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## Cultural Resources Survey Of The Sparks Drive Connector Project, City Of Cleburne, Johnson County, Texas

Kevin Stone

Anne Gibson

Thomas Chapman

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## Cultural Resources Survey Of The Sparks Drive Connector Project, City Of Cleburne, Johnson County, Texas

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## CULTURAL RESOURCES REPORT

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### CULTURAL RESOURCES SURVEY OF THE SPARKS DRIVE CONNECTOR PROJECT, CITY OF CLEBURNE, JOHNSON COUNTY, TEXAS

Prepared for:  
Texas Historical Commission  
Texas Antiquities Permit #8126

On Behalf of:  
City of Cleburne  
&  
Childress Engineers

**CE** CHILDRESS ENGINEERS  
ENGINEERS & CONSULTANTS



September 2017

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# **CULTURAL RESOURCES SURVEY OF THE SPARKS DRIVE CONNECTOR PROJECT, CITY OF CLEBURNE, JOHNSON COUNTY, TEXAS**

By

Kevin Stone, MA, RPA  
Principal Investigator

Anne Gibson, MA  
Project Archeologist

&

Thomas Chapman, MA  
Project Archeologist

Submitted to:

**Texas Historical Commission**  
1511 Colorado Street  
Austin, Texas 78701

**City of Coppel**  
10 North Robinson  
Cleburne, TX 76033

&

**Childress Engineers**  
211 North Ridgeway Drive  
Cleburne, Texas 76033

Prepared by:

**Integrated Environmental Solutions, LLC**  
610 Elm Street, Suite #300  
McKinney, Texas 75069

Cultural Resources Report  
September 2017

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## ABSTRACT

This report documents the substantive findings and management recommendations of a cultural resource inventory conducted by Integrated Environmental Solutions, LLC (IES) for the Sparks Drive Connector Project, City of Cleburne, Johnson County, Texas. Per the provisions of the Antiquities Code of Texas, as the project will transpire on land owned or controlled by the City of Cleburne, which is a political subdivision of the State of Texas, the proposed project will require coordination with the Texas Historical Commission (THC) prior to construction. In addition, as the project will require a Section 404 of the Clean Water Act (CWA) permit from the U.S. Army Corps of Engineers (USACE), portions of the project within USACE jurisdiction will also be subject to the provisions of the National Historic Preservation Act (NHPA) of 1966, as amended. All work conformed to 36 Code of Federal Regulations (CFR) Part 800, and 13 Texas Administrative Code (TAC) 26, which outline the regulations for implementing Section 106 of the NHPA and the ACT, respectively.

The goal of the survey was to locate, identify, and assess any cultural resources that could be adversely affected by the proposed development, and to evaluate such resources for their potential eligibility for listing as a State Antiquities Landmark (SAL) or eligibility for listing in the National Register of Historic Places (NRHP).

The cultural resources inventory was conducted by archeologist Thomas Chapman on 03 August 2017, under Texas Antiquities Permit No. 8126. During the IES survey, no cultural resources were encountered within the 19.1-acre Area of Potential Effects.

No artifacts were collected as part of this survey. All records will be temporarily curated at the IES McKinney office and permanently curated at the Texas Archeological Research Laboratory (TARL). No further work is warranted. However, if any archeological sites are encountered during construction, the operators should stop construction activities, and immediately contact the project environment representative to initiate coordination with the THC prior to resuming any construction activities.

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## CHAPTER 1: PROJECT DESCRIPTION

This report has been written in accordance with the guidelines for reports prepared by the Council of Texas Archeologists (CTA 2002). This report presents a brief description of the project area or Area of Potential Effects (APE), environmental setting, relevant cultural background, and methodology; followed by the results of the investigations and recommendations. This report serves as the cultural resources report to satisfy the Antiquities Code of Texas (ACT).

### **1.1: Introduction**

#### *1.1.1 Project Description*

This scope of work has been developed by Integrated Environmental Solutions, LLC (IES), which has been contracted by Childress Engineers, on behalf of the City of Cleburne, to perform an intensive cultural resources survey in advance of the proposed Sparks Drive connector located north of the intersection of Weatherford Highway (State Highway [SH] 171) and Chisholm Trail Parkway in the City of Cleburne, Johnson County, Texas. The APE is plotted on recent aerial photographs and the Joshua 7.5 Minute Series U.S. Geological Survey (USGS) Quadrangle sheet (**Figures 1.1 and 1.2**).

#### *1.1.2 Project History*

On 12 May 2017, IES provided a desktop analysis to the Texas Historical Commission (THC) for the Sparks Drive Connector Project. Through the desktop analysis, we identified that the limits of one previously conducted archeological survey encompassed the vast majority of the proposed Sparks Drive Connector project. The survey was conducted for the U.S. Department of Agriculture (USDA) Soil Conservation Service (SCS) in 1982 for West Fork Buffalo Creek Watershed Plan. For that reason, we recommended that the proposed project be allowed to proceed without additional cultural investigations. After the submittal of the desktop analysis to the THC, IES obtained the USDA SCS watershed plan report and conducted coordination with the THC regarding this past survey. Through additional research and coordination it was determined that the previously conducted survey did not likely cover the Sparks Drive Connector APE, nor likely met present day archeological survey standards. In addition, IES conducted a site visit with the U.S. Army Corps of Engineers - Fort Worth District (USACE) to review impacts to waters of the United States and to discuss the project with the USACE Regulatory Archeologists. Through consultation with the USACE Regulatory Archeologist, it was determined that the USACE would likely require a cultural resources survey to maintain compliance with Section 106 of the National Historic Preservation Act (NHPA) and to authorize the needed Section 404 of the Clean Water Act (CWA) Nationwide Permit (NWP). On 06 June 2017, the THC provided concurrence to the provided desktop analysis stating that no historic properties will be affected by the proposed project. However, on 13 June 2017, the USACE provided confirmation that the agency would still require a cultural resources survey to complete their Section 106 review of the proposed project. Since the project is sponsored by the City of Cleburne and would be subject to the ACT, an Antiquities Permit must be obtained prior to conduct the requested survey.

#### *1.1.3 Regulatory Framework*

##### *1.1.3.1 Section 106 of the National Historic Preservation Act*

As the project will require a Section 404 of the CWA permit from the USACE, the project would be subject to the provisions of the NHPA of 1966, as amended. The NHPA (54 U.S. Code [USC] 300101), specifically Section 106 of the NHPA (54 USC 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 National Register of Historic Place (NRHP), or eligible for such listing.

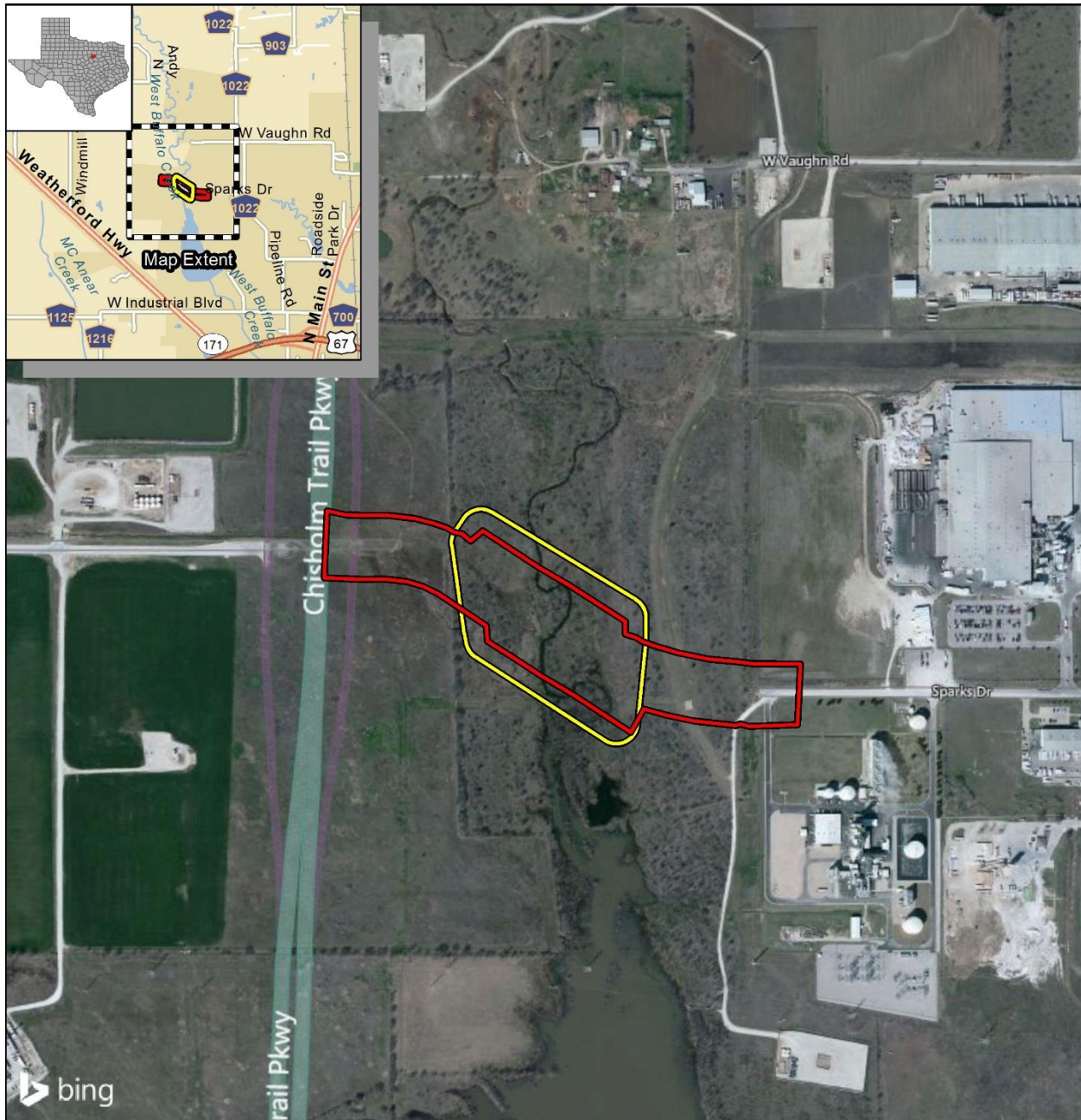
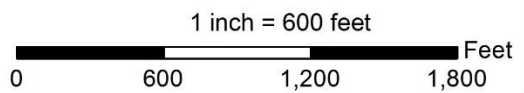


Figure 1.1  
General Location Map

County: Johnson  
 State: Texas  
 Date map created: 8/1/2017  
 Source: (c) 2009 Microsoft Corporation  
 and its data suppliers; ESRI 10.5  
 Streetmap  
 IES Project Ref: 04.266.003

- Area of Potential Effects - Direct
- Area of Potential Effects - Indirect



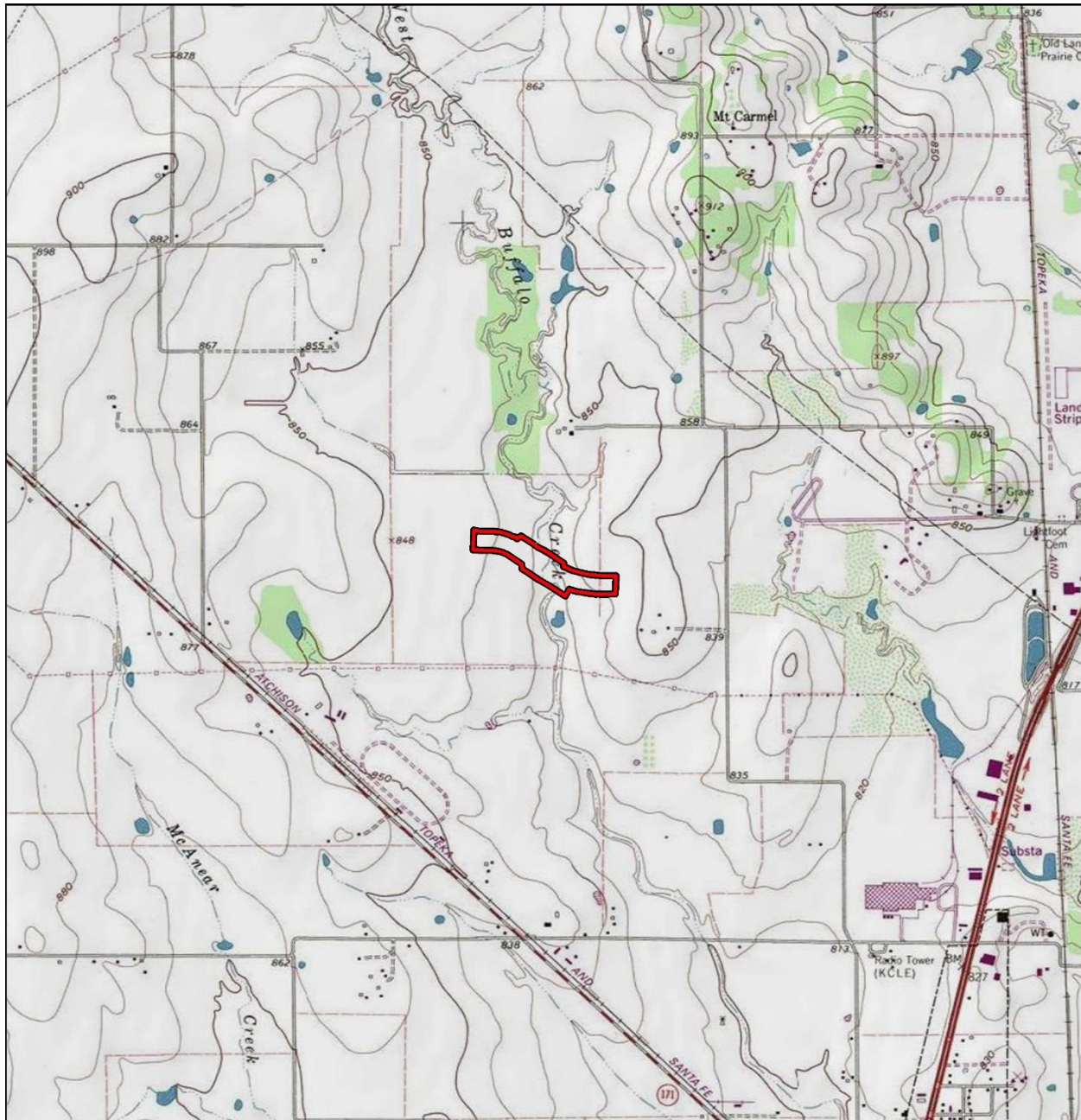

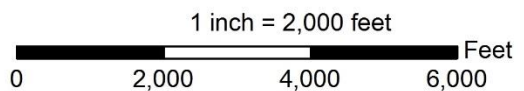


Figure 1.2  
Topographic Setting

County: Johnson  
 State: Texas  
 Date map created: 8/1/2017  
 Source: USGS Topographic Map  
 7.5' Quadrangle  
 Joshua, 1979  
 IES Project Ref: 04.266.003

 Area of Potential Effects - Direct



Per 36 Code of Federal Regulations (CFR) Part 800, the Federal agency responsible for overseeing the action must make a reasonable and good faith effort to identify cultural resources.

### 1.1.3.2 *Antiquities Code of Texas*

As the project will transpire on land owned or controlled by the City of Cleburne, 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 SHPO, represented by the 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 site and include easements on private property. 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.

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

## **1.2: Area of Potential Effects**

### 1.2.1 *Direct APE*

The APE encompasses approximately 19.1 acres. Current plans call for the construction of an undivided, two-lane road that crosses West Buffalo Creek and connects Sparks Drive and Sparks Road. The proposed connector road will measure approximately 2,037 feet (0.38 mile) in length and will require an 80-foot wide maintained right-of-way (ROW). The road will be elevated approximately 13 feet above the existing floodplain grade and will require an approximate 210-foot long bridge to span West Buffalo Creek. The fill for the bridge abutments will be graded in a 4:1 slope. Grading associated with the bridge construction will extend between approximately 41 and 61 feet from the proposed paved surface.

The deepest subsurface impacts associated with the proposed project include support columns situated in drilled shafts on either side of the creek that extend to bedrock in addition to rock rip-rap near each end of the bridge. The proposed Sparks Drive connector road also includes a system of stormwater drains. While the exact depth of subsurface impacts is unknown, investigations were conducted to the depth of construction or culturally sterile deposits.

### 1.2.2 *Indirect APE*

As the project will require Federal permitting from the USACE, an assessment of the indirect effects will be required within USACE jurisdiction to satisfy Section 106 requirements. The highest vertical elements associated with the project will be the bridge needed to span West Buffalo Creek. To account for these potential above ground elements, a 300-foot wide indirect effects APE will be considered surrounding the direct APE within USACE jurisdictional areas.

### **1.3: Administrative Information**

**Sponsor:** City of Cleburne

**Review Agency:** THC

**Principal Investigator:** Kevin Stone, MA, RPA

**IES Project Number:** 04.266.003

**Days of Field Work:** 03 August 2017

**Area Surveyed:** 19.1 acres

**Sites Recommended as Eligible for National Register Listing Under Criteria in 36 CFR 60.4:**

None

**Sites Not Recommended as Eligible for National Register Listing Under Criteria in 36 CFR 60.4:**

None

**Curation Facility:** No artifacts were collected. Field notes and all records will be temporarily curated at the IES office in McKinney and permanently curated at TARL.

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## CHAPTER 2: ENVIRONMENTAL BACKGROUND

### **2.1: Environmental Setting**

#### 2.1.1 *Climate*

Johnson County lies in the north-central part of the state of Texas. Annual rainfall precipitation is approximately 32.27 inches. Approximately 60 percent of the rainfall occurs between April and September. The subtropical region tends to have a relatively mild year-round temperature with the occasional exceedingly hot and cold periods. Thunderstorms occur approximately 50 days of the year and mostly occurring in spring (Estaville and Earl 2008).

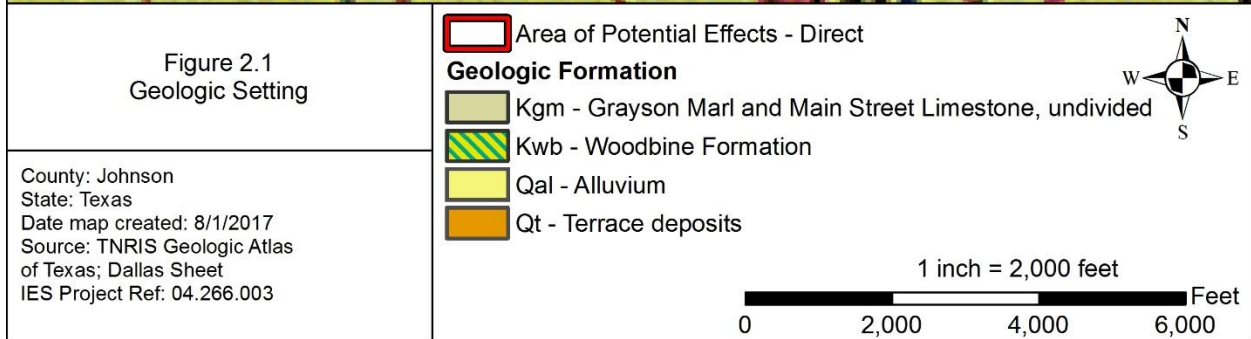
#### 2.1.2 *Topographic Setting*

The USGS Joshua 7.5' Quadrangle map illustrates that the APE is located within a gently rolling topographic setting that is sporadically dissected by named creeks and unnamed tributaries (*see Figure 1.2*). West Buffalo Creek is the primary topographic feature within the APE and bisects the APE into roughly equal halves. A narrow floodplain surrounds West Buffalo Creek and gives way to gently rising topography. A single unnamed tributary is located on the west side of West Buffalo Creek, which originates approximately 210 feet north of the APE. West Buffalo Creek flows in a general north to south orientation across the APE and confluences with the Nolan River approximately nine miles south of the APE. Downstream of the APE, West Buffalo Creek was impounded by the USDA SCS to create Lake George Marti (also known as Marti Reservoir). At full capacity, the upper reaches of this lake would extend north of the APE.

#### 2.1.3 *Geology and Soils*

The APE is located within an environmental interface or ecotone, between the Eastern Cross Timbers and Grand Prairie ecoregions. The Eastern Cross Timbers ecoregion is located between the Blackland Prairies to the east and the Grand Prairie to the west. The ecoregion occurs on a narrow band of Upper Cretaceous sandstone, the Woodbine Formation that supports oak dominated woodlands. The Grand Prairie is a limestone-rich ecoregion located between the Eastern Cross Timbers and the Western Cross Timbers. This transitional region between moist and dry climates typically contains rolling plains with meandering streams. Before extensive settlement, the Grand Prairie was characterized by open plains dominated by tall and short grasses. Forested areas were limited to draws and drainages along stream banks and river valleys. Although a significant portion of the Grand Prairie has been converted to cropland or improved pasture, the region supports some of the largest areas of native grass in Texas. Soils within this region mostly consist of shallow, well drained, dark clay deposits (Griffith et al. 2007; Texas A&M Forest Service 2017). Soils in this area are underlain by Grayson Marl and Main Street Limestone, undivided (Kgm), which is comprised of gray marl and limestone dating to the Cretaceous (**Figure 2.1**) (McGowen et al. 1987; USGS 2017).

As shown by the *Soil Survey of Johnson County, Texas*, there are five mapped soils within the APE (**Table 2.1**) (Coburn 1985). Approximately 82.3 percent of the APE contains upland soils typical of the Eastern Cross Timbers and Grand Prairie ecoregions. The remaining 17.7 percent of the APE contains occasionally flooded soils near West Buffalo Creek. Soil data was viewed from the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey (**Figure 2.2**) (Web Soil Survey 2017).



**Table 2.1: Soils Located Within the APE**

Soil Series Description	Approximate Percentage of the APE
<p><b>Fr - Frio silty clay, 0 to 1 percent slopes, occasionally flooded</b> - This component is described as silty clay derived from limestone and shale located in floodplains. Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is well drained.</p>	17.7%
<p><b>PnC - Ponder clay loam, 3 to 5 percent slopes</b> - This component is described as clay loams located on stream terraces. Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is moderately well drained.</p>	21.7%
<p><b>SaB - Sanger clay, 1 to 3 percent slopes</b> - This component is described as clay weathered from claystone located on ridges. Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is well drained.</p>	1.1%
<p><b>SIA - Slidell clay, 0 to 1 percent slopes</b> - This component is described as clay located on ridges. Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is moderately well drained.</p>	15.9%
<p><b>SIB - Slidell clay, 1 to 3 percent slopes</b> - This component is described as clay located on ridges. Depth to a root restrictive layer or bedrock is more than 80 inches. The natural drainage class is moderately well drained.</p>	43.5%

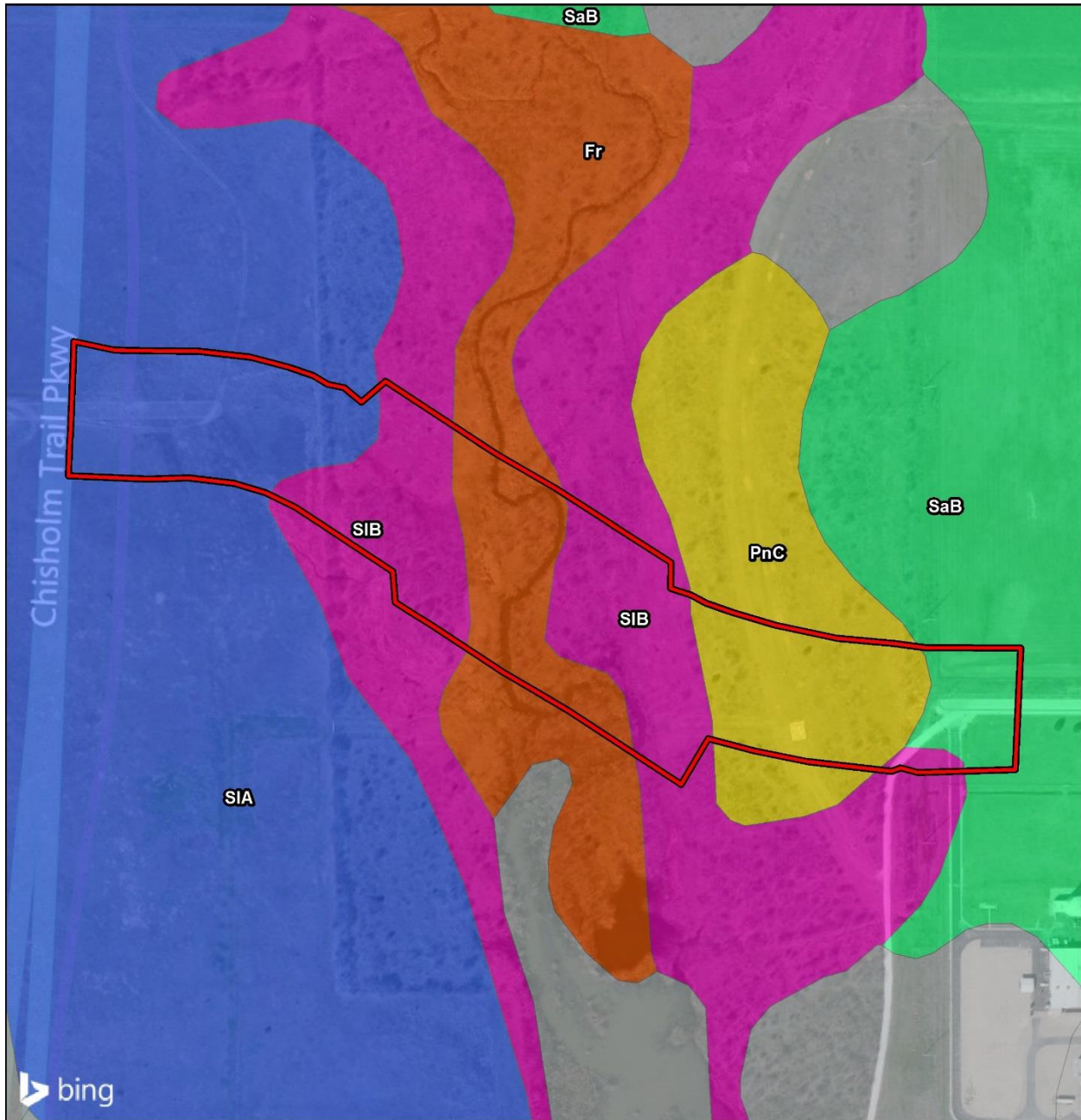








Figure 2.2  
Soil Map Units Located Within and  
Adjacent to the APE

County: Johnson  
State: Texas  
Date map created: 8/1/2017  
Source: 2007 USDA  
NRCS Digital Soils Database  
IES Project Ref: 04.266.003

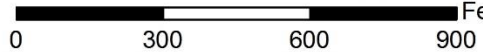
 Area of Potential Effects - Direct

**Soil Description**

-  PnC - Ponder clay loam, 3 to 5 percent slopes
-  SaB - Sanger clay, 1 to 3 percent slopes
-  Fr - Frio silty clay, 0 to 1 percent slopes, occasionally flooded
-  SIB - Slidell clay, 1 to 3 percent slopes
-  SIA - Slidell clay, 0 to 1 percent slopes
-  Other Values



1 inch = 300 feet



## CHAPTER 3: CULTURAL BACKGROUND

### **3.1: Previous Investigations**

A file search within the Texas Archeological Sites Atlas (TASA) maintained by the THC identified that there are no previously recorded archeological sites, National Register Historic Properties, historical markers, or cemeteries located within the APE or within one mile (~1,600 meter [m]) of the APE (TASA 2017). According to TASA records, one survey was previously conducted within the APE by the USDA SCS in 1981. The TASA indicates the survey encompassed the vast majority of the APE. However, based on agency coordination and conducted research, it was determined that this survey likely did not adequately assess the current APE or meet today's survey standards. In addition, there are three previously conducted cultural surveys located within one mile of the APE (**Table 3.1** and **Figure 3.1**).

**Table 3.1:** Previous Archeological Surveys Within One Mile of the APE

Agency	ACT* Permit No.	Firm/Institution	Date	Survey Type	Location (Approximate)
USDA SCS			1981	Linear	Crosses the APE
Federal Highway Administration	-	-	1994	Linear	0.07-mile west of the APE
-	-	-	1996	Linear	0.27-mile southeast of the APE
USDA-Rural Development	-	Horizon Environmental Services, Inc.	2007	Area	0.46-mile northeast of the APE

### **3.2: Cultural Resources Potential**

In addition to the TASA review, several additional sources were referenced to determine the overall potential for encountering cultural resources within the APE. These sources included the *Soil Survey of Johnson County, Texas*, the Geologic Atlas of Texas (Dallas Sheet), the USGS topographic map, the NRCS digital soil database for Johnson County, the Potential Archeological Liability Map (PALM) for Johnson County, the National Archives and Records Administration's (NARA) 1940 Census Enumeration District Maps for Johnson County, the Texas Historic Overlay (THO) georeferenced maps, and both past and current aerial photography.

#### *3.2.1 Prehistoric Resource Potential*

Data presented within the PALM for Johnson County indicated the vast majority of the APE featured a moderate potential for containing shallow and deeply buried cultural materials within a reasonable context. A high potential for shallow and deeply buried deposits was located along West Buffalo Creek. The eastern terminus of the APE featured a low potential for containing shallow and deeply buried cultural deposits.

In addition, through the site visit by IES and the USACE Regulatory Archeologist, it was determined that there was low potential for deeply buried archeological deposits. As such, it was not anticipated that backhoe trenching would be required for this project. However, if potential for these deposits was observed during the survey, IES would conduct the necessary field investigations to assess for deeply buried deposits.

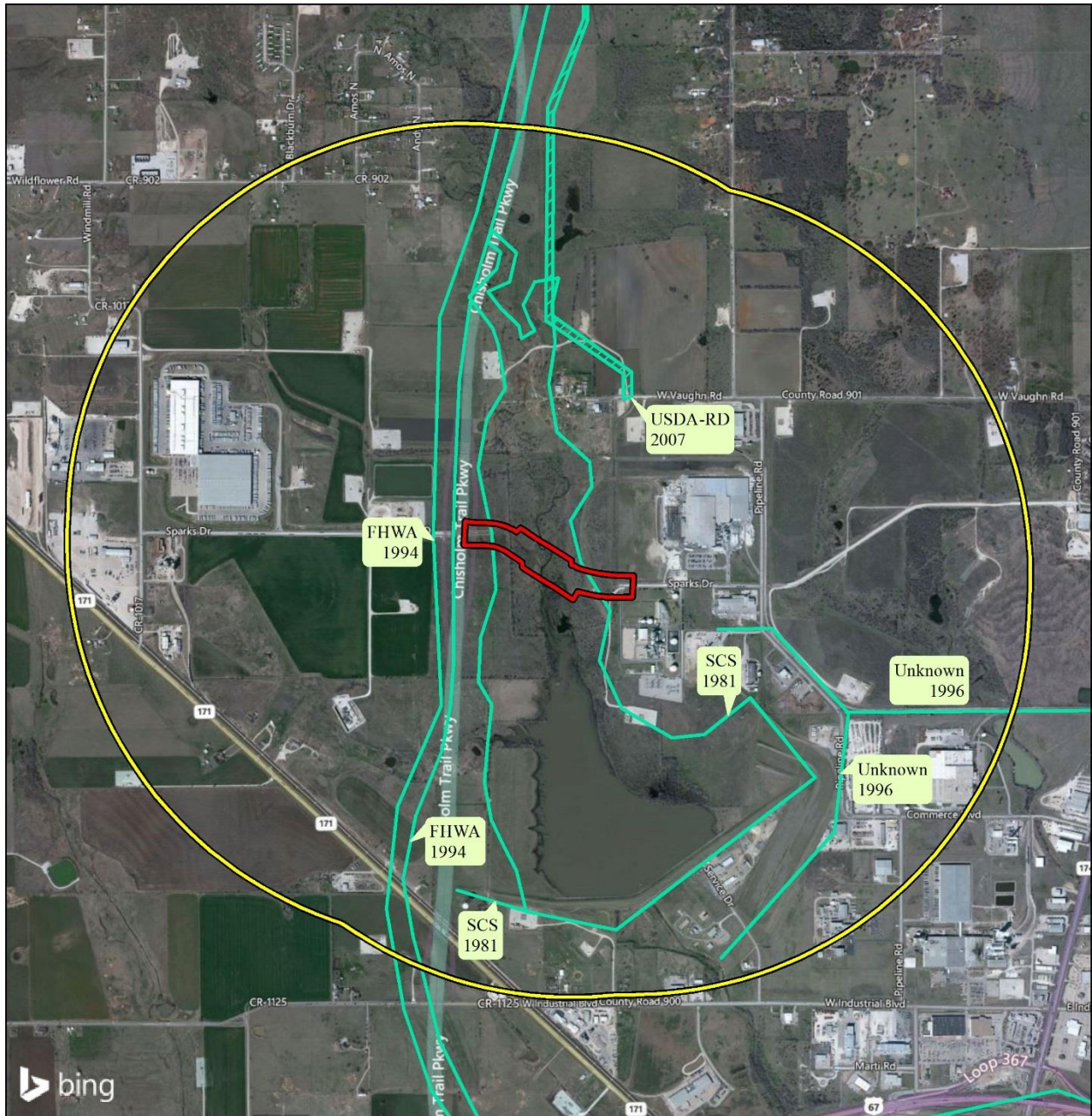
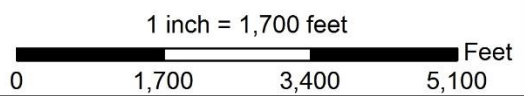


Figure 3.1  
Previous Investigations Within  
One-Mile of the APE

County: Johnson  
State: Texas  
Date map created: 8/1/2017  
Source: (c) 2009 Microsoft Corporation  
and its data suppliers; ESRI 10.5  
IES Project Ref: 04.266.003

- Area of Potential Effects - Direct
- APE 1M Radius
- Previous Archeological Survey - Line
- Previous Archeological Survey - Area



Past disturbances within the APE were observed within historical aerial photography. Historical aerial photography illustrates the APE was utilized as an agricultural field or pasture as early as 1953. In 1987, the USDA SCS impounded Buffalo Creek approximately 0.84 mile south of the APE. Between 2001 and 2005, development began surrounding the APE with construction of the eastern segment of Sparks Drive, industrial complexes, and oil/gas pad sites. Near the eastern terminus, a gas pipeline and sanitary sewer pipeline were installed in a north/south orientation across the APE. Although modern development has changed the landscape east and west of the APE, aerial photographs indicate that much of the APE near Buffalo Creek has been largely undisturbed as early as 1953. As such, the majority of the APE contains a reasonable context and features a moderate to high potential for containing prehistoric cultural materials.

### *3.2.2 Historic-Period Resource Potential*

Historic-period resources within North-Central Texas are primarily related to farmsteads, houses, and associated outbuildings and structures that date from the mid-19<sup>th</sup> to the mid-20<sup>th</sup> centuries. Typically, these types of resources are located along old roadways, but can be located along railroads, creeks, and open pastures. Although determining the presence of the earliest of these buildings and structures were problematic, thorough and accurate maps depicting these features were widely available post-1918.

Historical maps indicate the APE was void of historic-period buildings and structures as early as 1894. This was visually confirmed through historical aerial photography from 1953 and modern aerial photograph interpretations. As such, the APE has a low potential for historic-period archeological and architectural resources.

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## CHAPTER 4: METHODOLOGY

The archeological inventory for the cultural resources survey of the Sparks Drive Connector project was conducted on 03 August 2017. The methods and density of excavating shovel tests met the minimum requirements for field operations stipulated by the THC and CTA Archeological Survey Standards for Texas. Prior to field work, the IES staff conducted a historical and archeological records search to determine what cultural resources have been recorded within the APE and within a one-mile radius of the APE. This information was detailed in **Chapter 3**. Additionally, IES staff reviewed ecological, geological, soils data, as well as, historical and recent topographic maps and aerial photography.

### **4.1: Survey Methods**

The 100-percent intensive pedestrian survey consisted of careful examination of the ground surface and existing subsurface exposures for evidence of archeological sites within the APE. The transect survey was comprised of a multiple transect scheme, which was implemented across the APE. Transects were spaced at 30 m intervals and orientated in a manner that provided the best coverage. Areas displaying high levels of disturbance were photographed to document the lack of potential for intact archeological deposits. Other documentation methods included narrative notes, maps, and shovel test records.

### **4.2: Shovel Testing**

In areas with potential for archeological materials, shovel tests were excavated to 60 centimeters (cm) or the bottom of culturally sterile deposits, whichever was encountered first. Each shovel test measured approximately 30 cm in diameter and was hand-excavated in natural stratigraphic levels not exceeding 20 cm in thickness. Excavated soil was screened using ¼-inch hardware cloth to test for the presence of buried cultural materials. All test units were recorded on maps and plotted using handheld global positioning system (GPS) units. Investigators documented the results of each shovel test on standardized shovel test forms. According to the Archeological Survey Standards of Texas, for projects displaying little to no disturbance, an APE between 11 and 100 acres required one shovel test per two acres. As such, an APE of 19.1 acres required 10 shovel tests. However, the quantity of shovel tests varied based on the amount of ground disturbance, exposed bedrock or culturally sterile soil, ground visibility, steep slopes present within the APE, or if archeological site(s) are encountered. All positive shovel tests, cultural features, and other site data was geospatially recorded using a Trimble Geo XT handheld GPS unit.

### **4.3: Curation**

The survey employed a non-collection strategy. Records, files, field notes, forms, and other documentation were included in the curation package. All field-generated documents were temporarily curated at the IES office and permanently curated at TARL. These documents and photographs were organized and catalogued according to TARL curation standards.

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## CHAPTER 5: RESULTS

During the pedestrian survey, no cultural resources were encountered within the 19.1-acre APE. Shovel test locations are illustrated in **Figure 5.1**. A photograph location map and photographs are located in **Appendix A**.

### **5.1: Archeological Survey**

#### *5.1.1 Survey Observations*

During background review, it was determined that ground-disturbing activities related to past land use, transportation development, and utility development have transpired within the APE. Historical aerial photography depicted the majority of the APE was used as an agricultural field or pasture field as early as 1953. Recent development saw the expansion of Sparks Drive and the installation of a gas pipeline and sanitary sewer pipeline as early as 2005. Although modern development has changed the landscape east and west of the APE, aerial photographs indicated that much of the APE near West Buffalo Creek has been largely undisturbed as early as 1953.

During the survey, field investigations verified that the past land use and development within and surrounding the APE have disturbed portions of the APE. The APE was located within a varied environment that ranged from agricultural fields to a thinly wooded corridor situated along West Buffalo Creek. The topography within the APE was primarily very gently sloping and the western and eastern extent of the APE exhibited clear signs of modification from past transportation development.

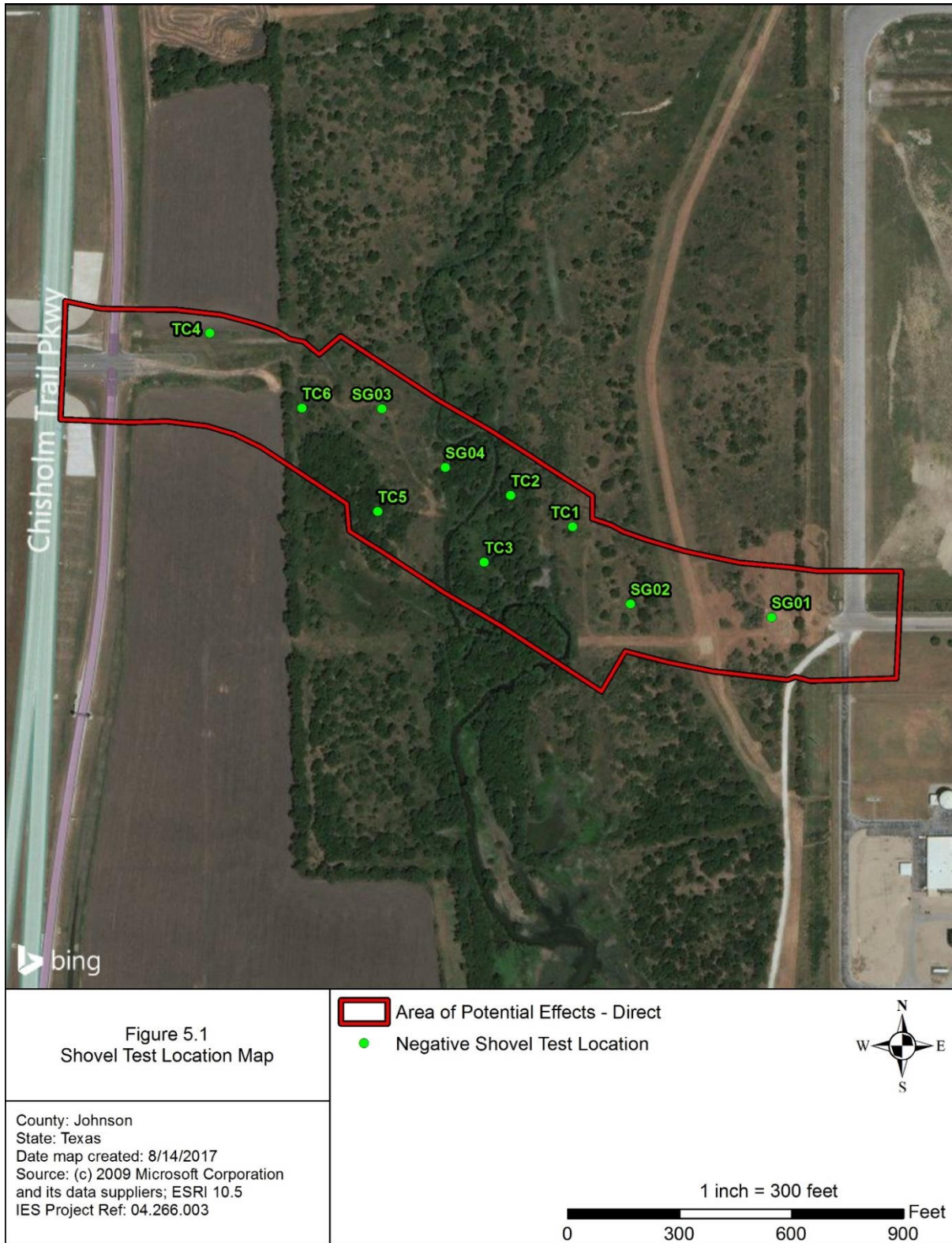
Overall, approximately 30 percent of the APE was located within areas that are routinely mowed or plowed. The western 615 feet of the APE incorporated portions of two agricultural fields, an overgrown unpaved roadway, utility lines, and infrastructure associated with Sparks Road and Chisholm Trail Parkway (**Appendix A, Photographs 1 and 2**). An additional dry drainage feature was observed north of the unpaved road. The central approximate 0.3-mile portion of the APE was centered along West Buffalo Creek. This portion of the APE featured thin woody vegetation intermixed with tall grasses that abutted the creek (**Appendix A, Photographs 3 through 6**). Minimal ground disturbances observed within this portion of the APE pertained to the 75-foot wide maintained easement serving the gas and sanitary sewer pipelines and connector site constructed prior to 2005 (**Appendix A, Photographs 7 and 8**). The eastern 260 feet of the APE was comprised of Sparks Drive, unnamed roadways serving surrounding businesses, a utility line, and maintained right-of-way (ROW) and utility easement (**Appendix A, Photographs 9 and 10**).

Although vegetation was thick along the banks of West Buffalo Creek (**Appendix B, Photograph 4**), several cutbank exposures were assessed during the survey for evidence of buried cultural deposits and to gauge the potential that cultural deposits could be deeply buried (**Appendix B, Photograph 11**). On average, the cutbanks along West Buffalo Creek rose approximately 3 to 4 feet above the active channel. No cultural deposits were observed within the West Buffalo Creek cutbank exposures, nor were any deeply buried soils. For these reasons, it was determined that backhoe trenching would not be required to assess for deeply buried cultural deposits.

#### *5.1.2 Shovel Testing*

During the pedestrian survey, 10 negative shovel tests were excavated throughout the APE (see **Figure 5.1**). Shovel Test TC1 was located within the lower potential extents of the APE and encountered a very dark grayish brown (10YR 3/2) clay loam with frequent gravel less than 0.5 cm in size. This overlaid a very dark brown (10YR 2/2) clay loam with no inclusions. The large occurrence of gravel was likely a result of runoff from the nearby overgrown unpaved roadway approximately 30 m to the south. The remaining nine shovel tests were situated within the undisturbed central portion of the APE. These shovel tests revealed clay loam that ranged from brown (10YR 4/2) along the margins of the central portion to very dark brown (10YR 2/2) near West Buffalo Creek. Shovel tests were terminated between 40 and 60

cmbs due to observed disturbances and the presence of culturally sterile soil. Additionally, subsurface exposures including animal burrows, disturbed patches, and the banks of West Buffalo Creek were examined.



## **5.2: Indirect APE Assessment**

To satisfy NHPA requirements, visual impacts were assessed. Historical maps and modern aerial photographs indicated the indirect APE was void of historic-period resources. The indirect effects survey verified the indirect APE was comprised of agricultural or open land and did not contain any historic-period, non-archeological cultural resources.

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## **CHAPTER 6: SUMMARY AND RECOMMENDATIONS**

During the pedestrian survey, 10 negative shovel tests were excavated within the 19.1-acre APE. Although the background review identified that portions of the APE contained a moderate to high potential for cultural resources, no cultural resources were encountered during the intensive pedestrian survey.

Therefore, it is the recommendation of IES that the Sparks Drive Connector Project be permitted to continue without the need for further cultural resource investigations. However, if any archeological resources are encountered during construction, the operators should stop construction activities immediately in those areas. The project environmental consultant should then be contacted to initiate further consultation with the THC/SHPO prior to resuming construction activities.

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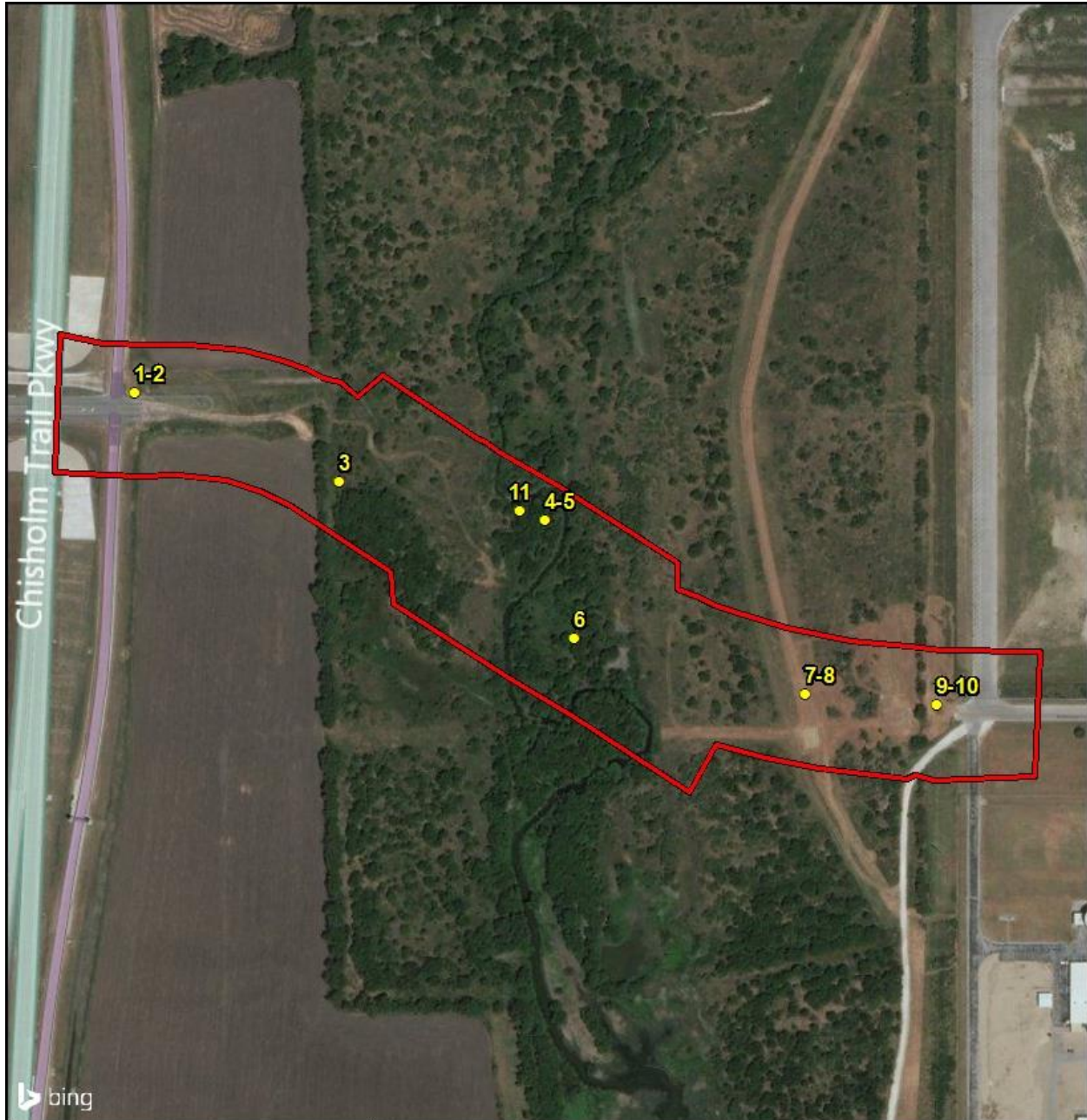
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**APPENDIX A**  
**Photograph Location Map and General Photographs**

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<p>Photograph Location Map</p>	<p> Area of Potential Effects - Direct</p> <p> Photograph Location</p>	
<p>County: Johnson          State: Texas          Date map created: 9/14/2017          Source: (c) 2009 Microsoft Corporation          and its data suppliers; ESRI 10.5          IES Project Ref: 04.266.003</p>	<p style="text-align: right;">1 inch = 291 feet</p> 	



Photograph 1 – Looking East – Disturbance



Photograph 2 – Looking West – General Overview



Photograph 3 – Looking West – General Overview



Photograph 4 – Looking South – West Buffalo Creek



Photograph 5 – Looking North – Unnamed Tributary



Photograph 6 – Looking South – General Overview



Photograph 7 – Looking West – General Overview



Photograph 8 – Looking South – General Overview



Photograph 9 – Looking West – General Overview



Photograph 10 – Looking East – Active Road



Photograph 10 – Looking North – West Buffalo Creek