, or Late Prehistoric I (Collins 2004; Johnson and Goode 1994). Bone-tempered ceramics are also indicative of the Late Prehistoric period, specifically the Toyah phase/interval, as will subsequently be discussed.

By the early part of the Late Archaic period, Central Texas was occupied by broad-spectrum foragers specializing in the resources available within specific ranges or territories. Arnn (2007:274–275) argues that the stabilization of climatic patterns during the Late Archaic allowed area-specific cultural material to emerge throughout the region. For example, the intensification in plant processing, evidenced by increased accumulation of rock oven features and burned rock middens, suggests an increasing reliance on a resource that is essentially fixed on the landscape (Arnn 2007:277).

Late Archaic groups did not exist in isolation, and the eventual spread of most Late Archaic point

styles, particularly the later style types, as well as exotic materials such as marine shell and perhaps religious ideas, throughout the state suggests their participating in a "vast web of social relations" (Arnn 2007:277). Decorated bone ornaments, Gulf whelk shells, and atlatl weights of exotic stone are among the new types of materials to appear during the Late Archaic (Johnson and Goode 1994). Exotic materials are recovered from domestic contexts as well as burials suggesting they were a pervasive component in the life of Late Archaic peoples (Arnn 2007:277).

The end of the Archaic, then, was an interesting time in Central Texas; one that we are still struggling to understand. Arnn (2007:278–279) argues "that the Late Archaic Period may be viewed as a precursor (in terms of technology, subsistence, and settlement practices) to similar technologies and practices observed during the Late Prehistoric." Framing the research within that context, one of continuity rather than change, may be a useful approach for investigating the transition from the Archaic to the Late Prehistoric. As is discussed elsewhere, Johnson and Goode (1994:40) characterize the termination of the Late Archaic as the most difficult and complex of all the period boundaries, noting that it may have ended either 400 years later with the Toyah phase or even 400 years earlier, when small dart points types like Darl appeared.

As noted above, the end of the Archaic period chronologically is marked by the appearance of a variety of small, side- and corner-notched dart point types including Fairland, Frio, Ensor, Ellis, and Edgewood (Turner and Hester 1999). Johnson and Goode (1994:37) point to social interaction with the eastern United States as a possible source for these new point types. These projectiles may have been part of a package of new cultural items related to the spreading of Eastern religious ideas as far as the Edwards Plateau—these included the exotic items noted above such as marine shells and atlatl weights (Johnson and Goode 1994:37).

An important cultural trait of the Late Archaic is the appearance of formal cemeteries off the Edwards Plateau—on the plateau sinkholes continued to be used as repositories for the dead. Cemeteries, where many of the exotic items noted above have been found, suggest that groups were tied to specific territories. Cemeteries are more common in the early Late Prehistoric, and many individuals buried in them show clear evidence of violent deaths (Johnson and Goode 1994:40). Prewitt (1982:Table 4) provides an exhaustive, if somewhat dated, list of cemeteries and burials in eastern Central Texas, and notes many incidences of Scallorn arrow points either with a skeleton or clearly imbedded in the skeleton. The Loeve-Fox site (41WM230) contained an Austin phase cemetery where warfare was "suggested by the direct association of Scallorn arrow points with fatal positions in several skeletons" (Prewitt 1982:12).

HISTORIC PERIOD

In the early Historic period (1630 AD 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).

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, cumulating 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.

After the battle, the nearby town of Waterloo, on the banks of the Colorado River, was renamed Austin and designated the seat of government for the Republic of Texas in 1839 (Webb 1952). Williamson County, located north of the new capital of Austin, was organized shortly afterward in 1848 as the population in the area grew. The county was named in honor of Robert M. Williamson, an area leader and a veteran of the Battle of San Jacinto. During this battle, Williamson lost one of his legs and thereafter, wore a wooden leg, which earned him the colloquial nickname Three-Legged Willie.

The county quickly grew in population and economic prosperity as the rich soils made agriculture one of the top industries in the area. Accompanying the increases in population and commerce was the rapid adoption of slave labor. In 1850, two years after the founding of the county, the slave population in Williamson County totaled 127. By 1864, less than 15 years later, the slave count had multiplied by over 10, with an enslaved population of 1,074 (Campbell 1989:266). Following the Civil War, many of the planters turned to cattle to regain their ante-bellum prosperity.

Texas University, later named Southwestern University, was founded in Georgetown in 1873. This was the first successful Methodist College in Texas and it brought several new facets to the county population. The county remained dedicated primarily to agriculture and cattle production through the first half of the twentieth century. As the modern era and new technology developed, Williamson County began to see major changes in its configuration. Due to its proximity to Austin, the county quickly became home to numerous large high-tech industries. This rapid influx of people and industries to the area continues to be the hallmark of the southern half of the county today, as the northern half continues to rely on agribusiness.

METHODS

BACKGROUND REVIEW

SWCA performed a cultural resources records review to determine if the proposed APE has been previously surveyed for cultural resources or if any archaeological sites have been recorded within or adjacent to the APE. To conduct this review, an SWCA archaeologist reviewed portions of the Leander (3097-321) USGS 7.5-minute topographic quadrangle map on the THC Texas Archeological Sites Atlas (Atlas). This source provided information on the nature and location of previously conducted archaeological surveys, previously recorded cultural resource sites, locations of National Register of Historic Places (NRHP) properties, sites designated as State Antiquities Landmarks (SAL), Official Texas Historical Markers, Registered Texas Historic Landmarks, cemeteries, and local neighborhood surveys. Aerial photographs, Bureau of Economic Geology Maps, and the NRCS Web Soil Survey, were also examined. The Texas Department of Transportation Historic Overlay was examined to identify the presence of potential historic-age structures.

ARCHAEOLOGICAL SURVEY

SWCA's investigations consisted of an intensive pedestrian survey with subsurface investigations within the APE. Archaeologists examined the ground surface and extensive erosional profiles and exposures along the river for cultural resources. The field assessment of the project area was conducted using two methods of investigation (shovel testing and backhoe trenching).

Shovel testing was primarily used when the project crosses topography with a potential for buried sites and surface visibility was low. Where performed, shovel tests were systematically excavated within the APE and additional shovel tests were required to define site boundaries. The amount of shovel tests decreased depending on the level of previous

disturbances, the nature of the soils, and the topographic setting of the APE. Shovel tests were excavated in 20-centimeter (cm) arbitrary levels to 1 m in depth or to culturally sterile deposits whichever came first and the matrix was screened through ¼-inch mesh. The location of each shovel test was plotted using a Global Positioning System receiver and was recorded on appropriate project field forms. Areas with previously recorded sites or other cultural resources revealed in the archival research required additional shovel testing to explore the nature of the cultural deposits. SWCA archaeologists excavated shovel tests to the depth of project impacts, when possible. In the instance that the shovel testing could not adequately explore project impacts in areas (e.g., floodplains) with potential to contain buried archaeological materials, archaeologists utilized backhoe trenches.

Portions of the project encompass topographic settings that have the potential for deeply buried archaeological sites. These areas are alluvial terraces of the South Fork of the San Gabriel River. The primary method for quickly and efficiently exploring such areas is with backhoe trenching at intervals of approximately 100–300 m, with tighter intervals if necessary.

Backhoe excavations extended to a depth sufficient to determine the presence/absence of buried cultural materials and allow the complete recording of all features and geomorphic information to depths of project impacts. Generally, trenches are 1.2 m (4 feet) deep, 4 m (13 feet) in length, and 0.75 m (2.5 feet) wide. All trenching was monitored by an experienced geoarchaeologist and archaeologist while excavations were underway. Once the trench was excavated, an SWCA archaeologist scraped down both walls of the trench, examining the profiles for artifacts, features, or other cultural manifestations. Stratigraphic descriptions were recorded for each trench. All features encountered during trenching were mapped and photographed.

All work was performed in accordance with U.S. Occupational Safety and Health Administration regulations (29 CFR Part 1926). To assess the potential for buried deposits up to 8 feet below surface, back dirt from the backhoe bucket was sifted and selectively screened to assess presence or absence of cultural materials. The entire process was thoroughly documented and photographed. Upon completion of excavation, all trenches were backfilled, leveled, and returned, as much as possible, to their original state.

SWCA conducted a non-collection survey. Artifacts, had any been encountered, would have been tabulated, analyzed, and documented in the field, but not collected.

SITE EVALUATIONS

All newly discovered archaeological sites found during the survey were evaluated for suitability for official SAL designation, with reference to the criteria given in 13 TAC 26.10, of the Rules of Practice and Procedure for the Antiquities Code of Texas.

For official SAL designation, the archaeological site must meet one or more of the following five distinct criteria:

1) has potential to contribute to a better understanding of the prehistory or history of Texas;
2) contains preserved, intact archaeological deposits;
3) possesses unique or rare attributes related to Texas prehistory or history;
4) provides opportunities to test theories and methods of preservation contributing to new scientific knowledge; and
5) is a target or likely target of vandalism or relic collecting.

RESULTS

BACKGROUND REVIEW

The background review determined that portions of the project area have been previously surveyed for cultural resources, and three linear cultural resources surveys have been conducted within a 1-mile radius of the APE. Three previously recorded sites, 41WM459, 41WM113, and 41WM114, are located within or directly adjacent to the project area. Site 41WM459 is along one of the proposed

access roads, while sites 41WM113 and 41WM114 are along the proposed pipeline.

Site 41WM459 is an upland prehistoric site bisected by SH 29 and identified in 1981 during investigations associated with the roadway. The site is identified as a prehistoric quarry procurement locale and is not recommended for further investigations due to disturbance (Atlas 2014).

Sites 41WM113 and 41WM114 are considered prehistoric terrace sites along the South Fork of the San Gabriel River. 41WM113 is described as a concentrated prehistoric midden, and 41WM114 is described as a scatter of prehistoric chipped stone tools and debris (Atlas 2014). In addition, eight previously recorded sites (41WM97, 41WM98, 41WM99, 41WM101, 41WM102, 41WM103, 41WM112, 41WM113, 41WM114, and 41WM197) are located within 1 mile of the APE (Table 1) (Atlas 2014).

The review also revealed a historic cemetery (Whitley Cemetery) on the north bank of the river opposite a segment of the sewer line extension (Atlas 2014). This cemetery is within 985 feet (300 m) of the proposed sewer line and a proposed lay down area for spoil generated during construction trenching. The available Atlas data do not indicate how many interments are within the cemetery. This is a maintained, fully fenced, active cemetery accessible to the public. Cemetery features include curbing, floral decorations, metal funeral markers, formal markers, and fieldstone markers.

Table 1. Previously Recorded Cultural Resource Sites within a 1-mile Radius of the Project Area

Site	Year Recorded	Temporal Affiliation	Description
41WM97	1963	Prehistoric; Archaic	Scatter of lithic tools, debitage, and burned rock adjacent to the South San Gabriel River.
41WM98	1963	Prehistoric; Archaic	Surficial scatter of lithic tools and debitage located on an upper terrace of the South San Gabriel River.
41WM99	1963	Unknown Prehistoric	Surficial scatter of lithic tools and debitage located on a hillside overlooking a terrace of the South San Gabriel River.
41WM101	1963	Prehistoric; Archaic	Scatter of multiple Archaic dart points, lithic tools and debitage, and burned rock across a terrace slope and in cultivated field.
41WM102	1963	Prehistoric; Archaic	Burned rock midden consisting of fire fractured rock, lithic tool and dart fragments, and debitage. Site is located on a hillside adjacent to a small creek.
41WM103	1963	Unknown Prehistoric	Scatter of lithic tools, debitage, and burned rock adjacent to the South San Gabriel River.
41WM112	1963	Unknown Prehistoric	Scatter of lithic tools, debitage, and burned rock in a cultivated field adjacent to the South San Gabriel River.
41WM113	1963	Unknown Prehistoric	Concentration of lithic tools, debitage, and burned rock on a small terrace.
41WM114	1963	Prehistoric; Archaic	Scatter of lithic tools, debitage, and burned rock adjacent to the South San Gabriel River.
41WM197	1972	Unknown Prehistoric	Partially collapsed rock shelter containing debitage, charcoal, and burned rock, located on a low cliff overlooking middle fork of the San Gabriel River.
41WM459	1981	Unknown Prehistoric	Large prehistoric quarry site containing debitage and cores. Site is dissected and heavily disturbed by Texas State Highway 29.

A large portion of the project area is included in an area previously surveyed in the 1960s on behalf of USACE and the U.S. Fish and Wildlife Department (USFWD).

Additionally, three linear surveys were conducted within 1 mile of the APE. The nearest linear survey, located 0.25 mile east of the eastern terminus of the APE, was conducted on behalf of USACE, USFWD, and Brushy Creek MUD. The other two linear surveys are located 0.3 mile north, and 0.6 mile north along Texas State Highway 29 (Atlas 2014).

HISTORIC MAP REVIEW

Historic maps dating from 1893–1962 were reviewed to determine if there are any historic age resources within the project area (Foster et al. 2006). A 1962 topographic map depicts one standing structure approximately 328 feet (100 m) northwest of the western terminus of the project area at the southern end of an unlabeled utility line. Subsequent aerial photography maps indicate the structure was later destroyed. Additionally, two structures appear 197 feet (60 m) and 394 feet (120 m) southwest and west-southwest of the eastern terminus of the APE on the 1962 map. Modern aerial imagery indicates that these two structures still exist to some extent.

ARCHAEOLOGICAL SURVEY

On January 8 and 9, 2015, SWCA archaeologists conducted an intensive pedestrian survey of the proposed 2.5-mile long utility easement (Figure 3). Field investigations encountered a moderately open environment dominated by tall grasses with dense clusters of hardwood trees bordering the South Fork of the San Gabriel River (Figure 4). Ground surface visibility throughout the survey area ranged between 10 to 90 percent, and averaged approximately 40 percent. Portions of the project area had been previously used for agricultural or ranching purposes, as evidenced by past vegetation removal and two-track road construction, while the surrounding uplands contain residential development.

At the project area, the South Fork of the San Gabriel River has a sinuosity ratio of 1.24 (Charlton 2008). This indicates that the drainage is sinuous and approaching meandering. This suggests the project area has experienced a dynamic alluvial history from the lateral movement of the drainage (Brakenridge 1988; Waters 1992). The perennial channel of the South Fork of San Gabriel River is roughly 20 m (65 feet) wide with 15 to 90 cm (0.5–3 feet) of water with a limestone bedrock base. Scattered riffles and pools are common and the point bars contain a mixed load of sand, gravel, subrounded limestone cobbles and a few boulders. The drainage valley at this project area varies as the river winds through it, but it typically exhibits a stepped terrace system with alluvial landforms of varying age aligning the drainage and bracketed by uplands.

The uplands overlooking the drainage valley are composed of shallowly buried and exposed Lower Cretaceous Edwards Limestone and Comanche Peak Limestone of the Fredericksburg Group (Barnes 1974). The topography of the surrounding uplands slopes toward the South Fork of San Gabriel River range in elevation from 750 feet above mean sea level (amsl) at the drainage to 900 feet amsl in the uplands.

The main project component (i.e., sewer line) begins on the left bank (north side) of the drainage and runs downstream. The pipeline parallels the drainage along its alluvial landforms (terraces and channel bars), crossing from the left bank to the right bank (south side) several times before terminating at an existing pipeline on the river's right bank, roughly 4 kilometers (km) (2.5 miles) downstream from its beginning (see Figures 1 and 2). The ancillary project components (i.e., access roads and spoil pile areas) are positioned on the adjacent upland areas and floodplain terraces.

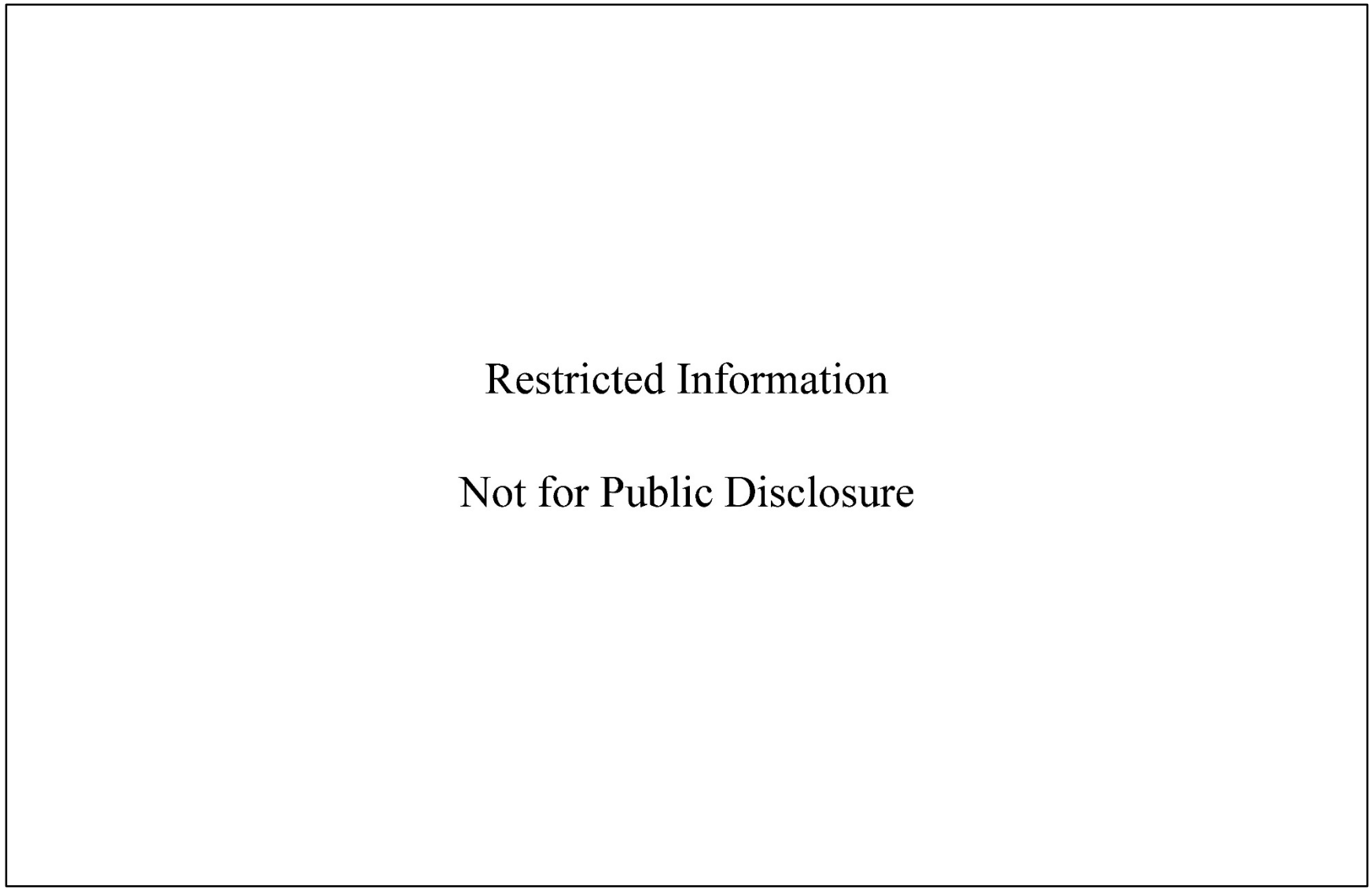

Figure 3. Results map.

Figure 4. Typical project area vegetation.

Figure 5. Typical gravel cutbank.

Figure 6. Example of channel deposits.

The investigations used shovel tests and backhoe trench excavations, supplemented with extensive inspection of cut bank exposures along the route. Soils near the drainage composing the alluvial terraces are composed of dark brown to brown sandy loam with high gravel content (Figure 5). Notably, examined cut banks exhibited several flood couplets indicating a high energy followed by low energy flood event. Deposits at the drainage tend to have conglomeratic facies composed of coarse sand with subrounded to subangular gravels, cobbles, and boulders (Figure 6). These deposits testify to the dynamic nature of the drainage and the project area (Brakenridge 1988; Collinson 1996).

A total of 43 shovel tests (MC01–21, TN01–16, and KL01–06) and one backhoe trench (BHT01) was excavated throughout the project area (Tables 2 and 3). Three of the shovel tests (MC12–13 and TN09) were positive for cultural materials (Table 2). The positive shovel tests occurred at the location of one previously recorded site (41WM459) and during the discovery of a newly discovered site (41WM1278) that are discussed further below.

Portions of the pipeline alignment were identified as having the potential to contain deeply buried cultural deposits and were to be investigated with backhoe trench excavation. The first backhoe trench (BHT01) immediately encountered deposits of large subangular-subrounded cobbles and boulders (Figure 7). Prior to the placement of further mechanical trenches, the alignment at the drainage was reviewed and available cut bank exposures were closely examined. The landforms were found to be either highly undulatory or, when relatively flat, very narrow (4–6 m) before encountering an older adjacent landform. Further, the available cut bank exposures exhibited a horizon of channel deposits at roughly 60–80 cm below ground surface (cmbs) (see Figure 5). Based on these data, the cultural resources survey transitioned solely to shovel test excavations.

Table 2. Shovel Test Data

Trinomial	Pos/Neg	ST/AP ID	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Inclusions	Comments/Reason For Termination
	N	TN01	0–22	10YR2/2	very dark brown	clay loam	roots; rootlets	No cultural material encountered.
	N	TN01	22–46	10YR3/4	dark yellowish brown	sand	tiny pebbles and gravels; rare snail shell fragments	No cultural material encountered.
	N	TN01	46–65	10YR3/2	very dark grayish brown	clay loam	sand from upper strate; rootlets	No cultural material encountered. Terminated due to dense gravels.
	N	TN02	0–15	10YR3/4	dark yellowish brown	sandy clay loam	roots; rootlets; rare pea gravels	No cultural material encountered.
	N	TN02	15–68	10YR3/3	dark brown	sandy clay loam	large root	No cultural material encountered. Terminated due to dense gravels.
	N	TN03	0–12	10YR3/2	very dark grayish brown	silty sandy loam	roots; rootlets	No cultural material encountered.
	N	TN03	12–58	10YR3/4	dark yellowish brown	silty sandy loam	rare pebbles and gravels; coarse sand increasing with depth	No cultural material encountered.
	N	TN03	58–70	10YR4/4	dark yellowish brown	sand	coarse sand; pea–size and smaller gravels; 3–5cm gravels at base	No cultural material encountered. Terminated due to dense gravels.
	N	TN04	0–30	10YR3/2	very dark grayish brown	clay loam	roots; rootlets; few pea gravels; few larger gravels and cobbles	No cultural material encountered. Terminated due to dense gravels.

	N	TN05	0–5	10YR3/2	very dark grayish brown	clay loam	roots; rootlets; few pea gravels; few larger gravels and cobbles	No cultural material encountered.
	N	TN05	5–10	10YR3/4	dark yellowish brown	sand	40% gravels and sand	No cultural material encountered. Terminated due to dense gravels.
	N	TN06	0–30	10YR3/2	very dark grayish brown	clay	roots; rootlets; few pea gravels; few larger gravels and cobbles	No cultural material encountered. Terminated due to dense gravels.
	N	TN07	0–30	10YR2/2	very dark brown	clay loam	roots; rootlets; 5% pea gravels increase in size with depth	No cultural material encountered. Terminated due to dense gravels.
41WM459	N	TN08	0–10	7.5YR3/3	dark brown	silty clay loam	rootlets; gravels; 3% chert cobbles likely fractured by machinery	No cultural material encountered. Terminated at bedrock.
41WM459	P	TN09	0–15	7.5YR3/3	dark brown	silty clay loam	roots; rootlets; 2% gravels	2 chert tertiary flakes. Terminated at bedrock.
41WM459	N	TN10	0–10	7.5YR3/3	dark brown	silty clay loam	roots; rootlets; 2% gravels	No cultural material encountered. Terminated at bedrock.
	N	TN11	0–60	10YR3/2	very dark grayish brown	silty clay loam	roots; rootlets; limestone cobbles	No cultural material encountered. Terminated due to dense gravels.
	N	TN12	0–38	10YR3/2	very dark grayish brown	clay loam	roots; rootlets	No cultural material encountered.
	N	TN12	38–56	10YR4/2	dark grayish brown	clay loam	gravels and cobbles at base	No cultural material encountered. Terminated due to dense gravels.
	N	TN13	0–60	10YR3/2	very dark grayish brown	clay loam	10YR4/3 sandy mottles from 40–60cmbs	No cultural material encountered. Terminated due to dense gravels.

	N	TN14	0–45	10YR3/2	very dark grayish brown	clay	10YR4/3 sandy mottles from 40–60cmbs	No cultural material encountered. Terminated due to dense gravels.
	N	TN15	0–85	10YR4/2	dark grayish brown	clay	10YR4/3 sandy mottles from 40–60cmbs	No cultural material encountered. Terminated due to dense gravels.
	N	TN16	0–45	10YR4/2	dark grayish brown	silty clay loam	roots; rootlets; rare gravels	No cultural material encountered.
	N	TN16	45–50	10YR3/3	dark brown	sand	15% gravels	No cultural material encountered. Terminated due to dense gravels.
	N	MC01	0–30	10YR4/3	brown	sandy loam		No cultural material encountered.
	N	MC01	30–60	10YR6/3	pale brown	sandy loam		No cultural material encountered.
	N	MC01	60+	10YR6/3	pale brown	sandy loam	50% gravels	No cultural material encountered. Terminated due to dense gravels.
	N	MC02	0–25	10YR6/3	pale brown	sand		No cultural material encountered.
	N	MC02	25+	10YR6/3	pale brown	sand	80% gravels	No cultural material encountered. Terminated due to dense gravels.
	N	MC03	0–50	10YR5/3	brown	sandy clay loam		No cultural material encountered. Terminated due to root mass.
	N	MC04	0–60	10YR4/3	brown	sandy loam		No cultural material encountered. Terminated due to compact soils.
	N	MC05	0–5	–	–	gravel		No cultural material encountered. Terminated due to dense gravels.
	N	MC06	0–30	7.5YR3/3	dark brown	clay loam	30% gravels	No cultural material encountered. Terminated due to dense gravels.
	N	MC07	0–30	7.5YR3/3	dark brown	clay loam	30% gravels	No cultural material encountered. Terminated due to dense gravels.
	N	MC08	0–40	10YR3/3	dark brown	clay loam	20% gravels	Within plow zone. No cultural material encountered.
	N	MC08	40–50	10YR3/4	dark yellowish brown	clay loam	10% gravels	No cultural material encountered. Terminated due to compact soils.
	N	MC09	0–30	10YR3/3	dark brown	clay loam	5% gravels	Within plow zone. No cultural material encountered.
	N	MC09	30–40	10YR3/4	dark yellowish brown	clay loam		No cultural material encountered. Terminated due to compact soils.

	N	MC10	0–30	10YR3/2	very dark grayish brown	clay	5% gravels	No cultural material encountered.
	N	MC10	30–40	5YR3/4	dark reddish brown	clay	40% micro gravels	No cultural material encountered. Terminated at basal clay.
	N	MC11	0–10	10YR5/3	brown	loam	30% fragmented bedrock	No cultural material encountered. Terminated at bedrock.
41WM459	P	MC12	0–15	7.5YR4/3	brown	sandy loam	10% gravels	3 chert tertiary flakes. Terminated at bedrock.
41WM459	P	MC13	0–15	7.5YR4/3	brown	sandy clay loam	5% gravels	1 chert shatter.
41WM459	N	MC13	15–25	5YR5/4	reddish brown	clay	10% gravels	No cultural material encountered. Terminated at basal clay.
	N	MC14	0–5	10YR3/3	dark brown	clay loam		No cultural material encountered. Terminated at bedrock.
	N	MC15	0–50	10YR3/4	dark yellowish brown	clay loam	rare gravels	No cultural material encountered.
	N	MC15	50–55	10YR5/4	yellowish brown	clay loam	rare gravels	No cultural material encountered. Terminated due to compact soils.
	N	MC16	0–80	10YR7/4	very pale brown	sand	30–50% gravels	No cultural material encountered. Terminated due to dense gravels.
	N	MC17	0–15	10YR4/6	dark yellowish brown	sand	70% gravels	No cultural material encountered. Terminated at bedrock.
	N	MC18	0–15	10YR4/6	dark yellowish brown	sand	70% gravels	No cultural material encountered. Terminated at bedrock.
	N	MC19	0–15	10YR4/6	dark yellowish brown	sand	70% gravels	No cultural material encountered. Terminated at bedrock.
	N	MC20	0–50	10YR4/3	brown	sand		No cultural material encountered. Terminated due to dense gravels.
	N	MC21	0–40	10YR4/2	grayish brown	sand		No cultural material encountered.
	N	MC21	40–50	10YR3/1	very dark gray	sandy clay	10% gravels	No cultural material encountered. Terminated due to compact soils.

	N	KL01	0–22	10YR3/3	dark brown	sandy loam	roots	No cultural material encountered.
	N	KL01	22–32	10YR5/3	brown	silty sand	pebbles	No cultural material encountered.
	N	KL01	32–38	10YR5/3	brown	sand	large cobbles	No cultural material encountered. Terminated due to dense gravels.
	N	KL02	0–38	7.5YR6/3	light brown	coarse sand	80% small pebbles	No cultural material encountered.
	N	KL02	38–44	10YR5/3	brown	sandy loam		No cultural material encountered.
	N	KL02	44–56	10YR5/3	brown	coarse sand		No cultural material encountered.
	N	KL02	56–60	–	–	cobbles		No cultural material encountered. Terminated due to dense gravels.
	N	KL03	0–54	10YR4/3	brown	sandy loam	roots	No cultural material encountered.
	N	KL03	54–62	10YR3/3	dark brown	clay loam	gravels and cobbles at base	No cultural material encountered. Terminated due to dense gravels.
	N	KL04	0–14	10YR4/3	brown	clay loam	40% pebbles	No cultural material encountered.
	N	KL04	14–20	10YR4/3	brown	clay loam	large gravels and cobbles	No cultural material encountered. Terminated due to dense gravels.
	N	KL05	0–74	7.5YR6/3	light brown	coarse sand	pebbles	No cultural material encountered. Terminated due to dense gravels.
	N	KL06	0–26	7.5YR4/3	brown	sandy loam		No cultural material encountered.
	N	KL06	26–31	7.5YR4/3	brown	clay loam	angular pebbles	No cultural material encountered.
	N	KL06	31–35	–	–	cobbles	angular cobbles and gravels	No cultural material encountered. Terminated due to dense gravels.

Table 3. Backhoe Trench Data

Trench	Stratum	Depth (cmbs)	Munsell*	Soil Color	Soil Texture Description	Inclusions	Lower Boundary	Comments
BHT01	I	0–30	10YR4/3	Brown	Sandy Loam-Silt Loam	Structureless matrix; roots-rootlets, snail shell (1 percent), rounded small (7-30 mm diameter) gravels (30-40 percent)	Clear and Wavy/Sloping	Trench oriented perpendicular to drainage; horizon is thinner on downstream side; no cultural materials
BHT01	II	30–55	7.5YR4/3	Brown	Sandy Loam-Silt Loam	Structureless matrix; roots-rootlets, snail shell (2 percent), rounded small (7 mm) pebbles (50 percent); subrounded gravels (40 percent)	Abrupt and smooth	Matrix is clast supported, channel deposits
BHT01	III	55–70	7.5YR4/4	Brown	Sandy Loam-Sand	Structureless matrix; pebbles-gravels-cobbles (60-70 percent)	Clear and smooth	Poorly sorted, clast supported matrix, channel deposits; coarse sand settling into horizon below
BHT01	V	70-160+	7.5YR4/4	Brown	Sandy Loam-Sand	Structureless matrix; gravels-cobbles (80-90 percent)	Unobserved	Large clast supported matrix with near absence of finer clasts (sand or silt)

*Colors recorded dry

Figure 7. Backhoe trench 1 profile.

Overall, shovel tests were excavated to depths ranging from 12–80 cmbs surface. The shovel tests encountered sandy loam to sandy clay loam and terminated at limestone bedrock or coarse subangular gravels and cobbles (see Table 2). Twenty-seven of the 43 shovel tests (63 percent) and one backhoe trench were excavated along the 2.5-mile pipeline, while 16 shovel tests (37 percent) were excavated along the access roads and spoil pile areas.

41WM459

Previously recorded site 41WM459 was initially identified in 1981 on a nearly level hill top 150 m east of an unnamed tributary of the South Fork of the San Gabriel River, approximately 4.5 miles (7.24 km) west of the intersection of SH 29 and IH 35 in Georgetown, Texas (see Figure 3). This lithic procurement-quarry site was identified as containing lithic debitage broadly scattered on the ground surface over a large area. The current investigations similarly observed a sparse quantity of lithic debitage diffusely scattered over a large area. The extent of cultural materials observed during the current investigations measures 50 m east-west by 70 m north-south, with the eastern and western boundaries determined by project constraints, and the northern and southern boundaries determined by artifact distribution (Figure 8).

Previously recorded site 41WM459 was observed during survey of a construction access road that would serve as access to the Lively Sewer Extension. Observations of the site were limited to a 50-m-wide project corridor along an existing two-track road that runs generally south from SH 29

Site 41WM459 is approximately 40 m west of a private residence that was occupied at the time of investigation. The previously mentioned two-track road runs through the center of the site, and another gravel road parallels that road between the site and the residence. A barbed-wire fence runs north-south between the two roads and, as a property boundary and the eastern extent of the survey area, forms the eastern site boundary. Investigators observed that the site extends beyond its current boundary to the west towards the tributary, and likely to the east beyond its eastern boundary onto the adjacent property.

In addition to roadway disturbance, vegetation clearing, and fence lines, archaeologists observed evidence of occasional livestock activity disturbing the site. Artifacts were distributed evenly and randomly across the site. Five shovel tests were excavated within 41WM459 (TN08-09, MC12–14), three of which were positive for cultural materials (TN09, MC12–13) to a maximum depth of 15 cmbs; a sixth shovel test was not excavated due to land form limitations and shallow bedrock.

Most artifacts across the site were observed on the surface. Cultural materials consisted of lithic shatter and mid- to late-stage lithic reduction debitage, suggesting that the site was used for final reduction or sharpening of lithic tools. No cultural features, chipped stone tools, or lithic cores were observed within the site.

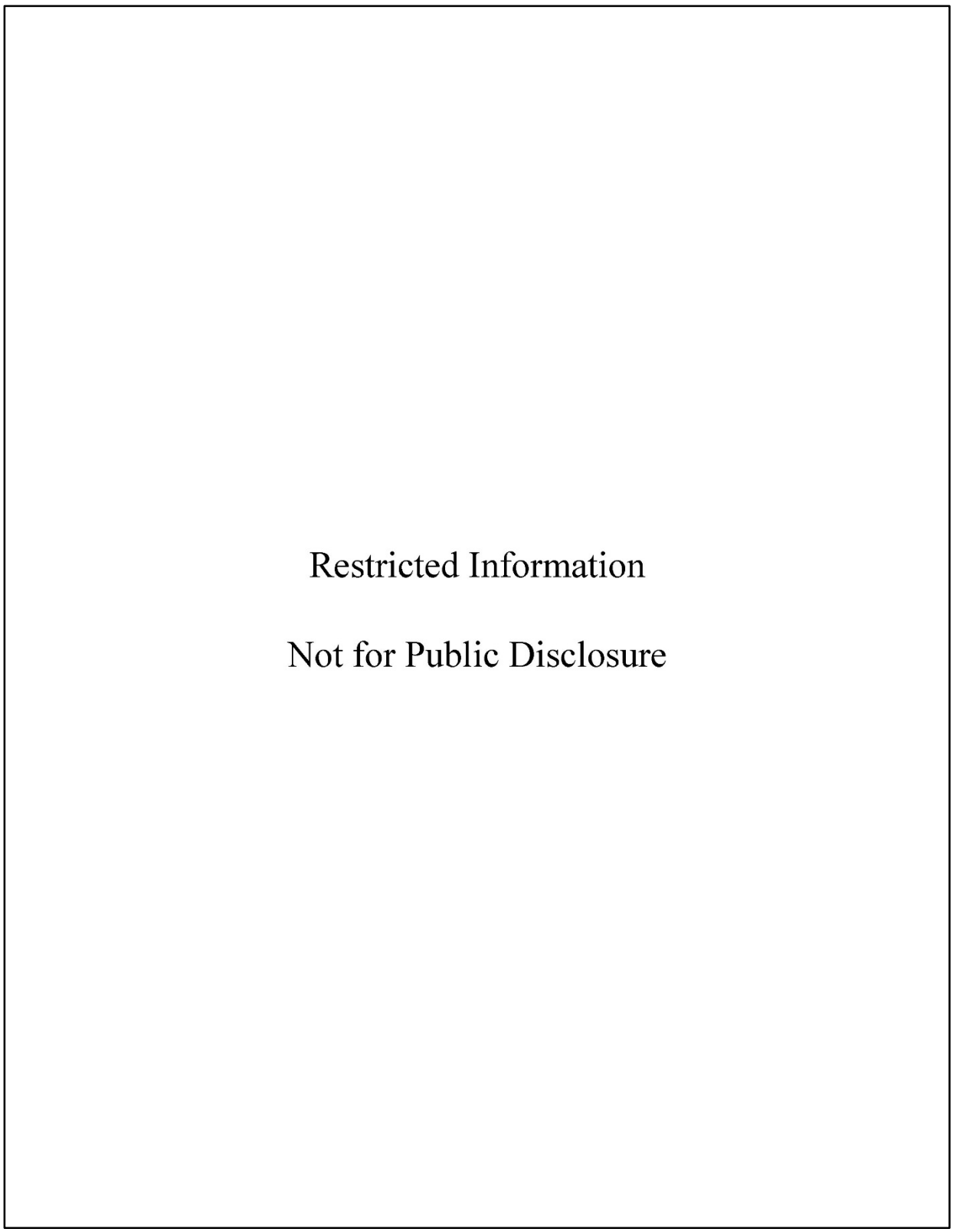

Figure 8. Site 41WM459 map.

SUMMARY

Previously recorded 41WM459 is a primarily surficial site of chert debitage diffusely scattered over a broad upland. The site was initially identified in 1981 as having been extensively disturbed from the construction of SH 29 and is not recommended for further investigations. The current investigations similarly observed impacts from land clearing activities related to agriculture, fencing, and roads. The artifact assemblage is sparse with minimal subsurface deposits and no identified temporally diagnostic artifacts or features.

Due to the ubiquity of the site type in the region, the low density of diffusely scattered artifacts, the absence of any temporally diagnostic artifacts or cultural features, and the lack of overall integrity across the site, the parts of 41WM459 within the project area have limited potential to yield new or important information concerning regional prehistory. SWCA recommends therefore that the parts of 41WM459 within the current project area are not eligible for inclusion in the NRHP nor do they warrant designation as an SAL; the remainder of the site outside of the project area is of undetermined eligibility. Based on these data, no further work or avoidance is recommended for the parts of site 41WM459 within the current project area. However, should the proposed project design change and require impacts to other parts of 41WM459, those areas would require additional survey.

41WM1278

Site 41WM1278 is a historic rock wall possibly associated with the Whitley Cemetery (approximately 100 feet to the southwest) located approximately 4.5 miles (7.24 km) west of the intersection of SH 29 and IH 35 in Georgetown, Texas (see Figure 3). The wall sits near the bottom of a slope that trends south toward the South Fork of the San Gabriel River, which is approximately 0.3 mile to the south (Figure 9).

The site was discovered during survey of an adjacent, proposed construction access road that would serve as access to the Lively Sewer Extension. Observations of the site were limited to a 50-m-wide project corridor along an existing two-track road that runs generally south from SH 29. Notably, the existing road is not planned to be modified for use as an access road. Therefore, the access road will not affect the site.

The general surroundings of the site are defined by rocky slopes with cleared pasture and areas of moderate to dense juniper woods.

A moderately dense stand of fairly mature juniper and live oak trees immediately surrounds the wall. A cleared pipeline right-of-way (ROW) that trends roughly east-west is located approximately 30 feet north of the wall, and an open pasture with tall grasses lies south of the trees.

The rock wall is constructed from several courses of dry lain, unmodified limestone blocks and slabs of varying size. The rock wall is 311 feet in length, 1.5–3 feet in height, and oriented west-northwest to east-southeast. The rock wall parallels a gravel road along an existing pipeline ROW. The wall is immediately surrounded by fairly mature juniper (4–6 inch diameter) and live oak trees (8–12 inch diameter), especially along its southern side (Figure 10). The proximity and maturity of the trees suggests the wall and trees are of the same age, which is likely contemporaneous with the cemetery.

The rocks were likely gathered from the cemetery during its construction or during its expansion over the years. From the project area, investigators observed that the cemetery is still in use and is regularly maintained. However, due to project boundary limitations, investigators were unable to access the cemetery to determine the age range of the interments.

Given high ground surface visibility, dense surface gravels, and exposures of limestone bedrock, shovel tests were not excavated around the wall. Investigators did thoroughly inspect the ground surface immediately surrounding the wall within the limitations of the project. Though a cultural assemblage may be present outside of the APE, no other features or artifacts were observed within the project limits.

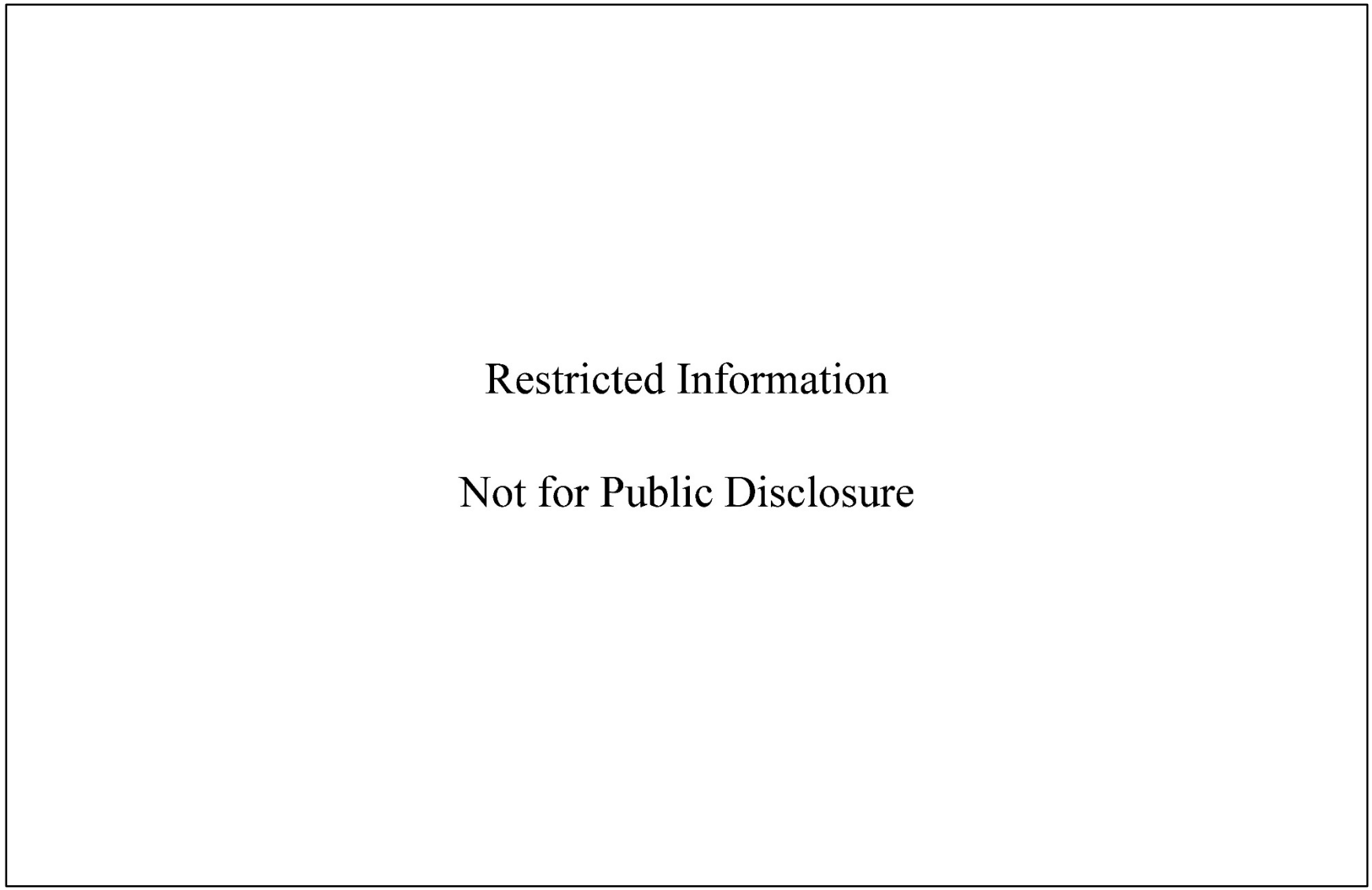

Figure 9. Site 41WM1278 map.

Figure 10. Overview photo of rock wall, facing west/southwest.

SUMMARY

Site 41WM1278 is a rock wall located on an upland slope north of the South Fork of the San Gabriel River. Although the historicity of the wall is undetermined, the mature trees overgrowing the feature suggest some antiquity. Similarly, the proximity of the historic Whitley Cemetery (100 feet to the southwest) suggests an association. No cultural materials or features associated with the rock wall were observed.

Given the possibility that 41WM1278 is associated with the Whitley Cemetery, and without the ability to determine the age, and context of the feature, SWCA recommends that the eligibility for designation as an SAL remains undetermined for 41WM1278. However, the use of the roadway for the project will not detrimentally affect the site. Accordingly, no further field investigations are recommended for the site. Should construction activities be altered and affect the rock wall, archival research is recommended to determine the age and significance of the wall as it may relate to Whitley Cemetery. Further archival research may determine the wall's age, context, and association with the Whitley Cemetery.

SUMMARY AND RECOMMENDATIONS

On behalf of a MUD, SWCA conducted an intensive cultural resources survey on the proposed Lively Sewer Line Extension Project in Williamson County, Texas. This report includes the results of investigations of the alignment as designed on January 8–9, 2015.

The work was conducted as part of the sponsor's compliance with the Antiquities Code of Texas (Permit Number 7027) and in compliance with Section 106 of the NHPA in anticipation of the acquisition of a USACE Section 404 Nationwide permit. As such, considerations of site significance were made according to criteria established in the NRHP.

The investigations included a background review and an intensive pedestrian survey with shovel testing and limited backhoe trenching of the project area boundaries. The background review determined that portions of the project area have been previously surveyed and three previously recorded sites (41WM459, 41WM113, and 41WM114) are located within or directly adjacent to the project area. Site 41WM459 is along one of the proposed access roads, while sites 41WM113 and 41WM114 are along the proposed pipeline. The historic map review determined there are no historic-age properties within the APE. The review identified an historic cemetery (Whitley Cemetery) within 985 feet (300 m) of the proposed sewer line and adjacent to an existing gravel road that would serve as one of several construction access roads for the proposed sewer line construction. The historic map review determined there are no historic-age properties within the APE.

Overall, the intensive pedestrian survey revealed that the proposed project area has been previously used for agricultural or ranching purposes, as evidenced by past vegetation removal and two-track road construction while the surrounding uplands contain residential development. The proposed pipeline alignment area along the river has been significantly affected by dynamic fluvial activity that has deposited large clast materials (boulders, cobbles, and gravels), eroded the cut banks, or a combination of the two. The subsurface investigations consisted of 43 shovel tests, one backhoe trench, and extensive examination of exposed cut bank profiles. During these investigations, SWCA newly recorded one archaeological site (41WM1278) and revisited one previously recorded site (41WM459).

Previously recorded 41WM459 is a surficial site of chert debitage diffusely scattered over a broad upland. Due to the ubiquity of the site type in the region, the low density of diffusely scattered artifacts, the absence of any temporally diagnostic artifacts or cultural features, and the lack of overall integrity across the site, the parts of 41WM459 within the project area have limited potential to yield new or important information concerning regional prehistory. SWCA recommends therefore that the parts of 41WM459 within the current project area are not eligible for inclusion in the NRHP nor do they warrant designation as an SAL; the remainder of the site outside of the project area is of undetermined eligibility. Based on these data, no further work or avoidance is recommended for the parts of site 41WM459 within the current project area. However, should the proposed project design change and require impacts to other parts of 41WM459, those areas would require additional survey.

Site 41WM1278 is an historic rock wall in proximity to the Whitley Cemetery. The rock wall is in good condition yet lacks associated artifacts or cultural deposits. Based on current construction plans, the project will not adversely affect the rock wall. No further work is recommended; however, if construction plans change and encroach upon the wall, additional archival research is recommended to determine the site's potential for designation as an SAL.

In accordance with 33 CFR 800.4, SWCA has made a reasonable and good faith effort to identify cultural resources properties within the APE. As no properties were identified that may meet the criteria for listing in the NRHP according to 36 CFR 60.4 or for designation as an SAL, as per 13 TAC 26.10, SWCA recommends no further cultural resources work within the project area.

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