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Cultural Resources Survey of the Fort Griffin Special Utility District Waterline Improvements Project, City of Breckenridge, Stephens County, Texas

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CULTURAL RESOURCES SURVEY OF THE FORT GRIFFIN SPECIAL UTILITY DISTRICT WATERLINE IMPROVEMENTS PROJECT, CITY OF BRECKENRIDGE, STEPHENS COUNTY, TEXAS

Prepared for:
Texas Historical Commission
Texas Antiquities Permit Number 9373

On Behalf of:
Fort Griffin Special Utility District
and
Jacob Martin, LLC

JACOB MARTIN

July 2020

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CULTURAL RESOURCES SURVEY OF THE FORT GRIFFIN SPECIAL UTILITY DISTRICT WATERLINE IMPROVEMENTS PROJECT, CITY OF BRECKENRIDGE, STEPHENS COUNTY, TEXAS

by

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Texas Antiquities Permit Number 9373

Cultural Resources Report
July 2020

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ABSTRACT

This report documents the substantive findings and management recommendations of a cultural resources survey conducted by Integrated Environmental Solutions, LLC (IES) for the proposed Fort Griffin Special Utility District (SUD) Waterline Improvements Project located in the City of Breckenridge, Stephens County, Texas. The proposed project will include the installation of a water supply line within a 39.45-acre (ac) Area of Potential Affects (APE). As the Fort Griffin SUD is a political subdivision of the State of Texas, the project is subject to the provisions of the Antiquities Code of Texas (ACT). Additionally, as the project will be partially funded by the U.S. Environmental Protection Agency (USEPA) through the Clean Water State Revolving Funds (CWSRF) and Drinking Water State Revolving Funds (DWSRF), the proposed project will be required to comply with Section 106 of the National Historic Preservation Act (NHPA).

The goal of this survey was to locate cultural resources that could be adversely affected by the proposed project, and to provide an evaluation of the eligibility potential of each identified resource for listing in the National Register of Historic Places (NRHP) or for designation as a State Antiquities Landmark (SAL). This cultural resources survey was conducted by Project Archeologist Anne Gibson and Archaeological Technician Trey Lyon on 28 through 30 April 2020. All work conformed to 13 Texas Administrative Code 26 (13 TAC 26), which outlines the regulations for implementing the ACT, and was conducted under Texas Antiquities Permit No. 9373.

During the survey, one newly recorded historic-age archeological site (41SE347) was encountered within the APE. Based on the lack of association with historically important individuals or events, absence of significant architectural features, the degree of prior disturbance, and lack of contextual integrity, site 41SE347 is recommended not eligible for listing in the NRHP or designation as a SAL.

All project-related records and field data will be temporarily stored at the IES McKinney office and permanently curated at the Center for Archeological Research (CAR) at the University of Texas at San Antonio (UTSA). No further work is warranted. However, if any cultural resources are encountered during construction, the operators should stop construction activities and immediately contact the project environmental representative to initiate coordination with the Texas Historical Commission (THC) prior to resuming any construction activities.

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CHAPTER 1: INTRODUCTION

This report presents the results of a cultural resources survey conducted by Integrated Environmental Solutions, LLC (IES), under contract by Jacob & Martin, LLC, on behalf of the Fort Griffin Special Utility District (SUD), for the proposed Fort Griffin SUD Waterline Improvements Project. The purpose of these investigations was to conduct an inventory of cultural resources (as defined by Code of Federal Regulations, Title 36, Section 800.4 [36 CFR 800.4]) present within the proposed project area or Area of Potential Effects (APE). The goal of this survey was to locate, identify, and assess archeological sites, buildings, structures, or other cultural resources within the project area that may be eligible for inclusion in the National Register of Historic Places (NRHP) or designation as State Antiquities Landmarks (SAL). This investigation was conducted in accordance with 36 CFR 60.4 and Texas Administrative Code, Title 13, Chapter 26 [13 TAC 26]), which outline the regulations for implementing Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended, and the Antiquities Code of Texas (ACT), respectively. Additionally, the project aimed to evaluate identified resources for their eligibility for inclusion in the NRHP, as per Section 106 (36 CFR 800) of the NHPA or for designation as SAL under the ACT (Texas Natural Resources Code, Title 9, Chapter 191 [9 TNRC 191]) and associated state regulations (13 TAC 26). Prepared in accordance with the Council of Texas Archeologists (CTA 2002) guidelines, this report satisfies the ACT requirements of the project. A description of the project area, pertinent regulations, environmental and historical contexts, field and analytical methods, results of the investigations, and recommendations regarding the identified cultural resources are provided in this document

1.1 Reporting Conventions

Standards for archeological methods require that measurements be recorded in metric units. For this reason, while general distances and engineering specifications are described in imperial units (e.g., inch [in], foot [ft], mile [mi], acre [ac]) within this report, archeological measurements and observations are listed in metric units (e.g., centimeter [cm], meter [m], kilometer [km], hectare [ha]), unless historic-period artifact or architectural elements are more appropriately recorded in imperial units.

1.2 Regulatory Framework

1.2.1 Antiquities Code of Texas

As the project will transpire on land owned or controlled by Fort Griffin SUD, which is a political subdivision of the State of Texas, the project will be subjected to the provisions of the ACT. The ACT was passed in 1969 and requires that the Texas Historical Commission (THC) staff review any action that has the potential to disturb historic and archeological sites on public land. Actions that require review under the ACT include any project that will have ground-disturbing activities on land owned or controlled by a political subdivision of the State and include easements on private property. Advanced project review by the THC is required only for undertakings with more than 5 ac or 5,000 cubic yards (yd^3) of ground disturbance. However, if the activity occurs inside a designated historic district, affects a recorded archeological site, or requires onsite investigations, the project will need to be reviewed by the THC regardless of project size.

1.2.1 Section 106 of the National Historic Preservation Act

The NHPA (54 U.S. Code [U.S.C.] 300101 et seq.), specifically Section 106 of the NHPA (54 U.S.C. 306108) requires the State Historic Preservation Officer (SHPO), an official appointed in each state or territory, to administer and coordinate historic preservation activities, and to review and comment on all actions licensed by the federal government that will have an effect on properties listed in the NRHP, or eligible for such listing. Per 36 CFR 800, the federal agency responsible for overseeing the action must make a reasonable and good faith effort to identify cultural resources.

Under the Texas Water Development Board (TWDB) rules, an assessment of the social and environmental conditions of projects being proposed for federally and state-funded projects is required as part of the overall application. Projects that have a tie to federal funding are the Clean Water State Revolving Funds (CWSRF) and Drinking Water State Revolving Funds (DWSRF), which are ultimately funded through the U.S. Environmental Protection Agency (USEPA). Since the USEPA is the generator of funds, all projects receiving funds through the state programs must meet the environmental analysis requirements of the National Environmental Policy Act of 1969 (NEPA). Subsequently, as the proposed project will be partially funded by the USEPA, the project must comply with Section 106 of the NHPA.

Identification, evaluation, and documentation of archeological sites shall be completed in accordance with the provisions of the Secretary of the Interior's regulatory standards, which are implemented by the THC. Archeological investigations shall be performed and documented at sufficient levels to satisfy THC requirements for determining the presence of archeologically significant properties within the APE in accordance with 13 TAC 26, which outlines the regulations for implementing the ACT. The goal of the survey will be to locate, identify, and assess any archeological sites that could be adversely affected by the proposed project, and to evaluate such resources for their potential eligibility for listing as a SAL or eligibility for listing in the NRHP.

1.3 Area of Potential Effects

1.3.1 Direct APE

The proposed project includes approximately 5.41 mi of proposed waterline with permanent or temporary easements with a 60-ft-wide right-of-way (ROW) that totals 39.45 ac. The western terminus of the APE corridor is located approximately 0.34 mi east of the intersection of U.S. Highway (US) 180 and Stephens County Road (CR) 210 and extends west along US 180 and north along Farm-to-Market Road (FM) 313. At that point, the APE corridor extends east along a two-track road, then north along FM 3099 where it turns east near the intersection with CR 315 and terminates at an existing pipeline (**Figure 1.1**). Although preliminary project designs were not available at the time of this report, it is anticipated that the project will consist of the installation of new water supply pipeline. The 8-in waterline will be installed via traditional open-cut trenching methods at a minimum of 4 ft below the existing ground surface throughout most of the APE and via subsurface boring depths of up to 30 ft at the crossings of Dry Branch and Rush Branch.

1.3.2 Indirect APE

As the project will require TWDB funding, an assessment of indirect effects will be required to satisfy Section 106 of the NHPA requirements. However, it is anticipated that all project components will be installed at or below grade; therefore, indirect effects were not evaluated for this project.

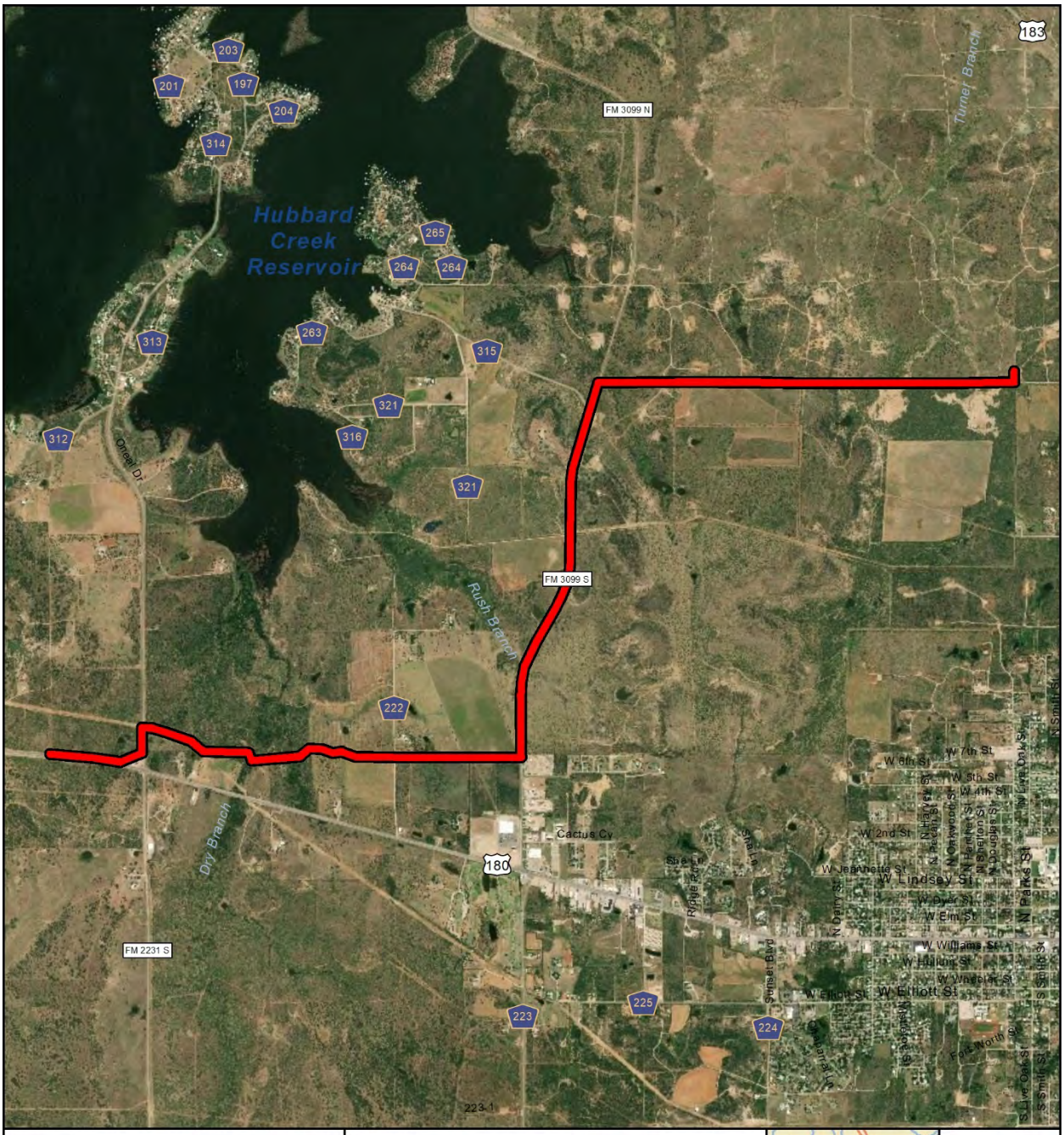

Figure 1.1
General Location Map

County: Stephens
State: Texas
Date map created: 5/19/2020
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.6 Streetmap
IES Project Ref: 04.302.003

1.4 Administrative Information

Sponsor(s): Fort Griffin SUD
Review Agency(ies): THC
Texas Antiquities Permit Number: 9373
Principal Investigator: Jamie Vandagriff, MA, RPA
Survey Crew Members: Anne Gibson (Project Archeologist) and Trey Lyon (Archeological Field Technician)
IES Project Number: 04.302.003
Days of Field Work: 28 through 30 April 2020
Area Surveyed: 39.45 ac
Sites Recommended Eligible for NRHP under 36 CFR 60.4: None
Sites Recommended Eligible for SAL under 13 TAC 26: None
Sites Recommended Not Eligible for NRHP under 36 CFR 60.4: 41SE347
Sites Recommended Not Eligible for SAL under 13 TAC 26: 41SE347
Curation Facility: No artifacts were collected. Field notes and project records will be temporarily stored at the IES office in McKinney and permanently curated at the Center for Archeological Research (CAR) at The University of Texas at San Antonio (UTSA).

CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Environmental Setting

2.1.1 Climate

Stephens County lies in the north-central part of the State of Texas. Annual precipitation is approximately 26 in (66 cm). Approximately 60 percent of the precipitation typically occurs as rain between April and September. The temperature falls rapidly during the winter with short cold spells and frequent periods of relatively mild weather. The summers are hot and semi-humid (Cyperian 1994).

2.1.2 Topographic Setting

The Breckenridge 7.5-minute U.S. Geological Survey (USGS) topographic quadrangle map illustrates that the APE is located in an upland setting within the Brazos River basin near the headwaters of Hubbard Creek (**Figure 2.1**). Other topographic features within the project area include Dry Branch and Rush Branch in the western portion of the APE, which flow northwest toward Hubbard Creek, which is now impounded to form Hubbard Creek Lake. Prior to the creation of Hubbard Creek Lake, the tributaries within the APE were ephemeral drainage features that only carried water flow following precipitation events. The project area occupies an elevation range of 1,196 to 1,266 ft (365 to 386 m) above mean sea level (amsl).

2.1.3 Geology and Soils

The APE is located within the Western Cross Timbers subregion of the Cross Timbers ecoregion (Griffith et al. 2007). This ecoregion is characterized by sandstone ridges, cuestas, and rolling plains. Soils typically consist of fine sandy loams with clay subsoils. The ecoregion is dominated by woodlands of post oak and blackjack oak and prairie tall grass species such as big bluestem, yellow Indiangrass, and switchgrass. Soils within the APE are underlain by the Pennsylvanian-age Harpersville Formation, which consists of sandstone and limestone that is interbedded with shale (Brown and Goodson 1972; USGS 2020; **Figure 2.2**). The Pennsylvanian bedrock outcrops in this area have been dissected by the channels of major streams that have cut considerably below the surface level (TSHA 2020). Quaternary-age alluvium deposits (Qal) of sand, silt, clay, and gravel are located along Dry Branch within the APE.

The *Soil Survey of Stephens County, Texas* indicates there are 11 soil map units within the APE (Cyperian 1994; **Table 2.1; Figure 2.3**). Approximately 97.5 percent of the APE contains soils typical of upland settings within the Western Cross Timbers ecoregion. The remaining 2.5 percent of the APE contains occasionally flooded soils in the Dry Branch floodplain. Soil data was reviewed from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (2020).

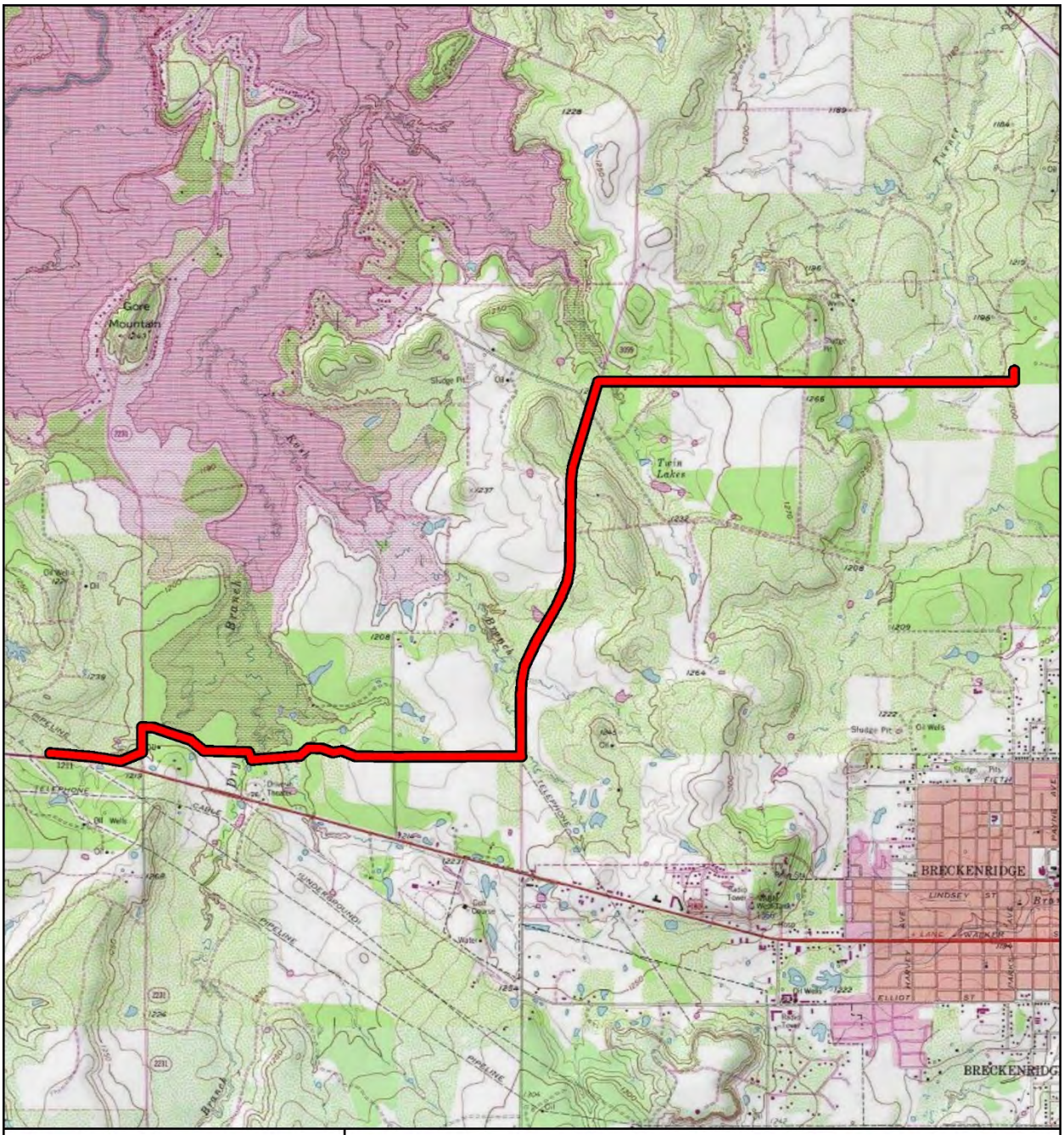

Figure 2.1
Topographic Setting

County: Stephens
State: Texas
Date map created: 5/4/2020
Source: USGS Topographic Map
7.5' Quadrangle
Breckenridge (1982)
IES Project Ref: 04.302.003

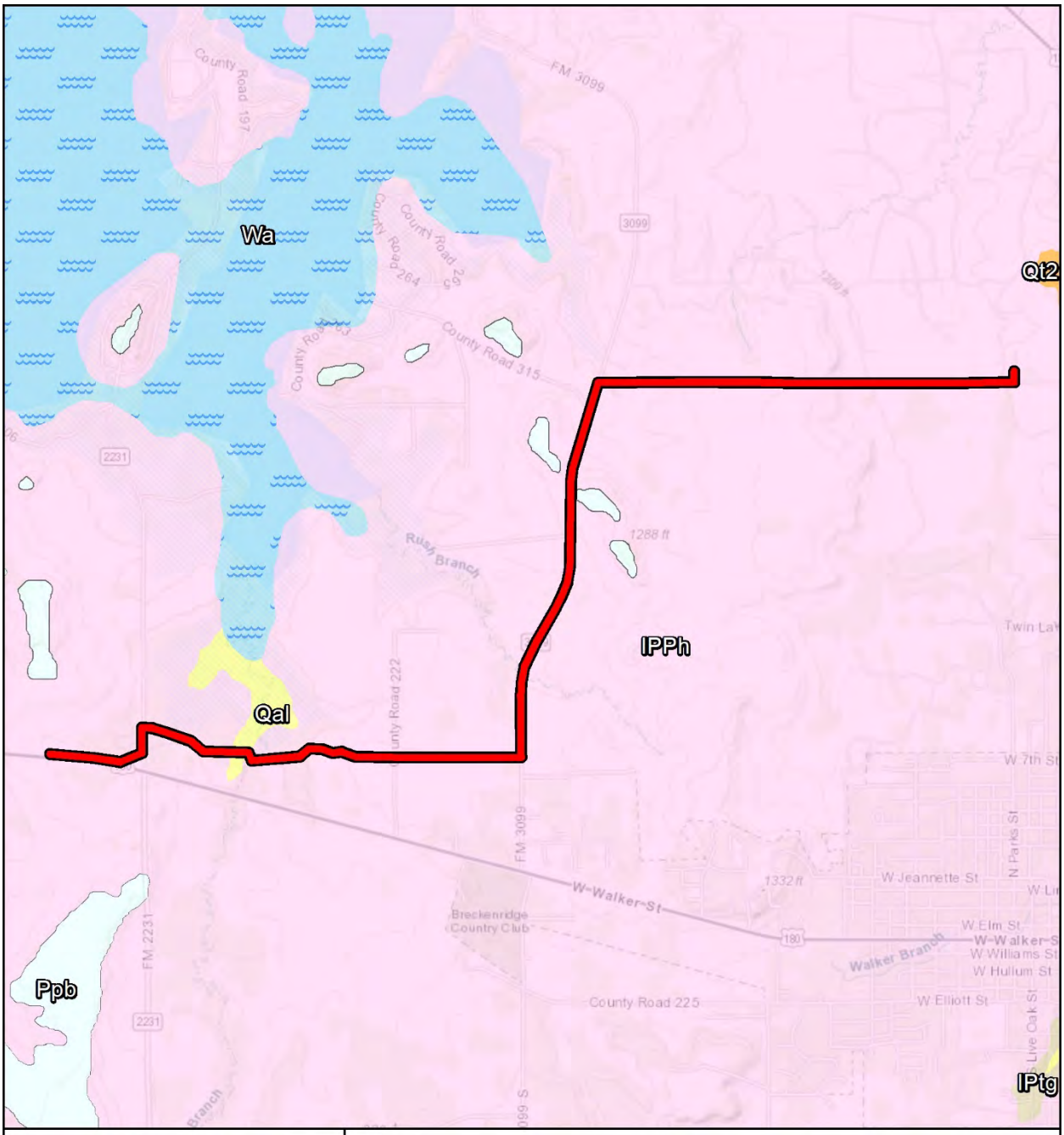

Figure 2.2
Geologic Setting

County: Stephens
State: Texas
Date map created: 5/19/2020
Source: TNRIS Geologic Atlas of Texas; Abilene Sheet
IES Project Ref: 04.302.003

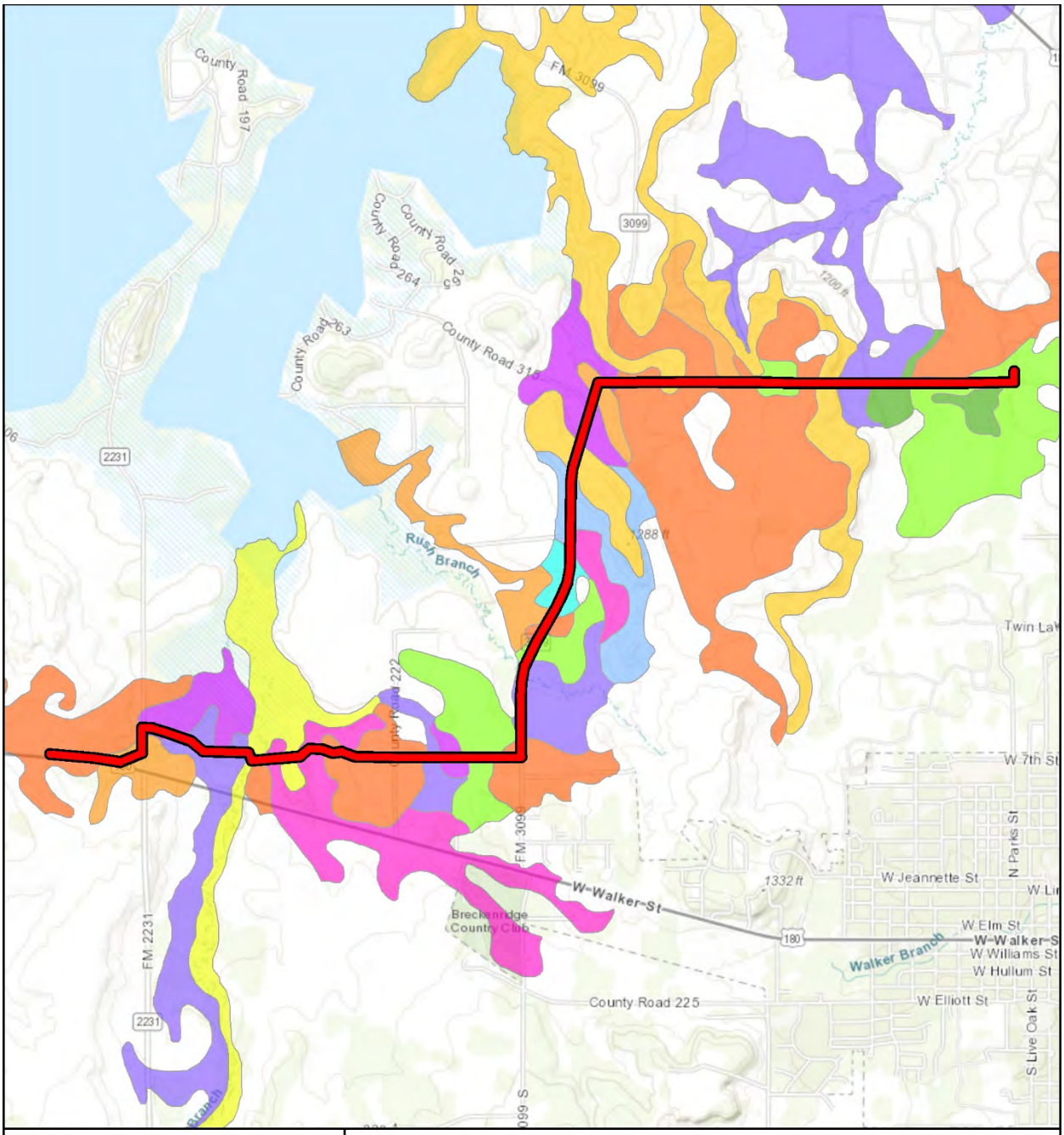

Figure 2.3
Soil Map Units Located Within and Adjacent to the APE

County: Stephens
State: Texas
Date map created: 5/4/2020
Source: 2007 USDA
NRCS Digital Soils Database
IES Project Ref: 04.302.003

Table 2-1: Soil Map Units Located within and Adjacent to the APE

Soil Map Unit Description	Percentage of the APE
BgB – Bluegrove loam, 1 to 3 percent slopes – This component is described as loam that is located on ridges. Typical Bt subsoil horizon depth is 5 to 27 in (13 to 69 cm). Depth to bedrock is 27 to 80 in (67 to 203 cm). The natural drainage class is well drained.	24.9
BrC – Bontil-Exray complex, 1 to 8 percent slope, extremely stony – This component is described as fine sandy loam located on ridgetops. Typical Bt subsoil horizon depth is 8 to 30 in (20 to 76 cm). Depth to bedrock is 30 to 80 in (76 to 203 cm). The natural drainage class is well drained.	8.1
BxE – Bontil-Exray-Truce complex, hilly, very stony – This component is described as stony fine sandy loam located on ridges. Depth to bedrock is 18 to 40 in (46 to 102 cm). The natural drainage class is well drained.	5.6
Ga – Gageby clay loam, 0 to 1 percent slopes, occasionally flooded – This component is described as clay loam located in floodplains. Typical Bw subsoil horizon depth is 22 to 52 in (56 to 132 cm). Depth to bedrock is 52 to 80 in (132 to 203 cm). The natural drainage class is well drained.	2.5
LeB – Leeray clay, 1 to 3 percent slopes – This component is described as clay located on ridges. Typical Bss subsoil horizon depth is 11 to 32 in (28 to 81 cm). Depth to restrictive feature is more than 80 in (203 cm). The natural drainage class is well drained.	16.0
Oa – Oil-waste land, 0 to 16 percent slopes – This map unit comprises land that has been extensive disturbed by activities related to the production of petroleum and natural gas resources.	3.2
OcC – Owens clay, 1 to 5 percent slopes – This component is described as clay located on ridges. Typical depth to the Bk subsoil horizon is 3 to 10 in (8 to 25 cm). Depth to restrictive feature is more than 80 in (203 cm). The natural drainage class is well drained.	4.9
OxE – Owens-Harpersville complex, 8 to 45 percent slopes, extremely bouldery – This component is described as clay located on ridges. Typical depth to the Bk subsoil horizon is 3 to 10 in (8 to 25 cm). Depth to restrictive feature is 14 to 30 in (36 to 76 cm). The natural drainage class is well drained.	4.8
TrB – Thurber clay loam, 1 to 3 percent slopes – This component is described as clay loam located on ridges. Typical Bt subsoil horizon depth is 4 to 38 in (10 to 97 cm). Depth to restrictive feature is more than 80 in (203 cm). The natural drainage class is moderately well drained.	15.1
TuB – Truce fine sandy loam, 1 to 3 percent slopes – This component is described as fine sandy loam located on ridges. Typical Bt subsoil horizon depth is 5 to 56 in (13 to 142 cm). Depth to restrictive feature is 40 to 60 in (102 to 152 cm). The natural drainage class is well drained.	10.1
TuC2 – Truce fine sandy loam, 1 to 5 percent slopes, eroded – This component is described as fine sandy loam located on ridges. Typical Bt subsoil horizon depth is 3 to 42 in (8 to 107 cm). Depth to restrictive feature is 40 to 60 in (102 to 152 cm). The natural drainage class is well drained.	4.8

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CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

A file search and review of the Texas Archeological Sites Atlas (TASA) and the Texas Historic Sites Atlas (THSA), maintained by the THC and the Texas Archeological Research Laboratory (TARL), identified no previously recorded archeological sites, NRHP properties, NRHP districts, historical markers, or cemeteries located within the APE (TASA 2020; THSA 2020). The TASA database identified one previously conducted archeological survey within the APE (**Table 3.1**; **Figure 3.1**). This survey was conducted in 2014 by American Archaeology Group (AAG) under Texas Antiquities Permit No. 7096 for the City of Abilene. During the survey, shovel testing and backhoe trenching were conducted within a section of the APE west of Dry Branch. No cultural resources were identified during the AAG survey. Additionally, TASA records depicted three previously completed archeological surveys that were conducted within 1 mi of the APE (TASA 2020; *see* **Table 3.1**). As a result of these surveys, five archeological sites were recorded within 1 mi of the APE (**Table 3.2**).

Table 3-1: Previously Conducted Archeological Surveys within 1 Mi of the APE

Agency	ACT Permit No.	Firm/Institution	Date	Survey Type	Location (Approximate)
Federal Highway Administration (FHWA)	N/A	No data	1993	Linear	0.48 mi south of the APE
TWDB	5375	AR Consultants, Inc.	2009	Linear	0.71 mi southeast of the APE
USDA – Rural Utilities	5375	AR Consultants, Inc.	2009	Area	0.93 mi southeast of the APE
City of Abilene	7096	AAG	2014	Linear	Overlaps western portion of the APE

Table 3-2: Previously Recorded Archeological Sites within 1 Mi of the APE

Site Trinomial	Time Period	Site Type	Site Size	Depth Extent	Cultural Materials	Topographic Setting	NRHP Determination
41SE307	Prehistoric	Quarry	45 m x 274 m	Surface	Cores, debitage	Upland terrace	Undetermined
41SE322	Historic	Farmstead	30 m x 30 m	Surface	Concrete, brick fragments, round nails, clear glass, shaped sandstone (possible pier stones), and whiteware ceramics	Slope above creek	Ineligible
41SE325	Historic	Farmstead	No data	Surface	Water trough and possible cistern/root cellar	Upland terrace	Ineligible within ROW
41SE326	Historic	Farmstead	150 m x 60 m	Surface	Sandstone rocks (piled), brick fragments, possible house foundation, round nail, and clear glass	Upland terrace	Ineligible
41SE327	Historic	Farmstead	50 m x 50 m	Unknown	Two separate house mound areas, sandstone chimney fall, square cut and round nails, and clear glass	Upland terrace	Undetermined

3.2 Cultural Resources Potential

In addition to the TASA review, several additional sources were referenced to determine the general potential for encountering cultural resources within the APE. These sources included the *Soil Survey of Stephens County, Texas*, the Geologic Atlas of Texas (Abilene Sheet), USGS topographic maps, the USDA NRCS digital soil database for Stephens County, the Texas Historic Overlay (THO) georeferenced maps, and both past and current aerial photography.

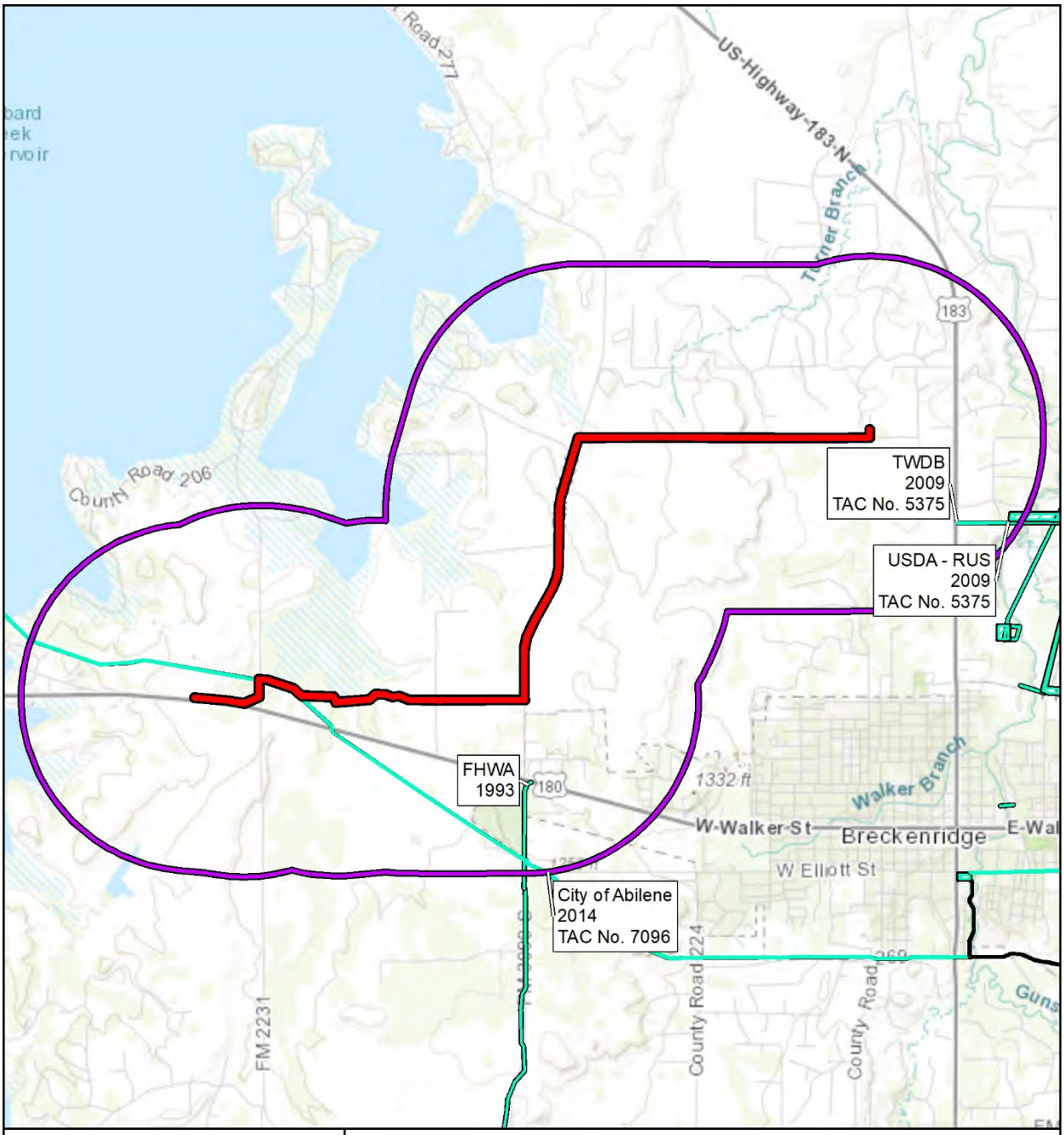

Figure 3.1
Previous Investigations Within
1 Mile of the APE

County: Stephens
State: Texas
Date map created: 5/4/2020
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.6
IES Project Ref: 04.302.003

3.2.1 Disturbance Analysis

During the background review, it was determined that ground-disturbing activities related to past land use have transpired within portions of the APE. Historical aerial photographs indicated that the properties within and adjacent to the APE were primarily used for agricultural or ranching purposes as early as 1953, and presumably since the late 19th and early 20th centuries. Based on a review of historical aerial photographs, the APE was primarily used for ranching purposes or remained undeveloped for most of the 20th century. The primary disturbances within the APE were related to oilfield activities such as two-track roads and existing pipelines intersecting with the APE. Natural disturbances, such as erosional activity, were also noted in the eastern portion of the APE.

In the westernmost portion of the project area, historical topographic maps and aerial photographs dating to the 1950s illustrate various unpaved oilfield and ranch roads and an existing pipeline intersecting the APE. Within the central portion of the APE, which extends east-to-west from FM 313 to CR 222, only minor disturbances were identified, including clearing of vegetation for agricultural fields. The portion of the APE that extends east-to-west from CR 222 to FM 3099 parallels an existing fence line that has been present on aerial photographs since 1953. This portion appears to have been historically used for agricultural purposes.

The section of the APE within the FM 3099 corridor was used for grazing and agriculture prior to roadway construction and currently dominates land use on adjacent properties. According to the historical maps and aerial photographs, this area has been subject to very few disturbances with the exception of the construction of FM 3099 between 1975 and 1981.

From FM 3099 to an existing pipeline west of US 183, the APE has been subject to various disturbances. The primary land uses in this section have been ranching, agriculture, and fossil fuel extraction. Various two-track roads intersect with the APE. The easternmost section the APE has been subject to pockets of erosional activity along two unnamed tributaries of Turner Branch and a wash that leads to an oil field north of the project area. Overall, the majority of the APE has not been subject to significant historic or modern ground disturbances with the exception of FM 3099 construction.

3.2.2 Prehistoric Resource Potential

One prehistoric archeological site (41SE307) was recorded within 1 mi of the APE. The site was documented as a quarry containing lithic debitage and cores. In addition, a couple of prehistoric archeological sites have been documented along the nearby Gunsolus Creek watershed to the east of the project area. Previously recorded sites within the watershed occupy both the upland terrace escarpments as well as the floodplain of Gunsolus Creek, such as 41SE307 and 41DE290, respectively. They consisted of a lithic procurement site that included a surface scatter of chipped stone and an open occupation site that included lithic debitage and burned rock with potentially buried deposits within the floodplain.

Although the soils along the low-order, intermittent tributaries within the region have the potential to be up 1.3 m in depth, it was considered that there was low potential for deeply-buried cultural resources to exist in those locations. Deep, frequently flooded alluvial soils constitute only 2.4 percent of the APE along Dry Branch and Rush Branch. These tributaries are high within the Hubbard Creek watershed and lack associated floodplains, which creates a setting more conducive for high velocity flood events than alluvial deposition over longer periods of time. As such, portions of the APE located along terraces and the margins of dissected uplands in proximity to those streams were considered to have likely retained a moderate to high potential for containing prehistoric cultural deposits, but potential sites were not likely to be deeply buried by alluvial sediment deposition. In addition, preliminary plans called for boring at stream crossings which would have minimal surface impacts as the boring would occur far below Holocene-age soils.

3.2.3 Historic-Period Resource Potential

Historic-period resources within the region are primarily related to farmsteads, houses, and associated outbuildings and structures that date from the mid-19th to the mid-20th centuries. Typically, these types of resources are located along old roadways, but can be located along railroads, streams, and open pastures. Although determining the presence of the earliest of these buildings and structures is problematic, maps depicting these features in the vicinity of the APE are available as early as 1936.

Based on a review of historical maps and aerial photographs, the majority of the APE was devoid of historic-period resources with the exception of one area. Where the APE intersects CR 222, historic topographic maps and aerial photographs dating to the 1950s, indicate that a historic-age homestead with several structures/buildings was located directly north of the APE. Based on aerial photographs, the southernmost building was demolished between 1995 and 2004. This portion of the APE was considered to have a moderate to high potential for containing historic-period archeological deposits. However, in consideration of past ground disturbing activities and the lack of identified resources, the potential of encountering historic-age archeological resources with contextual integrity was considered low.

CHAPTER 4: METHODOLOGY

Prior to fieldwork, the IES staff conducted historical and archeological records reviews to determine the locations of previously recorded cultural resources within the APE and within a 1-mi radius of the direct APE (*see* **Section 3.1**). IES staff also reviewed ecological, geologic, and soils data, as well as historical and modern topographic maps and aerial photography of the APE. As this survey was permitted by the THC prior to 17 April 2020, the methods utilized during this survey meet the minimum archeological survey standards for field investigations recommended by the CTA and adopted by the THC in 2001 (CTA 2001).

4.1 Survey Methods

4.1.1 Pedestrian Survey

The pedestrian reconnaissance survey consisted of visual examination of the ground surface and existing subsurface exposures for evidence of archeological sites and historic-age architectural resources within the APE. The survey utilized a single transect scheme implemented across the entirety of the APE. The pedestrian survey also confirmed the locations of previous disturbances initially identified during the background review. Areas displaying high levels of disturbance were confirmed through shovel testing and photographically documented to illustrate the lack of potential for intact archeological deposits. Other documentation methods included narrative notes, maps, and intensive survey sampling forms, which include shovel test forms.

4.1.2 Intensive Survey

To sample for archeological materials in shallow contexts, shovel tests were excavated to 80 cm below surface (cmbs) or to the top of culturally sterile deposits, typically the argillic (Bt) subsoil horizon in this area. Each shovel test was at least 30 cm in diameter and was hand excavated in levels not exceeding 20 cm in thickness. Excavated soil was screened using ¼-in (0.64 cm) hardware mesh to facilitate the recovery of buried cultural materials. If clay content was high and could not be efficiently screened, the excavated soil was troweled through by hand and inspected for cultural deposits. Additionally, the physical properties of each natural stratigraphic level were recorded. All test locations were recorded on paper and plotted using hand-held Global Positioning System (GPS) units. Investigators documented the results of each shovel test on standardized forms. For linear projects, the THC Archeological Survey Standards for Texas require that 16 shovel tests be conducted per mi for each survey transect. Thus, it was anticipated that approximately 88 shovel tests would be required by the survey standards to be excavated during the intensive survey. However, the number of shovel tests varied based on the amount of disturbance, exposed bedrock or culturally sterile soil, ground visibility, and steep slope present within the APE, or if archeological site(s) were encountered. Overall, 93 shovel tests were excavated across the APE for this survey.

4.1.3 Site Recording

An archeological site is typically considered to be a spatially discrete area containing cultural resources. The recognition of a "site" is therefore contingent on content and extent. Content may refer to artifacts or cultural features encountered in surface or subsurface contexts, architectural elements, or other manifestations of past human activity. The extent of a site is based on the vertical and horizontal spatial arrangement of these cultural remains. For surficial materials, a site is defined as five or more artifacts of at least two different materials or functional classes located within the same vicinity (typically a 400 square m [m^2; 0.1-ac] area) or at least one cultural feature. The extent of the surface artifacts and cultural features are then defined as the site boundary. When artifacts or features are encountered in buried contexts, a site is defined within the extent of the culturally positive excavations. In cases where an excavated survey sampling location (i.e., shovel test) yields cultural materials, additional delineation excavations are conducted to define the boundary of the site. The spatial extent of the site is defined within the extent of positive excavations and surface artifacts or features when both are present. Shovel testing at 15-m intervals

during site delineation was also conducted to assist in site evaluation and boundary delineation. In addition, archival research was also used to define the limits of some historic-period archeological sites.

Cultural remains, meeting these criteria, are designated as a site, recorded on a Texas Archeological Site Data Form, and submitted to the Texas Archeological Research Laboratory (TARL) to be included in the TASA database. Conversely, discovery of cultural materials that do not meet these criteria are considered isolated occurrences of past human activity and are simply documented by location and content. Modern materials and features (i.e., less than 50 years old) are not considered sites, with only location and content noted during the survey. Depending on depositional integrity and cultural content, archeological sites can be eligible for inclusion in the NRHP or for designation as SALs. Cultural isolates and modern features are not eligible for inclusion in the NRHP or for designation as SALs because of their failure to meet the site definition and their inability to contribute important information to the understanding of history or prehistory.

4.1.4 Archival Research

Prior to field investigations, a suite of archival sources including historic maps and aerial photographs was reviewed to determine former land use patterns and the locations of historic-age (e.g., greater than 50 years old) structures within and surrounding the APE.

4.2 National Register Evaluation Criteria

The assessment of significance of a cultural resource is based on federal regulations and guidelines. The regulatory criteria for evaluating resources for inclusion in the National Register are codified under the authority of the NHPA as amended (36 CFR 60.4 [a–d]), and the Advisory Council on Historic Preservation (ACHP) has also set forth guidelines to use in determining site eligibility. Federal regulations indicate that "[t]he term 'eligible for inclusion in the National Register' includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet National Register listing criteria" (36 CFR 800.2[e]). Based on Advisory Council guidelines, any cultural resource that is included in or eligible for inclusion in the National Register is a historic property.

Subsequent to the identification of relevant historical themes and related research questions, four criteria for eligibility are applied. The regulations provide that the quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association and:

Criterion A: that are associated with events that have made a significant contribution to the broad patterns of our history; or

Criterion B: that are association with the lives of persons significant in our past; or

Criterion C: that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

Criterion D: that have yielded, or may be likely to yield, information important in prehistory or history [36 CFR 60.4(a–d)].

The principal objective is to determine whether a cultural resource possesses the potential to contribute to one or more of the above-defined criteria. Adequate information regarding site function, context, and chronological placement from both archeological and, if appropriate, historical perspectives is essential for cultural resources investigations. Because research questions vary as a result of geography, temporal period, and project design, determination of site context and chronological placement of cultural resources is a particularly important objective during the inventory and evaluation processes. Criterion D is generally associated with prehistoric, but also historic-era, archeological sites. Criteria A, B, and C typically reflect association with historic-era resources, rarely with prehistoric sites. The objective of the current project

was to locate and define both the horizontal and vertical extents of any cultural resources, document and describe those resources, and then, when adequate data were present, evaluate each for NRHP eligibility.

4.3 Curation

This survey employed a non-collection strategy. Artifacts observed on the ground surface and recovered within excavations were identified, quantified, photographed, and inventoried in the field and were returned to the provenience from which they were recovered. Project-related records, field notes, photographs, forms, and other documentation will be organized to curation facility standards. All project records will be temporarily stored at the IES office and will be permanently curated at the CAR at UTSA.

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CHAPTER 5: RESULTS

The archeological inventory for the Fort Griffin SUD Waterline Improvements Project was conducted 28 through 30 April 2020. During this archeological survey, the direct APE was subjected to reconnaissance survey transects and a systematic intensive survey. Pedestrian reconnaissance survey was conducted across 100 percent of the APE to confirm the extent of prior ground disturbances and assess the likelihood of encountering cultural resources. Ground surface visibility was variable and irregular across the APE, ranging from 0 to 100 percent. Intensive survey with systematic shovel test sampling in staggered intervals was conducted across the entire APE. During this survey, one historic-age site (41SE347) was documented within the APE. A survey photograph location map and general APE photographs are presented in **Appendix A**.

5.1 Archeological Survey Results

5.1.1 Pedestrian Survey Results

Vegetation was primarily a mix of oak woodlands and open tall grass prairie with overgrowth of mesquite trees (**Appendix A, Photographs 1** through **53**). The APE featured a topographic setting that was gently rolling with the exception of lowland areas near creeks and a prominent ridge east of FM 3099. The slopes of the ridge were observed to be heavily eroded with nearly 100 percent ground visibility (*see* **Appendix A, Photographs 38, 39, 46,** and **47**). No artifacts were observed on the ground surface of the slopes.

The APE, within modern road corridors, contained significant ground disturbance from past construction activities and erosion. At the time of survey, multiple road crossings over tributaries of Rush Branch were under construction (*see* **Appendix A, Photographs 25, 29, 30, 33,** and **35**). Between roadways, the APE was located within cattle pastures and former agricultural fields. Disturbances observed in these areas included utility lines, gravel oil field roads, land clearing, soil erosion, and surface impacts from cattle (*see* **Appendix A, Photographs 11, 13, 43, 44, 48, 49,** and **53**). Deer feeders and hunting blinds were observed on properties east of FM 3099 (*see* **Appendix A, Photograph 37**).

5.1.2 Intensive Survey and Shovel Testing Results

The intensive survey was conducted through a combination of systematic and judgmental shovel testing within portions of the APE with potential for containing archeological deposits. Shovel tests were conducted along a single transect. During the survey, 93 shovel tests were excavated throughout the APE, which exceeds the THC Minimum Survey Standards for area projects this size (**Figure 5.1**).

In upland areas, soils exposed within shovel tests revealed a shallow uniform profile of strong brown or dark yellowish brown (7.5YR 4/6 or 10YR 4/6) to depths of approximately 5 to 15 cmbs (**Table 5.1; Appendix A, Photographs 54** through **58**). Soil textures were generally characterized as sandy clay loam or sandy clay. These shovel tests were typically terminated due to disturbed or compact soils containing a dense layer of gravel and rock. Shovel tests excavated in lowland areas near water sources revealed soils that ranged from a yellowish brown (10YR 5/8 and 7.5YR 3/4) clay loam to a brown or strong brown (10YR 4/3 and 7.5YR 4/6) clay subsoil (**Appendix A, Photographs 59** through **64**). The maximum depth of these shovel tests was 80 cmbs with most terminating between 30 to 40 cmbs due to encountering the culturally sterile clay subsoil horizon or bedrock.

No subsurface artifacts were observed within shovel tests. In addition to shovel testing, subsurface exposures including animal burrows, disturbed patches, and exposed cut banks were examined.

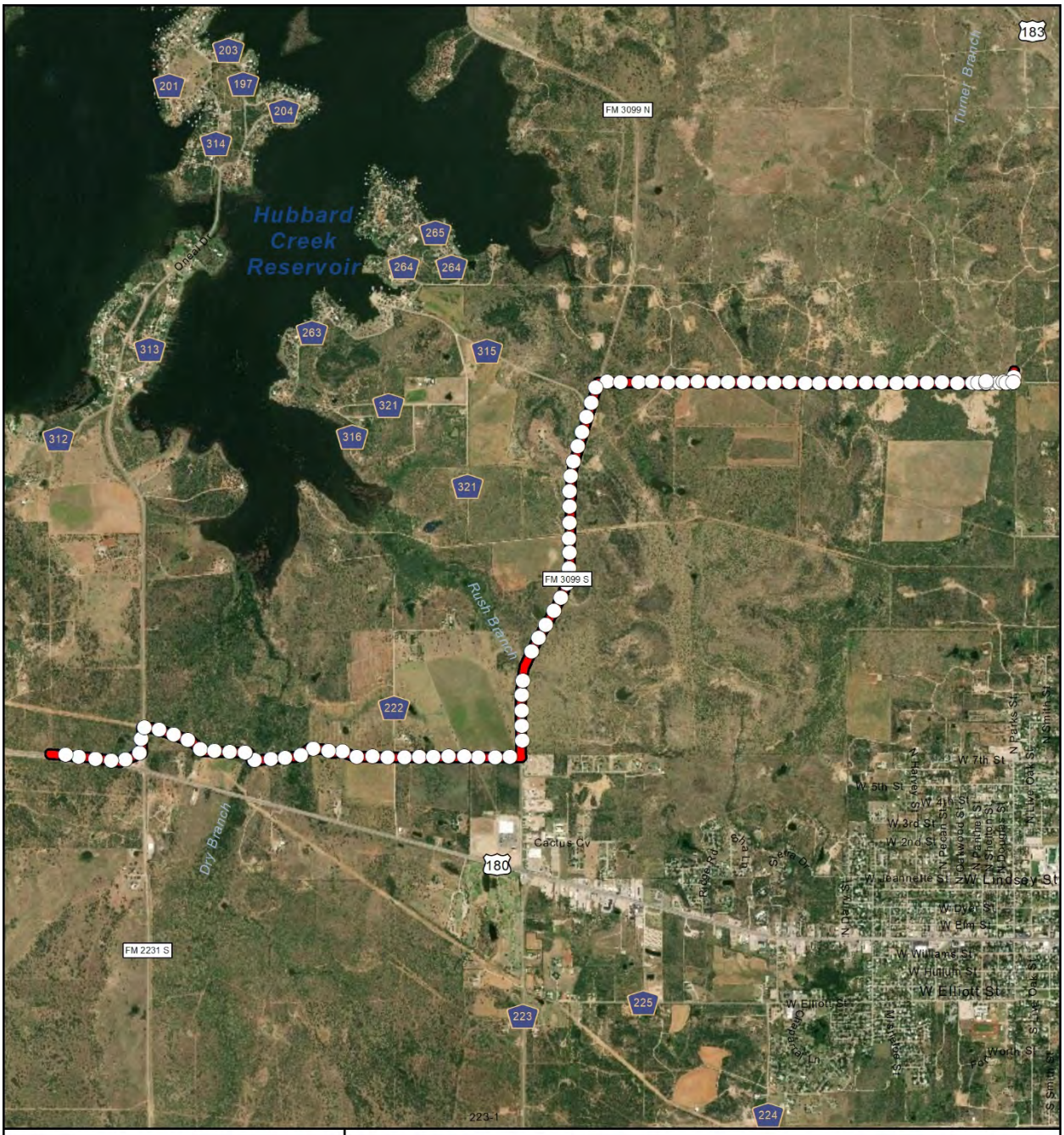

Figure 5.1
Shovel Test Location Map

County: Stephens
State: Texas
Date map created: 5/19/2020
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.6
IES Project Ref: 04.302.003

5.2 Encountered Cultural Resources

5.2.1 41SE347

During the IES survey, archeologists documented historic-aged site 41SE347. The site was encountered within approximately 300 m of the eastern APE terminus (**Figure 5.2**). The site was documented within an area extending approximately 43 ft (13 m) north-to-south by 600 ft (183 m) east-to-west, encompassing approximately 0.44 ac (0.18 ha) within the APE. The site was located on flat terrain dissected by two intermittent tributaries of Turner Branch (**Appendix A, Photographs 65** through **70**). The western half of the site featured a deeply incised erosional gully that was perpendicular to the largest of the tributaries (*see* **Appendix A, Photographs 65** and **66**). Ground surface visibility was high, approximately 70 to 100 percent, throughout the site during the survey due to erosion, compact clay soils, and vegetation consumption by fire ants. The site was delineated based on the distribution of surface artifact concentrations, negative shovel tests, the APE limits, water features, and observed disturbances.

Twelve shovel tests were excavated within and surrounding the 0.44-ac site. Shovel tests contained a soil profile characterized by an upper stratum of yellowish brown (10YR 4/6, 10YR 5/6, and 10YR 5/8) sandy clay or sandy clay loam (**Appendix A, Photograph 71**). Below the upper stratum, soils ranged from a light red (2.5YR 6/6) clay loam to a dark yellowish brown (10YR 4/3 and 10YR 4/6) sandy clay subsoil horizon. Shovel tests were generally terminated between 30 to 40 cmbs due to culturally sterile subsoil, disturbance, or compact soils. No subsurface artifacts were observed at the site.

5.2.1.1 Artifacts

The site was composed of multiple surface artifact concentrations. In the western half of the site, two concentrations were located on each side of the erosional gulley. This part of the site contained approximately 100 artifacts consisting primarily of unmarked whiteware sherds, bottle glass (solarized, cobalt blue, clear, milk), and old battery parts (**Appendix A, Photographs 72** through **77**). The artifact scatter north of the gulley contained a heavily solarized (c. 1890-1920 [Lindsey 2020]) glass bottle neck and finish with form characteristics dating to the late 19th or early 20th century (**Appendix A, Photograph 78**). On the south side of the gulley, a glass fragment of a candy dish shaped as a locomotive was observed. Although exact dates for the unmarked glass locomotive artifact could not be found, sale listings for similar pieces give a date range of 1920 to 1940 (**Appendix A, Photograph 79**).

The eastern half of the site featured two small artifact concentrations separated by a subsurface pipeline corridor. Compared to the other portion of the site, these surface scatters contained fewer overall artifacts (<50). Artifacts observed included bottle glass (clear, aqua, cobalt blue), milled lumber, and a metal can fragment (**Appendix A, Photographs 80** through **84**). Two sherds of stoneware with an Albany slip, which generally dates from the mid-19th to early 20th century (MACL 2020), were within the existing pipeline corridor (**Appendix A, Photographs 85** and **86**).

5.2.1.2 Background Research

According to historical maps and aerial photographs, no buildings or structures were located within or in the vicinity of the site. The site is located at the southeast corner of a property that was historically used for cattle ranching and oil extraction. Based on the ephemeral nature and location of the site, it appears the artifact scatter was associated with those working on the property.

5.2.1.3 Site Summary

Site 41SE347 represents an ephemeral historic-period surface artifact scatter dating to the first half of the 20th century. The site was located in an area approximately 43 ft (13 m) north-to-south by 600 ft (183 m) east-to-west and encompassed approximately 0.44 ac (0.18 ha) within the APE. Twelve negative shovel tests were excavated in proximity to the site during intensive survey and site delineation. Archeologists identified multiple surface concentrations of artifacts that included bottle glass, whiteware, and stoneware. No subsurface artifacts were encountered within the APE during the site delineation.

Restricted Information

Map Removed

Contained Archeological Site Location Information

Table 5-1: Shovel Test Results

Shovel Test	Stratum 1	Stratum 2	Stratum 3	Termination
AG1	0 - 5 cmbs: 10YR 5/4 clay loam	—	—	Compact Soil at 5 cmbs
AG2	0 - 30 cmbs: 10YR 5/4 clay loam	—	—	Compact Soil at 30 cmbs
AG3	0 - 5 cmbs: 10YR 5/4 clay loam	—	—	Compact Soil at 5 cmbs
AG4	0 - 5 cmbs: 7.5YR 4/4 clay	—	—	Compact Soil at 5 cmbs
AG5	Not excavated	—	—	Regolith/Bedrock at 0 cmbs
AG6	0 - 5 cmbs: 7.5YR 4/4 clay	—	—	Compact Soil at 5 cmbs
AG7	0 - 5 cmbs: 7.5YR 4/4 clay	—	—	Compact Soil at 5 cmbs
AG8	0 - 10 cmbs: 7.5YR 5/8 clay loam	—	—	Regolith/Bedrock at 10 cmbs
AG9	0 - 5 cmbs: 7.5YR 4/4 clay loam	—	—	Compact Soil at 5 cmbs
AG10	0 - 30 cmbs: 10YR 4/4 clay	—	—	Disturbed at 30 cmbs due to fill from past road construction
AG11	0 - 5 cmbs: 7.5YR 4/4 clay loam	—	—	Compact Soil at 5 cmbs
AG12	0 - 40 cmbs: 10YR 3/3 clay	—	—	Other at 40 cmbs
AG13	0 - 60 cmbs: 10YR 3/3 clay loam	—	—	Other at 60 cmbs
AG14	0 - 10 cmbs: 7.5YR 4/3 clay loam	10 - 30 cmbs: 7.5YR 4/3 clay loam	—	Sterile Subsoil at 30 cmbs
AG15	0 - 25 cmbs: 5YR 4/4 clay	—	—	Regolith/Bedrock at 25 cmbs
AG16	0 - 10 cmbs: 7.5YR 4/4 clay	—	—	Disturbed at 10 cmbs due to fill from past road construction
AG17	0 - 5 cmbs: 10YR 4/4 clay	—	—	Compact Soil at 5 cmbs
AG18	0 - 5 cmbs: 7.5YR 4/4 clay loam	—	—	Compact Soil at 5 cmbs
AG19	0 - 5 cmbs: 10YR 4/6 loam	—	—	Regolith/Bedrock at 5 cmbs
AG20	0 - 15 cmbs: 7.5YR 4/6 clay loam	15 - 25 cmbs: 7.5YR 4/6 sandy clay	—	Sterile Subsoil at 5 cmbs
AG21	0 - 5 cmbs: 10YR 4/6 sandy clay loam	—	—	Regolith/Bedrock at 5 cmbs
AG22	0 - 5 cmbs: 7.5YR 4/6 sandy clay loam	—	—	Compact Soil at 5 cmbs
AG23	0 - 6 cmbs: 7.5YR 4/6 sandy clay	—	—	Compact Soil at 6 cmbs
AG24	0 - 10 cmbs: 7.5YR 4/6 sandy clay	—	—	Regolith/Bedrock at 10 cmbs
AG25	0 - 30 cmbs: 7.5YR 3/4 sandy clay loam	30 - 40 cmbs: 7.5YR 4/6 sandy clay	—	Sterile Subsoil at 40 cmbs
AG26	0 - 5 cmbs: 7.5YR 4/6 sandy clay loam	—	—	Compact Soil at 5 cmbs
AG27	0 - 10 cmbs: 7.5YR 4/6 sandy clay loam	—	—	Compact Soil at 10 cmbs
AG28	0 - 5 cmbs: 10YR 6/4 sandy clay loam	5 - 25 cmbs: 10YR 4/3 sandy clay loam	25 - 30 cmbs: 10YR 4/3 clay	Sterile Subsoil at 30 cmbs
AG29	0 - 1 cmbs: 10YR 5/4 sand	—	—	Regolith/Bedrock at 1 cmbs
AG30	0 - 30 cmbs: 10YR 4/6 sandy clay loam	30 - 35 cmbs: 10YR 4/6 sandy clay	—	Sterile Subsoil at 35 cmbs
AG31	0 - 20 cmbs: 10YR 4/6 sandy clay loam	—	—	Regolith/Bedrock at 20 cmbs
AG32	0 - 30 cmbs: 7.5YR 4/6 sandy clay	—	—	Compact Soil at 30 cmbs
AG33	0 - 5 cmbs: 10YR 5/8 sandy clay loam	5 - 25 cmbs: 10YR 3/6 clay loam	25 - 30 cmbs: 10YR 3/6 clay	Sterile Subsoil at 30 cmbs

Shovel Test	Stratum 1	Stratum 2	Stratum 3	Termination
AG34	0 - 10 cmbs: 10YR 5/8 sandy clay loam	—	—	Regolith/Bedrock at 10 cmbs
AG35	0 - 5 cmbs: 10YR 5/8 sandy clay	5 - 30 cmbs: 10YR 4/3 clay loam	30 - 35 cmbs: 10YR 4/3 clay	Sterile Subsoil at 35 cmbs
AG36	0 - 20 cmbs: 10YR 4/6 sandy clay loam	20 - 30 cmbs: 10YR 4/2 clay	—	Sterile Subsoil at 30 cmbs
AG37	0 - 30 cmbs: 7.5YR 4/3 clay loam	30 - 35 cmbs: 7.5YR 4/3 clay	—	Sterile Subsoil at 35 cmbs
AG38	0 - 10 cmbs: 7.5YR 5/6 sandy clay loam	10 - 30 cmbs: 7.5YR 3/4 clay loam	—	Regolith/Bedrock at 30 cmbs
AG39	0 - 20 cmbs: 7.5YR 3/4 sandy clay loam	—	—	Regolith/Bedrock at 20 cmbs
AG40	0 - 10 cmbs: 7.5YR 4/4 clay	—	—	Compact Soil at 10 cmbs
AG41	0 - 10 cmbs: 10YR 4/6 sandy clay loam	—	—	Compact Soil at 10 cmbs
AG42	0 - 5 cmbs: 10YR 4/6 sandy clay loam	—	—	Compact Soil at 5 cmbs
AG43	0 - 80 cmbs: 7.5YR 3/4 clay loam	—	—	Depth at 80 cmbs
TL1	0 - 12 cmbs: 10YR 4/6 clay loam	—	—	Disturbed at 12 cmbs due to fill from past road construction
TL2	0 - 7 cmbs: 10YR 4/6 clay loam	—	—	Disturbed at 7 cmbs due to fill from past road construction
TL3	0 - 12 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 12 cmbs due to fill from past road construction
TL4	0 - 19 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 19 cmbs due to fill form past road construction
TL5	Not excavated	—	—	Disturbed at 0 cmbs due to modern construction
TL6	0 - 5 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 5 cmbs due to fill from past road construction
TL7	0 - 1 cmbs: 10YR 7/2 sand	—	—	Regolith/Bedrock at 1 cmbs
TL8	0 - 8 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 8 cmbs due to fill from past road construction
TL9	0 - 9 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 9 cmbs due to fill from past road construction
TL10	0 - 17 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 17 cmbs due to fill from past road construction
TL11	0 - 7 cmbs: 10YR 4/6 sandy clay	—	—	Compact Soil at 7 cmbs
TL12	0 - 6 cmbs: 10YR 4/6 sandy clay	—	—	Compact Soil at 6 cmbs
TL13	Not excavated	—	—	Disturbed at 0 cmbs due to modern construction
TL14	0 - 15 cmbs: 10YR 5/4 sandy clay	15 - 31 cmbs: 10YR 4/6 sandy clay	—	Compact Soil at 31 cmbs
TL15	0 - 15 cmbs: 10YR 5/4 sandy clay	15 - 23 cmbs: 10YR 4/6 sandy clay	—	Compact Soil at 23 cmbs
TL16	0 - 25 cmbs: 10YR 4/6 sandy clay	25 - 35 cmbs: 10YR 3/5 clay loam	—	Compact Soil at 35 cmbs
TL17	0 - 15 cmbs: 10YR 5/8 sandy clay	—	—	Compact Soil at 15 cmbs
TL18	0 - 29 cmbs: 10YR 5/4 sandy clay	29 - 45 cmbs: 10YR 4/6 clay loam	—	Sterile Subsoil at 45 cmbs
TL19	0 - 29 cmbs: 10YR 4/3 clay loam	29 - 52 cmbs: 2.5Y 5/3 clay	—	Sterile Subsoil at 52 cmbs

Shovel Test	Stratum 1	Stratum 2	Stratum 3	Termination
TL20	0 - 15 cmbs: 10YR 5/6 clay loam	—	—	Disturbed at 15 cmbs due to fill from past road construction
TL21	0 - 5 cmbs: 10YR 4/6 sandy clay	—	—	Disturbed at 5 cmbs due to fill from past road construction
TL22	0 - 27 cmbs: 10YR 4/3 clay	27 - 42 cmbs: 10YR 4/3 clay	—	Sterile Subsoil at 42 cmbs
TL23	0 - 21 cmbs: 10YR 6/6 clay loam	21 - 61 cmbs: 10YR 3/4 sandy clay loam	—	Sterile Subsoil at 61 cmbs
TL24	0 - 20 cmbs: 5YR 4/4 clay loam	20 - 46 cmbs: 7.5YR 4/6 clay loam	46 - 60 cmbs: 7.5YR 4/6 sandy clay	Sterile Subsoil at 60 cmbs
TL25	0 - 20 cmbs: 7.5YR 3/4 clay loam	20 - 21 cmbs: 7.5YR 4/6 clay	—	Compact Soil at 21 cmbs
TL26	0 - 18 cmbs: 7.5YR 4/6 clay loam	18 - 22 cmbs: 7.5YR 4/6 clay	—	Compact Soil at 22 cmbs
TL27	0 - 15 cmbs: 10YR 3/4 clay loam	—	—	Compact Soil at 15 cmbs
TL28	0 - 30 cmbs: 10YR 3/4 clay loam	30 - 40 cmbs: 10YR 3/4 clay	—	Compact Soil at 40 cmbs
TL29	0 - 4 cmbs: 10YR 4/6 sandy loam	—	—	Regolith/Bedrock at 4 cmbs
TL30	0 - 19 cmbs: 10YR 6/4 sandy loam	19 - 42 cmbs: 10YR 4/6 sandy clay loam	—	Sterile Subsoil at 42 cmbs
TL31	0 - 7 cmbs: 10YR 4/6 clay loam	—	—	Compact Soil at 7 cmbs
TL32	0 - 50 cmbs: 10YR 5/6 sand	50 - 60 cmbs: 10YR 4/6 clay loam	—	Sterile Subsoil at 60 cmbs
TL33	0 - 28 cmbs: 10YR 4/6 sandy clay	28 - 35 cmbs: 10YR 3/4 clay loam	—	Sterile Subsoil at 35 cmbs
TL34	0 - 7 cmbs: 10YR 4/6 clay loam	—	—	Compact Soil at 7 cmbs
TL35	0 - 17 cmbs: 10YR 4/6 sandy clay	17 - 32 cmbs: 2.5YR 5/6 clay loam	—	Sterile Subsoil at 32 cmbs
TL36	Not excavated	—	—	Other at 0 cmbs
TL37	0 - 29 cmbs: 10YR 5/6 sandy clay	29 - 40 cmbs: 10YR 5/6 clay loam	—	Sterile Subsoil at 40 cmbs
TL38	0 - 22 cmbs: 10YR 4/6 clay loam	—	—	Sterile Subsoil at 22 cmbs
TL39	0 - 12 cmbs: 10YR 4/6 clay loam	—	—	Sterile Subsoil at 12 cmbs
TL40	0 - 22 cmbs: 10YR 5/6 sandy clay	22 - 31 cmbs: 10YR 5/6 clay loam	—	Sterile Subsoil at 31 cmbs
TL41	0 - 35 cmbs: 10YR 3/6 sandy clay	35 - 41 cmbs: 2.5YR 6/6 clay loam	—	Regolith/Bedrock at 41 cmbs
TL42	0 - 10 cmbs: 10YR 4/6 sandy clay	10 - 21 cmbs: 10YR 4/6 clay loam	—	Sterile Subsoil at 21 cmbs
TL43	0 - 38 cmbs: 10YR 4/6 clay loam	38 - 51 cmbs: 10YR 3/4 clay	—	Sterile Subsoil at 51 cmbs
TL44	0 - 21 cmbs: 10YR 4/6 sandy clay	21 - 26 cmbs: 10YR 4/6 clay loam	—	Compact Soil at 26 cmbs
TL45	0 - 21 cmbs: 10YR 4/6 sandy clay	21 - 35 cmbs: 10YR 4/6 clay loam	—	Sterile Subsoil at 35 cmbs
TL46	0 - 40 cmbs: 10YR 4/6 clay loam	40 - 61 cmbs: 10YR 3/4 clay	—	Sterile Subsoil at 61 cmbs
TL47	0 - 12 cmbs: 10YR 4/6 sandy clay	12 - 18 cmbs: 10YR 4/6 clay loam	—	Compact Soil at 18 cmbs
TL48	0 - 7 cmbs: 10YR 4/6 sandy clay	7 - 13 cmbs: 10YR 4/6 clay loam	—	Compact Soil at 13 cmbs
TL49	0 - 20 cmbs: 10YR 4/6 sandy clay	20 - 28 cmbs: 10YR 4/6 clay loam	—	Compact Soil at 28 cmbs
TL50	0 - 10 cmbs: 10YR 4/6 clay loam	—	—	Compact Soil at 10 cmbs
TL51	0 - 11 cmbs: 10YR 4/6 clay loam	—	—	Compact Soil at 11 cmbs
TL52	0 - 12 cmbs: 10YR 4/6 clay loam	—	—	Regolith/Bedrock at 12 cmbs
TL53	0 - 25 cmbs: 10YR 4/6 sandy clay	25 - 51 cmbs: 10YR 3/4 clay loam	—	Sterile Subsoil at 51 cmbs

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CHAPTER 6: SUMMARY AND RECOMMENDATIONS

During this cultural resources survey for the Fort Griffin SUD Waterline Improvements Project, the 39.45-ac APE was systematically and intensively investigated through pedestrian survey augmented by the excavation of 96 shovel tests within areas that had potential for containing archeological deposits. Through the survey, one historic-period archeological site (41SE347) was documented. A summary of the archeological resource located within the APE and NRHP/SAL eligibility recommendations are provided within this chapter and within **Table 6.1**. Based on recent investigations, IES considers 100 percent of the APE to be fully assessed for archeological resources at this time and recommends that no further work is warranted.

Table 6.1: Summary of NRHP/SAL Eligibility Recommendations

Resource ID	NRHP/SAL Eligibility Recommendations
41SE347	Not Eligible within the APE

41SE347 was a newly recorded archeological site representing a historic-age surface scatter dating to the first half of the 20th century. The site comprised a 43 ft (13 m) north-to-south by 600 ft (183 m) east-to west area, encompassing approximately 0.44 ac (0.18 ha) within the APE. At the time of survey, the site contained multiple artifact concentrations containing bottle glass and ceramic fragments. Based on the lack of association with a significant historical event(s) or person(s), the absence of innovative or artistic design elements or architectural features, and the low potential to yield significant archeological data, the portion of 41SE347 within the APE is recommended as not eligible for listing in the NRHP under Criteria A, B, C, or D nor considered for SAL designation. No further evaluation or mitigation efforts are recommended for this site.

It is the recommendation of IES that the Fort Griffin SUD Waterline Improvements Project be permitted to continue without the need for further cultural resources investigations. However, if any cultural resources are encountered during construction, the operators should immediately cease construction activities in those areas. The project cultural resources consultant should then be contacted to initiate further consultation with the THC prior to resuming construction activities. In addition, if project designs change, and areas outside the APE detailed within this report are to be impacted, additional field investigations may be required.

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APPENDIX A
Project Photograph Location Maps and Project Photographs

Restricted Information
Map Removed
Contained Archeological Site Location Information

Restricted Information

Map Removed

Contained Archeological Site Location Information

Restricted Information

Map Removed

Contained Archeological Site Location Information

Photograph 1 – Overview of APE near US 180, view to the west.

Photograph 2 – Overview of APE near US 180, view to the east.

Photograph 3 – US 180 right-of-way (ROW), view to the west.

Photograph 4 – Steep grade in US 180 ROW, view to the west.

Photograph 5 – Overview of APE, view to the northeast.

Photograph 6 – Intersection of US 180 and FM 2231, view to the south.

Photograph 7 – FM 2231 corridor, view to the north.

Photograph 8 – Recent drainage construction along FM 2231, view to the east.

Photograph 9 – Overview of APE, view to the west.

Photograph 10 – Overview of APE, view to the west.

Photograph 11 – Overview of APE, view to the east.

Photograph 12 – Overview of APE, view to the west.

Photograph 13 – Lowland area associated with Dry Branch, view to the southeast.

Photograph 14 – Abandoned vehicles, view to the northwest.

Photograph 15 – Lowland area associated with Dry Branch, view to the southeast.

Photograph 16 – Vegetation near AG43, view to the north.

Photograph 17 – Overview of APE, view to the west.

Photograph 18 – Overview of APE, view to the west.

Photograph 19 – Overview of APE, view to the east.

Photograph 20 -Overview of APE, view to the west.

Photograph 21 – Overview of APE, view to the south.

Photograph 22 – Overview of APE, view to the west

Photograph 23 – FM 3099 ROW, view to the north.

Photograph 24 – FM 3099 ROW, view to the south.

Photograph 25 – Current construction on FM 3099 at Rush Branch, view to the north.

Photograph 26 – Gravel along roadway, view to the west.

Photograph 27 – FM 3099 corridor, view to the south.

Photograph 28 – FM 3099 corridor, view to the north.

Photograph 29 – Recent rip-rap installation within drainage, view to the south.

Photograph 30 – Installation of a box culvert under FM 3099, view to the north.

Photograph 31 – Private driveway and FM 3099 shoulder, view to the north.

Photograph 32 – FM 3099 ROW, view to the north.

Photograph 33 – Modern ground disturbance, view to the north.

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Photograph 55 – Shovel test AG08 soil profile.

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Photograph 59 – Shovel test AG14 soil profile.

Photograph 60 – Shovel test AG43 soil profile.

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Photograph 64 – Shovel test AG38 soil profile.

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Photograph 66 – 41SE347, erosional gulley through site, view to the east.

Photograph 67 – 41SE347, overview of site, view to the east.

Photograph 68 – 41SE347, overview of site, view to the east.

Photograph 69 – 41SE347, overview of site, view to the east.

Photograph 70 – 41SE347, eastern drainage area within site, view to the south.

Photograph 71 – 41SE347, shovel test AG33 soil profile.

Photograph 72 – 41SE347, artifact scatter on northside of gulley in western half of site.

Photograph 73 – 41SE347, artifact scatter on northside of gulley in western half of site.

Photograph 74 – 41SE347, whiteware sherds.

Photograph 75 – 41SE347, cobalt blue glass shard.

Photograph 76 – 41SE347, milk glass jar fragment.

Photograph 77 – 41SE347, milk glass jar fragment.

Photograph 78 – 41SE347, solarized glass bottle neck and finish

Photograph 79 – 41SE347, glass train figurine fragment from southside of gulley.

Photograph 80 – 41SE347, lumber and glass in eastern half of site.

Photograph 81 – 41SE347, glass sherds.

Photograph 82 – 41SE347, metal can fragment.

Photograph 83 – 41SE347, artifact scatter in eastern half of site.

Photograph 84 – 41SE347, artifact scatter in eastern half of site.

Photograph 85 – 41SE347, Albany slip stoneware rim sherd fragment.

Photograph 86 – 41SE347, Albany slip stoneware fragment.

APPENDIX B
Archeological Site Location Map

Restricted Information
Map Removed
Contained Archeological Site Location Information

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