Intensive Archaeological Survey of the Proposed Foster Road Project, San Antonio, Bexar County, Texas

Antiquities Permit No. 8188

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ABSTRACT

On behalf of the Alamo Regional Mobility Authority (Alamo RMA), Pape-Dawson conducted an intensive archaeological survey of a 2.53-kilometer (km) (1.57-mile) segment of North Foster Road in San Antonio, Bexar County, Texas. The proposed project will extend along North Foster Road from Interstate 10 (IH 10) to East Houston Street (Farm-to-Market [FM] Road 1346), and will include expanding the existing two-lane road to a four-lane road, consisting of two 3.7-meter (m) (12-foot [ft]) travel lanes, with a 1.8-m (6-ft) shoulder in each direction. The Area of Potential Effects (APE) is defined as the footprint of the existing right-of-way (ROW), proposed new ROW, permanent drainage easements, and temporary construction easements at several driveways. The ROW width varies between 24.4 to 30.5 m (80 to 100 ft) wide, while the new ROW would be a 7- to 10-m- (23- to 33-ft-) wide strip along the eastern side of approximately 0.6 km (1 mile) of the APE. Drainage easement vary between 4 to 70 m (13 to 230 ft) long, centered on the creek crossings, while small temporary construction easements would be used for driveways. Thus, the APE encompasses 11 ha (27.25 acres). The depth of impact has yet to be established, but for road construction, 1.2 to 1.5 m (4 to 5 ft) deep is typical.

As portions of the project are situated within both the city limits and the COSA Extraterritorial Jurisdiction (ETJ), compliance with the Historic Preservation and Design Section of the City's Unified Development Code (UDC) is required. Portions of the proposed APE are owned by COSA and Bexar County, which are both political subdivisions of the State of Texas; therefore, compliance with the Antiquities Code of Texas (ACT) is necessary. In addition, this project requires a Nationwide Permit from the United States Army Corps of Engineers (USACE); thus, compliance with Section 106 of the National Historic Preservation Act (NHPA) (Title 36 Code of Federal Regulations Part 800.4 [36 CFR 800.4]) is required. This scope of work includes compliance with all of the above regulations. The project was conducted under Texas Antiquities Permit No. 8188.

Prior to fieldwork, Pape-Dawson archaeologists conducted a background study that assessed the potential for cultural resources to exist within the APE. The background review determined that the APE had not been previously surveyed, no sites were within the APE, and that two sites (41BX770 and 41BX784) were recorded adjacent to the west of the APE. Pape-Dawson conducted the intensive archaeological survey on October 11, 2017. The entirety of the APE was subject to visual inspection supplemented by judgmentally placed shovel tests within the new ROW and drainage easements in order to evaluate the potential for buried cultural resources. This work was conducted under Antiquities Permit No. 8188 with Virginia Moore, M.A.G. serving as Principal Investigator (PI). A total of 20 shovel tests was excavated within the APE, all of which were negative for archaeological material. No evidence of sites 41BX770 and 41BX784 was encountered within the APE.

No archaeological resources were previously recorded within the APE and none was recorded during the course of this survey. In accordance with 36 CFR 800.4, Pape-Dawson has made a reasonable and good faith effort to identify archaeological historic properties within the APE. As no properties were identified that meet the criteria for listing in the National Register of Historic Places (NRHP) according to 36 CFR 60.4, or for designation as a State Antiquities Landmark (SAL) according to 13 Texas Administrative Code 26.12 (13 TAC 26.12), Pape-Dawson recommends that no further archaeological work is necessary for the

proposed undertaking as presently designed and that the project be allowed to proceed within the APE. However, if undiscovered cultural material is encountered during construction, it is recommended that all work in the vicinity should cease and the THC and COSA archaeologists be contacted to ensure compliance with the NHPA, ACT, and UDC. No artifacts were collected, but all project records and photographs will be curated at the Center for Archeological Research at The University of Texas at San Antonio (CAR-UTSA).

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Management Summary

Pape-Dawson conducted an intensive archaeological survey of a 1.57-mile (2.53-kilometer [km]) segment of North Foster Road in San Antonio, Bexar County, Texas. The proposed project will extend along North Foster Road from IH 10 to East Houston Street (FM Road 1346), and will include expanding the existing two-lane road to a four-lane road, consisting of two 3.7-m (12-ft) travel lanes with a 1.8-m (6-ft) shoulder in each direction. Portions of the project are situated within both the city limits and the COSA ETJ; therefore, compliance with the Historic Preservation and Design Section of the COSA UDC was required. Portions of the proposed APE are owned by COSA and Bexar County, which are both political subdivisions of the State of Texas, requiring compliance with the ACT. In addition, this project requires a Nationwide Permit from the USACE; thus, compliance with Section 106 of the NHPA (36 CFR 800.4) is required. The project was conducted under Texas Antiquities Permit No. 8188.

Prior to fieldwork, Pape-Dawson archaeologists conducted a background study of the APE that determined it had not been previously surveyed, no sites were within the APE, and that two sites (41BX770 and 41BX784) were recorded adjacent to the west of the APE. Pape-Dawson archaeologists Virginia Moore served as PI and was accompanied in the field by Mary Jo Galindo and Megan Veltri on October 11, 2017. A total of 20 shovel tests was excavated within the APE, all of which were negative for archaeological material. No evidence of sites 41BX770 and 41BX784 was encountered within the APE.

No archaeological resources were previously recorded within the APE and none was recorded during the course of this survey. In accordance with 36 CFR 800.4, Pape-Dawson has made a reasonable and good faith effort to identify archaeological historic properties 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 TAC 26.12, Pape-Dawson recommends that no further archaeological work is necessary for the proposed undertaking as presently designed and that the project be allowed to proceed within the APE. However, if undiscovered cultural material is encountered during construction, it is recommended that all work in the vicinity should cease and the THC and COSA archaeologists be contacted to ensure compliance with the NHPA, ACT, and UDC.

No artifacts were collected, but all project records and photographs will be curated at the Center for Archeological Research at The University of Texas at San Antonio (CAR-UTSA).

Introduction

On behalf of the Alamo Regional Mobility Authority (Alamo RMA), Pape-Dawson conducted an intensive archaeological survey of the 1.57-mile (2.53-kilometer [km]) segment North Foster Road Project in San Antonio, Bexar County, Texas. (Figures 1 and 2). The proposed project extends along North Foster Road from Interstate 10 (IH 10) to East Houston Street (FM Road 1346), and includes expanding the existing two-lane road to a four-lane road, consisting of two 3.7-meter (m) (12-foot [ft]) travel lanes with a 1.8-m (6-ft) shoulder in each direction. The Area of Potential Effects (APE) is defined as the footprint of the existing right-of-way (ROW), proposed new ROW, permanent drainage easements, and temporary construction easements at several driveways. The ROW width varies between 24.4 to 30.5 m (80 to 100 ft) wide, while the new ROW would be a 7- to 10-m- (23- to 33-ft-) wide strip along the eastern side of approximately 0.6 km (1 mile) of the APE. Drainage easement vary between 4 to 70 m (13 to 230 ft) long, centered on the creek crossings, while small temporary construction easements would be used for driveways. Thus, the APE encompasses 11 ha (27.25 acres). The depth of impact has yet to be established, but for road construction, 1.2 to 1.5 m (4 to 5 ft) deep is typical.

As portions of the project are situated within both the City of San Antonio (COSA) limits and the COSA Extraterritorial Jurisdiction (ETJ), compliance with the Historic Preservation and Design Section of the COSA Unified Development Code (UDC) is required. Portions of the proposed APE are owned by COSA and Bexar County, which are both political subdivisions of the State of Texas; therefore, compliance with the Antiquities Code of Texas (ACT) is necessary. In addition, this project requires a Nationwide Permit from the United States Army Corps of Engineers (USACE); thus, compliance with Section 106 of the National Historic Preservation Act (NHPA) (Title 36 Code of Federal Regulations Part 800.4 [36 CFR 800.4]) is required. This scope of work includes compliance with all of the above regulations. The project was conducted under Texas Antiquities Permit No. 8188.

Pape-Dawson conducted the intensive cultural resources survey along North Foster Road on October 11, 2017. The APE was subjected to visual inspection and shoveling testing. Virginia Moore served as Principal Investigator (PI) and was assisted in the field by Mary Jo Galindo and Megan Veltri. The goals of the investigation were to: (1) locate all prehistoric and historic archaeological sites, if present, within the APE; (2) establish vertical and horizontal site boundaries, as appropriate with respect to the APE; (3) evaluate the significance of recorded sites and structures with regard to eligibility for inclusion to the National Register of Historic Places (NRHP) (36 CFR 60.4) and for designation as a State Antiquities Landmark (SAL) 13 Texas Administrative Code 26.10 (13 TAC 26.10).

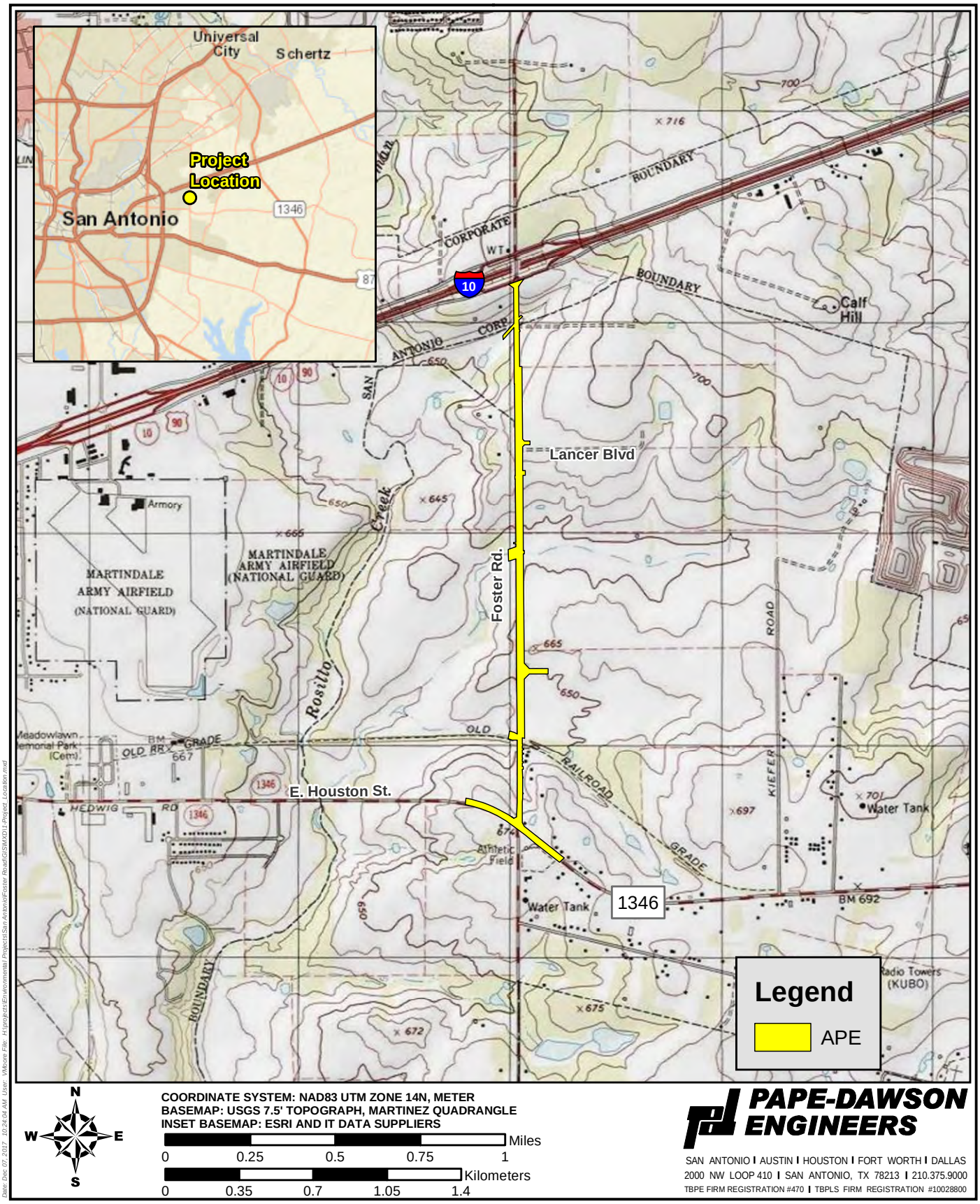

Figure 1. Project Location Map

Figure 2. Project Area

Project Setting

The APE is situated approximately 8 miles (12.9 km) east of downtown San Antonio, encompasses the North Foster Road ROW, and is bounded by the IH 10 Frontage Road to the north and East Houston Street to the south (see Figure 2). The surrounding area is composed of undeveloped agricultural fields, low-density residential lots, and a number of industrial complexes. The APE itself consists of a paved, two-lane roadway bordered by 18- to 30-ft- (5.5- to 9.1-m-) wide unimproved shoulders covered with low maintained grasses. An overhead power line parallels the western side of the APE. Situated near the border between the Blackland Prairies and the Interior Coastal Plains natural regions of Texas (Wermund 1996), the 27.25-acre (11-ha) APE spans gently undulating uplands. Three unnamed tributaries flow westward across the APE to Rosillo Creek, which is 0.37 mile (0.59 km) west of the APE.

The underlying geology is mapped as the Eocene-age Midway Group consisting primarily of clay, silt, and sand that extends more than 500 ft (152 m) deep in some areas (Bureau of Economic Geology [BEG] 1982). Four soil series are mapped within the APE (Figure 3, Table 1). Houston Black clay (HsB, HsC, HuB, HuC, and HuD), Heiden clay (HoD3, HnB, HbC2), and San Antonio clay loam (SaB) which constitute the majority of the APE, are derived from residuum and are found on upland ridges and slopes on dissected plains (Natural Resources Conservation Service [NRCS] 2017). These soils have a low potential to contain deeply buried cultural material. Tinn and Frio soils (Tf), which are composed of deep and very deep clayey alluvium, are mapped straddling two of the unnamed tributaries to Rosillo Creek in the northern and central portions of the APE (NRCS 2017). These soils occur in floodplains and have a higher likelihood of containing buried cultural material.

Table 1. Soils mapped within the APE

Soil Series	Characteristics	Landforms	Parent Material	%
Houston Black clay, 1 to 3 percent slopes (HsB)	very deep, moderately well drained, very slowly permeable	ridges / shoulder ridges / summit	clayey residuum weathered from calcareous mudstone of Upper Cretaceous Age	6.02%
Houston Black clay, 3 to 5 percent slopes (HsC)	very deep, moderately well drained, very slowly permeable	ridges / backslope	clayey residuum weathered from calcareous mudstone of Upper Cretaceous Age	19.03%
Houston Black gravelly clay, 1 to 3 percent slopes (HuB)	very deep, moderately well drained, very slowly permeable	ridges / shoulder ridges / summit	clayey residuum weathered from calcareous mudstone of Upper Cretaceous Age	12.16%
Houston Black gravelly clay, 3 to 5	very deep, moderately well drained, very slowly permeable	ridges / backslope	clayey residuum weathered from calcareous mudstone of Cretaceous Age	18.63%

Soil Series	Characteristics	Landforms	Parent Material	%
percent slopes (HuC)				
Houston Black gravelly clay, 5 to 8 percent slopes (HuD)	very deep, moderately well drained, very slowly permeable	ridges / shoulder ridges / summit	clayey residuum weathered from calcareous mudstone of Upper Cretaceous Age	0.22%
Heiden clay, 1 to 3 percent slopes (HnB)	deep and very deep to mudstone, well drained, very slowly permeable	ridges / backslope	clayey residuum weathered from mudstone	4.19%
Heiden clay, 3 to 5 percent slopes, eroded (HnC2)	deep and very deep to mudstone, well drained, very slowly permeable	ridges / backslope	clayey residuum weathered from mudstone	11.21%
Heiden-Ferris complex, 5 to 10 percent slopes, severely eroded (HoD3)	deep and very deep to mudstone, well drained, very slowly permeable	ridges / backslope	clayey residuum weathered from clayey shale	7.06%
San Antonio clay loam, 1 to 3 percent slopes (SaB)	deep, well drained, slowly permeable	stream terraces	loamy alluvium of Quaternary age derived from mixed sources	14.79%
Trinity and Frio soils, frequently flooded (0 to 1 percent slopes (Tf)	very deep, moderately well drained, very slowly permeable,	Flood plains	clayey alluvium of Holocene age derived from mixed sources	6.69%

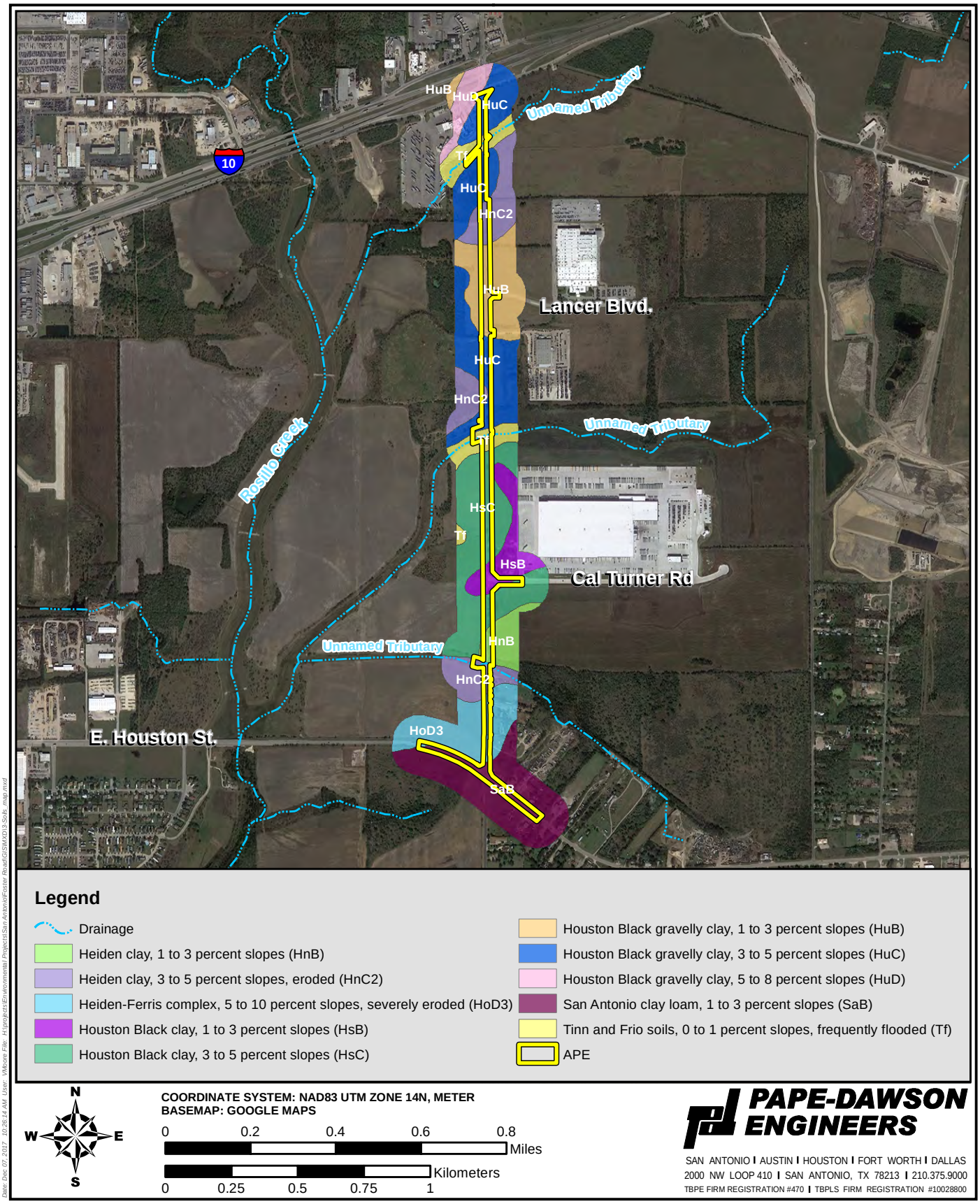

Figure 3. Soils Map

Cultural Chronology

Bexar County falls within the Central Texas archaeological region of the Central and Southern Planning Region as delineated by the Texas Historical Commission (THC) (Mercado-Allinger et al. 1996). Cultural developments in this region are typically classified by archaeologists according to four primary chronological time periods: Paleoindian, Archaic, Late Prehistoric, and Historic. These classifications have been defined primarily by changes in material culture and subsistence strategies over time as evidenced through information and artifacts recovered from archaeological sites. This cultural chronology provides a brief summary of each major cultural period with reference to significant archaeological work that has occurred within the region.

Paleoindian (11,500 B.P. – 8,800 B.P.)

Although there is some debate about whether pre-Clovis Paleoindian peoples lived in Texas, there is evidence of Paleoindian occupation within Texas by 11,500 B.P. Collins (1995:376, 381) has proposed dividing this period into early and late phases, with Dalton, San Patrice, and Plainview possibly providing the transition between them. Research has shown Paleoindians were gathering wild plants and hunting large mammals (mammoth, bison, etc.) as well as smaller terrestrial and aquatic animals (Collins 1995:381; Bousman et al. 2004:75). Projectile points characteristic of the Paleoindian period in Central Texas are lanceolate-shaped and include Clovis, Plainview, and Folsom (Turner and Hester 1999). In Texas, most Paleoindian sites are classified as procurement or consumption sites (Bousman et al. 2004:76-78), but a few, such as the Wilson-Leonard site in Williamson County (Collins 1995) and the Pavo Real site in Bexar County (Henderson 1980; Collins et al. 2003; Figueroa and Frederick 2008), have produced burials in context (Collins 1995:383). Other Paleoindian sites discovered within Bexar County include site 41BX47 on Leon Creek (Tennis 1996), the Richard Beene site (41BX831) (Thoms et al. 2005; Thoms and Mandel 2007), and the St. Mary's Hall site (41BX229), which has provided insight into a more diverse diet for Paleoindian groups (Hester 1978).

As the climate warmed, the Paleoindian people began to shift away from hunting large animals. The changing environment, which led to extinction of the megafauna, likely influenced their decision to focus more on hunting small game animals, including deer and rabbit, as well as gathering edible roots, nuts, and fruits (Black 1989). This change in food supply, as well as a different set of stone tools, marks the transition into the Archaic Period.

Archaic (8,800 B.P. – 1,200 B.P.)

Usually divided into early, middle, late, and sometimes transitional sub-periods, the Archaic marks a gradual shift from hunting Megafauna and some smaller animals supplemented with wild plants to a focus on hunting and gathering medium and small animals and wild plants, and an eventual transition to agriculture. Beginning with Clear Fork gouges and Guadalupe bifaces in the Early Archaic (8500 B.P. – 6000 B.P.) (Turner and Hester 1999; Collins 1995), Early Archaic people produced a variety of point types. The variety of points and their scattered distribution over a large area in the Early Archaic may indicate smaller groups of people moving over larger territories (Prewitt 1981). Point types transition to Bell-Andice-Calf Creek, Taylor, and Nolan-Travis points in the Middle Archaic (6000 B.P. – 4000 B.P.) (Turner and Hester

1999; Collins 1995), and burned rock middens become an important characteristic. The Middle Archaic focus on constructing burned rock ovens to cook a diverse array of plant food (Black 1989) suggests a slightly more sedentary focus. The Bulverde, Pedernales, Ensor, Frio, and Marcos points in the Late Archaic (4000 B.P. – 1300 B.P.) (Turner and Hester 1999; Collins 1995) mirror the diversity of point types found in the Early Archaic. During the Late Archaic, cemeteries, especially associated with rock shelters, become common in central Texas (Dockall et al. 2006). In Bexar County, sites with Early Archaic components include the Housman Road site (41BX47), the Richard Beene site (41BX831) (Thoms et al. 2005; Thoms and Mandel 2007), the Higgins site (41BX184), and the Panther Springs site (41BX228) (Black and McGraw 1985). While the Elm Waterhole site (41BX300) is representative of a Middle Archaic site within Bexar County (McNatt et al. 2000), the Granberg site (41BX17\41BX271) in San Antonio is a multi-component site with occupations from both the Middle and Late Archaic sub-periods.

Late Prehistoric (1,200 B.P. – 250 B.P.)

As the Archaic transitioned into the Late Prehistoric period, several technological changes become apparent. The most notable change is the use of the bow and arrow rather than the spear and atlatl, evidenced by smaller dart points. Another significant innovation is the creation and use of ceramic vessels. Some groups began to practice consistent agriculture during this time as well; there is some evidence that peoples in Central Texas may have incorporated agriculture into their lives, but primarily remained hunter gatherers (Collins 1995). Also during this period, there are possible indications of major population movements, changes in settlement patterns and perhaps lower population densities (Black 1989). Archaeologists divide the Late Prehistoric into two phases: the Austin phase, followed by the Toyah phase.

Historic (1600s – 1960)

While there is an overlap between the prehistoric and historic periods (sometimes called the protohistoric), Europeans did not begin exploration in the area until the 17th century. Alonso de Leon's 1689 and 1690 expeditions and de los Rios' 1691 expedition were likely the some of the first interactions between Europeans and Native groups (de la Teja 1995:6). According to historical accounts of the expeditions, these early Spanish explorers encountered numerous indigenous groups residing in and near Central Texas (Mercado-Allinger et al. 1996). These indigenous groups likely included the Payaya and the Pamaya who resided in the southern plains of Texas as well as the Tonkawa, Karankawa, Lipan Apache, and Comanche, who entered the area from the northern plains in pursuit of food and stopped at the area's springs (Long 2017). In 1691, Spanish explorers traveling through Bexar County began creating what would become the El Camino Real de los Tejas (The King's Highway, also known as the Old San Antonio Road in portions) (United States Department of the Interior [DOI] 2011). This network of roadways at least in part likely followed existing trails already well established by the numerous highly mobile indigenous groups within the area.

These explorations helped the Spanish choose locations to establish five missions in and around what would later become San Antonio. Don Martín de Alarcón established the first mission, San Antonio de Valero, in 1718, on the west bank of the San Pedro Creek, followed by the Presidio San Antonio de Béxar and the Villa Béxar (de la Teja 1995). However, by 1722 the Marqués de San Miguel de Aguayo had moved

the presidio and villa to the west side of the San Antonio River (Clark et al. 1975). Other missions, including Mission San José y San Miguel de Aguayo, Nuestra Señora de la Purísma Concepción, San Juan Capistrano, and San Francisco de la Espada were established in the area from 1718 to 1731 (Wright 2016). Most of the Native American groups recruited to live at these missions comprised many different groups (Campbell 1977), but it is difficult to know all the groups that were present due to the variations in spelling and phonetic complexity. The missions used this Native labor force to construct acequias, or irrigation ditches, which helped them to develop self-sustaining communities bordered by farmland. (Long 2017).

In 1731, Spain sent 16 families from the Canary Islands to the villa de Bexar to establish the secular village. With the arrival of these families, surveyors set out the city's main plaza, or Plaza de las Islas, next to the church, designated a spot for the Casas Reales, and began to establish residential lots (Spell 1962). This began San Antonio's gradual secularization. In 1773, San Antonio de Bexar Presidio was named the capital of Spanish Texas, and the settlement including mission Indians had a population of about 2,000 by 1778 (Fehrenbach 2017).

During the 1820s and early 1830s, American settlers began moving to San Antonio in increasing numbers, though the population remained predominately Mexican. In 1824, Texas and Coahuila were united into a single state with the capital at Saltillo. San Antonio fought for Mexican Independence in 1813, then for its own sovereignty during the Texas Revolution. The Siege of Bexar and the Battle of the Alamo, in 1835 and 1836, were both located within San Antonio, showing its importance in the region. After Texas gained its independence from Mexico in 1836, Bexar County was created and San Antonio was chartered as its seat (Long 2017). However, this was not the end of conflict in the city; a dispute with Comanche Indians resulted in the Council House Fight in 1840, and Woll's invasion in 1842 precipitated Texas' entrance into the United States as the 28th state. By 1846, San Antonio's population had decreased to approximately 800 people (Fehrenbach 2017).

On March 2, 1861, Texas seceded from the Union about a month before the Civil War began. San Antonio became a Confederate storage area as well as a location where military units could be organized; however, the city kept its distance from most of the actual fighting (Fehrenbach 2017). After the Civil War, San Antonio continued to grow larger, spurred on by the arrival of the railroad in 1877 (Fehrenbach 2017). Industries such as cattle, distribution, ranching, mercantile, gas, oil, and military centers in San Antonio prospered. The city served as the distribution point for the Mexico-United States border as well as the rest of the southwest.

Modernization increased dramatically between the 1880s and the 1890s, compared to the rest of the United States. Civic government, utilities, electric lights and street railways, street paving and maintenance, water supply, telephones, hospitals, and a city power plant were all built or planned around this time (Fehrenbach 2017). At the turn of the twentieth century, San Antonio was the largest city in Texas with a population of more than 53,000. Much of the city's growth after the Civil War was a result of an influx of southerners fleeing the decimated, Reconstruction-era south. An additional population increase came after 1910, when large numbers of Mexicans began moving into Texas to escape the Mexican Revolution (Fehrenbach 2017). The First United States Volunteer Cavalry was organized in San

Antonio during the Spanish-American War, and San Antonio was an important military center for the army and air forces during both world wars. Its five military bases provided an important economic base and contributed to the evolution of the city's medical research industry.

In 1921, a disastrous flood engulfed downtown San Antonio with up to 12 ft (3.7 m) of water. The Olmos Dam was built in response to this event to prevent further flooding. Sections of the San Antonio River were straightened and widened in areas to control the water flow. Another recommendation was to construct an underground channel in downtown San Antonio and to cover portions of the river with concrete. This last idea was controversial, but a compromise was eventually agreed upon to create a Riverwalk with shops and restaurants along the water channel, which was completed by the WPA in 1941 (Fisher 2014).

Methods

Records Review

Prior to fieldwork, Pape-Dawson archaeologists conducted a thorough background literature and records search of the proposed APE. This research included reviewing the Martinez (2998-134) U.S. Geologic Survey (USGS) 7.5-minute topographic quadrangle map at the Texas Archeological Research Laboratory (TARL), searching the THC's Texas Archeological Sites Atlas (THC 2017) online database, and searching the City of San Antonio's geodatabase of Local Historic Landmarks for any previously recorded surveys and historic or prehistoric archaeological sites located within a 1-km (0.62-mile) radius of the APE. The review also included information on the following types of cultural resources located within the study area: NRHP-listed properties, sites, and districts, SALs, Official Texas Historical Markers (OTHM), Registered Texas Historic Landmarks (RTHL), cemeteries, and local historic landmarks and districts. The archaeologists also examined U.S. Department of Agriculture (USDA) Soil Survey of Bexar County (Taylor et al. 1991), Natural Resources Conservation Service (NRCS) Web Soil Survey, and the Geologic Atlas of Texas-San Antonio Sheet (BEG 1983). Historic and modern aerial photographs (Nationwide Environmental Title Research Online [NETR Online] 2017) were examined to identify Historic High Probability Areas (HHPAs). As a part of the review, a Pape-Dawson archaeologist examined the Texas Department of Transportation (TxDOT) Historic Overlay, a mapping/GIS system with historic maps and resource information covering most portions of the state (Foster et al. 2006).

Archaeological Fieldwork

Pape-Dawson archaeologists conducted an intensive archaeological survey of the proposed 2.53-km (1.57-mile) linear APE. Survey methods followed the Council of Texas Archeologists' (CTA) Survey Standards for Texas. This investigation consisted of pedestrian survey along the 35-m- (115-ft-) wide APE (including both existing and proposed new ROW) with inspection of the ground surface, augmented by shovel testing in areas with the perceived potential for buried cultural deposits and with less than 30 percent ground surface visibility. As soils in the APE are clayey upland deposits, it was anticipated that

archaeological deposits, if present, would be shallowly buried or on the ground surface and visible to surface inspection.

A total of 20 shovel tests were excavated to investigate the new ROW and easements, exceeding the state's minimum standard of 1 shovel test every 100 m or 16 shovel tests per 1 linear mile. Shovel tests were roughly 30 cm (11.8 in) in diameter and were excavated in 10-cm (4-in) levels to sterile clay, bedrock, or to a maximum of 80 cm (31.5 in) below the ground surface when intact soils were encountered. All soils were screened through 0.64-cm (0.25-in) wire mesh unless clay concentrations were high enough to require hand sorting. All shovel tests were recorded, visually described, plotted by a Global Positioning System (GPS) unit, and backfilled upon completion.

All archaeological site boundaries were determined by the horizontal extent of the subsurface and/or surface material. Site settings and representative cultural materials were photographed, and site boundaries were mapped and marked with a GPS device. A State of Texas Archeological Site Form was filled out for each site identified and submitted to TARL to obtain trinomials for newly recorded sites. All isolated finds identified during the course of the survey were photographed and marked with a GPS unit. Archaeological sites were evaluated according to the criteria in 36 CFR 60.4 and in 13 TAC 26.10. Project records and photographs will be curated at the Center for Archeological Research (CAR) at the University of Texas at San Antonio following their specific standards of preparation.

Results

Records Review

The cultural resources background review revealed that the APE had not been previously surveyed, and no previously recorded archaeological sites are within the APE. However, two sites—41BX770 and 41BX784—are adjacent to the APE and five other previously recorded archaeological sites are located within 0.62 mile (1 km) of the APE (Table 1, Figure 4). In addition, there are no NRHP-listed properties or districts, SALs, OTHMs, RTHLs, cemeteries, or local historic landmarks or districts located within the study area.

Site 41BX770 is a prehistoric lithic scatter originally recorded in 1987 by Espey, Huston & Associates, Inc. (EH&A) during the Rosillo Creek Development project (EH&A 1988). The site spans a broad, upland ridge between Rosillo Creek and its unnamed tributary and is located just west of the central portion of the APE. A scatter of prehistoric lithic debitage and chipped stone tools, including three projectile points, a bifacial gouge, and biface fragments were observed in an agricultural field. EH&A excavated three shovel tests within the site, all of which were negative for cultural material. Based on the lack of buried cultural deposits and agriculture-related disturbance (i.e., plowing), EH&A recommended site 41BX770 not eligible for inclusion in the NRHP, and no further work was recommended (EH&A 1988).

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Table 2. Previously Recorded Archaeological Sites within 1 km (0.62 miles) of the APE.

Trinomial	Site Type	Depth of Deposits	Additional Information
41BX770	Prehistoric lithic scatter	Surface	Consultant recommended no further work.
41BX782	Prehistoric lithic scatter; historic-age structural debris	Undetermined	Consultant recommended site not eligible for listing in the NRHP.
41BX783	Historic farmstead	Undetermined	Consultant recommended further research to determine NRHP eligibility.
41BX784	Historic farmstead	Undetermined	Consultant recommended further research to determine NRHP eligibility.
41BX839	Prehistoric lithic scatter	Undetermined	Consultant recommended site not eligible for listing in the NRHP within the US 90 ROW. Site has not been evaluated outside of the existing road ROW.
41BX1460	Late nineteenth- to early twentieth-century farmstead	Surface	Site recommended not eligible for listing in the NRHP.
41BX2002	Prehistoric lithic scatter	0–5 cmbs	Consultant recommended no further work within their project area. Further delineation south of the project area was recommended.

Site 41BX784, located just north of site 41BX770 and adjacent to the western edge of the APE, was also recorded by EH&A in 1987 during the abovementioned project. The site consists of the remains of a historic-age farmstead, including two cisterns, concrete troughs, and concrete foundations. The associated structures were bulldozed prior to the 1987 survey. The site form indicates that the site is surficial in nature, yet it is unclear if any shovel tests were excavated at the time of recording.

EH&A conducted archival research for site 41BX784 that consisted of a historic map review, deed search, and oral interviews. The land on which the site is situated was purchased by Carl Hild, a German immigrant, in 1903 and was conveyed to his son, Richard, that same year. Richard was a bookkeeper at a cotton gin in the nearby town of Martinez, and he and his wife, Clara Rittermann Hild, produced cotton on their farm with the help of Mexican laborers. Richard resided at the farm until his death in 1966. The farm was then conveyed to his son, Hugo Hilde, who resided at the farm and ran cattle until 1987 (EH&A 1988).

According to EH&A's research, a barn was present on the property when it was purchased in 1903, and all additional structures were constructed between 1903 and 1934. These structures had been demolished; however, the foundations remained in good condition. EH&A notes that the archaeological component of site 41BX784 lacks integrity; however, the site may provide additional information regarding German settlement in the area and the economic and social relationships between German and Mexican cultures during the early-twentieth century. Therefore, EH&A recommended additional research to assess the site's potential for inclusion in the NRHP (EH&A 1988).

The remaining sites within 0.62 mile (1 km) of the APE consist of prehistoric lithic scatters and historic-age farmstead remnants. All of these sites are in proximity to waterways, such as Rosillo Creek and its

unnamed tributaries. Based on the cultural resources records review, sites most likely to be encountered within the APE are anticipated in proximity to the unnamed tributaries of Rosillo Creek, and based on the deep alluvium present in the floodplains of these drainages, there is potential for buried cultural material.

Map and Aerial Photograph Review

In addition to the cultural resources records review, Pape-Dawson reviewed recent (1969–2017) and historic (1955–1966) topographic maps and aerial photographs made available by Nationwide Environmental Title Research Online (NETR Online) to identify areas that have a higher potential to contain historic-age structures or historic archaeological deposits, referred to as historic high probability areas (HHPAs). The circa 1930 Stoner System Maps (Stoner maps) were also reviewed. The results indicate that one former railroad grade is within the APE and three potentially historic-age structures have been mapped adjacent to the APE (Figure 5).

Stoner System Map Sheet 1026 depicts the Galveston, Harrisburg and San Antonio Railroad crossing the APE approximately 0.24 mile (394 m) north of FM 1346. The railroad is clearly depicted on the 1955 and 1963 aerial photographs; however, the path of the railroad fades with each subsequent aerial photograph, and the railroad is not visible on current Google Earth imagery. A 1959 topographic map depicts the railway as the Southern Pacific Railroad. The path is then labeled an “old railroad grade” in 1969 and all subsequent topographic maps. Therefore, the line was decommissioned sometime between 1959 and 1969.

Three potentially historic-age structures are depicted adjacent to the APE. The 1955 aerial imagery depicts one structure east of North Foster Road approximately 0.75 km (0.47 mile) north of its intersection with FM 1346. The structure is later depicted just north of a stock tank on the 1959 topographic map, but is not visible on any subsequent map. Current Google Earth imagery depicts a copse of trees at this location, which indicates that the structure may have been razed or removed, or is currently obscured by vegetation.

The 1959 topographic map depicts an additional two structures adjacent to the southeast corner of the APE on the northeast side of the North Foster Road and East Houston Street intersection. Only one structure is visible at this location on aerial imagery dated to 1963, which matches what is depicted on the 1969 topographic map. Thus, the second structure was razed or removed between 1959 and 1963. The remaining structure is visible on all subsequent aerial imagery through 2012; however, current aerial imagery depicts a large foundation at this location. Therefore, the structure was likely razed or removed between 2012 and 2016.

No additional historic-age structures were depicted immediately adjacent to the APE. However, the area situated south of the railroad and north of FM 1346, encompassing roughly 394 m (0.24 mile), has been historically occupied, and many modern residences currently line the roadway. So while the potentially historic-age structures situated adjacent to the APE may no longer be extant, there is a potential for historic-age archaeological deposits to exist adjacent to or within the North Foster Road ROW.

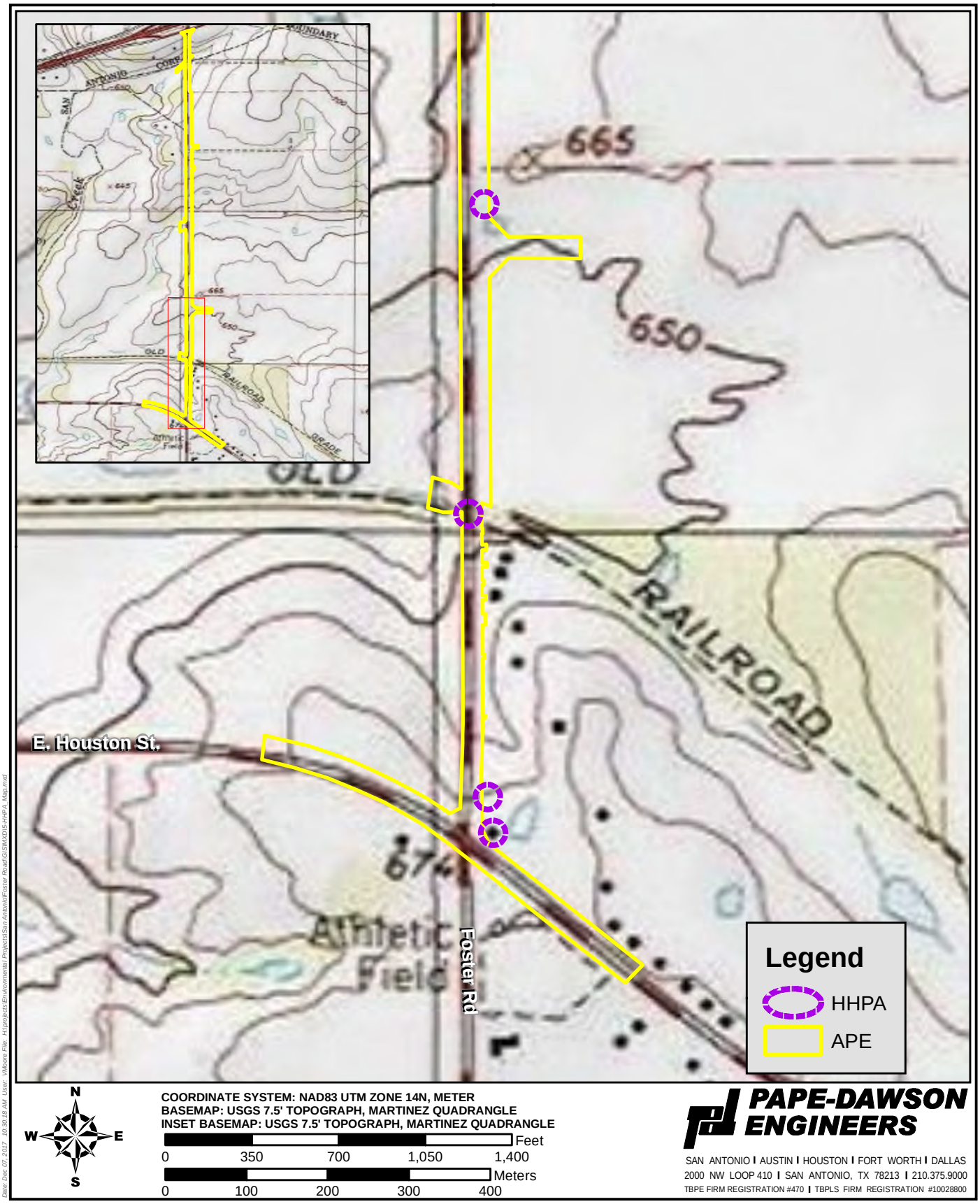

Figure 5. Historic High Probability Areas (HHPAs) Within the APE

Fieldwork

Pape-Dawson archaeologists conducted an archaeological survey of the entire 2.53-km- (1.57-mile-) long APE on October 11, 2017. The survey consisted of a pedestrian survey of the entire APE with a reconnaissance-level survey of the existing ROW, and an intensive survey of the new ROW and easements (Figure 6). The project begins at the intersection of Foster Road and IH 10 and extends south along Foster Road to the intersection with East Houston Street. The new ROW was adjacent to the east of the existing ROW, about midway along the APE. During the course of this survey, no new archaeological sites were recorded within the limits of the APE. Likewise, no evidence of sites 41BX770 and 41BX784 was encountered within the APE.

The landscape of the APE consists of level to gently sloping upland terraces and floodplains. Three unnamed tributaries of Rosillo Creek cross the APE: one along the northern end, one near the middle, and one to the south (Figure 6). Generally, the channels were contained within low, wide banks with thick vegetation to either side (Figure 7). These drainage easements extend a short distance from the Foster Road ROW generally following the banks (Figure 8). In addition to drainage easements there are 11 construction easements along either side of Foster Road comprising 0.06 ha (0.15 acres) (see Figure 6). Each of these follows an existing private driveway for a short distance beyond the ROW (Figure 9). New ROW stretches roughly 1.8 km (1.1 miles) along the eastern side of Foster Road. The new ROW begins just north of the southernmost creek, extending north across the central unnamed drainage, and ending about 350 m (1,148 ft) north of Lancer Boulevard. In addition, the new ROW extends a short distance along two existing intersections (Lancer Boulevard and Cal Turner Drive). The vegetation within the APE largely consists of medium to tall grasses, with a few cacti (Figure 10). Trees documented within the APE consist mainly of live oak, mesquite, willow, and Ashe juniper (Figure 11). Ground surface visibility throughout the APE was generally less than 30 percent depending on the extent of leaf litter and grasses.

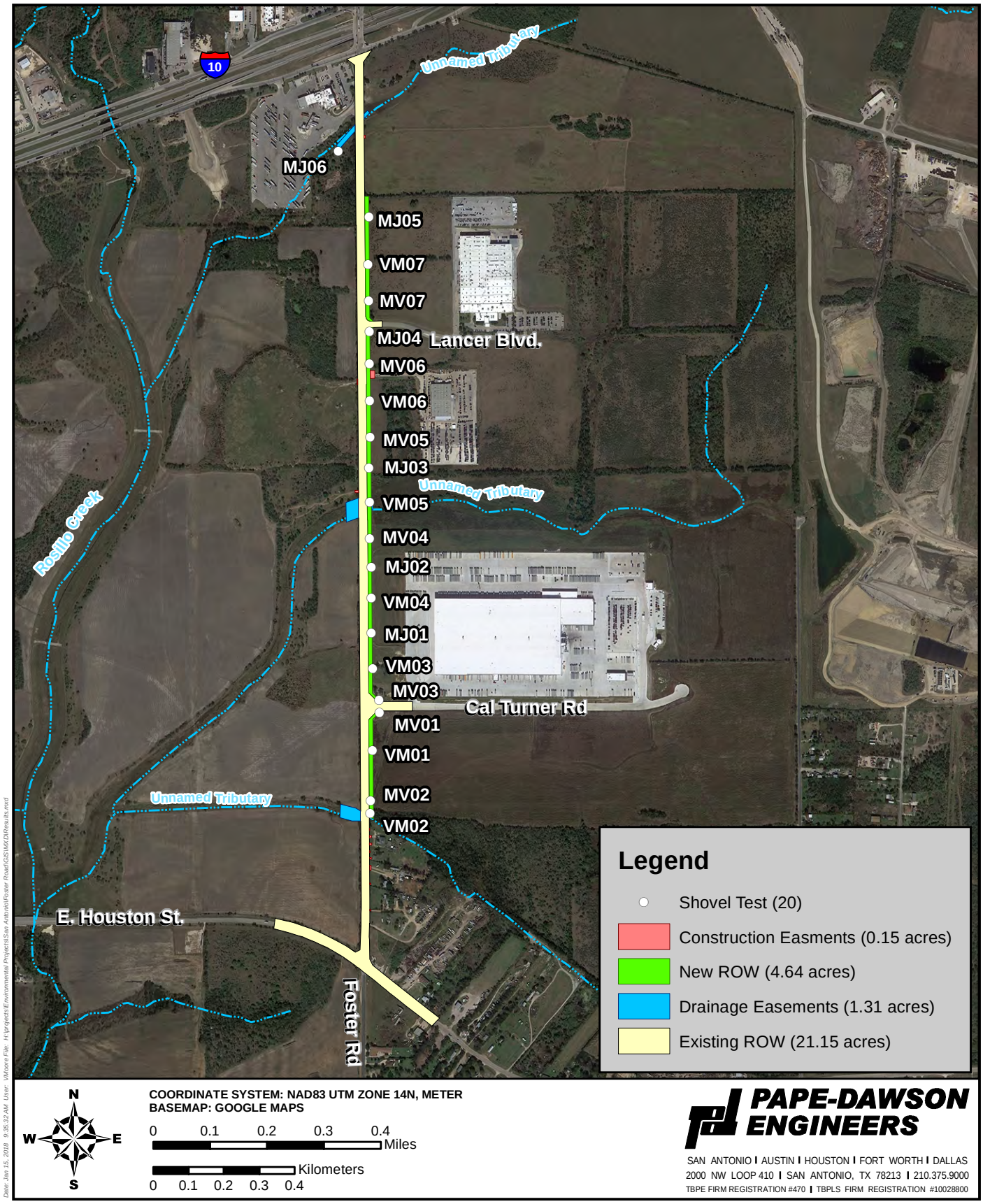

Figure 6. Results Map

Figure 7. Overview of central creek bisecting APE, looking east.

Figure 8. Overview of southern most drainage easement west of Foster Road, looking west.

Figure 9. Overview of one of the driveway easements, looking northeast.

Figure 10. General view of new ROW north of central creek, looking south.

Figure 11. Overview within existing ROW with ditch, looking north.

The survey found a large portion of the APE to be extensively disturbed. Previous impacts to the APE were photographed and noted as part of the survey effort. Disturbances within the APE have resulted from both natural and artificial impacts. Artificial impacts included the construction of Foster Road, East Houston Street, and IH 10, drainage ditches along either side of Foster Road (Figure 11), multiple existing buried utilities (Figure 12 and 13), overhead power-lines (Figure 14), bridges across three unnamed drainages along Foster Road, and prior channelization of the drainages (Figure 15). Other major disturbances were observed south of the intersection of Foster Road and IH 10. The area along the west side of the road has been heavily disturbed by the construction of a TA travel center/ gas station where the parking lot sits as much as 4.5 m (15 ft) above the adjacent road and sidewalk (Figure 16). On the opposite end of the APE east of the intersection of Foster Road and East Houston Street, disturbances are evidenced by gravel covered parking areas, concrete culverts, and utility lines (Figure 17). To the west of Foster Road along East Houston Street, the ROW consists of drainage ditches, with overhead utilities and buried utilities visible along the fence line (Figure 18). Natural impacts include erosion into the three drainages running perpendicular to Foster Road, bioturbation caused primarily by tree fall and animal burrowing, and game trails crisscrossing the APE.

Figure 12. Existing sanitary sewer and gas line within existing and new ROW and fenced in fill area in front of Dollar General Plant, looking south.

Figure 13. Buried natural gas line paralleling west side of Foster Road, looking south.

Figure 14. Existing ROW west of Foster Road showing ditch and overhead powerlines, looking north.

Figure 15. Overview of northernmost bridge with concrete culvert on east side of road, looking north.

Figure 16. Raised parking lot at the TA gas station with driveway, looking north.

Figure 17. Overview of East Houston Street east of Foster Road, looking southeast.

Figure 18. Overview of East Houston Street west of Foster Road, looking southwest.

Archaeologists walked the entire APE visually inspecting the ground surface for artifacts and features. During the survey effort, a total of 20 shovel tests were excavated within the new ROW and temporary easements, all of which were negative for cultural material (see Figure 6, Appendix A). Based on results of the background review, archaeologists focused the subsurface investigations in areas with the least known disturbance. As such, archaeologist walked the existing ROW and conducted intensive survey within the new ROW and easements. The new ROW begins on the eastern side of Foster Road roughly 400 m (1312 ft) north of the intersection with East Houston Street, and just north of the southernmost creek crossing the APE. The southernmost creek was once a railroad track crossing the southern portion of the proposed project corridor from 1938 until sometime between 1986 and 1996. The tracks are no longer present on aerials after this date, and the previous railroad route is identified as an unnamed tributary of Rosillo Creek. Within the creek area, archaeologist documented many large piles of sandstone rocks (Figure 19), a large block of concrete (Figure 20), and a large amount of modern trash. One shovel test was placed to investigate the sandstone rock piles. Soils observed within the shovel test were heavily mottled, very loose gravelly clay. On the west side of Foster Road along the same unnamed tributary is the southernmost drainage easement. The easement extends west along the creek for roughly 37 m (120 ft). As this location was once the location of a historic railroad, the current drainage is highly channelized. The southern edge of the easement runs along the top of the channelized bank, while a small portion on the northern edge extended into the plowed field. However, this small portion corresponded to the location of an existing water line and an existing gas line (Figure 21). As there was little indication of intact soils, no shovel tests were placed within this easement. Inspection of the plowed field revealed no archaeological deposits on the surface.

Figure 19. Pile of large stones in creek bed, looking north.

Figure 20. Large loose concrete block in creek bed next to the bridge, looking southwest.

Figure 21. Southernmost drainage with existing utilities and plowed field, looking west.

Along the southern end of the new ROW archaeologist encountered a 90 m (295 ft) long inundated marshy area (Figure 22). While the area does not extend all the way to the southern drainage, a recently constructed ditch beginning south of the Dollar General plant (Google Maps 2017), angles southwest, intersecting the APE near the inundation and Creek. One shovel test (MV02) was excavated in the area between the standing water and the creek (an area roughly 20 m (66 ft) long). Soils were very wet, black (10YR2/1) clay with many cobbles mixed with modern trash. North of the inundation is overgrown with minimal to no ground visibility. One shovel test (VM01) placed between the inundation and Cal Turner road encountered intact soils to a depth of 80 cm (32 in) below surface (Figure 23). This was the only shovel test excavated between the southern and central creeks that encountered intact soils (Figure 24). North of this point, a sanitary sewer line, and natural gas line were documented within the new ROW. In addition, the APE adjacent to the Dollar General Plant has been heavily modified with a large area along the eastern edge of the APE sloping up (fill) toward a fenced in yard (see Figure 12).

Bisecting the APE, the central drainage is roughly 1,231 m (4039 ft) north of the intersection of Foster Road and East Houston Street. Soils along the narrow floodplain are mapped as the Tin and Frio series which are deep alluvial soils. Two drainage easements are located on either side of Foster Road along the creek. East of Foster Road, the easement extends roughly 4 m (13 ft) beyond the new ROW. One shovel test (VM05) was placed within the new ROW on the north bank of the creek. Soils were very dark grayish brown clay loam with common pebbles to a depth of 70 cm (28 in) below surface. The drainage easement west of Foster Road was much large. However, the APE followed the edges of a large concrete structure roughly 56 m (184 ft) north south by 35 m (115 ft) east west.

Figure 22. Overview of inundation in southern portion of the new ROW, looking south.

Figure 23. Shovel test VM01 soil profile.

Figure 24. Example of disturbed shovel test in APE.

Figure 25. Southwest end of the central drainage easement west of Foster Road, looking northeast.

Figure 26. Northwest end of the central drainage easement west of Foster Road, looking southeast.

In addition, the sanitary sewer line crosses from the east side of Foster Road to the west side following the south side of the creek (Figure 25 Figure 26). Additional disturbances noted in this area were an old telecommunications marker and an existing gas line running along the western edge of the existing ROW. As this side of the drainage easement had been heavily modified, no shovel tests were excavated.

Between the creek and the next driveway (the entrance to Drive Time), archaeologist excavated three shovel test in a grassy field within the new ROW. Shovel tests within this sloping field encountered gravely upland soils to an average depth of 45 cm (18 ft) below surface. This stretch of the APE is east of an existing prehistoric archaeological site (41BX770) (see Figure 4). Investigation of the existing ROW along the western edge of the APE encountered a ditch beginning at the edge of the road and ending along the fence line (see Figure 14). No evidence of site 41BX770 was documented extending into the current APE. At the northern end of the field, just south of the Drive Time driveway, is a large natural gas line, and waterline (Figure 27). Two shovel tests were placed between the Drive Time entrance and Lancer Blvd, both of which encountered black to very dark brown cobbly clay to an average depth of 45 cm (18 ft) below surface. On the north side of Lancer Blvd, the new ROW is a relatively flat mowed field followed by a pasture (Figure 28). A large concrete sign and the base of an older concrete sign were documented north of Lancer Blvd within the new ROW (Figure 29). Three shovel tests were excavated in this stretch encountering black to very dark grayish brown cobbly clay to an average depth of 55 (22 ft) below surface.

One additional drainage easement is located 194 m (637 ft) south of the intersection of Foster Road and IH 10 (see Figure 6). The drainage easement extends roughly 18 m (59 ft) along the creek east of Foster Road, closely following the edges of the creek (Figure 30). Due to the dense vegetation and narrow confines of the easement, no shovel tests were excavated east of Foster Road. On the west side of the road, the easement extends 76 m (249 ft) along a northeast-to-southwest path following the edges of the creek. The area is overgrown with tall grasses with trees along and within the creek banks. One shovel test (MJ06) was excavated along the southwest corner of the easement. Soils revealed in the shovel test were heavily mottled with a few limestone cobbles and calcium carbonate flecks increasing with depth. The shovel test was terminated at 65 cm (2.6 ft) below surface due to increased moisture. No shovel test was placed along the northwest corner of the easement because a homeless camp guarded by a large dog with puppies was encountered. Multiple utilities were evident in the existing ROW north of the drainage easement and adjacent to the TA Gas Station. No shovels tests were excavated at this location based on the apparent prior disturbances (Figure 31).

Figure 27. Overview of natural gas line and fire hydrant south of Drive Time, looking south.

Figure 28. Grassy field north of Lancer Blvd within new ROW, looking south.

Figure 29. Concrete signs within the new ROW north of Lancer Blvd, looking northwest.

Figure 30. Overview of the northernmost drainage easement east of Foster Road, looking east.

Figure 31. Buried utilities north of the drainage and south of the TA, looking northeast.

Summary and Recommendations

Pape-Dawson conducted an intensive archaeological survey of the proposed North Foster Road Expansion Project in San Antonio, Bexar County, Texas, on behalf of Alamo RMA. The proposed project extends along North Foster Road from IH 10 to East Houston Street (FM 1346), and includes expanding the existing two-lane road to a four-lane road, consisting of two 3.7- m (12-ft) travel lanes with a 1.8-m (6-ft) shoulder in each direction. The APE is defined as the footprint of the existing ROW, proposed new ROW, permanent drainage easements, and temporary construction easements at several driveways. The ROW width varies between 24.4 to 30.5 m (80 to 100 ft) wide, while the new ROW would be a 7- to 10-m- (23- to 33-ft-) wide strip along the eastern side of approximately 0.6 km (1 mile) of the APE. Drainage easement vary between 4 to 70 m (13 to 230 ft) long, centered on the creek crossings, while small temporary construction easements would be used for driveways. Thus, the APE encompasses 11 ha (27.25 acres). The depth of impact has yet to be established, but for road construction, 1.2 to 1.5 m (4 to 5 ft) deep is typical.

As portions of the project are situated within both the city limits and the COSA ETJ, compliance with the Historic Preservation and Design Section of the City's UDC is required. Portions of the proposed APE are owned by COSA and Bexar County, which are both political subdivisions of the State of Texas; therefore, compliance with the ACT is necessary. In addition, this project requires a Nationwide Permit from the USACE; thus, compliance with Section 106 of the NHPA (36 CFR 800.4] is required. This scope of work includes compliance with all of the above regulations. The project was conducted under Texas Antiquities Permit No. 8188.

Prior to fieldwork, Pape-Dawson archaeologists conducted a background study that assessed the potential for cultural resources to exist within the APE. The background review determined that the APE had not been previously surveyed, no sites were within the APE, and that two sites (41BX770 and 41BX784) were recorded adjacent to the west of the APE. Pape-Dawson conducted an archaeological investigation on October 11, 2017, for the proposed North Foster Road expansion project, with Virginia Moore serving as Principal Investigator for Antiquities Permit No. 8188. The entirety of the APE was subjected to an intensive archaeological survey. Results of the survey found much of the APE to be heavily disturbed. A total of 20 shovel tests were excavated to investigate the APE in areas displaying minimal disturbance. All shovel tests were negative for archaeological material. No cultural deposits were encountered. No evidence of sites 41BX770 and 41BX784 was encountered within the APE.

No archaeological resources were previously recorded within the APE and none were recorded during the course of this survey. In accordance with 36 CFR 800.4, Pape-Dawson has made a reasonable and good faith effort to identify archaeological historic properties 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 TAC 26.12, Pape-Dawson recommends that no further archaeological work is necessary for the proposed undertaking as presently designed and that the project be allowed to proceed within the APE. However, if undiscovered cultural material is encountered during construction, it is recommended that all work in the vicinity should cease and the THC and COSA archaeologists be contacted to ensure compliance with the NHPA, ACT, and UDC. No artifacts were collected, but all project records and photographs will be curated at CAR-UTSA.

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Appendix A

Shovel Test Data

Table A-1. Shovel Test Data

ST #	Site	Level	Depth	Positive/ Negative	Munsell	Soil Color	Soil Texture	Cultural Material	Comments/Reason for Termination
MV01		1-4	0-40	N	10YR2/1	black	compact clay	none	Near corner of Cal Turner and Foster road. ASV=0%. Tall grasses. Modern glass shard found at 40 cmbs. Disturbed. Lots of roots/root etching in the clay. Terminated at sterile soils.
		4-6	40-60	N	10YR2/1	black	compact clay	none	
MV02		1-3	0-30	N	10YR2/1	black	compact clay	none	Distrubed. Full of cobbles and nodern debris (40 oz. bottle). Terminated at super wet soil.
MV03		0-1	0-10	N	10YR5/2	Grayish brown	Loamy clay	none	Most likely distrubed. Common roots and worms. Top 10 cm of soil was obviously disturbed. On Cal Turner road near intersection of Foster road at grassy field. Terminated at sterile soils.
		1-5	0-50	N	10YR4/2	dark grayish brown	Loamy clay	none	
MV04		1-5	0-50	N	10YR4/2	dark grayish brown	clay	none	Distrubed-mottling throughout the test. Compact clay. In ROW on the east of Foster road. Terminated at sterile soil.
MV05		1-4	0-40	N	10YR2/1	black	clay	none	Many cobbles; ASV=0%. In ROW off Foster road. Compact clay. Terminated at impenetrable root.
MV06		1-5	0-50	N	10YR2/1	black	clay	none	On the corner of unknown driveway and Foster road. Near ROW at Drivetime sign. Compact sticky clay. Terminated at sterile soils.

Table A-1. Shovel Test Data

ST #	Site	Level	Depth	Positive/ Negative	Munsell	Soil Color	Soil Texture	Cultural Material	Comments/Reason for Termination
MV07		1-5	0-50	N	10YR2/1	black	clay	none	In grassy field near ROW by Foster road. Sticky, compact clay. 0-10 cmbs was all cobbles. Terminated at sterile soils.
MJ01		1-5	0-45	N	10YR5/4	yellowish brown	silty clay	none	Manicured grass. 30% mottled with 10YR6/6. Occasional tree. ~6m east of fence line at base of built up area between fence and sewer line. Terminated at dense clay.
		5	45-50	N	10YR2/2	very dark brown	clay	none	
MJ02		1	0-10	N	10YR5/4	yellowish brown	silty clay	none	30% mottled with 10YR6/6. ~6 m east of fence line at base of built up area between fence and sewer line. ~200 m north of MJ01. Terminated at dense clay.
		1-2	0–15	N	10YR2/2	very dark brown	clay	none	
MJ03		1-5	0-50	N	10YR2/2	very dark brown	silty clay	none	~10% sandstone cobbles (5-10 cm in diameter). Tall grass pasture. ~5% $CaCO_3$. ~5m east of ROW. Terminated at basal clay.
		6	50-55	N	10YR5/4	yellowish brown	clay	none	
MJ04		1-4	0-40	N	10YR2/2	very dark brown	clay	none	~30% 5-15 cm diameter cobbles. At Lancer boulevard near oak trees. Upland.
		5	40-45	N	10YR2/2	very dark brown	clay	none	~10% 0-5cm diameter cobbles. Terminated at imenetrable cobbles.
MJ05		1	0-10	N	10YR2/2	very dark brown	clay	none	~40% 5-15 cm diameter cobbles. In an overgrown pasture.
		2-4	10-40	N	10YR2/2	very dark brown	clay	none	No inclusions. Terminated at dense clay.

Table A-1. Shovel Test Data

ST #	Site	Level	Depth	Positive/ Negative	Munsell	Soil Color	Soil Texture	Cultural Material	Comments/Reason for Termination
MJ06		1-7	0-65	N	10YR5/8	yellowish brown	clay	none	Few limestone cobbles. 50% mottled with 10YR6/6 and 10YR2/2. $CaCO_3$ increases with depth. Northern most drainage eastment-west side.
VM01		1-8	0-81	N	10YR3/2	very dark grayish brown	clay with very few limestone pebbles	none	In fallow pasture east of Foster road. ~5% visibility on east ridge of APE. Terminated at sterile soils.
VM02		1-4	0-40	N	mottled 10YR3/2 with 10YR6/4	very dark grayish brown with light yellowish brown	cobbley silty clay	none	On rise in drainage with sandstone rocks. 30% visibility. Terminated at sterile soil.
VM03		1-2	0-15	N			caliche	none	Mottled. Just east of existing sewer line on edge of APE. Open field, short grasses. Gravels on surface. In front of Dollar General shipping plant. Terminated at sterile soil. In pasture at edge of project area (west).
		2-4	15-40	N	10YR3/2	very dark grayish brown	compact clay	none	
VM04		1-3	0-25	N	mottled	brown	crumbly clay loam	none	~5 m west of fence (Dollar General). Slope begins by shovel test. Short grasses. Sanitary sewer and gas lines between shovel test and Foster road to the west. Terminated at sterile soil.
		3-5	25-50	N	10YR3/2	very dark grayish brown	compact clay	none	

Table A-1. Shovel Test Data

ST #	Site	Level	Depth	Positive/ Negative	Munsell	Soil Color	Soil Texture	Cultural Material	Comments/Reason for Termination
VM05		1-7	0-70	N	10YR3/2	very dark grayish brown	clay loam with few cobbles	none	~10 m north of creek on low terrace. East of property/tree line. Goldenrod everywhere. Terminated at sterile soil.
VM06		1-4	0-40	N	10YR2/2	very dark brown	clay	none	~10 m east of fence line in dense, tall grass. Site is across Foster road from here. Basal soil (soil change).
VM07		1-5	0-45	N	10YR2/2	very dark brown	clay	none	At top of hill. ~15 m east of Foster road in dense, medium grasses just south of tree/fence line. Terminated at sterile soil.