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Cultural Resources Survey for the Granbury East Wastewater TreatmentPlant, City of Granbury, Hood County, Texas (TWDB Project No. 73813)

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CULTURAL RESOURCES REPORT

Cultural Resources Survey for the Granbury East Wastewater Treatment Plant, City of Granbury, Hood County, Texas (TWDB Project No. 73813)

Prepared for:

Texas Water Development Board
&
Texas Historical Commission
Texas Antiquities Permit #9401

On Behalf of:

City of Granbury
&
Enprotec/Hibbs & Todd, Inc.

June 2020

Report Contains Archeological Site Locational Information – Not for Public Distribution

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Cultural Resources Survey for the Granbury East Wastewater Treatment Plant, City of Granbury, Hood County, Texas (TWDB Project No. 73813)

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Cultural Resources Report
June 2020

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ABSTRACT

This report presents the substantive findings of a cultural resources survey for the Granbury East Wastewater Treatment Plant (WWTP) Project, which is a component to the Wastewater Phase I Improvements Project reviewed by the Texas Water Development Board [TWDB] under Project No. 73813. The proposed Granbury East WWTP is located within a 10.6-acre (ac) property located at 3121 Old Granbury Road in the City of Granbury, Hood County, Texas.

As the City of Granbury is a political entity of the State of Texas, the City is required to comply with the Antiquities Code of Texas (ACT). In addition, as the project will require federal funding from the Environmental Protection Agency through the TWDB Clean Water State Revolving Fund (CWSRF) the project must comply with the National Environmental Policy Act (NEPA), which requires compliance with the National Historic Preservation Act (NHPA).

The goal of the survey was to locate, identify, and document any cultural resources, which include architectural features and archeological sites, and to evaluate such resources for their potential eligibility for inclusion in the National Register of Historic Places (NRHP). The cultural resources survey was conducted by Project Archeologist Thomas Chapman on 30 April 2020 within an approximate 10.6-ac project area or Area of Potential Effects (APE). All work conformed to 13 Texas Administrative Code 26 (13 TAC 26), which outlines the regulations for implementing the ACT, and was conducted under Antiquities Permit No. 9401. During the survey, the site boundaries for one previously recorded archeological site (41HD96), were expanded to include a portion of the current APE. Based on the lack of association with historically important individuals or events, absence of significant architectural features, and the limited archeological data potential of the site, it is the recommendation of IES that 41HD96 be considered not eligible for listing in the NRHP or designation as a SAL.

Based on the findings of this cultural resources survey, IES is requesting concurrence for the APE and a "no historic properties affected" determination per 36 Code of Federal Regulations 800.4(d)(1). It is the recommendation of IES that the Texas Historical Commission (THC) concur with these findings and the Granbury East WWTP (TWDB Project No. 73813) be permitted to continue without the need for further cultural resources investigations. However, if any cultural resources (other than those documented within this report) are encountered during construction, the operators should immediately cease work in the area of the inadvertent discovery. The project cultural resources consultant should then be contacted to initiate further consultation with the THC prior to resuming construction activities. All project records generated by this project will be permanently stored at the IES office in McKinney, Texas.

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CHAPTER 1: PROJECT DESCRIPTION

The report presents a brief description of the project history, project area or Area of Potential Effect (APE), environmental setting, and methodology; followed by the results of the investigations and recommendations. Written in accordance with the guidelines for reports prepared by the Council of Texas Archeologists (CTA 2002), this report serves as the cultural resources report to satisfy the Antiquities Code of Texas (ACT) and National Historic Preservation Act (NHPA) Section 106 requirements.

1.1 Introduction

As the cultural resources consultant on this project for Enprotec/Hibbs & Todd, Inc. (eHT), on behalf of the City of Granbury, Integrated Environmental Solutions, LLC (IES) performed a cultural resources inventory to locate any prehistoric- or historic-period cultural resources within the proposed Granbury East Wastewater Treatment Plant (WWTP), which is a component to the Wastewater Phase I Improvements Project reviewed by the Texas Water Development Board [TWDB] under Project No. 73813. Proposed WWTP construction will transpire within an approximate 10.6-acre (ac) APE at 3121 Old Granbury Road, City of Granbury, Hood County, Texas (**Figure 1.1**).

1.2 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], 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.

1.3 Regulatory Framework

1.3.1 - *Antiquities Code of Texas*

As the project will transpire on land owned or controlled by the City of Granbury, which is a political subdivision of the State of Texas, the proposed 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 an 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 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.

1.4 Project History

In January 2018, IES was contracted by Pacheco Koch Consulting Engineers (PKCE) to conduct a cultural resources survey of a 51-ac property to ensure compliance with Section 404 of the Clean Water Act (CWA). At the time of the survey, the entire 51-ac property was privately owned, the project was privately sponsored, and there were no known archeological sites within the property limits. Therefore, it was determined that the project was not subject to the requirements of the ACT. During the survey, IES encountered one archeological site (41HD96) within the 51-ac property, which was delineated and reported to the Texas Archeological Research Laboratory (TARL) in Austin. After the completion of the survey, a 10.6-ac portion of the overall property was sold to the City of Granbury. The City intended to utilize this newly acquired property for the proposed Granbury East WWTP.

Figure 1.1
General Location Map

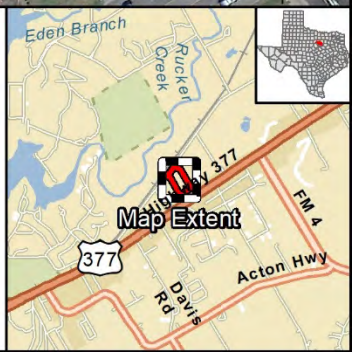
County: Hood
State: Texas
Date map created: 2/4/2020
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5 Streetmap
IES Project Ref: 04.317.002

Area of Potential Effects - Direct

N

1 inch = 200 ft

0 200 ft



In 2019, eHT was contracted by the City of Granbury to design the Granbury East WWTP within the newly acquired City of Granbury property and obtain environmental clearance from the TWDB. On 19 August 2019, the THC provided comment for the project under THC Track No. 201911135 for the Granbury Wastewater Phase I Improvements, which included the Granbury East WWTP. The THC provided comment that no historic properties were affected and did not require an archeological survey. No 911 address had been assigned to proposed Granbury East WWTP parcel at the time of the THC review, but a general address (3500 E. State Highway [SH] 377 and surrounding areas) along with project maps detailing the correct project limits were provided in the review request. The site was issued a new 911 address; it is presently 3121 Old Granbury Road, Granbury, Hood County.

On 16 September 2019 and on behalf of the City of Granbury, eHT submitted an application to the Texas Commission on Environmental Quality (TCEQ) for a new Texas Pollutant Discharge Elimination System (TPDES) permit for the new Granbury East WWTP. After the application was declared administratively complete, on 17 December 2019, the TCEQ sent the required Senate Bill 709 notices to interested parties and agencies, including the THC. On 18 December 2019, the THC provided comments for the TCEQ permit application under THC Track No. 202003649. The THC comment indicated an archaeological survey would be required due to the proximity of previously recorded site 41HD96. On 31 December 2019, eHT asked for confirmation that the THC's previous comment that "no historic properties are present or affected by the project as proposed" remained valid. On 02 January 2020, the THC stated that the previous THC comment issued under THC Track No. 201911135 was not valid as the project address had been changed. The THC requested that a detailed desktop analysis be conducted by a professional archeologist to determine if 41HD96 is within the area of direct impact for the project.

In January 2020, IES was contracted by eHT to conduct coordination with the THC for the proposed Granbury East WWTP. The contract between eHT and IES was limited to the utilization of existing cultural resources survey data collected by IES in 2018. No archeological surveys were conducted by IES on this property since the City of Granbury purchased the property or contracted eHT to design the Granbury East WWTP. As such, per the THC's request on 02 January 2020, IES provided detailed information regarding the location of 41HD96 in relation to the area of direct impact for the project. In addition, IES detailed the results of the intensive archeological survey conducted in 2018, and provided a thorough review of the project area to ensure that the project complied with the ACT and the NHPA Section 106 regulations.

In March and April 2020, the THC commented on the project under THC Tracking #202007391 and THC Tracking #202010062. As a result, in April 2020, IES conducted the cultural resources survey for the Granbury East WWTP under Texas Antiquities Permit number 9401. During this survey, the entire 10.6-ac property was surveyed under archeological survey standards requirements for field investigations recommended by the CTA and approved by the THC. Additionally, the 2020 survey assessed the potential for 41HD96 to extend into the APE.

1.5 Area of Potential Effects

1.5.1 - *Direct*

Design plans call for the construction of a new WWTP and will include the installation of screen system, influent lift station, secondary treatment process, disinfection system, and solids dewatering system. Ancillary infrastructure will include site piping, grading and paving, noise and odor mitigation systems, site lighting, and a control/support building, and a grit removal system (**Figure 1.2**). Proposed subsurface disturbances will be primarily restricted to the first few ft below the ground's surface. However, portions of the project will have deep ground disturbances (e.g., wet well structure) that will reach 25 ft below grade.

Figure 1.2
Area of Potential Effects

County: Hood
State: Texas
Date map created: 5/15/2020
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5
IES Project Ref: 04.317.002

1.5.2 - *Indirect*

As the project will require funding from the TWDB, indirect effects must be considered to satisfy Section 106 of the NHPA. The majority of project components that will remain permanently above ground will not exceed one story in height. The highest design elevation for the project will be for the dewatering building canopy, which will reach 23 ft above grade. To account for the potential indirect visual impacts associated with the project, a 100-ft buffer was evaluated surrounding the above ground project components.

As proposed construction will comply with all Section 404 of the CWA and TCEQ requirements the proposed undertaking will not increase or alter water flow along any tributary crossed by the project that could cause erosion to archeological sites downstream from the project. No other indirect effects are anticipated as a result of the construction of this project.

1.6 Administrative Information

Sponsor(s): City of Granbury and TWDB

Review Agency: TWDB, THC

Principal Investigator: Kevin Stone MA, RPA

Survey Members: Thomas Chapman, MA, RPA

IES Project Number(s): 04.317.002

Date(s) of Field Work: 30 April 2020

Area Surveyed: 10.6 ac

Archeological Sites Recommended Eligible for NRHP Under Criteria in 36 CFR 60.4: None

Archeological Sites Recommended Not Eligible for NRHP Under Criteria in 36 CFR 60.4: 41HD96

Architectural Resources Recommended Eligible for NRHP Under Criteria in 36 CFR 60.4: None

Architectural Resources Recommended Not Eligible for NRHP Under Criteria in 36 CFR 60.4: None

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).

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CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Climate

Hood County is located in the north-central portion of the State of Texas. This region has a humid subtropical climate and an average annual precipitation ranging from approximately 35 to 40 in (89 to 102 cm). About half of the precipitation usually falls as rain between April and May, with July and August being the two driest months of the year. The subtropical region tends to have a relatively mild year-round temperature with the occasional exceedingly hot and cold snaps (Estaville and Earl 2008).

2.2 Topographic Setting

The USGS Acton 7.5-minute topographic quadrangle map illustrates that the APE is located within a dissected upland terrace bordering the Brazos River floodplain. An unnamed tributary of Rucker Creek flowed west crossing the northeastern corner of the APE. Overall, the project area slopes toward the tributary that crosses the APE and features an elevation range of approximately 727 to 772 ft above mean sea level (amsl; **Figure 2.1**).

2.3 Geology and Soils

The APE is located within the Grand Prairie of the Cross Timbers ecoregion (Griffith et al. 2004). This area is distinguished from surrounding regions as an undulating plain that is underlain by Lower Cretaceous limestones that primarily support tallgrass prairie in upland areas and elm, pecan, and hackberry in lowland areas. Soils within the APE are underlain by Quaternary-age alluvium (Qal) and the Cretaceous-age Glen Rose Limestone (Kgr), which is characterized by thinly-bedded limestone with interbedded marl and clay (McGowen et al. 1987; **Figure 2.2**).

As shown by the *Soil Survey of Hood and Somervell Counties, Texas*, there are five mapped soil units within the project area (Coburn 1978; **Figure 2.3**; **Table 2.1**). Approximately 75.81 percent of the project area contains soils typical of the Grand Prairie ecoregion. The remaining 24.19 percent of the APE contains occasionally flooded soils. Soils data were viewed from the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (Web Soil Survey 2020).

Table 2.1: Soils Located within the APE

Soil Map Unit Description	Percentage of APE
1 - Aledo-Bolar association, 1 to 8 percent slopes - This component is described as gravelly clay loam located on ridges. Typical depth Bk subsoil or bedrock is 16 to 28 in (40 to 71 cm). The natural drainage class is well drained.	45.82
26 - Frio silty clay, 0 to 1 percent slopes, occasionally flooded - This component is described as silty clay located on floodplains. Typical Bk subsoil horizon depth is 40 to 80 in (102 to 203 cm). Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is well drained.	24.19
38 - Pedernales 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 11 to 20 in (28 to 51 cm). Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is well drained.	2.99
39 - Pedernales fine sandy loam, 3 to 5 percent slopes - This component is described as fine sandy loam located on ridges. Typical Bt subsoil horizon depth is 11 to 20 in (28 to 51 cm). Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is well drained.	23.16
53 - Venus loam, 1 to 3 percent slopes - This component is described as loam located on ridges and stream terraces. Typical Bk subsoil horizon depth is 14 to 30 in (36 to 76 cm). Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is well drained.	3.84

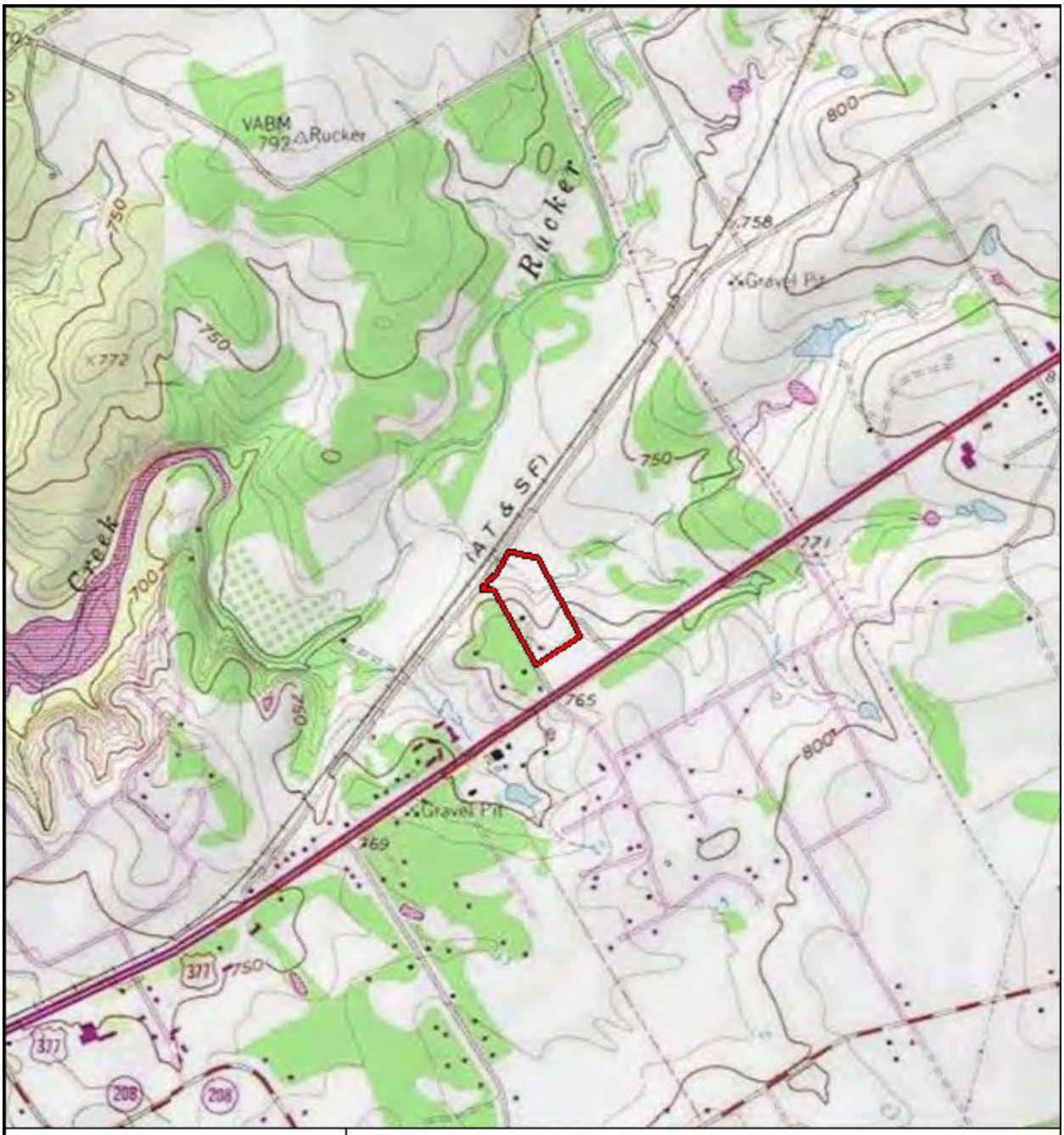

Figure 2.1
Topographic Setting

County: Hood
State: Texas
Date map created: 5/18/2020
Source: USGS Topographic Map
7.5' Quadrangle
Action (1980)
IES Project Ref: 04.317.002

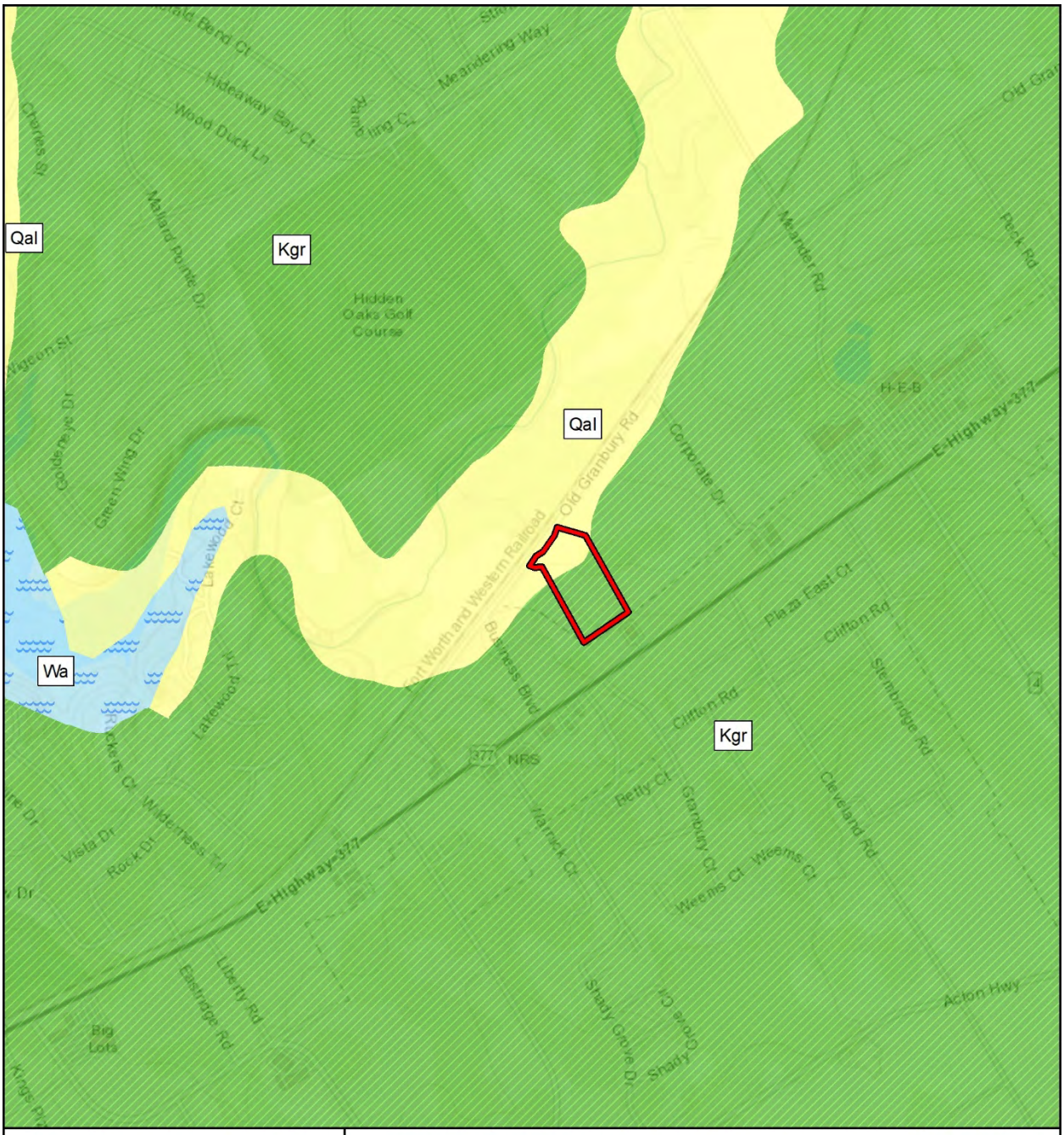

Figure 2.2
Geologic Setting

County: Hood
State: Texas
Date map created: 2/4/2020
Source: TNRIS Geologic Atlas of Texas; Dallas Sheet
IES Project Ref: 04.317.002

Area of Potential Effects - Direct

Geologic Formation

Kgr - Glen Rose Limestone

Qal - Alluvium

Wa - Water

N

1 inch = 1,500 ft

0 1,500 3,000 ft

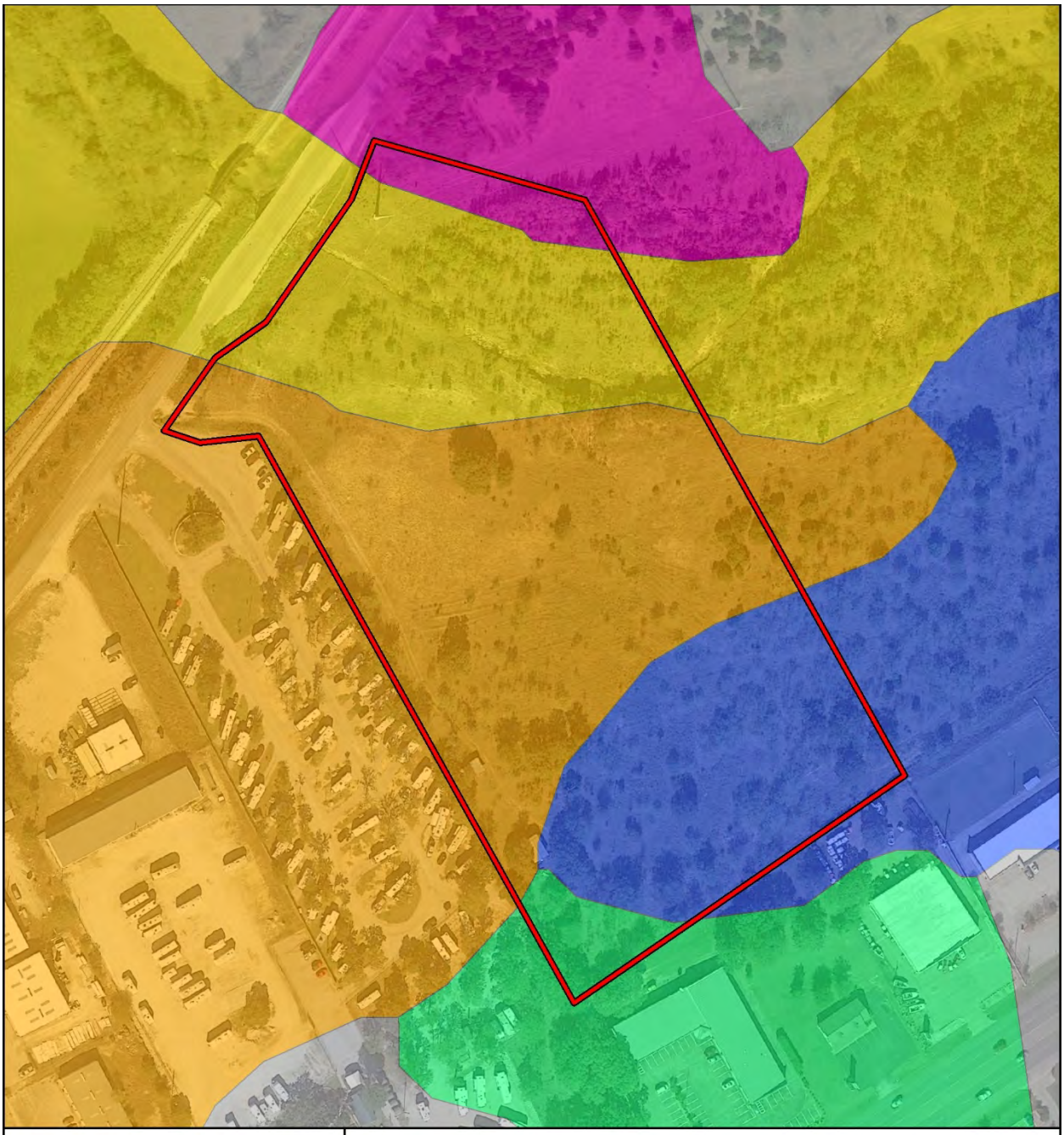

Figure 2.3
Soil Map Units Located Within and Adjacent to the APE

County: Hood
State: Texas
Date map created: 2/4/2020
Source: 2007 USDA
NRCS Digital Soils Database
IES Project Ref: 04.317.002

Area of Potential Effects - Direct

Soil Description

- 1 - Aledo-Bolar association, 1 to 8 percent slopes
- 26 - Frio silty clay, 0 to 1 percent slopes, occasionally flooded
- 38 - Pedernales fine sandy loam, 1 to 3 percent slopes
- 39 - Pedernales fine sandy loam, 3 to 5 percent slopes
- 53 - Venus loam, 1 to 3 percent slopes
- Other Values

N

1 inch = 200 ft

0 200 400 ft

CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

A file search within the Texas Archeological Site Atlas (TASA) and the Texas Historic Sites Atlas (THSA) databases, maintained by the THC and Texas Archeological Research Laboratory (TARL), indicate that there are no previously recorded archeological sites, National Register properties or districts, historical markers, or cemeteries located within the proposed APE (TASA 2020). TASA records indicated there are no previously recorded archeological sites and two previously conducted archeological surveys located within 1 mi (~1.6 km) of the APE. As discussed in *Section 1.4*, IES conducted a survey of approximately 51 ac in 2018 that entirely encompass the current APE but is not in the TASA database (**Figure 3.1; Tables 3.1** and **3.2**).

Table 3.1: Previous Archeological Surveys within 1 Mile of the APE

Agency	TAP No.*	Firm / Institution	Date	Survey Type	Location (Approximate)
National Park Service	n/a	Southern Methodist University	1971	Area	0.96 mi west of APE
Brazos Electric Power Cooperative, Inc.	n/a	Espey, Huston, and Associates	1981	Area	0.2 mi northeast of APE
USACE – SWF	n/a	IES	2018	Area	Encompasses entire APE

*TAP = Texas Antiquities Permit Number

Table 3.2: Previously Recorded Archeological Sites within 1 Mile of the Project Area

Site Trinomial	Time Period	Site Type	Site Size	Depth Extent	Cultural Materials	Topographic Setting	Reference
41HD96	Historic	Well	0.75 m^2	Unknown	Well	Upland	Chapman 2018

During the 2018 IES survey, one historic-period archeological site (41HD96) was encountered outside the current APE. Site 41HD96 was encountered on a gently-sloping upland terrace bordering the unnamed tributary to Rucker Creek. The site was comprised of a hand-dug well with rough-cut limestone blocks that was located outside the current APE. The well was associated with a farmstead that was depicted on the 1923 Granbury USGS topographic map and visually confirmed on the 1948 USDA aerial photograph. Aerial photographs illustrate the farmstead was demolished between 1995 and 2002. The well was approximately 60 m east of the former farmstead and was approximately 1 m in diameter with the uppermost course flush with the ground's surface. Only one lower course was visible as the well had been filled with earthen material. No additional limestone blocks were located adjacent to the well. Due to the lack of additional features and the associated artifacts within and/or surrounding the well, the site boundary of 41HD96 was restricted to limits of the hand-dug well. No surficial cultural materials were observed within and surrounding 41HD96 or the footprint of the historic-period farmstead.

3.2 Regional Historical Context

Prior to Anglo-American settlement, Hood County was home to the Comanche, Lipan Apache, and Kiowa tribes (Callaway 2019). Settlers began to arrive around 1850 to farm and raise livestock near the Brazos and Paluxy rivers. Hood County, named after Confederate Army Lt. General John Bell Hood, was established in 1866 with the town of Granbury as the county seat (Callaway 2019; Mayborn 2016). Due to a dispute over the location of the county seat, the southern half of the county split from Hood County to form Somervell County in 1875 (Callaway 2019).

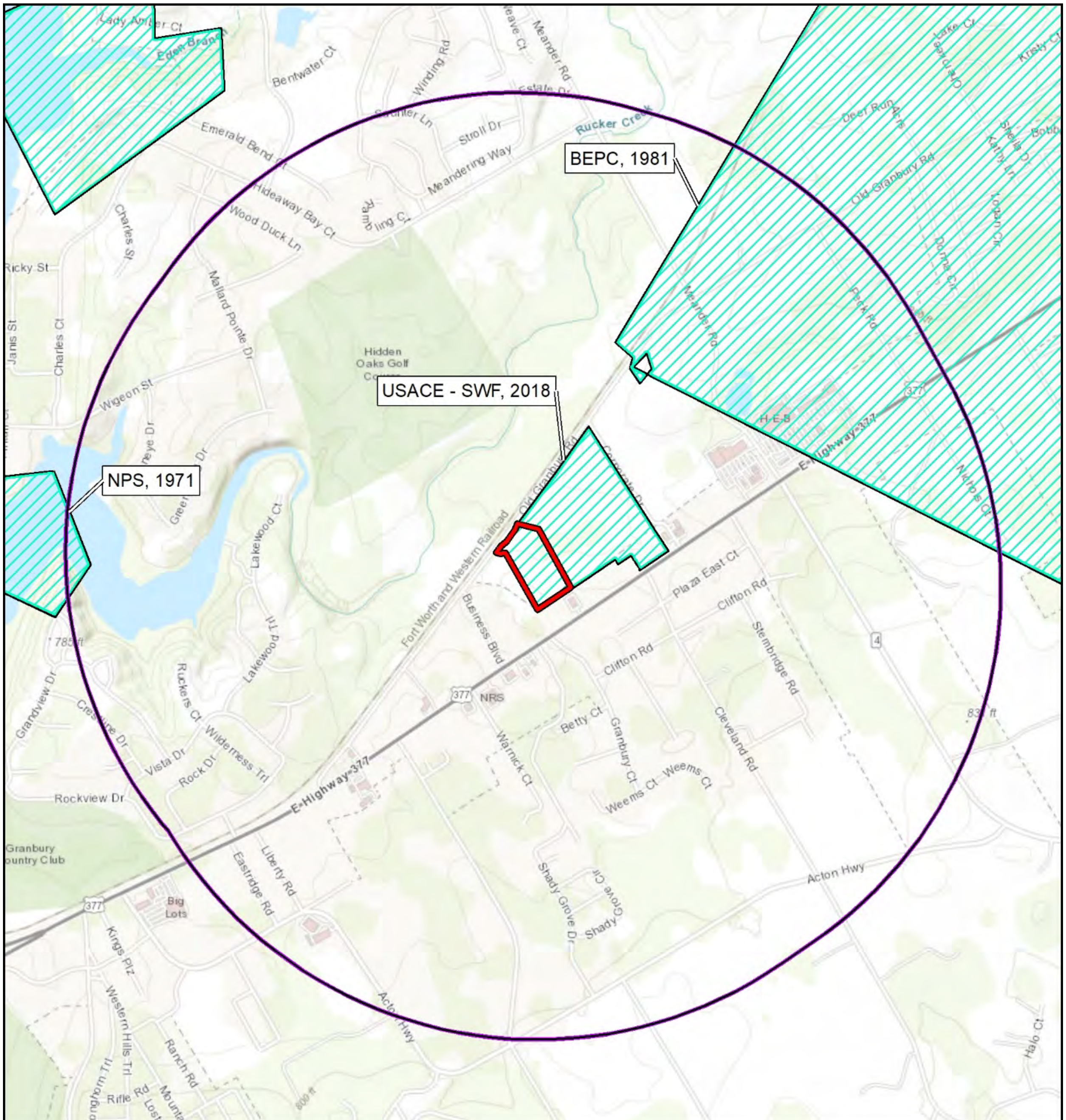

Figure 3.1
Previous Investigations Within 1 Mile of the APE

County: Dallas
State: Texas
Date map created: 2/4/2020
Source: (c) 2009 Microsoft Corporation and its data suppliers; ESRI 10.5
IES Project Ref: 04.317.002

Area of Potential Effects - Direct
Area of Potential Effects - 1 Mile Buffer
Previous Archeological Survey - Area
Previous Archeological Survey - Line

N

1 inch = 2,000 ft
0 2,000 4,000 ft

In 1887, the Fort Worth and Rio Grande Railway was constructed through Hood County with a stop in the town of Granbury. Like other towns and cities in Texas with a railroad stop, Granbury experienced economic growth in the 19th century that resulted in construction of many of its iconic historic buildings in downtown (Mayborn 2016). The railroad gave farmers and ranchers increased access to other markets in Texas. By 1910, the population of Hood County was over 10,000 residents (Callaway 2019). The economy of the county was largely based on livestock and crops, such as cotton, corn, and oats (Callaway 2019). However, after 1910, the county's population and number of farms declined.

Hood County and the City of Granbury experienced another period of growth after the damming of the Brazos River to create Lake Granbury in 1969. The lake's recreational appeal attracted new residents and businesses to the area. The county population tripled to over 17,000 residents. Businesses, especially in the retail sector, increased significantly (Callaway 2019). Tourism also increased in the area after the restoration of downtown Granbury. Although the lake brought new opportunities to the area, the county's economy was still primarily centered on agriculture and ranching. In 2014, Hood County had a population of over 52,000 residents (Callaway 2019).

3.3 Cultural Resources Potential

In addition to the TASA and THSA record reviews, several additional sources were referenced to determine the overall potential for encountering cultural resources within the APE. These sources included historic USGS topographic maps, the *Soil Survey of Hood and Somervell Counties, Texas*, the Geologic Atlas of Texas (Dallas Sheet), the USDA NRCS digital soil database for Hood County, the Texas Department of Transportation (TxDOT) Potential Archeological Liability Map (PALM) for Hood County, the Texas Historic Overlay (THO) georeferenced map database, and both historic and modern aerial imagery.

3.3.1 - *Disturbance Analysis*

During background review, it was determined that the APE was located within an undeveloped parcel that was historically utilized for agricultural and pastoral purposes as early as 1948. During the mid-20th century, the area north of the unnamed tributary was cultivated. A dwelling and a system of unpaved private roads occupied upland areas south of the tributary. Between 1995 and 2002, the parcels bordering the southern boundary of the project area were developed. During this time, the dwelling was demolished, and an overhead electric utility line was constructed through the central portion of the project area in an east-to-west alignment. Erosional scaring is visible north of the tributary and is most prevalent within the northern and western corner of the project area. At that time, a stock pond was filled, and a small channel was constructed within the eastern corner of the project area. By 2004, buried utility pipelines were installed along the overhead electric utility line easement. Erosional scarring is prevalent north of the powerline since 2013.

3.3.2 - *Archeological Potential*

3.3.2.1 - Prehistoric Resource

According to the TxDOT PALM for Hood and Somervell counties, the portion of the project area adjacent to the primary unnamed tributary contains a high potential for shallow and deeply buried prehistoric archeological resources, within a reasonable context. The potential for encountering prehistoric archeological resources decreases with distance from the tributary. During background review, it was determined that the central and southwestern corner of the project area has avoided significant disturbances and contains a reasonable context. The eastern corner, the western corner, and the portion of the project area north of the tributary have been significantly disturbed and do not contain a reasonable context. As such, the potential for encountering shallow or deeply buried cultural materials in these portions of the project area is reduced to low.

3.3.2.2 - Historic-Period Resource Potential

Direct APE

A review of historical maps and aerial photographs indicate that much of the land within and directly surrounding the APE has remained largely undeveloped. Historical topographic maps from 1923 and 1928 indicate a large residence located east of the APE, near the location of 41HD96. The presence of this residence was visually confirmed on a 1948 USDA aerial photograph. In the 1948 aerial photograph is a complex of a larger building and two or three smaller outbuildings, which are visible along the western edge of the APE (**Appendix B**). Unfortunately, due to the resolution of the image it is unclear what the buildings represent, but based on the road network connecting these buildings to the residence associated with the 41HD96 location, it is assumed that all the buildings are associated with the same landowner. The 1961 Acton 7.5' USGS topographic map illustrates a residence, with a dedicated access road, in the same locations as the larger building from the 1948 aerial photograph. No other buildings or structures were identified within the 1961 USGS topographic map within the APE. In the 1981 USDA aerial photograph, new dirt work and two new buildings appear where the 1948 building complex was located (*see* **Appendix B**). In addition, the building presumed from aerial photographs as the residence identified in the 1961 topographic map had been demolished. By 2004, only two buildings remain standing within the APE. One building pertains to the historic-age building first observed in the 1948 aerial photograph. The second pertains to a modern building constructed between 1976 and 1981 (*see* **Appendix B**).

Indirect APE

Through a review of modern aerial photography, no extant historic-age buildings or structures were identified within the indirect APE that could be historic-age (50 years in age or older).

CHAPTER 4: METHODOLOGY

The methods utilized during this survey exceed the minimum archeological survey standards requirements for field investigations recommended by the CTA (2001; 2002) and approved by the THC. Prior to field work, IES staff conducted historical and archeological records reviews and background research to determine the locations of previously recorded resources within the project area and within a 1-mi (1.6-km) radius of the project area (*see* **Section 3.1**). Additionally, IES staff reviewed ecological, geological, and soils data, as well as historical and modern maps and aerial photography of the project area. The indirect APE was reviewed for the presence of historic-age standing structures.

4.1 Archeological Survey

4.1.1 - *Pedestrian Survey*

The pedestrian survey consisted of visual examination of the ground surface and existing subsurface exposures for evidence of archeological sites within the survey area. The pedestrian survey was conducted in a multiple transect scheme, which was implemented across the entire APE. Transects were spaced at 30-m intervals generally orientated in northeast-to-southwest direction. Areas displaying high levels of modern ground disturbance, frequent inundation, and slopes greater than 30 percent were photographed to document the lack of potential to preserve intact archeological deposits. This pedestrian survey was supplemented by the excavation of shovel tests to assess for subsurface archeological deposits.

4.1.2 - *Intensive Survey*

In areas with potential for archeological materials, shovel tests were excavated to 80 cm or the bottom of culturally sterile deposits, whichever was encountered first. Each shovel test was 30 cm in diameter and was hand excavated in natural stratigraphic levels not exceeding 20 cm in thickness. Excavated soil was screened using ¼-in hardware cloth to test for the presence of buried cultural material. All tests were recorded on maps and plotted using hand-held Global Positioning System (GPS) units. Investigators documented the results of each test on standardized shovel test forms. According to the Archeological Survey Standards of Texas, for area projects displaying little to no disturbance, 1 shovel test should be excavated for every 2 ac. As such, a maximum of 6 shovel tests would be required for the project. However, shovel test numbers 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. All positive shovel tests, cultural features, and other site data was geospatially recorded using Trimble Geo XT hand-held GPS unit.

4.1.3 - *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 the direct APE and indirect APE. A deed title research was conducted for historic-age archeological resources identified within the APE. The purpose was to identify historically notable persons that were possibly associated with each resource. Initial research was carried out by examining deed and land title records through the Hood County Appraisal District and the Hood County Clerk's Office. The historic significance of identified persons associated with each resource were also researched using The Handbook of Texas Online database, genealogical websites, and various local history publications.

4.1.4 - *Site Delineation and Recording*

An archeological site is typically considered to be a spatially discrete area containing cultural artifacts and features. The recognition of a "site" is therefore contingent on the basis of 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-m² [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 or backhoe trench) 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. Archeological sites may also be defined within the extent of surface artifacts or features and culturally positive excavations when both are present.

Cultural remains meeting these criteria are designated as a site, recorded on a Texas Archeological Site Data Form, and submitted to the TARL to be included in the TASA database. Conversely, the 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 to be sites, with only location and content documented. Depending on depositional integrity and potential research value, archeological sites can be eligible for inclusion in the National Register of Historic Places (NRHP). Isolated artifacts and modern features are typically not eligible for inclusion in the NRHP because of their failure to meet the definition of an archeological site and inability to contribute important information to the understanding of history or prehistory.

4.2 Architectural Resources Survey

The purpose of the architectural resources survey is:

1) To locate both previously identified and unidentified architectural properties in the APE;
2) To identify the characteristics which the properties must possess to be eligible for NRHP listing;
3) To identify whether the properties retain sufficient integrity to be qualify for NRHP listing;
4) To determine if any properties require additional evaluation to determine historic significance; and
5) To determine if any historic properties are affected by the project.

Typical methods accepted by the THC place the cut-off date for historic-aged resources as those determined to be 50 years old or greater, which for this project was 1969. Architectural resources 50 years in age or older were visited to observe and briefly document location, type, age, material, and integrity, which was primarily through photographs and field notes. The existing conditions and architectural elements of each resource were evaluated for NRHP eligibility and potential adverse effects.

4.3 Resource Evaluation

Identified archeological sites are plotted on the appropriate 7.5-minute USGS topographic map and scaled site maps are prepared for each site. Field data are processed to evaluate site significance and potential eligibility for inclusion in the NRHP. When applicable, a variety of data are used to assess site significance including temporal period, artifact density, artifact variety, feature density, feature variety, feature preservation, stratigraphic integrity, and amount of disturbance.

4.3.1 - *National Register Evaluation Criteria*

The assessment of the significance of a cultural resource is based on federal guidelines and regulations. The criteria for evaluating resources for inclusion in the NRHP are codified under the authority of the NHPA of 1966, as amended (36 Code of Federal Regulations [CFR] 60.4 [a–d]), and the Advisory Council on Historic Preservation (ACHP) has 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 ACHP guidelines, any cultural resource that is included in or eligible for inclusion in the NRHP is a historic property.

Subsequent to the identification of relevant historical themes and related research questions, four criteria for eligibility are applied (36 CFR 60.4[a–d]). 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.

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. Criteria A, B, and C typically reflect association with historic-age resources, rarely with prehistoric sites. Criterion D is generally associated with prehistoric, but also historic-age, archeological 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.

4.4 Curation

No artifacts were collected during this survey. Records, files, field notes, forms, and other project documentation will be organized and permanently stored at the IES office in McKinney, Texas.

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CHAPTER 5: RESULTS

The cultural resources survey for the Granbury East WWTP was conducted on 30 April 2020 by IES Project Archeologist Thomas Chapman. During the cultural resources survey, the APE was subjected to pedestrian reconnaissance survey transects and a systematic intensive survey. Pedestrian reconnaissance transects were conducted across the entire APE to assess the likelihood of encountering archeological resources. Ground surface visibility ranged from 0 to 100 percent across the APE, with the majority containing less than 30 percent ground visibility. Intensive survey with systematic shovel test sampling was conducted in staggered intervals to confirm the extent and magnitude of previous ground disturbances and to assess for archeological resources in areas with potential. Background and archival research conducted in preparation for the survey indicated that the APE features a low to moderate potential for containing prehistoric archeological resources and a moderate to high potential for containing historic-period archeological resources in areas that have avoided significant ground disturbances. Through intensive survey, previously recorded site 41DN96 was determined to extend into the APE.

5.1 Archeological Survey

5.1.1 - *Pedestrian Survey Observations*

At the time of survey, the project area was comprised of open grassland with sporadic, densely-wooded groves (**Appendix A, Photographs 1** through **14**). Grassland areas contained a variable amount of ground surface visibility ranging from 0 to 100 percent. Highest surface visibility was observed around animal burrows, disturbed areas, areas with shallow bedrock, areas near extant buildings and/or structures, eroded areas near the unnamed tributary to Rucker Creek, and the cut banks of the unnamed tributary, which contained between 30 to 100 percent ground visibility (**Appendix A, Photographs 8** through **12**). The largest area of high ground surface visibility was within an approximate 2.7-ac area that contained 75 percent or greater surface visibility. Several existing utility corridors are located within the APE that pertain to utilities for the former buildings located within and adjacent to the APE, a sanitary sewer main, and high voltage overhead electrical transmission (**Appendix A, Photographs 1** through **4,** and **15**)

5.1.2 - *Intensive Survey Observations*

During the pedestrian survey, the 2018 survey shovel tests were augmented through the excavation of an additional 19 shovel tests (**Figure 5.1**). Through shovel testing, it was determined that the APE contained three soil profiles that generally related to the topographic setting (**Table 5.1**). Along the southern boundary, soils contained a shallow reddish brown (5YR 4/4) sandy loam with few gravel inclusions to depths of approximately 30 cmbs. Below this, a red (2.5YR 5/4) sandy clay with frequent, coarse gravel inclusions was encountered. These shovel tests were excavated to depths of 45 cmbs. Along the hill slope, soils consisted of a dark grayish brown (10YR 4/2) clay loam to 30 to 40 cmbs. This stratum consisted of common gravel inclusions. The root content increased as elevation decreased, while soil deflation was prevalent in higher elevation areas. Below this, soils with significant portions of eroded bedrock was encountered at depths not exceeding 50 cmbs. The final soil stratum was observed at the stream terrace and included a series of grayish brown (10YR 4/2) clay loams to depths not exceeding 90 cmbs. Gravel inclusions increased with depth past 60 cmbs. Two shovel tests (ST3 and ST6) were positive for cultural materials and were located adjacent to a dilapidated, historic-period building. The positive shovel tests and dilapidated building were included within the site boundary for 41HD96 described within this report.

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Table 5.1: Shovel Test Table

Shovel Test	Stratum 1	Stratum 2	Stratum 3	Termination	Results
ST1	0 - 35 cmbs: 10YR 4/2 cllo	35 - 40 cmbs: 10YR 5/2 cllo		Bedrock at 40 cmbs	Negative
ST2	0 - 40 cmbs: 10YR 4/2 cllo	40 - 45 cmbs: 10YR 5/2 cllo		Bedrock at 45 cmbs	Negative
ST3	0 - 35 cmbs: 10YR 4/2 cllo	35 - 45 cmbs: 10YR 5/2 cllo		Bedrock at 45 cmbs	Positive
ST4	0 - 40 cmbs: 10YR 4/3 cllo	40 - 45 cmbs: 10YR 5/3 cllo		Bedrock at 45 cmbs	Negative
ST5	0 - 40 cmbs: 10YR 4/3 cllo	40 - 40 cmbs: 10YR 5/3 cllo		Bedrock at 40 cmbs	Negative
ST6	0 - 40 cmbs: 10YR 4/2 cllo	40 - 40 cmbs: 10YR 5/3 cllo		Bedrock at 40 cmbs	Positive
ST7	0 - 40 cmbs: 10YR 4/3 cllo	40 - 40 cmbs: 10YR 5/2 cllo		Bedrock at 40 cmbs	Negative
ST8	0 - 35 cmbs: 10YR 4/3 cllo	35 - 45 cmbs: 10YR 5/3 cllo		Bedrock at 45 cmbs	Negative
ST9	0 - 35 cmbs: 10YR 4/2 cllo	35 - 40 cmbs: 10YR 5/3 cllo		Bedrock at 40 cmbs	Negative
ST10	0 - 40 cmbs: 10YR 4/2 cllo	40 - 45 cmbs: 10YR 5/2 cllo		Bedrock at 45 cmbs	Negative
ST11	0 - 40 cmbs: 10YR 4/2 cllo	40 - 50 cmbs: 10YR 5/2 cllo		Bedrock at 50 cmbs	Negative
ST12	0 - 35 cmbs: 10YR 4/3 cllo	35 - 50 cmbs: 10YR 5/2 cllo		Bedrock at 50 cmbs	Negative
ST13	0 - 30 cmbs: 5YR 4/3 salo	30 - 35 cmbs: 2.5YR 5/4 sacl		Sterile Soil at 35 cmbs	Negative
ST14	0 - 35 cmbs: 5YR 4/4 salo	35 - 40 cmbs: 2.5YR 5/4 sacl		Sterile Soil at 40 cmbs	Negative
ST15	0 - 35 cmbs: 10YR 4/3 cllo	35 - 45 cmbs: 10YR 5/3 cllo		Bedrock at 45 cmbs	Negative
ST16	0 - 35 cmbs: 10YR 4/3 cllo	35 - 45 cmbs: 10YR 5/3 cllo		Bedrock at 45 cmbs	Negative
ST17	0 - 20 cmbs: 10YR 4/2 sicl	20 - 50 cmbs: 10YR 4/3 cllo	50 - 70 cmbs: 10YR 4/4 cllo	Depth at 70 cmbs	Negative
ST18	0 - 35 cmbs: 10YR 4/2 sicl	35 - 60 cmbs: 10YR 4/3 cllo	60 - 80 cmbs: 10YR 4/4 cllo	Depth at 80 cmbs	Negative
ST19	0 - 45 cmbs: 10YR 4/2 sicl	45 - 60 cmbs: 10YR 4/3 cllo	60 - 90 cmbs: 10YR 4/4 cllo	Depth at 90 cmbs	Negative

5.2 Encountered Cultural Resources

5.2.1 - *41HD96*

5.2.1.1 - Previous Investigations

Site 41HD96 was originally recorded in 2018 by IES during the cultural resources survey of a 51-ac property to ensure compliance Section 404 of the CWA. At the time of its initial documentation, the site was encountered on a gently-sloping upland terrace bordering the unnamed tributary to Rucker Creek. The site was located approximately 60 m east of the APE and consisted of a brick-lined well 1-m in diameter. The well was associated with the location of a former farmstead that was depicted on the 1923 Granbury USGS topographic map and visually confirmed on the 1948 USDA aerial photograph. Aerial photographs illustrate the farmstead was demolished between 1995 and 2002. During the 2018 site delineation, seven negative shovel tests were excavated within and surrounding the location of the demolished dwelling and well. During site delineation, ground surface visibility ranged from 50 to 100 percent.

5.2.1.2 - Current Investigation

During the 2020 IES survey, a reassessment of 41HD96 determined that the site extended into the APE (**Figure 5.2; Appendix D**). The revised site boundary was documented within an area extending approximately 270 m north-to-south by 200 m east-to-west, encompassing approximately 2.43 ha, which includes a small portion of the site that extends outside of the APE. The site boundaries were largely created using a network of dirt roads observed on historical aerial photographs but were also delineated based on the distribution of archeological features, positive and negative shovel tests, surface artifacts, APE limits, observed disturbances. Aerial photography from 1948 illustrates that the APE contained the majority of a large farmstead that included a network of dirt roads and a few outbuildings to the primary residence, which was located to the east of the APE (**Figure 5.3**). Through time, the majority of the buildings and structures associated with 41HD96 were demolished and the dirt road network fell into disuse and became overgrown (*see* **Appendix B**).

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Ground surface visibility did not exceed 30 percent throughout the site at the time of survey. Vegetation included moderate ground cover of short grasses with sporadic patches of visible ground. An additional 10 shovel tests were excavated to delineate the horizontal and vertical limits of the site and to assess the site's archeological data potential. Shovel test contained soils profiles congruent with those excavated along the hillslope. These soils consisted of a dark grayish brown (10YR 4/2) clay loam to 30 to 40 cmbs. This stratum consisted of common gravel inclusions. The root content increased as elevation decreased, while soil deflation was prevalent in higher elevation areas typically observed in the eastern half of the site. Below the upper stratum, soils with significant amount of eroded bedrock. Shovel tests did not exceed 50 cm in depth due to the presence of bedrock. Two shovel tests (ST3 and ST6) recovered two colorless glass shards and a whiteware ceramic sherd from depths between 15 and 20 cmbs.

During the site delineation, two modern buildings/structures and the dilapidated remnants of one historic-age building (**Feature 2**) were encountered within the former footprint of a farmstead that was in continuous operation starting between 1928 and 1948 up through the 1980s. Due to the continuous use of the APE surrounding the extant structures, the majority of the surrounding area contained a low-density accumulation of modern construction debris (e.g., brick, clear glass, scrap metal, wire, plastic, and wood). High ground surface visibility (typically >30%) and a short grass setting facilitated the pedestrian survey surrounding Feature 2. No surficial historic-age artifacts were observed in proximity to the historic-age building.

5.2.1.3 - Features

Feature 1 consisted of a hand-dug well with rough-cut limestone blocks located outside the current APE (**Appendix A, Photograph 16**). The well was associated with a farmstead that was depicted on the 1923 Granbury USGS topographic map and visually confirmed on the 1948 USDA aerial photograph (*see* **Appendix B**). Aerial photographs illustrate the farmstead was demolished between 1995 and 2002. The well was approximately 60 m east of the former farmstead and was approximately 1 m in diameter with the uppermost course flush with the ground's surface. Only one lower course was visible as the well had been filled with earthen material. No additional limestone blocks were located adjacent to the well. However, similar rough-cut limestone blocks were observed out of context approximately 220 m northeast of the well, adjacent to the unnamed tributary to Rucker Creek and outside the current APE.

Feature 2 was a typical example of a side-gabled cabin comprised of a single room that was constructed using balloon frame constructions methods (**Appendix A, Photographs 21** through **25**). The building's foundation was comprised of pier and beam resting on the ground's surface or limestone rock. The majority of the walls contained exposed studs, but a section of wall illustrated the cabin was once cladded in horizontal milled wood boards. The roof was comprised of milled wood clad in iron sheets rolled in a simple 2 ½-in x ½-in wavy profile. At some point in modern times, the original shed extension covering the front porch was extended off the front porch to provide additional storage space. This modern shed extension was supported by round wooden poles and a galvanized tin roof pressed in a "U"-shaped profile. At the time of field survey, Feature 2 was dilapidated and considered an archeological ruin.

5.2.1.4 - Archival Research

Site 41HD96 was located within the John A. McCreary survey, which was patented on 15 August 1859 in Abstract 386 of Hood County. Using records from the Hood County Clerk's Office, a chain of title for the property encompassing site 41HD96 was generated (**Table 5.2**). Based on the deed records, 41HD96 most likely pertained to the Clifton family ownership. None of the names presented within the chain of title were listed in the Handbook of Texas Online or the TxGenWeb Project website.

Table 5.2: Site 41HD96 Chain of Title

Grantor	Grantee	Date	Volume	Page
State of Texas	J.A. McCreary	8/15/1859	—	—
J.A. McCreary, deceased	Heirs of J.A. McCreary	DOD 1/11/1886	—	—
H. Alex McWhorter	W.G. Terrell	4/21/1888	K	571
W.R. McCreary, Louisia Huffstuttler, Adam Huffstuttler, Isabelle Jackson, Charles N. Jackson, J.L. Gilstrap	W.G. Terrell	5/4/1888	K	569
W.G. Terrell	B.J. Clifton and Joseph E. Clifton	12/31/1892	S	64
B.J. Clifton and Maud Clifton	Joseph E. Clifton	1/8/1901	27	358
Joseph E. Clifton, deceased	Essie W. Clifton	DOD 4/9/1946	—	—
Essie W. Clifton, deceased	Paul Clifton, Joh E. Clifton, and Dude Clifton	DOD 5/13/1961	—	—
Paul Clifton	John E. Clifton and Dude Clifton	8/12/1961	125	327
John E. Clifton and Margaret Clifton	Dude Clifton	10/7/1969	154	102
Ira Wales "Dude" Clifton, deceased	Bob Burns	DOD 8/25/1989	Probate 61	86
Bob Burns, aka Robert E. Burns, Jr.	Triple B Development Company, LP	12/29/2006	2266	693
Triple B Development Company, LP	NE-Granbury Holdings LLC	6/30/2015	2015-0006625	—

5.2.1.5 - Modern Buildings

The southern building consisted of a modern, front gabled storage building constructed from cinderblocks. A variety of furniture debris was observed within the shed, which included tables, cabinets, and a refrigerator (**Appendix A, Photographs 26** and **27**). As detailed in *Section 3.2.2.3* of this report, this building was constructed between 1976 and 1981. A modern outbuilding was located to the south of the modern storage building and consisted of a small utility shed constructed using milled wood framing and roofing. The shed contained a modern water heater and piping (**Appendix A, Photographs 29** through **30**).

5.2.1.6 - Summary

Site 41HD96 represents a historic-period farmstead occupied as early as the early 20th century. The site is located in an area approximately 270 m north-to-south by 200 m east-to-west, encompassing approximately 2.43 ha within and outside of the APE. Eleven shovel tests were excavated within or in proximity to the site during this intensive survey and site delineation, two of which yielded a shallow cultural component. During the IES survey, a previously well feature was revisited. In addition, a newly-recorded feature was identified on the western boundary.

5.3 Indirect APE

To satisfy Section 106 requirements, indirect visual impacts must be assessed. The indirect APE was designed to include the maximum distance adverse visual impacts could occur for a building with a maximum vertical elevation of 23 ft. The indirect APE incorporated a 100-ft buffer surrounding the proposed above-ground infrastructure. Through the reconnaissance survey, no architectural resources were identified within the indirect APE (*see* **Figure 5.1**).

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CHAPTER 6: NRHP RECOMMENDATIONS AND CONCLUSIONS

During the cultural resources survey of the 10.6-ac APE, 19 shovel tests were excavated to augment the 7 shovel tests previously excavated by IES in 2018. An additional 100-ft-wide buffer surrounding the direct APE was reviewed and inventoried for indirect impacts to historic-age above-ground resources. During the survey, 41HD96 was determined to extend into the APE. The NRHP eligibility recommendations for 41HD96 are briefly detailed within **Table 6.1** and summarized within the following section.

6.1 NRHP Recommendations

Table 6.1: NRHP Eligibility Recommendations

Resource ID	Potential Effects Type	NRHP-Eligibility Recommendations
41HD96	Direct	Not eligible

41HD96 was a previously-recorded historic-period farmstead dating to the early 20th century and did not contain distinctive characteristics of design or construction. The site contained two features and a shallowly buried archeological component near a dilapidated cabin. Chain-of-title review conducted for this site revealed no significant associations with individuals or historical importance. Due to the lack of association with a significant historical event(s) or person(s), vernacular design characteristics and construction techniques, and the lack of significant archeological data potential the site is recommended not eligible for inclusion in the NRHP under Criteria A, B, C, or D.

6.2 Conclusions

Site 41HD96 was revisited and determined to extend into the APE during the survey. It is the recommendation of IES that Site 41HD96 be considered not eligible for listing in the NRHP.

Based on the findings of this cultural resources survey, IES is requesting concurrence for the APE and a "no historic properties affected" determination per 36 CFR 800.4(d)(1). It is the recommendation of IES that the THC concur with these findings and the Granbury East WWTP (TWDB Project No. 73813) be permitted to continue without the need for further cultural resources investigations. However, if any additional resources (other than those documented within this report) are encountered during construction, the operators should immediately cease work in the area of the inadvertent discovery. The project cultural resources consultant should then be contacted to initiate further consultation with the THC prior to resuming construction activities.

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CHAPTER 8: REFERENCES CITED

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APPENDIX A
General Photograph Location Map and Photographs

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Photograph 1: General APE, utility easement, facing East.

Photograph 2: General APE, wooded area, facing East.

Photograph 3: General APE, stream terrace, facing Southeast.

Photograph 4: General APE, utility easement, facing Northeast.

Photograph 5: General APE, stream terrace, facing East.

Photograph 6: General APE, northern boundary, facing Northeast.

Photograph 7: General APE, northern boundary, facing Southwest.

Photograph 8: General APE, deflated hillslope, facing Northeast.

Photograph 9: General APE, deflated hillslope, exposed bedrock, facing East.

Photograph 10: General APE, deflated hillslope, exposed bedrock, facing Northwest.

Photograph 11: General APE, deflated hillslope, exposed bedrock, facing North.

Photograph 12: General APE, deflated hillslope, facing Northwest.

Photograph 13: Deflated hillslope with modern fencing materials, facing Northeast.

Photograph 14: General APE, summit of hilltop, facing Northwest.

Photograph 15: Modern manhole cover, facing North.

Photograph 16: Site 41HD96, Original Feature 1, well, facing Northeast.

Photograph 17: Site 41HD96, fallen utility pole, facing East.

Photograph 18: Site 41HD96, surface debris, facing East.


Photograph 19: 41HD96, general setting, facing Northwest.


Photograph 20: 41HD96, standing utility pole, facing South.


Photograph 21: 41HD96, Feature 2, barn exterior, facing Southeast.


Photograph 22: 41HD96, Feature 2, barn exterior, facing Northwest.


Photograph 23: 41HD96, Feature 2, barn interior, facing North.


Photograph 24: 41HD96, Feature 2, barn interior, facing North.

Photograph 25: 41HD96, Feature 2, barn interior, facing North.

Photograph 26: 41HD96, modern structure, facing Southwest.

Photograph 27: 41HD96, modern structure, facing Northwest.

Photograph 28: 41HD96, modern structure, facing West.

Photograph 29: 41HD96, modern structure, facing Northeast.

Photograph 30: 41HD96, modern structure, facing Northeast.

APPENDIX B
Aerial Photographs

3500 E U.S. Hwy 377

3500 E U.S. Hwy 377

Granbury, TX 76049

Inquiry Number: 5102050.1

November 13, 2017

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

11/13/17

Site Name:

3500 E U.S. Hwy 377
3500 E U.S. Hwy 377
Granbury, TX 76049
EDR Inquiry # 5102050.1

Client Name:

Integrated Env. Solutions, Inc.
610 Elm St Suite 300
McKinney, TX 75069
Contact: Ross Rogers

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2008	1"=500'	Flight Year: 2008	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
2004	1"=500'	Flight Date: January 01, 2004	USDA-CIR
1995	1"=500'	Acquisition Date: January 19, 1995	USGS/DOQQ
1981	1"=500'	Flight Date: September 18, 1981	USDA
1976	1"=500'	Flight Date: January 01, 1976	TXDOT
1953	1"=500'	Flight Date: January 01, 1953	AMS
1948	1"=500'	Flight Date: January 01, 1948	ASCS

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INQUIRY #: 5102050.1
YEAR: 2012
= 500'
N
EDR


INQUIRY #: 5102050.1
YEAR: 2010
= 500'
N
EDR


INQUIRY #: 5102050.1
YEAR: 2008
= 500'
N
EDR


INQUIRY #: 5102050.1
YEAR: 2006
= 500'
N
EDR


INQUIRY #: 5102050.1
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 5102050.1

YEAR: 2004

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.


INQUIRY #: 5102050.1
YEAR: 1995
= 500'
N
EDR


INQUIRY #: 5102050.1
YEAR: 1981
= 500'
N
EDR

INQUIRY #: 5102050.1

YEAR: 1976

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

INQUIRY #: 5102050.1

YEAR: 1953

= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

INQUIRY #: 5102050.1

YEAR: 1948

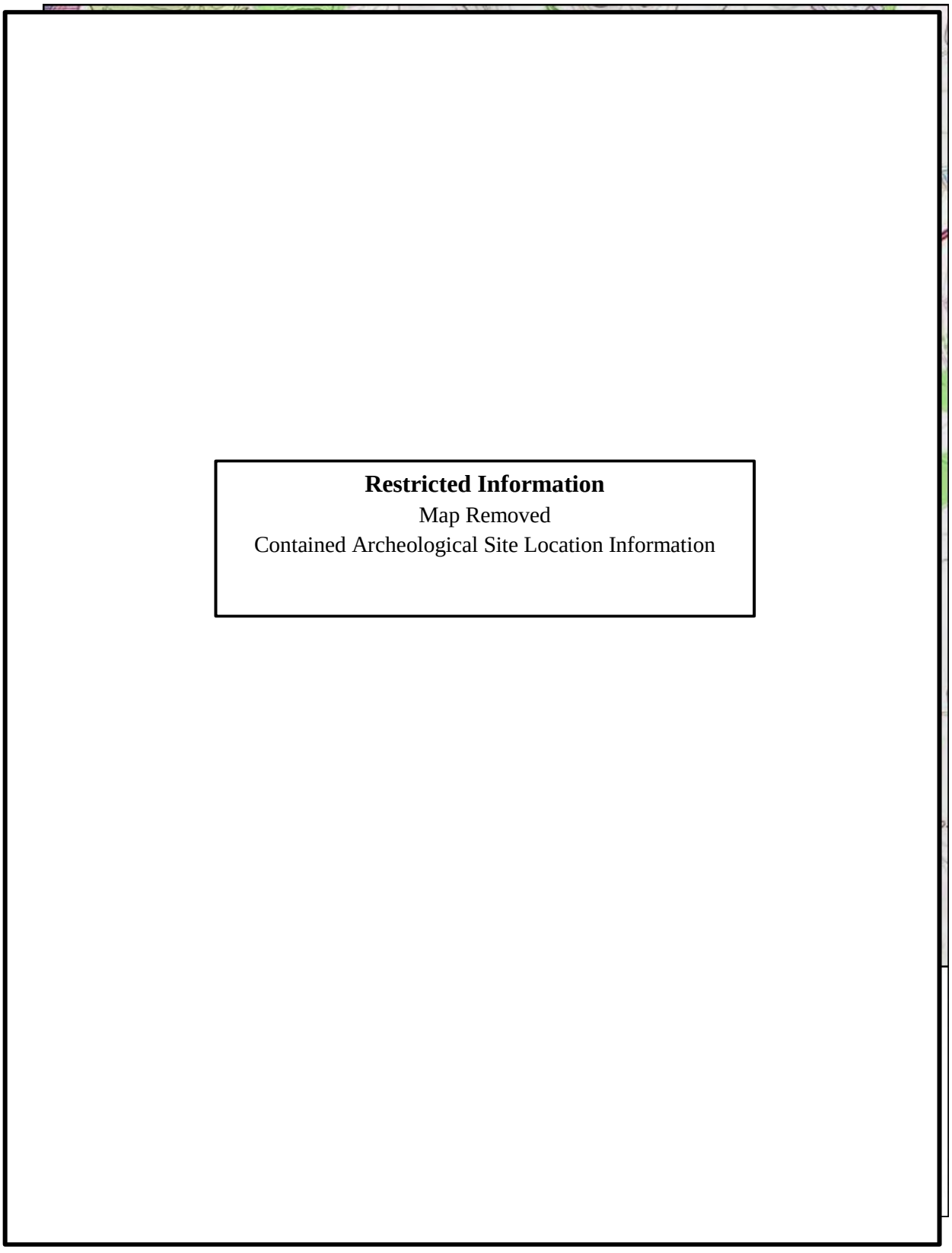
= 500'

N

EDR

Subject boundary not shown because it exceeds image extent or image is not georeferenced.

APPENDIX C
Site Location



Restricted Information
Map Removed
Contained Archeological Site Location Information

APPENDIX D
Site 41HD96 Revisit Form

Archeological Site Form

Form Date 6/30/2020

General Site Information

Site Name

☑ Revisit

Site Type farmstead

Explanation of Type

20th century farmstead with modern components

Project and Permit

Project Name Granbury East Wastewater Treatment Plant

Project Number 04.317.002 **Project Funding** City of Granbury, EPA

Permit Number 9401 **Permit Source** THC

Recorder Information

Address 610 Elm Street, Suite 300
McKinney
TX 75069

Affiliation Integrated Environmental Solutions

☑ **Recorder Visited Site**

Sources of Information

Owner

City of Granbury

Informant

Additional Sources

Work Performed

Observation/Recording Date 4/30/2020

Surface Inspection/Collection Date 4/30/2020

Method Pedestrian survey, photography

Mapping Dates 4/30/2020

Method GPS handheld unit

Testing Dates 4/30/2020

Method Shovel testing

Excavation Dates

Method

Records and Materials

Records
correspondence;digital map;digital photos;photo logs;project report;shapefile;shovel test notes

Materials Collected
None

Special Samples
None

Temporary Housing IES office in McKinney

Permanent Housing UTSA CAR

Location

Primary County Hood **Location in County** Central

Other Counties

USGS Map and Quad Acton (3297-243)

UTM Zone 14 **Easting** **Northing** **Datum** NAD 1983

Elevation **Elevation Range** 750-775

Description of Location

Environment

Nearest Natural Water Unnamed tributary, 300 ft, northeast

Major Drainage Brazos River

Creek Drainage Rucker Creek

Soil Description and Reference
1 - Aledo-Bolar association, 1 to 8 percent slopes; 38 - Pedernales fine sandy loam, 1 to 3 percent slopes; 39 - Pedernales fine sandy loam, 3 to 5 percent slopes

Percentage Surface Visible 30

Surface Texture fine sandy loam

Soil Derivation ☐ **Alluvial** ☐ **Colluvial** ☐ **Eolian** ☐ **In Situ** ☐ **Marine**

Other Soils

Environmental/Topographical Setting
The site is located on an upland terrace bordering an unnamed tributary of Rucker Creek.

Site Conditions

Circumstances Affecting Observation
Sunny, clear day

Site Condition Site is in poor condition with very little of the original site remaining intact.

Current Land Use
Agricultural field or pasture

Natural Impacts
Erosion

Artificial Impacts
Modern land use

Future Impacts
Construction of the Granbury East Wastewater Treatment Plant

Cultural Manifestations

Time Period of Occupation
Modern (1901-present)

Basis for Time Period
Historical topographic maps, aerial photographs, and observed materials within site

☑ **Single Component** ☐ **Multiple Component** ☐ **Component Unknown**

Basis for Component
Only historic-age components observed

Cultural Features
Feature 1 consisted of a hand-dug well with rough-cut limestone blocks located outside the current APE. The well was associated with a farmstead that was depicted on the 1923 Granbury USGS topographic map and visually confirmed on the 1948 USDA aerial photograph. Aerial photographs illustrate the farmstead was demolished between 1995 and 2002. The well was approximately 60 m east of the former farmstead and was approximately 1 m in diameter with the uppermost course flush with the ground's surface. Only one lower course was visible as the well had been filled with earthen material. No additional limestone blocks were located adjacent to the well. However, similar rough-cut limestone blocks were observed out of context approximately 220 m northeast of the well, adjacent to the unnamed tributary to Rucker Creek and outside the current APE.

Feature 2 was a typical example of a side-gabled cabin comprised of a single room that was constructed using balloon frame constructions methods. The building's foundation was comprised of pier and beam resting on the ground's surface or limestone rock. The majority of the walls contained exposed studs, but a section of wall illustrated the cabin was once cladded in horizontal milled wood boards. The roof was comprised of milled wood

clad in iron sheets rolled in a simple 2 ½-in x ½-in wavy profile. At some point in modern times, the original shed extension covering the front porch was extended off the front porch to provide additional storage space. This modern shed extension was supported by round wooden poles and a galvanized tin roof pressed in a "U"-shaped profile. At the time of field survey, Feature 2 was dilapidated and considered an archeological ruin.

Approximate Site Size 270 x 200 m

Basis for Determination Archeological features, shovel tests, surface artifacts, APE limits, disturbances, and a

Top of Deposit Below Surface Surface

Basis for Determination Archeological features at surface

Bottom of Deposit 20 cmbs

Basis for Determination shovel testing

Artifactual Materials Observed
colorless glass shards (n=2), a whiteware ceramic sherd

Discussion of Site
Site 41HD96 represents a historic-period farmstead occupied as early as the early 20th century. The site is located in an area approximately 270 m north-to-south by 200 m east-to-west, encompassing approximately 2.43 ha within and outside of the APE. Eleven shovel tests were excavated within or in proximity to the site during this intensive survey and site delineation, two of which yielded a shallow cultural component. During the IES survey, a previously recorded well feature was revisited. In addition, a historic age cabin was identified on the western boundary. Two modern modern buildings were observed within the site boundaries.

Registration and Recommendations

Registration Status

State Arch Landmark	Not Eligible	**Conservation Easement**	Not Eligible
Registered TX Landmark	Not Eligible	**National Register**	Not Eligible

Registration Comments

Research Value
None

Further Investigations
No further investigations warranted

Attachments