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Plano Eastside Pipeline Replacement Collin County, Texas

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ARCHAEOLOGICAL SURVEY OF THE PROPOSED

PLANO EASTSIDE PIPELINE REPLACEMENT

COLLIN COUNTY, TEXAS

Texas Antiquities Permit Number 8277

By:

Joy C. Tatem, BA

Principal Investigator: Cody S. Davis, MA

Submitted to:

ALAN PLUMMER ASSOCIATES, INC.
1320 S. University Drive, Suite 300
Fort Worth, Texas 76107

Submitted by:

AR CONSULTANTS, INC.
805 Business Parkway
Richardson, Texas 75081

Cultural Resources Report 2018-06
February 9, 2018

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ABSTRACT

North Texas Municipal Water District is planning the Plano Eastside Pipeline Replacement project in Collin County, Texas. The proposed project consists of replacing approximately 8,000 linear feet (2,438 meters) of waterline along the west side of Shiloh Road. Much of the line will be replaced within existing easements and in parking lots and entrances associated with commercial developments between Renner Road and 14th Street, and along Del Sol Drive. However, a few segments will require new easements. These segments total approximately 570 meters and are the only sections in need of an intensive pedestrian survey, although they parallel existing utilities. The survey was conducted within a 30-meter corridor, consisting of approximately 4.19 acres. AR Consultants, Inc. conducted survey on January 18, 2018 under Texas Antiquities Permit Number 8277. It was predicted that there was archaeological potential for historic cultural resources, however, potential for prehistoric sites was low. Four shovel tests were excavated; no cultural resources were observed on the surface and all shovel tests were devoid of cultural materials. As such, AR Consultants, Inc. recommends that further cultural resource investigations are unwarranted and requests that that Texas Historical Commission concur with this assessment. However, if artifacts or features are found during construction, work should stop immediately, and the Archeology Division of the Texas Historical Commission should be notified before work resumes. Field documents, photos, and other paperwork from this survey will be curated at the Center for Archaeological Studies at Texas State University.

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INTRODUCTION

North Texas Municipal Water District (NTMWD) is planning to construct the Plano Eastside Pipeline Replacement in Collin County, Texas (Figure 1). Alan Plummer Associates, Inc. (APAI) is handling the permitting and project design. APAI contracted with AR Consultants, Inc. (ARC) to conduct the intensive pedestrian survey. The proposed project consists of replacing approximately 8,000 linear feet (2,438 meters) of waterline along the west side of Shiloh Road from its intersection with Renner Road to its intersection with 14th Street. The line will cross 14th Street and continue west along its north side until it intersects with Del Sol Drive. Much of the line will be replaced within existing easements and in parking lots and entrances associated with commercial developments along Renner Road, 14th Street, and Del Sol Drive. However, a few segments will require new easements. These segments total approximately 570 meters and were the only sections in need of an intensive pedestrian survey, although they parallel existing utilities. The survey was conducted within a 30-meter corridor, consisting of approximately 4.19 acres.

The cultural resource investigation was required because NTMWD is a state entity and Texas Antiquities Permit Number 8277 was issued for the archaeological survey. Relevant legislation includes the Antiquities Code of Texas (Texas Natural Resource Code, Title 9, Chapter 191). The Archeology Division of the Texas Historical Commission (THC) will review this report on behalf of the State.

This report is written in accordance with report guidelines used by the Archeology Division of the THC (Council of Texas Archeologists n.d.). The following report presents a brief description of the natural setting of the project area, followed by a discussion of the culture history and previous investigations within the study area. A chapter on the research design and methodology employed in the investigation is then followed by the results of the field investigation. The report concludes with recommendations followed by the references cited.

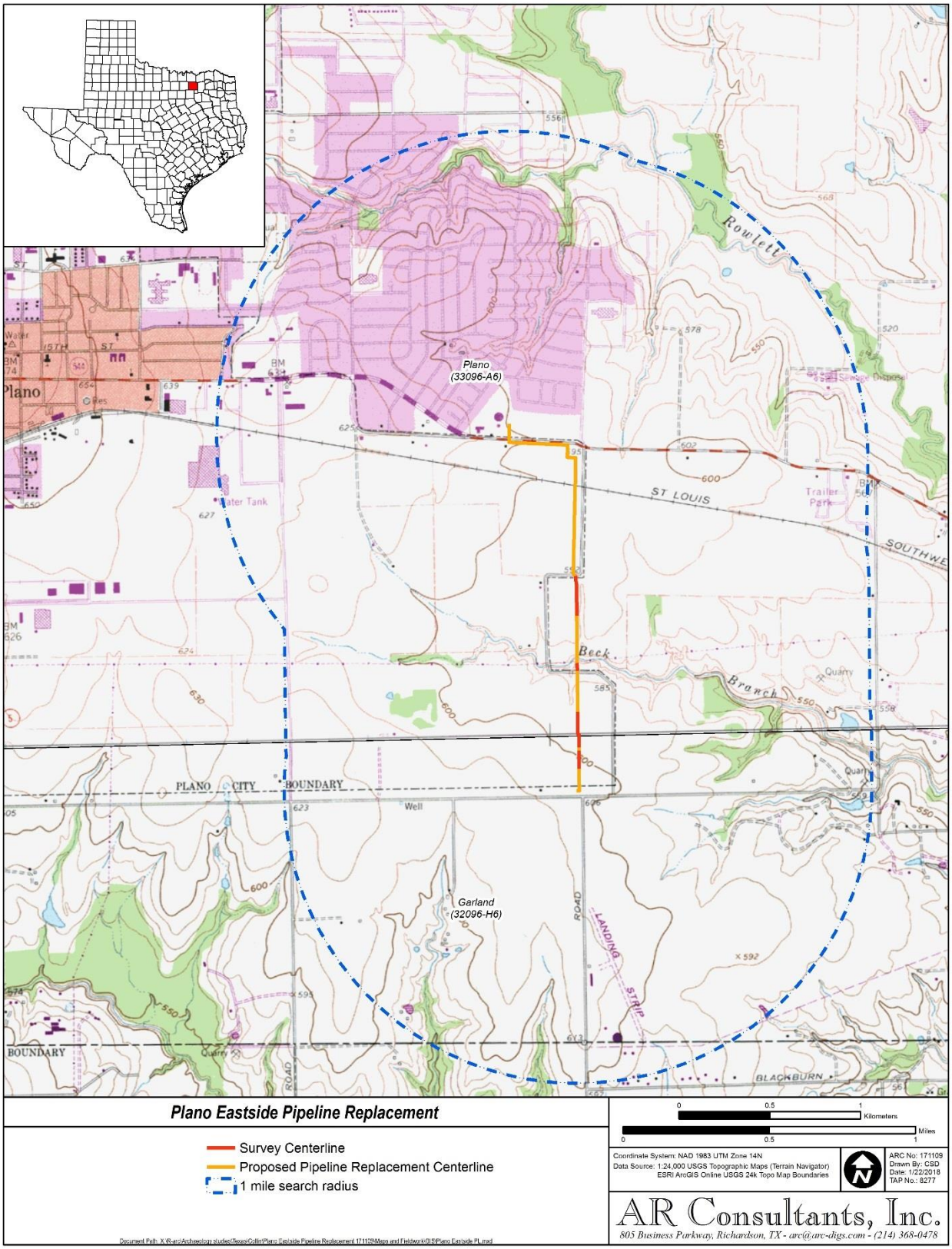

Figure 1. Plano Eastside Pipeline Replacement survey centerline shown on the 1973 Garland and 1973 Plano, TX 7.5' USGS maps.

Administrative Information:

ARC Project Number:	171109
Sponsor:	North Texas Municipal Water District with APAI handling the permitting and design
Review Agency:	Archeology Division of the Texas Historical Commission.
Principal Investigator:	Cody S. Davis, MA
Field Dates:	January 18, 2018
Field Crew:	Cody S. Davis and Joy C. Tatem
Field Person Days:	1
Acres Surveyed:	Approximately 4.19 acres
Curation:	Center for Archaeological Studies, Texas State University, San Marcos

NATURAL ENVIRONMENT

The project area is situated within the Trinity River Basin and Northern Blackland Prairie Ecoregion of Texas. This ecoregion is composed of rolling to nearly level plains that formed over Upper-Cretaceous marl, chalk, limestone, and shale (Griffith et al. 2007:61-62). In a climax setting, the Northern Blackland Prairie is a tallgrass prairie, dominated by big and little bluestem, Indiangrass, and tall dropseed growing on the region's deep, fertile, "black waxy" soil, which gives the Prairie its name. Today, most of the study area supports a young growth of deciduous and juniper trees (Griffith et al. 2007: 62). The study area intersects Beck Branch, which then proceeds southeast to flow into Rowlett Creek. Beck Branch is mapped as a perennial stream on recent USGS maps, though older maps show Beck Branch as ephemeral.

The underlying geology consists of Upper Cretaceous age Austin chalk, with a thickness of about 600 ft (Bureau of Economic Geology 1967). The upper and lower parts include chalk and light gray massive calcareous clay. The middle part includes thin-bedded marl with inter-beds of massive chalk and light gray clay. Austin chalk is highly fractured, faulted, and jointed (Allen and Flannigan 1986). Two soils underlie the project area: Austin silty clay with 1-3 percent slopes in the south and Houston Black clay with 0-3 percent slopes in the north (Hanson and Wheeler 1969: Sheet 59). The topsoil of the Austin series averages approximately 16 inches of dark grayish brown/brown silty clays underlain by a Cr horizon of very pale brown platy chalk extending to 57 inches. The Houston Black series is characterized by an 8-inch-thick A horizon of very dark gray clay underlain by a Bkss horizon of gray clay extending to 104 inches. Neither Houston Black nor Austin soil descriptions contain reports of knappable material being present.

CULTURAL HISTORY

A prehistoric chronology, based on Prikryl (1990), with an added historic period, for North Central Texas is presented below to provide the reader with a temporal framework for the culture history of the region.

Table 1. Cultural Chronology

Historic European	A.D. 1800 to present
Protohistoric [Historic Native American]	A.D. 1600 to A.D. 1800
Late Prehistoric	A.D. 700 to A.D. 1600
Late	A.D. 1400 to A.D. 1600
Middle	A.D. 1000 to A.D. 1400
Early	A.D. 700 to A.D. 1000
Archaic	6000 B.C. to A.D. 700
Paleoindian	ca. 11,000 B.C. to 6000 B.C.

The Paleoindian period is characterized as having small, nomadic bands of hunter-gatherers whose primary emphasis was the exploitation of now-extinct megafauna, such as mammoth and bison. Smaller game and plant gathering likely supplemented the Paleoindian diet (Meltzer and Bever 1995:59). As such, the archaeological record for the region consists of several distinctive styles of projectile points, such as the Clovis, Plainview, and Folsom. Currently, no Clovis points have been reported in Collin County, but numerous have been found in surrounding counties (Bever and Meltzer 2007:67-70). Subsistence patterns began to change as a general drying climatic trend swept the region, leading to extinction of many of the area's large mammals toward the end of the Paleoindian period.

The Archaic period is characterized by increased alluviation of water channels and a generally wetter environment than the previous period. This change in climate resulted in modification of Native American subsistence patterns, with broad exploitation of bottomland food resources. This, in turn, resulted in clusters of seasonal settlements along large drainages, including the Trinity River and its various forks and tributaries, and a marked increase in population density. With the advent of repeated, seasonal occupation of sites along drainages came a perceived increase in territorial constrictions among different groups in the region, with several authors citing the limited use of regional lithic resources as evidence of this trend (Skinner 1981; Prewitt 1983).

The Late Prehistoric period is interpreted as a dryer period, with a focus on procurement of faunal resources, agriculture, and food preservation. The appearance of pottery and the bow and arrow help date artifact assemblages to this period (Shafer 1977). The Protohistoric period is characterized by Native American abandonment of north central Texas in the period around 1500/1600, with almost no archaeological evidence found in the region dating to this time (Skinner 1988).

The Historic European period saw widespread Anglo settlement of north central Texas beginning in the 1830s. This expansion often resulted in brutal conflicts between settlers and nomadic bands of Native Americans (Garrett 1972:24). These early conflicts gave way to various Anglo strategies aimed at cohabitation, including peace treaties signed as early as 1843. Eventually, the entirety of

north central Texas was settled, with numerous Anglo military installations established in the region. After Texas became part of the United States in 1845, peace was short lived. The Civil War took its toll on the north central Texas population, as most of the able-bodied men left to fight for the Confederacy.

There is very little evidence of historic-era Native American occupation anywhere in the Dallas area, although historic accounts indicate that groups were present in the early 1800s. Beginning in the 1830s and continuing into the 1840s, the aboriginal inhabitants continued to play a role in the regional history. Garrett (1972:24) states, "Indian hostilities almost depopulated North Texas (of Anglo dwellers) after 1839. It dwindled to less than half." Hostilities continued until the Republic of Texas and ten Native American tribes signed the Treaty of 1843. This treaty provided the impetus for settlement of several North Central Texas counties.

Collin County was separated from Fannin County in 1846 and McKinney became the county seat (Minor 2016). The first phase of settlement in Collin County was from 1840 to 1860. Commercial farming was not important until after the Civil War, and the early settlers were essentially self-sufficient. Besides domestic plants and animals, wild animals and plants were commonly consumed, so settlers established homesteads near creeks and rivers. In 1872, the Houston and Texas Central Railway became the first major route through the county, initiating the second phase of settlement near railroad hubs. By 1870, cotton, corn, and wheat were the main cash crops. The county experienced continuous growth until the Great Depression, but like most of the country, had recovered and was once again prospering by 1950. Post 1960, many farms and ranches turned to mechanized techniques and relied less on tenant farmers who had dominated the workforce in the 1800s and early 1900s. This led to a general decline in the county's population. Recent decades have seen a dramatic increase in the county's population and residential neighborhoods dominate the present-day landscape.

Previous Investigations

A search of the Texas Archeological Sites Atlas (TASA 2018) located no archaeological sites, historical markers, National Register of Historic Places (NRHP) properties, or State Antiquities Landmarks (SALs) within a 1-mile radius of the project area. Two surveys from 1982 were within a mile of the project area: one linear survey conducted by the Federal Highway Administration and one block area survey conducted for the Heritage Conservation and Recreation Service. Additionally, Plano Mutual Cemetery lies within one mile to the north of the current project area.

Additionally, historic maps and aerials were examined prior to field work, including the 1936 and 1961 General Highway Maps of Collin County, the 1930 Collin County soil map, and the 1960 and 1968 Plano 7.5' USGS maps. An aerial image of the project area from 1956 was also reviewed. These historic maps and the aerial photograph show no structures within the project area, though several are shown nearby. While historic structures could have been present in the vicinity of the project area, they may have been destroyed in recent decades due to extensive urbanization in the area.

RESEARCH DESIGN AND METHODOLOGY

Research Design

Two hypotheses were formulated in order to examine the archaeological potential of the project area. First, it has been hypothesized that prehistoric archaeological sites would not be encountered in the project area unless in close proximity to Beck Branch. This hypothesis was based on the potential destruction of sites resulting from decades of extensive development in the area and due to the survey's location within the Blackland Prairie. Although currently mapped as a perennial stream, Beck Branch appears to have been ephemeral until recent decades. Water is typically only present in ephemeral drainages after precipitation and then it rapidly runs off the rolling terrain into the various drainages. Additionally, there are no knappable materials reported in the soils underlying the project area, as stated in the Natural Environment of this report.

The second hypothesis is that there was potential of historic sites within the project area. Available historic maps show structures in the vicinity of the project area. This area has been rural and used as farmland until relatively recently, therefore any historic structures are likely to have been destroyed in recent decades due to extensive urbanization in the area. However, historic trash scatters are common along drainages and roads and may be old enough to be recorded as sites.

Methodology

Survey was conducted in accordance with the standards set forth by the THC (n.d.). Field personnel walked transects and excavated shovel tests (STs) every 100 meters. In areas of disturbance, field personnel would survey but not excavate STs. STs averaged 30cm in diameter. All loamy soils were screened through ¼" wire mesh screens. The clay fill was inspected visually and broken into smaller chunks in order to determine if cultural materials were present. ST soil matrices were described on the basis of composition, texture, and color. The Munsell Soil Color Chart (2010) was used to identify soil colors. Field personnel made notes about the ground exposure, drainages, soil types, and disturbed areas where subsoil was exposed. Photographs were taken during the survey using a 16-megapixel, GPS-equipped, digital camera. ST and project boundary locations were marked with a handheld GPS receiver.

RESULTS

This chapter is divided into two sections. The first describes the study area's setting along with results of the pedestrian survey. Conclusions derived from the survey close the chapter. While STs are described generally throughout the survey results, they are detailed in Table 2 at the end of the survey results section.

Survey Results

A total of four STs were excavated along the project centerline (Figure 2). Some areas were not shovel tested due to disturbance, as described below. The project area parallels Shiloh Road on the west side and intersects Beck Branch; the general environment along the route consists of ankle-high grass fields with 0 to 10 percent ground visibility, surrounded by extensively developed areas (Figure 3).

The northernmost segment of the pipeline is located approximately 100 meters south of E. Plano Parkway; disturbance due to proximity to the road, in addition to existing utilities, resulted in no ST being excavated here (Figure 4). A similar situation was encountered further south by Beck Branch, where existing utilities intersected the survey route; therefore, no STs were excavated here (Figure 5). Though the area by Beck Branch had potential for prehistoric archaeology, disturbance from existing utilities resulted in no STs being excavated surrounding the stream (Figure 6). ST1 was located 130 meters south of the northernmost extent of the survey route and revealed 35 cm of very dark grayish brown clay with 60 percent limestone fragments. The A horizon soils of STs 2-4 were similar to one another, with 40-50 cm of black clay containing 10 to 60 percent limestone fragments; the A horizon of ST3 was underlain by a mottled black and very dark grayish clay with 10 percent limestone fragments, while the A horizon of ST4 was underlain by very dark grayish brown clay with 60 percent limestone fragments. All STs were negative and no cultural resources were observed on the surface. The soil colors and textures are consistent with the descriptions of Houston Black clay and Austin silty clay, on which the route mapped. The limestone fragments present here may be a result from the extensive development in the area/proximity to a main road or likely from bedrock degradation.

Table 2. Shovel Test Descriptions.

ST	Depth (cmbs)	Description*	Comments/ Artifacts
1	0-35	Very dark grayish brown (10YR3/2) clay w/ 60% limestone fragments (>5mm)	None
2	0-50	Black (10YR2/1) clay w/ 50% limestone fragments (>5mm)	None
3	0-45 45-50	Black (10YR2/1) clay w/ 10% limestone fragments (<1mm) Black (10YR2/1) clay mottled w/ 40% very dark grayish brown (10YR3/2) clay and 10% limestone fragments (<1mm)	None
4	0-40 40-45	Black (10YR2/1) clay w/ 50% limestone fragments (>5mm) Very dark grayish brown (10YR3/2) clay w/ 60% limestone fragments (>5mm)	None

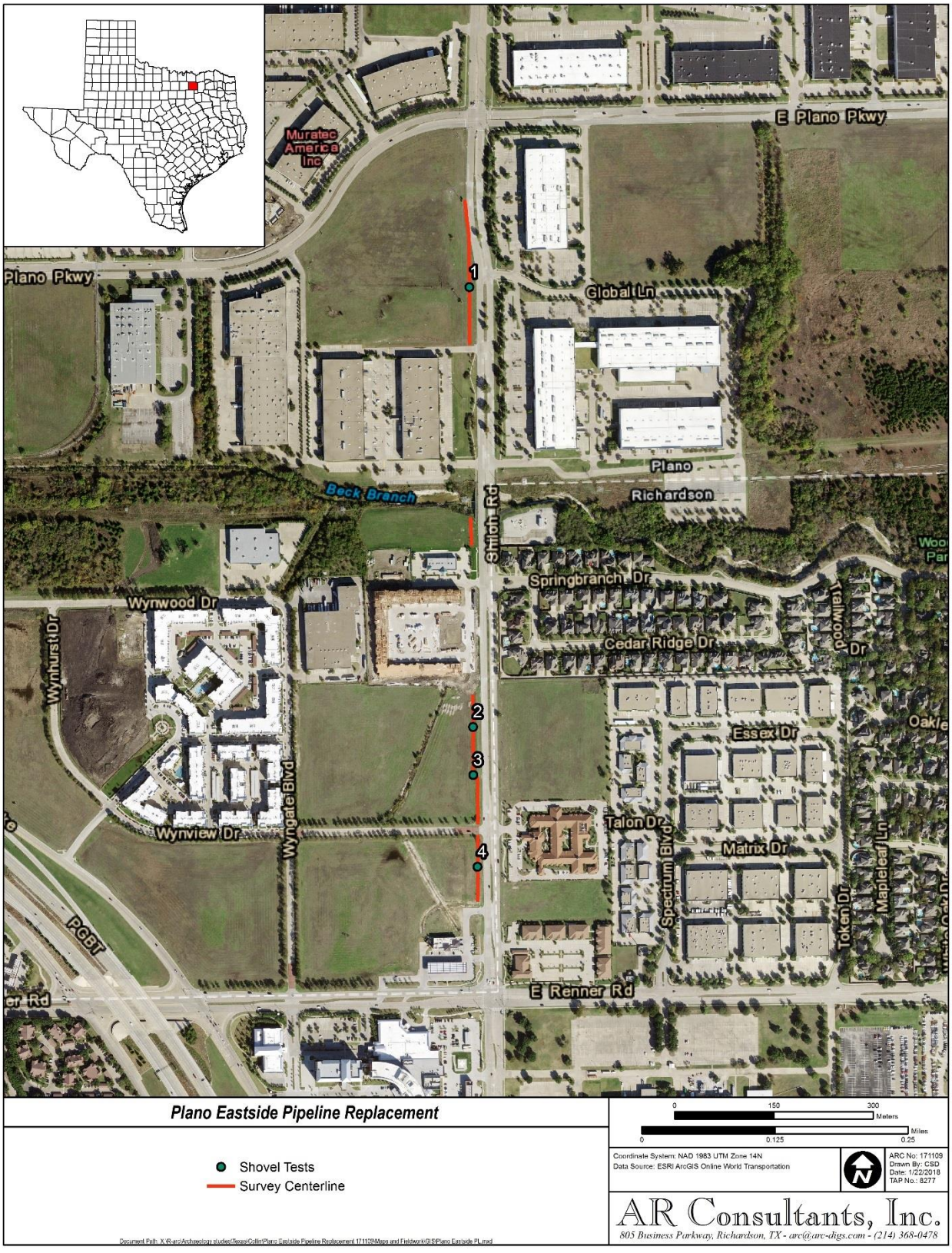

Figure 2. Shovel tests locations within surveyed segments shown on a recent aerial photograph.

Figure 3. Example of the survey route's general environment; shovel at location of ST3. View is facing to the north.

Figure 4. Northernmost extent of surveyed pipeline route showing existing utility disturbance and proximity to Shiloh Road. View is facing to the south.

Figure 5. Shortest segment of surveyed pipeline route showing existing utility disturbance, located approximately 20 meters south of Beck Branch. View is facing to the west.

Figure 6. Overview of Beck Branch, showing utility disturbance. View facing to the west.

Conclusions

No archaeological sites, features, or artifacts were found during the survey. This was predicted regarding both prehistoric and historic cultural resources based on the potential destruction of sites resulting from decades of extensive development in the area. Additionally, this was predicted regarding prehistoric cultural resources due to the lack of knappable material in the soil and the survey area's location in the Blackland Prairie. Though it was described in the Research Design of this document that historic trash scatters could be found in the project area, none were located during the survey.

RECOMMENDATIONS

The purpose of this investigation was to determine if significant cultural resources were present in the proposed Plano Eastside Pipeline Replacement survey area in Collin County, Texas. No cultural resources were identified on or below the surface during the survey. Based on the results of the survey, ARC concludes that further cultural resource investigations for this project are unwarranted, and requests that the THC concur with this recommendation. However, if buried cultural materials are discovered during construction, the Archeology Division of the THC should be notified.

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