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Cultural Resources Survey of the Lebow Drainage Improvement Project, City of Fort Worth, Tarrant County, Texas

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Cultural Resources Survey of the Lebow Drainage Improvement Project, City of Fort Worth, Tarrant County, Texas

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CULTURAL RESOURCES REPORT



Cultural Resources Survey of the Lebow Drainage Improvement Project,
City of Fort Worth, Tarrant County, Texas



Prepared for:
Texas Historical Commission
Texas Antiquities Permit #7291



On Behalf of:
City of Fort Worth
&
Teague Nall and Perkins, Inc.



November 2015

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Cultural Resources Survey of the Lebow Drainage Improvement Project, City of Fort Worth, Tarrant County, Texas

by

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&

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Cultural Resources Report
November 2015

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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 Lebow Drainage Improvement Project in Fort Worth, Tarrant County, Texas. As the City of Fort Worth is a political subdivision of the State of Texas, the proposed project will require coordination with the Texas Historical Commission (THC) prior to construction, per the provisions of the Antiquities Code of Texas (ACT). 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), it 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, which include standing structures and archeological sites 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 archeologists Kevin Stone and Joshua Hamilton on 04 June 2015, under Texas Antiquities Permit No. 7291. Proposed construction consists of an approximately 61.95-acre project corridor that extends along an unnamed tributary of the West Fork Trinity River. Although the project is still in the development stage, current designs call for the enhancement of Lebow Channel through regrading and reinforcement of the channel and the creation of several water retention/detention areas.

Although four historic-period sites (41TR279, 41TR280, 41TR281, and 41TR282) were documented during the field survey, based on the degree of disturbance and general nature of each site, they were deemed ineligible for listing on the NRHP or as a SAL. No artifacts were collected as part of this survey. All records will be curated at the Texas Archeological Research Laboratory (TARL). No further work is warranted. However, if any cultural resources, other than those documented within this report, are unearthed during construction, the operators should stop construction activities, and immediately contact the project environmental 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). The report presents a brief description of the Area of Potential Effect (APE), environmental setting, 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) and National Historic Preservation Act (NHPA) Section 106 requirements.

1.1 Introduction

As the project cultural resources consultant for Teague Nall and Perkins, Inc, the City of Fort Worth, and the U.S. Army Corps of Engineers (USACE), Integrated Environmental Solutions, LLC. (IES) performed a cultural resources inventory to locate any prehistoric or historic-period cultural resources. Proposed construction will consist of an approximately 61.95-acre project corridor that extends along an unnamed tributary of the West Fork Trinity River from the intersection of Neal Street and Peak Street to 200 feet west of the intersection at De Ridder Street and Elaine Place in the City of Fort Worth, Tarrant County, Texas. The project area is plotted on the Haltom City 7.5-minute series U.S. Geological Survey (USGS) Quadrangle sheet and recent aerial photograph (**Figures 1.1 and 1.2**).

During the desktop analysis and background review, conducted prior to the pedestrian survey, it was determined that the natural landscape had been exposed to a variety of activities that have drastically affected the soil's stratigraphic integrity prior to the current project. Historic-period aerial photographs dating from the early 1950s illustrate that agricultural activities, residential development, and stream bed creation had dramatically altered the natural landscape. Although the natural setting may have been altered, an investigation was conducted to identify any archeological sites, buildings, structures, or other resources located within the project area that may be eligible for inclusion on the National Register of Historic Places (NRHP) or listing as a State Antiquities Landmark (SAL).

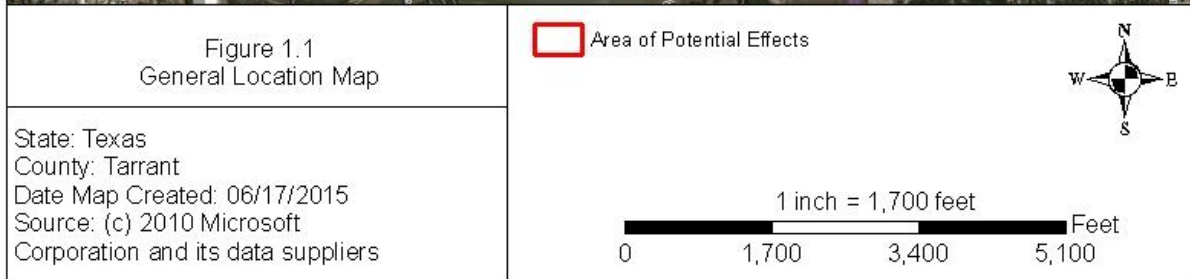
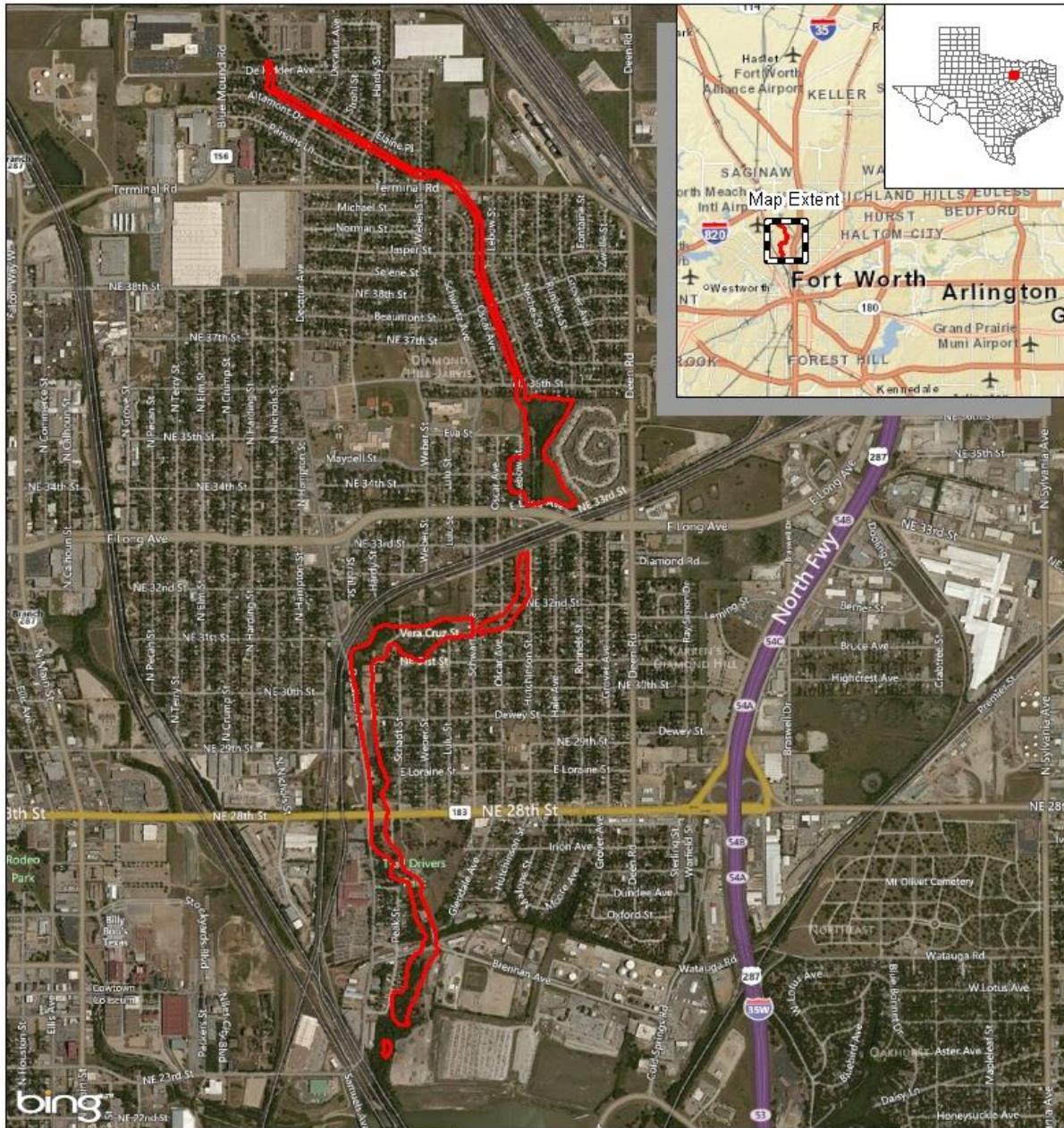
1.2 Area of Potential Effects

1.2.1 Archeological Resources

While project designs are still in the early stages of planning, current plans call for the modification of an approximate 15,550 linear foot (2.95 miles) of an unnamed drainage channel. Depths of impacts are anticipated to be minimal, as the majority of ground-disturbing activities will occur within the existing drainage channel and surrounding banks. Channel modification activities will likely include grading, installation of hard armoring (gabions, modular block wall, large block wall, rock rip rap, etc.), bridge/culvert modification, and vegetation removal. For ease of discussion, the APE was divided into two segments (north and south) split by the St. Louis Southwestern Railroad.

1.2.2 Historic-Period Resources

Although an assessment of indirect visual effects is not required per the ACT regulations, the project will require compliance with Section 106, an assessment of indirect effects would be required per the NHPA Section 106 regulations. However, since the nature of improvements will have only have surficial above ground elements and the type of improvements will be stylistically similar to features already present within the surrounding landscape, the proposed activities will subsequently have negligible visual impacts and will not be assessed as part of the project.



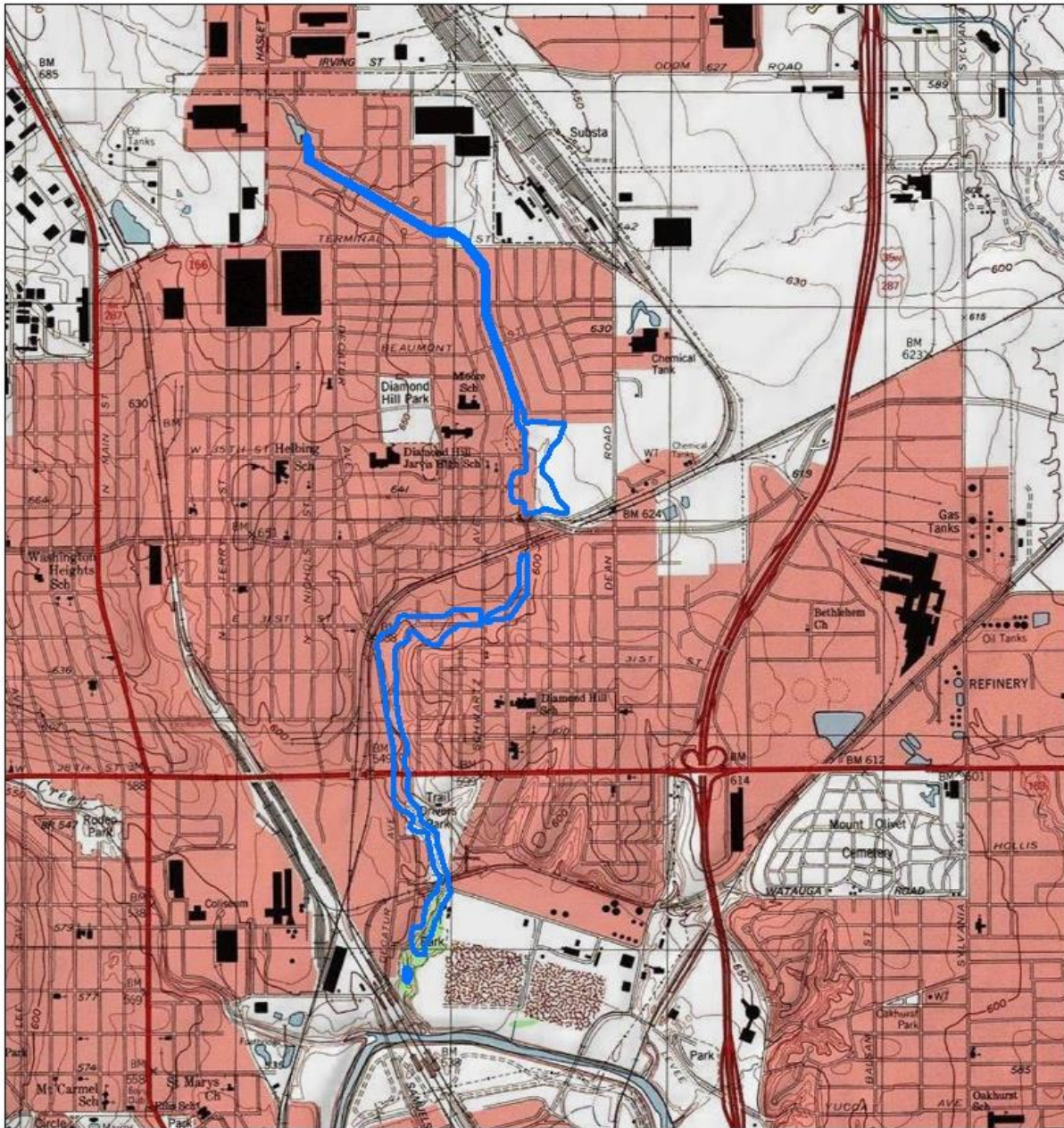
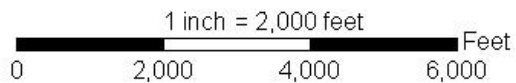
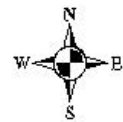


Figure 1.2
Topographic Setting

State: Texas
 County: Tarrant
 Date Map Created: 06/17/2015
 Source: USGS Topographic Map
 Haltom City 7.5' Quadrangle, 1968

 Area of Potential Effects



1.3 Administrative Information

Sponsor: City of Fort Worth

Review Agency: Texas Historical Commission

Principal Investigator: Kevin Stone, MA, RPA

IES Project Number: 04.080.005

Days of Field Work: 04 June 2015

Area Surveyed: Approximately 61.95 acres (25.07 ha)

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:

41TR279, 41TR280, 41TR281, and 41TR282

Curation Facility: No artifacts were collected. Field notes will be curated at IES office in McKinney, Texas.

CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Environmental Setting

2.1.1 *Climate*

Tarrant County is in the north-central part of the state of Texas. This region has a humid subtropical climate and an annual rainfall averaging between approximately 35.01 to 40.00 inches. About half of the rain usually falls 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; Brooks et. al 1964).

2.1.2 *Topographic Setting*

The APE contains a variable degree of natural topography and a wide range of land use pertaining to urban subdivisions, industrial areas, and city parks. Current topographic maps illustrate the north segment as being located primarily within an urban setting. As such, the APE's north segment contains the highest amount of topographic alteration, as the entire tributary has been channelized and the banks of the original tributary have been removed. While the APE's south segment is also located within or near urban development, a large percentage is located within Trail Drivers Park. In addition, the channel south of the St. Louis Southwestern Railroad has not been extensively channelized. The southernmost portion of the APE is located within the valley floor of the West Fork Trinity River.

2.1.3 *Geology and Soils*

The APE is located within the Grand Prairie physiographic province of the Cross Timbers ecoregion (Wermund 1996). 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 (Texas A&M Forest Service 2014).

As part of the APE is located within the West Fork Trinity River floodplain and its associated terraces, it is underlain by Holocene-aged alluvium (Qal), Pleistocene-age fluvial terrace deposits (Qt), and the Fort Worth Limestone and Duck Creek Limestone Formation (Kfd) (McGowen et al. 1974, Sellards et al. 1932) (**Figure 2.1**). The portion of the APE south of State Highway (SH) 183 is composed of the alluvial and fluvial deposits. Alluvial deposits are composed of clay, sand, and gravel found within floodplain areas. The portion of the APE north of SH 183 is composed of Fort Worth Limestone and Duck Creek Limestone. This formation was deposited during the Cretaceous period and is composed primarily of thin layers of marly clay with alternating limestone beds (Scoggins 2004).

Eight soil series are contained within the APE (**Figure 2.2**). **Table 2.1** provides a brief description of the eight soils and their percentages within the project corridor. According to the *Soil Survey of Tarrant County, Texas* (Ressel 1981) and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) web soil survey data for Tarrant County (Web Soil Survey 2015), the primary soil series within the APE are Sanger-Urban land complex, 1 to 5 percent slopes and Frio-Urban land complex, occasionally flooded.

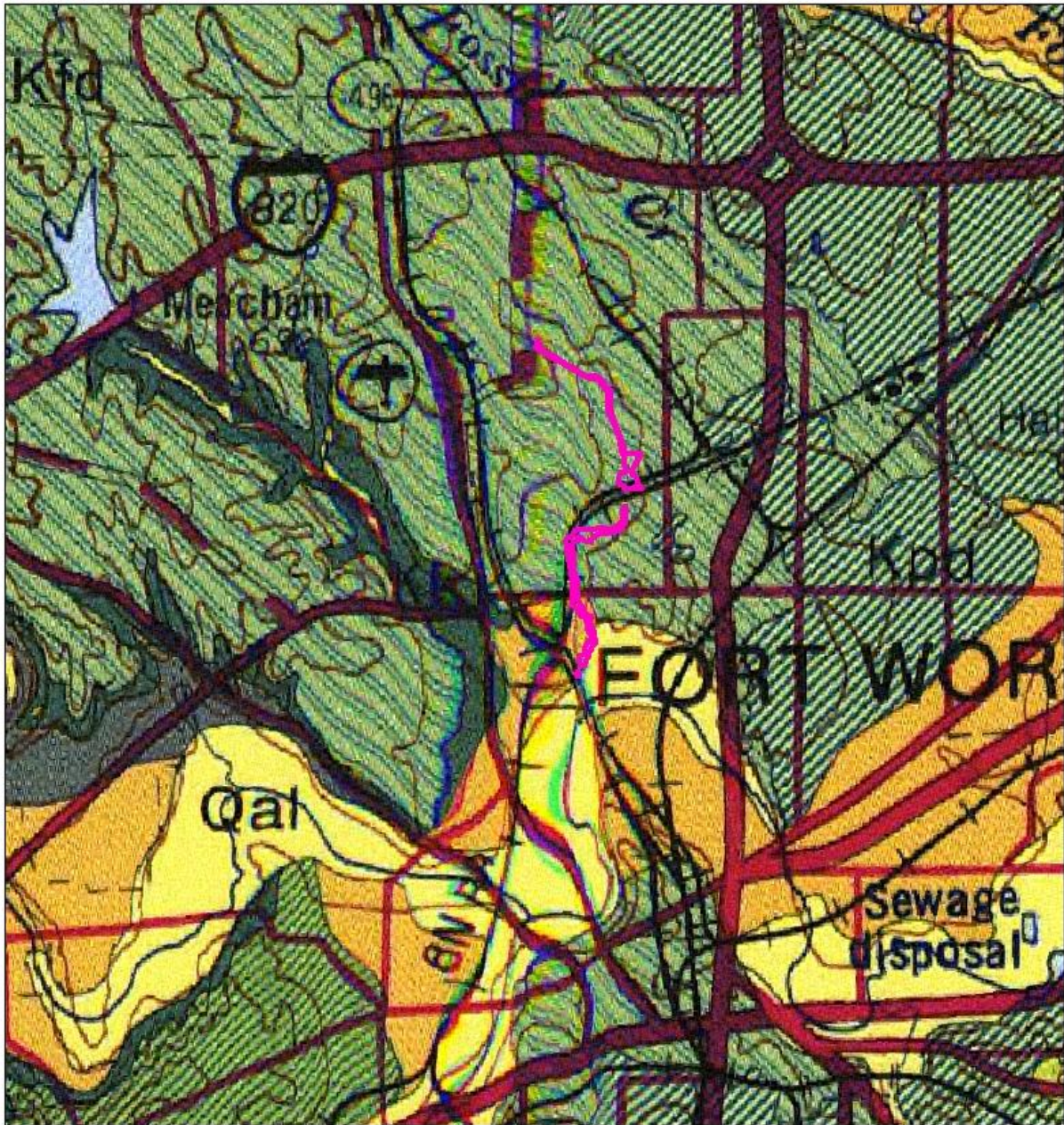
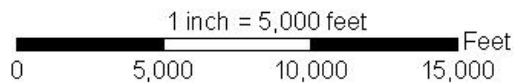
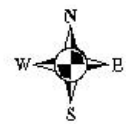


Figure 2.1
Geologic Setting

State: Texas
 County: Tarrant
 Date Map Created: 06/17/2015
 Source: TNRIS Geologic Atlas of Texas, Dallas Sheet

 Area of Potential Effects



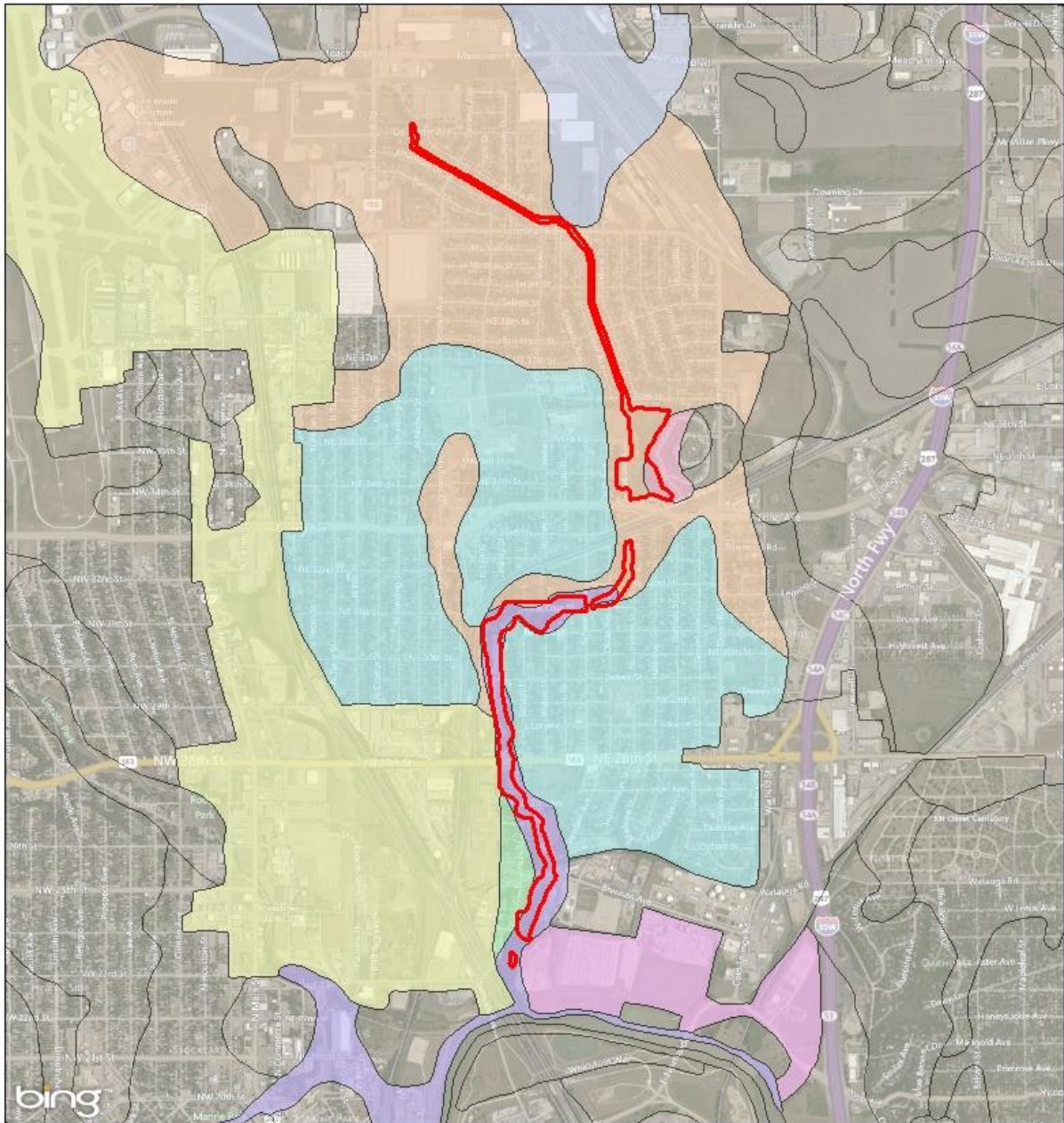


Figure 2.2
Soil located within and adjacent to the Survey Corridor

State: Texas
 County: Tarrant
 Date Map Created: 06/17/2015
 Source: (c) 2010 Microsoft Corporation and its data suppliers; 2007 USDA NRCS Digital Soils Database



Table 2.1: Soils Mapped within the APE

Map Unit	Soil	Approximate Percentage of the APE
67	Sanger-Urban land complex, 1 to 5 percent slopes - This component is described as a silty clay loam residuum weathered from claystone that is located on the footslope of ridges. Depth to a root restrictive layer, bedrock, lithic, is more than 80 inches. The natural drainage class is well drained.	48
28	Frio-Urban land complex, occasionally flooded - This component is described as a silty clay loam located within floodplains. Depth to a root restrictive layer, bedrock, lithic, is greater than 80 inches. The natural drainage class is moderately well drained.	38.4
3	Aledo-Bolar-Urban land complex, 3 to 20 percent slopes – This component is described as a gravelly clay loam residuum derived from limestone along the backslope of ridges. Depth to a root restrictive layer, bedrock, lithic, is between 8 to 20 inches. The natural drainage class is well drained.	5.2
65	Sanger clay, 1 to 3 percent slopes – This component is described as a silty clay residuum weathered from Austin Chalk limestone that is located on the backslope of hills. Depth to a root restrictive layer, bedrock, lithic, is 20 to 40 inches. The natural drainage class is well drained.	4.6
10	Bastil-Urban land complex, occasionally flooded – This component is described as a loamy alluvium located along stream terraces. Depth to a root restrictive layer, bedrock, lithic, is more than 80 inches. The natural drainage class is well drained.	1.7
81	Urban land – This component is described as developed land.	1.3
73	Slidell clay, 0 to 1 percent slopes – This component is described as a silty clay alluvium located along ridges. Depth to a root restrictive layer, bedrock, lithic, is greater than 80 inches. The natural drainage class is well drained.	0.4
7	Arents, frequently flooded – This component is described as slope alluvium over a residuum clay that is located along stream terraces. Depth to a root restrictive layer, bedrock, lithic, is more than 80 inches. The natural drainage class is well drained.	0.3

CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

The Texas Archeological Sites Atlas (TASA) database, maintained by the Texas Historical Commission (THC), indicated that four archeological surveys overlap the current APE. The first survey occurred in 2008 by Geo-Marine, Inc. (GMI) under the Texas Antiquities Permit No. 4775. The survey area paralleled the southern St. Louis Southwestern Railway. The second survey occurred in 2008 by AR Consultants Inc. (ARC) under Texas Antiquities Permit No. 4839. The survey examined the existing bridge and channel at the intersection of SH 183 and Decatur Avenue. Due to the high level of disturbance from the existing channel and sewage lines, no subsurface excavations took place and no cultural resources were observed. The third survey extended south of the intersection of SH 183 and Decatur Avenue and was conducted in 2010 by Tierras Antiguas Archaeological Investigations (TAAI) under Texas Antiquities Permit No. 5715. The survey investigated the cultural resources of Trail Drivers Park and fully encompassed the portion of the APE south of SH 183. Extensive subsurface testing occurred and only revealed three non-diagnostic historic materials coming from an eroded landscape. The fourth survey occurred in 2010 by GMI under Texas Antiquities Permit No. 5715. The survey area paralleled the northern St. Louis Southwestern Railway.

Previous Recorded Sites within Vicinity

Besides the surveys described above, the TASA archives indicate six additional archeological surveys have been conducted within one-mile of the APE (**Figure 3.1**). All surveys within one-mile of the APE are summarized in **Table 3.1**. In addition, three National Register Districts and a single National Register Property were recorded in the TASA archives and are summarized in **Table 3.2**. No archeological sites were recorded within one-mile.

Table 3.1: Previous Surveys within One-Mile of the

Agency	ACT* Permit No.	Firm/ Institution	Date	Survey Type	Location (Approximate)
TxDOT	4775	GMI	2008	Linear	Parallels St. Louis Southwestern Railway
TxDOT	4839	ARC	2008	Block	Intersection of 28th Street and Decatur Avenue
TxDOT	5160	GMI.	2010	Linear	Parallels St. Louis Southwestern Railway
TxDOT/ City of Fort Worth	5715	TAAI	2010	Block	Trail Drivers Park; Southern portion of APE

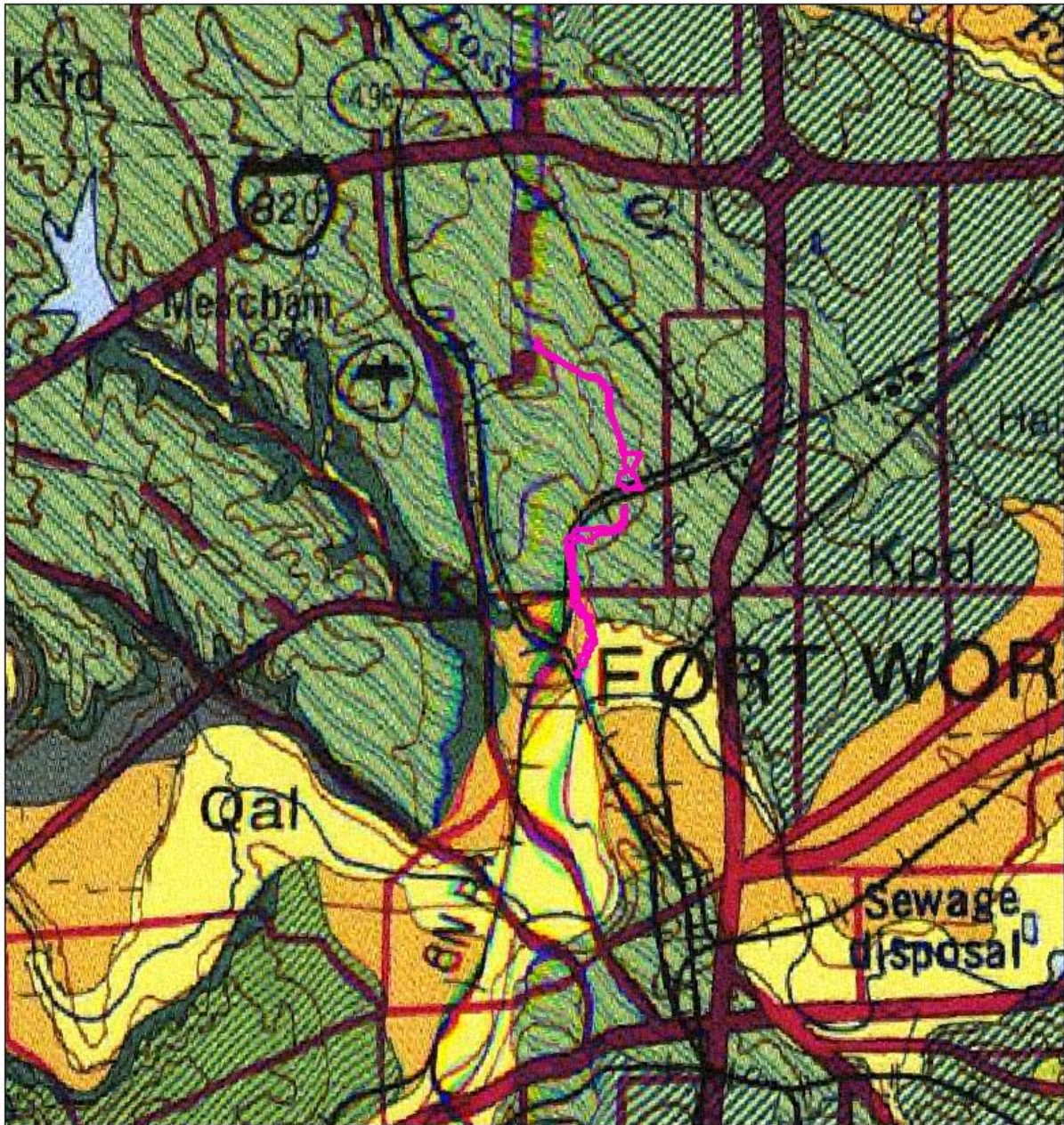


Figure 2.1
Geologic Setting

State: Texas
 County: Tarrant
 Date Map Created: 06/17/2015
 Source: TNRIS Geologic Atlas of Texas, Dallas Sheet

 Area of Potential Effects

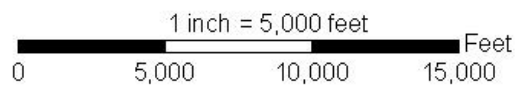
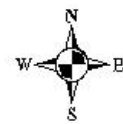


Table 3.2: National Register Properties

Property Name	Time Period of Significance	Property Type	SHPO Reference Number	Description	Location (Approximate)
Fort Worth Historic Stockyards	1890	Historic District	76002067	First permanent stockyards in Fort Worth: includes Amour and Smith packing plants, stockyard pens, coliseum, cattle barns, commercial district, and old post office	Bounded by 23 rd Street, Houston Street, 28 th Street, and railway
Marine Commercial Historic District	1906-1920	Historic District	1000102	Primarily composed of one and two-story brick and concrete buildings built in the Commercial, Moderne, and Mission/Spanish Colonial Revival styles	Bounded by North Main Street, between North Side Drive and North 14 th Street
Oakhurst Historic District	1830-1960	Historic District	10000051	Residential suburbs including portions of the town of Oakhurst	Bounded by Yucca Avenue, Sylvania Avenue, Watauga Avenue, and Oakhurst Scenic Drive
American Airways Hanger and Administration Building	2007	Historic Property	8000317	Architecture from A. Epstein and T. Byrne	Within Fort Worth Meacham International Airport

3.2 Regional Historical Background

Prior to 1843, occupation by Anglo-American settlers was limited due to hostile relations with Native American Comanche, Kiowa, and Wichita tribes. A series of punitive raid attempts, beginning in 1838, were conducted against the Native Americans settled along Village Creek, culminating in the Battle of Village Creek on May 24, 1841. A treaty signed in 1843 relocated the Native Americans to a reservation on the upper Brazos River. The treaty provided a greater sense of security to immigrants, which began to move into the region in larger quantities. By 1849, the population growth warranted additional military support. Thus, an outpost, Camp Worth (later to become the town of Fort Worth), was established and the area was formally recognized by the Texas Legislature as Tarrant County (Hightower 2012). The post-Civil War and Reconstruction years during the mid- to late-1860s saw the population decrease, as well as, economic decline and shortages. However, construction of the Texas and Pacific Railroad and the Missouri-Kansas-Texas Railroad through Fort Worth, during the 1870s, ensured the importance of the region and aided in its development and growth. Spurred by the railroads, agriculture began to take root during the 1880s. Agriculture was firmly established within the region by 1890, when open range ranching and long distance cattle drives were eliminated by the widespread adoption of barbed wire fencing. The combination of agriculture, coupled with localized cattle ranching, continued to fuel growth in Tarrant County, raising the population from 41,142 to 152,800 between 1890 to 1920. Economies within Tarrant County flourished until the peak of the Great Depression in 1932. Times remained tough, with few employment opportunities, until New Deal projects were initiated by President Franklin D Roosevelt. The economy continued to improve with the onset of World War II, which permanently established Fort Worth as an aviation powerhouse in both the military and manufacturing sectors. Population growth within the county was immense during the mid to late 20th century, rising from

361,253 in 1950 to 1.4 million by 2000. The population growth was linked to several key components, including: aviation and manufacture, interstate highway construction, and the completion of the Dallas/Fort Worth (DFW) International Airport. Today, the City of Fort Worth and Tarrant County has maintained its frontier atmosphere, while serving as a vital component to the Dallas-Fort Worth metropolitan area (Hightower 2012).

3.3 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 Tarrant County, Texas*, the Geologic Atlas of Texas, Dallas Sheet, the USGS topographic map, the NRCS digital soil database for Tarrant County, the Potential Archeological Liability Map (PALM), the National Archives and Records Administration's (NARA) 1940 Census Enumeration District Maps for Tarrant County, the Texas Historic Overlay (THO) georeferenced maps, and both past and current aerial photography.

3.3.1 Archeological Resource Potential

The APE contains variable levels of subsurface preservation as urban development and agricultural activities have dramatically altered the landscape. Historic-period aerial photographs, dating from 1952 to the present day, illustrate the ongoing disturbances that have occurred in the area. As shown in the 1952 aerial photograph, the northern segment was historically used for agricultural purposes. The area had been cleared of vegetation and an unnamed tributary bisected through several large maintained fields. The same 1952 aerial photograph illustrates the southern segment of the APE had been developed into residential and commercial areas. By 1957, the unnamed tributary was channelized north of East Long Avenue and the large agricultural fields had been replaced by residential houses and neighborhoods. The unnamed tributary remained unchannelized within the south segment, with the exceptions being immediately south of the St. Louis Southwestern Railroad and at the intersection of SH 183 and Decatur Avenue, which was altered between 1968 to 1970. According to historic-period and modern aerial photographs, the tributary and riparian corridor south of SH 183 has remained largely unaffected by modern disturbances. The only exception being at the intersection of Brennan Avenue and Guenther Avenue where a small section, approximately 200 feet, of the unnamed tributary was altered between 1970 to 1979.

Potential Archeological Liability Map

Looking at the APE within the Tarrant County PALM, the northern segment lies within an area that contains a moderate potential for shallow deposits and a high potential for deeply buried deposits. The southern segment generally lies within an area that contains negligible potential for shallow deposits and low potential for deeply buried deposits. The southern extent of the APE, which lies within Trail Drivers Park, contains a high potential for shallow deposits and a high potential for deeply buried deposits. The predictive potential for archeological deposits is based upon an environment that lies within a reasonable context. The highest potential for deposits within the APE lies within Trail Drivers Park; the area was extensively surveyed by Tierras Antiguas. As a result of the cultural resources survey, 74 shovel tests were excavated and only revealed three historic artifacts from an eroded setting. Unfortunately, due to the previous disturbances occurring throughout most of the APE, it is likely that the probability for intact deposits has been compromised.

3.3.2 Historic-Period Resources

Historical aerial photographs provided by Environmental Data Resources, Inc. (EDR) and georeferenced topographic maps illustrate that several structures dating to the mid-20th century were located within undeveloped portions of the APE (**Appendix B**). The earliest of these structures, identified during background research, were present as early as 1920 within the former location of Niles City. It is likely that older structures, dating to the turn-of-the-century, were located within the section of the APE

between Diamond Road and the West Fork Trinity River. However, finding evidence to corroborate this is difficult as maps did not generally document structures until early 1950s. Early 1950s maps indicated that a majority of these structures were located straddling Ridder Road, between NE 36th Street and East Long Avenue and between Diamond Road and NE 28th Street. Since all of the structures within the APE have been demolished, it was determined that the APE contains a high potential for historic-aged archeological sites, with little to no integrity.

CHAPTER 4: METHODOLOGY

The archeological inventory for the Lebow Drainage Improvement project was conducted on 04 June 2015. The methods and density of excavating shovel test met the minimum requirements for field tactics stipulated by the THC and CTA Archeological Survey Standards for Texas. Prior to field work, the IES staff conducted an historical and archeological records search to determine what cultural resources have been recorded within the APE and within a one-mile (1,600 meter [m]) radius of the APE. This information was detailed above. Additionally, IES staff reviewed ecological, geological, soils data, as well as, historic and recent topographic maps and aerial photography.

4.1 Survey Methods

The 100 percent intensive pedestrian survey consisted of a careful examination of the ground surface and existing subsurface exposures for evidence of archeological sites within the APE. The survey consisted of a multiple transect scheme with transect lines paralleling Lebow Drainage. Additional shovel test units were placed in the northwestern portion of the APE near existing features or potential areas of interests. 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

Shovel tests were excavated along each transect line at 50m intervals within areas with potential for cultural materials. Shovel tests were excavated to 80 centimeters (cm) or the bottom of culturally sterile deposits, whichever was encountered first, unless otherwise specified. Each shovel test was 30cm in diameter and was hand excavated in natural stratigraphic levels not exceeding 20cm in thickness. Excavated soil was screened using ¼-inch hardware cloth to test for the presences of buried cultural material. All shovel tests were recorded on maps and plotted using hand-help global positioning system (GPS) units. Archeologists documented the results of each test on standardized shovel test forms. According to the Archeological Survey Standards of Texas, for a project area between 10 and 100 acres, one shovel test should be excavated for every two acres. As such, approximately 31 shovel tests were needed to appropriately test for archeological resources within the 61.95-acre APE. However, shovel tests numbers varied based on the amount of disturbance and previously surveyed areas present within the APE. All shovel tests, cultural features, and other site data were geospatially recorded using a Trimble Geo XT handheld GPS unit.

4.3 Site Recording

When applicable, archeological sites were evaluated through no fewer than six shovel tests to assess their horizontal extent and characterize depth of archeological deposits. Negative shovel tests, the distribution of surficial artifacts/features, topography, and/or the APE extent delineated the boundaries of each site. For the purposes of this survey, an archeological site was defined as five or more surface artifacts within a 10m radius, a cultural feature observed on the surface or exposed during shovel testing, a positive shovel test containing two or more subsurface artifacts, or two or more positive shovel tests located within 30m of each other. All newly-documented sites were assigned a temporary field number and were recorded on

State of Texas Archeological Site Data forms, photographed, sketch mapped, and plotted on the USGS topographic quadrangle.

4.4 Site Assessment

A scaled map was prepared for each identified archeological site, and each site was plotted on the Haltom City 7.5-minute USGS topographic map. The data from any encountered site was recorded in the field and processed at the IES office in McKinney, Texas to determine site significance and potential eligibility as a SAL or listing on the NRHP. When applicable, a variety of data was used to assess site significance including date(s), artifact density, artifact variety, features density, feature variety, feature preservation, stratigraphic integrity, and amount of disturbance. Completed site forms were submitted to the Texas Archeological Research Laboratory (TARL).

4.5 Curation

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

CHAPTER 5: RESULTS

During the survey, four archeological sites were encountered within the 61.95-acre (25.07 hectare [ha]) area inventoried for cultural resources. Shovel test unit locations are illustrated in **Figure 5.1**, a photograph location map is located in **Appendix A**, general project photographs in **Appendix B**, and archeological site locations in are in **Appendix C**.

5.1 Survey Area

5.1.1 Past Ground Disturbances

Through the survey, it was determined that the APE contained a low degree of subsurface integrity. The low subsurface integrity was the result of the APE's location surrounding the Lebow Channel, which has been extensively modified and rerouted since the 1950s (**Appendix B, Photographs 3, 7, 8, 11, and 15**). In addition, to channel modification, numerous historic-aged structures and roads have been demolished/removed in proximity to the channel. The overall goal of the project is to reduce excessive flooding that transpires during heavy rain events. However, the past high velocity flooding is apparent within several portions of the APE, which has stripped any potential archeological deposits. Approximately 29 acres of the remaining 48.4 acres that have not been previously surveyed for cultural resources exhibited some form of disturbance (**Figure 5.1**).

5.1.2 Vegetation Communities

Dominant plant communities within the project area identified during the survey included a riparian and a grassland community. Field investigations identified the dominant plant species occurring in the riparian area to include trees species such as hackberry (*Celtis laevigata*), green ash (*Fraxinus pennsylvanica*), cottonwood (*Populus deltoides*), Osage orange (*Maclura pomifera*), and eastern red cedar (*Juniperus virginiana*). The grassland community was dominated by species such as Chinese privet (*Ligustrum sinense*), greenbrier (*Smilax bona-nox*), poison ivy (*Toxicodendron radicans*), annual ragweed (*Ambrosia trifida*), Canada wild-rye (*Elymus canadensis*), Johnsongrass (*Sorghum halepense*), Bermudagrass (*Cynodon dactylon*), and common dandelion (*Taraxacum officinale*).

5.2 Pedestrian Survey and Shovel Testing

During the pedestrian survey, six negative shovel tests were excavated throughout the APE (**Figure 5.2**). Due to the shallow depth of soils that could potentially contain archeological resources, any heavy disturbance observed on the surface was perceived to have likely impacted the majority of subsurface deposits that could potentially contain cultural material. Excavating shovel test units across the APE revealed one predominant soil type containing a clay loam (10YR 3/1 or 10YR 2/1) with gravel one to two millimeters in size. No shovel test was excavated deeper than 40 cmbs because of the shallow Holocene-aged soils and shallow bedrock that prevails throughout the area and the overall high level of disturbance. In addition to shovel testing, subsurface exposure including animal burrows, disturbed patches, and cutbanks along the unnamed tributary were examined. Shovel testing and visual inspections revealed that there are no soils suitable for containing deeply buried cultural material along the tributary.

5.3 Documented Resources

5.3.1 41TR279

During the IES survey, a newly recorded historic period site (41TR279) was encountered within the north segment of the APE. The site is located 150 feet west of the intersection of De Ridder Street and Elaine Place (**Figure 5.3**). The component was defined by a low density, diffused scatter of historic-aged artifacts (**Appendix A, Photographs 1 to 4**).

During the background review, an aerial photograph from 1957 indicated a residential structure and a paved driveway was present within the boundary of the newly recorded site. An outbuilding was constructed southeast of the residential structure in 1968 and another to the south in 1970. The southeastern structure was removed between 1995 and 2001 and the residential structure and southern outbuilding were demolished between April 2012 and April 2013.

It was determined that site 41TR279 extended approximately 160 feet by 50 feet (50m by 15m) within the APE. Although no structural foundations were encountered during the site delineation, several brick fragments and concrete aggregate were identified. The artifacts observed consisted of a metal pipe, whiteware sherds, tile fragments, and scrap and sheet metal. The artifacts were observed along the surface and due to the obvious ground disturbance and the nature of the site, no subsurface testing was conducted.

5.3.1.1 Site Summary

Site 41TR279 was a newly recorded historic period site with a low-density surficial artifact scatter. Overall, the condition of the site was very poor. The removal of the structure by heavy machinery has ubiquitously disbursed artifacts throughout the site. Based on the background review and results of the cultural resources survey, it appears the site has no integrity and negligible potential to yield significant archaeological data.

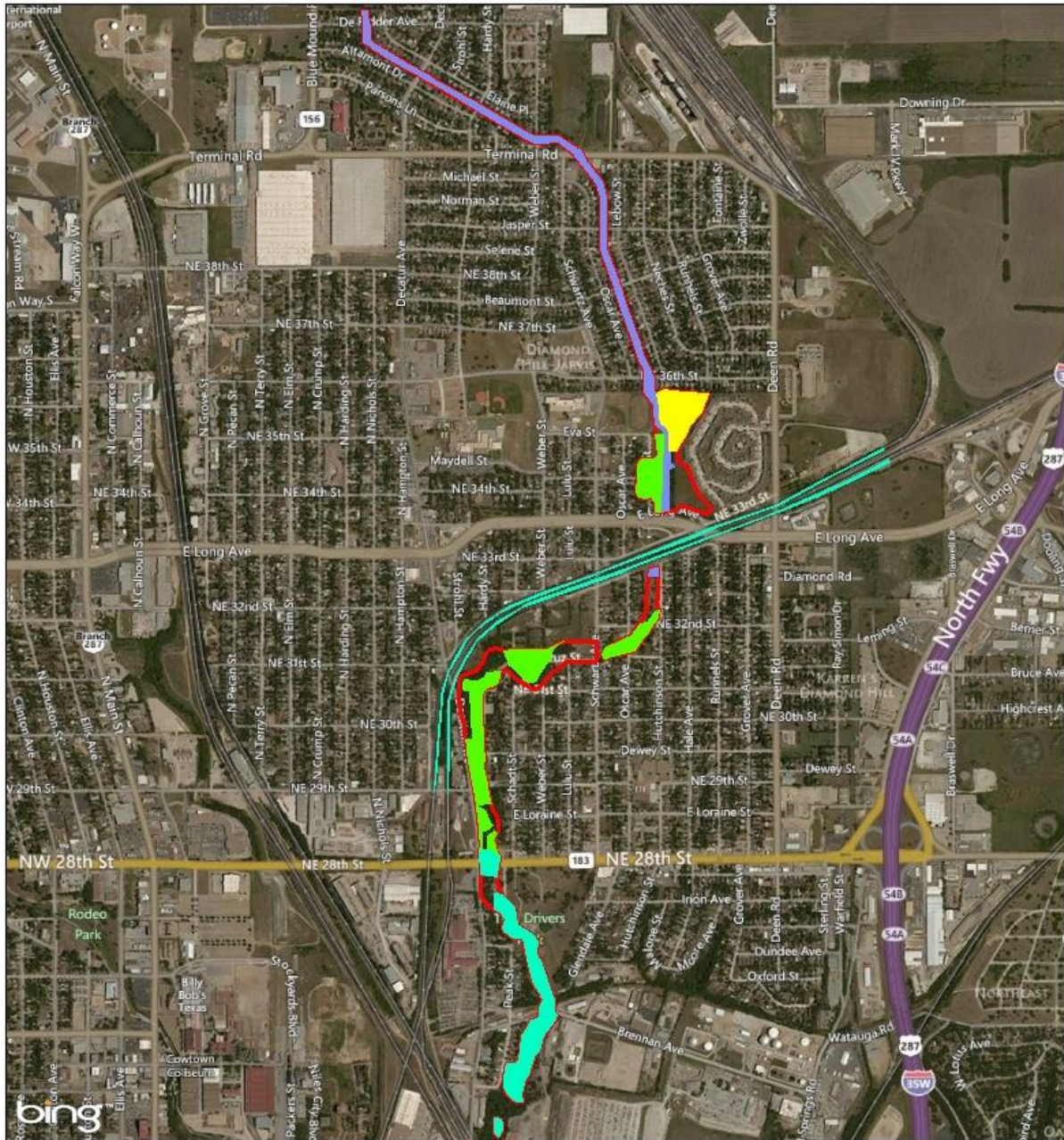


Figure 5.1
 Previously Surveyed, Disturbed, or Restricted Wildlife Areas

State: Texas
 County: Tarrant
 Date Map Created: 06/15/2015
 Source: (C) 2010 Microsoft Corporation and its data suppliers

Area of Potential Effects
 Previously Surveyed
 Listed Rookery

Previous Ground Disturbances
 Channelization
 Demolition/Construction Related

1 inch = 1,500 feet
 0 1,500 3,000 4,500 Feet

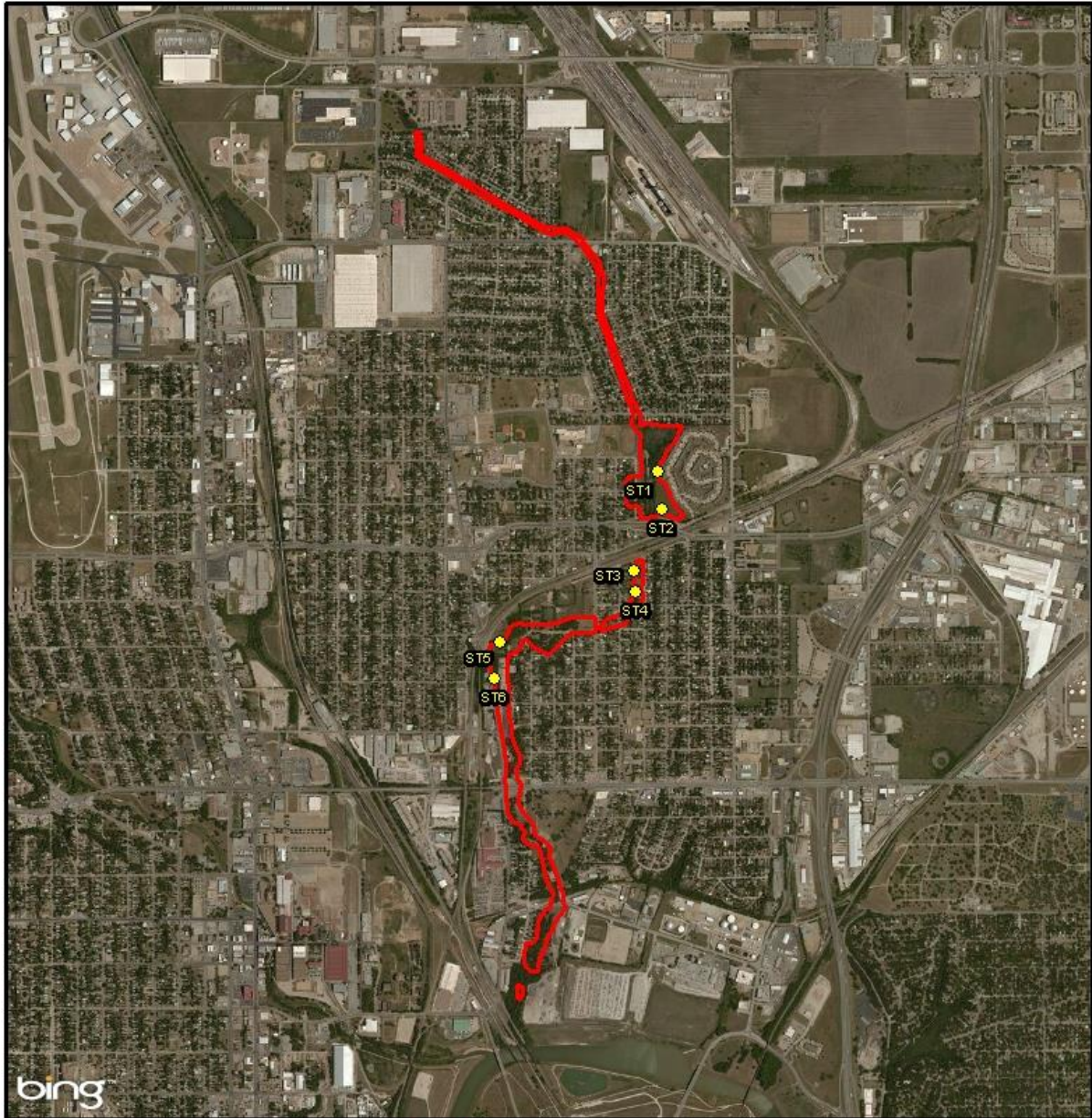
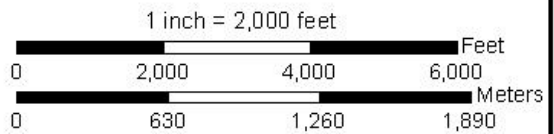
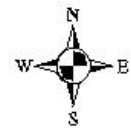
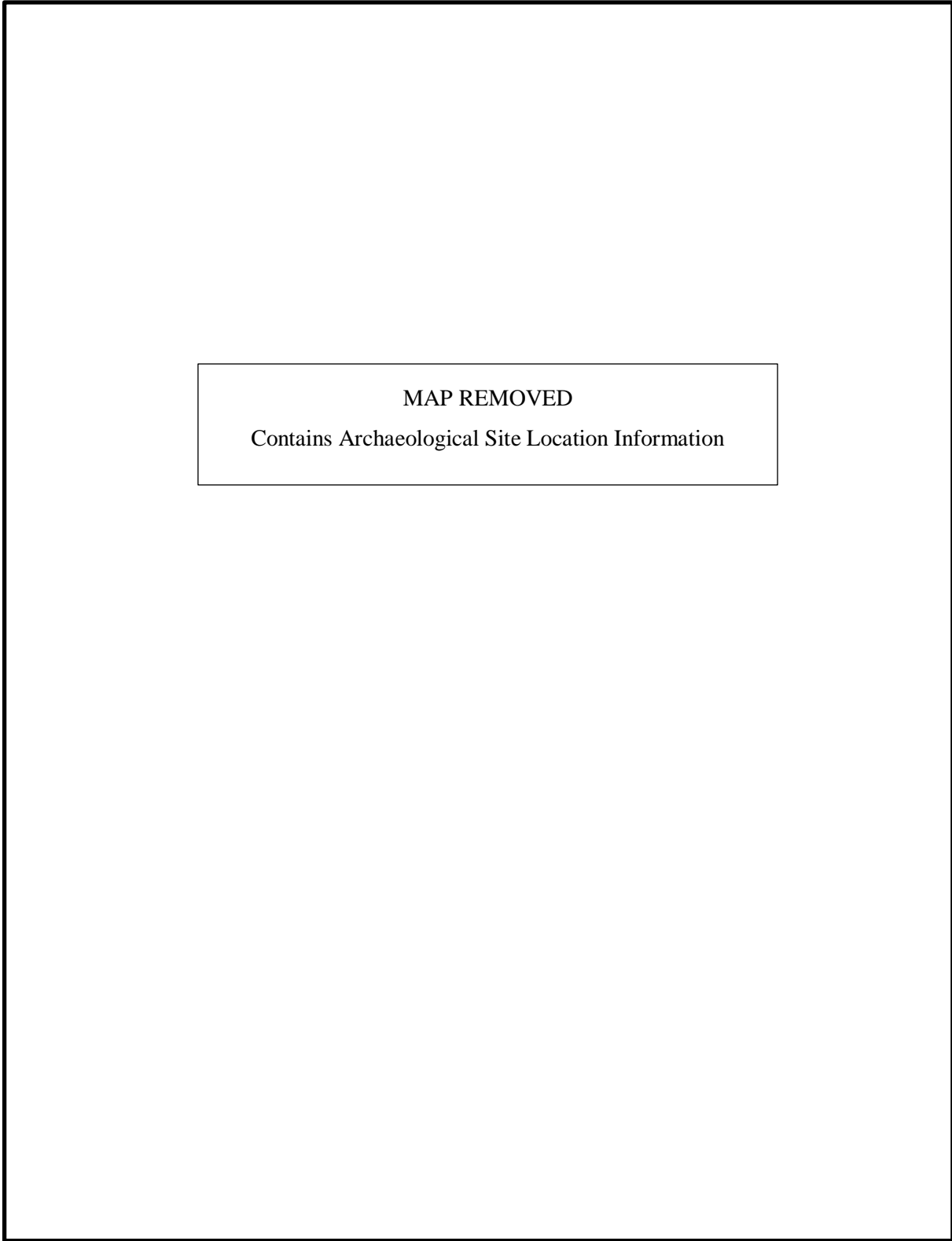


Figure 5.2
Archeological Shovel Test Locations

County: Tarrant
 State: Texas
 Date map created: 06/17/2015
 Source: (c) 2010 Microsoft Corporations
 and its data suppliers

- Area of Potential Effects
- Negative Shovel Test Location





5.3.2 41TR280

During the IES survey, a newly recorded historic component site (41TR280) was encountered within the southernmost portion of the northern APE segment. The site is located 160 feet northeast of the intersection of Lebow Street and E Long Avenue (**Figure 5.4**). This component was defined by historic-aged manifestations, which were defined by a diffuse surface accumulation of building materials. The site encompassed an approximate 2.14-acre area that sprawled across approximately 3.5 percent of the APE (**Appendix A, Photographs 18 to 26**).

During the background review, a 1952 aerial photograph indicated that six lots, containing residential homes and multiple outbuildings were present within the boundary of the newly recorded site. The individual properties within the site continuously transformed between 1952 and 2013 as outbuildings were constructed, demolished, or altered throughout this period. The demolishing of the residential structures began in 2013 and was completed by 2014.

It was determined that site 41TR280 spans approximately 625 feet by 130 feet (190m by 40m) along a north/south by east/west axis. Six fragmented driveways, leading to where the residences would have been, were encountered during the site delineation and several brick fragments and concrete aggregate were identified within site's boundary. Additionally, several pieces of scrap metal and rebar were observed.

5.3.2.1 Site Summary

Site 41TR280 was a newly recorded historic component site with a diffused historic scatter. Overall, the condition of the site was very poor. The removal of the structures by heavy machinery disbursed a low-density scatter of building materials and associated artifacts throughout the site. Based on the background review and results of the cultural resources survey, it appears the site has no integrity and has negligible potential to yield significant archeological data.



5.3.3 41TR281

During the IES survey, a newly recorded historic period site (41TR281) was encountered within the southern APE segment. It was determined that site 41TR281 spans approximately 325 feet by 900 feet (100m by 275m) along a north/south by east/west axis. The site extends from 650 feet north of the intersection of Hardy Street and Dewey Street to 400 feet west of the intersection of Vera Cruz Street and Lulu Street (**Figure 5.5**). The site was characterized by a diffuse, low-density artifact scatter. Although no structural foundations were encountered during the site delineation, several brick fragments and concrete aggregate were observed. The site encompassed an approximate 3.74-acre area that sprawled across approximately six percent of the APE (**Appendix A, Photographs 29 to 32**).

During the background review, an aerial photograph from 1952 indicated the presence of six residential structures and their associated outbuildings, a residential road, and a bridge within the boundary of the newly recorded site. Many of the outlying buildings were constructed, removed, or altered between 1952 and 2009. Between 1995 and 2001, the bridge fell into disrepair and was no longer functional. Subsequently, the portion of Hardy Street leading south from the bridge was no longer used and vegetation began to reclaim the area. By 2009, the structures north of the bridge had all been demolished and the road leading to them was no longer utilized and fell into disrepair. The final structure within the site boundary was demolished in 2009.

5.3.3.1 Site Summary

Site 41TR281 was a newly recorded historic-aged site encompassing a portion of a residential neighborhood that was established prior to the 1950s. The removal of the structures by heavy machinery disbursed a low-density scatter of building materials and associated artifacts throughout the site. Based on the background review and results of the cultural resources survey, it appears the site has no integrity and has negligible potential to yield significant archeological data.

5.3.4 41TR282

During the IES survey, a newly recorded historic period site (41TR282) was encountered within the south-central portion of the APE. The site extends south of the intersection of 28th Street and Decatur Avenue (**Figure 5.6**). This component was defined by a low density, diffused historic scatter. The site encompassed an approximate 1.79-acre area that sprawled across approximately 2.89 percent of the APE (**Appendix A, Photograph 33 to 38**).

During the background review, an aerial photograph from 1952 indicated the presence of one commercial structure and four residential structures and their associated outlying structures. The commercial structure is located along 28th Street and the four residential structures are located along Guenther Avenue. Many of the outlying buildings were constructed, removed, or altered between 1952 and 2013. The first structures demolished were the commercial structure and the residential structure located at the intersection of 28th Street and Guenther Avenue in 2009. The second and fourth residential structures located along Guenther Avenue were demolished in 2011 and the third residential structure was demolished in 2013. It was determined that site 41TR282 spans approximately 250 feet by 400 feet (75m by 120m) along a north/south by east/west axis. Although no structural foundations were encountered during the site delineation, several brick fragments and concrete aggregate were observed.

5.3.4.1 Site Summary

Site 41TR282 was a newly recorded historic component site covering a residential neighborhood that was established prior to the 1950s. The current condition of the site was very poor and many of the locations of the residential foundations are overgrown with vegetation. Based on the background review and results of the cultural resources survey, it appears the site has little integrity and has little potential to yield significant archeological data.



MAP REMOVED

Contains Archaeological Site Location Information

CHAPTER 6: SUMMARY AND RECOMMENDATIONS

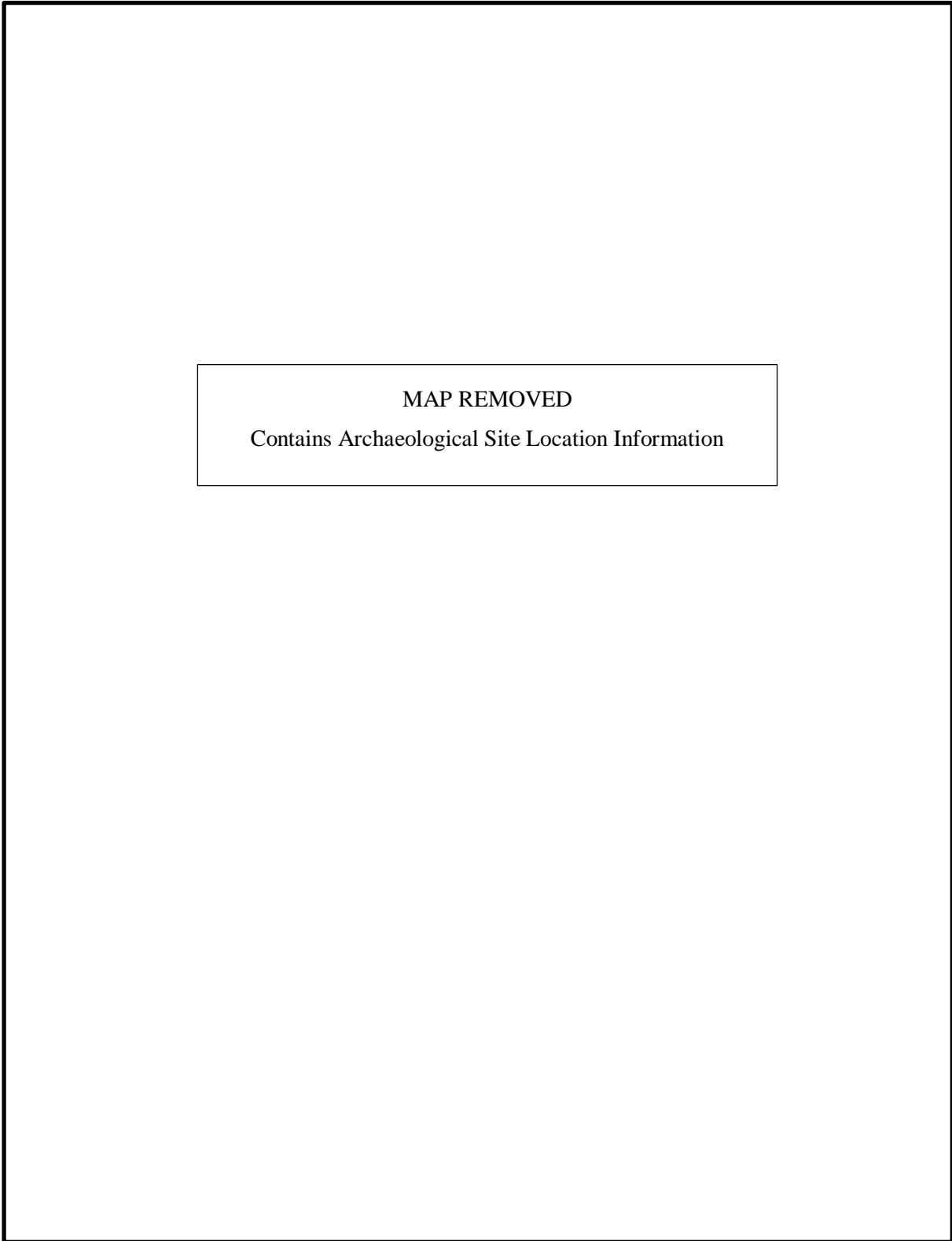
During the pedestrian survey, six shovel tests were excavated within the 61.95 acre (25.09 ha) area. Four cultural resources sites (41TR279, 41TR280, 41TR281, and 41TR482) were encountered during the pedestrian survey. However, due to the lack of preservation and general nature of the sites, none were recommended as potentially eligible for listing on the NRHP or as an SAL. As such, it is the recommendation of IES that the Lebow Drainage Improvement Project be permitted to continue without the need for further cultural resource investigations. However, if any cultural resources, other than those detailed within this report are unearthed during construction, the operators should stop construction activities immediately in those areas. The project environmental representative should then be contacted to initiate coordination with the THC prior to resuming any construction activities.

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APPENDIX A
Photograph Location Map



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**APPENDIX B
General Project Photographs**



Photograph 1



Photograph 2



Photograph 3



Photograph 4



Photograph 5



Photograph 6



Photograph 7



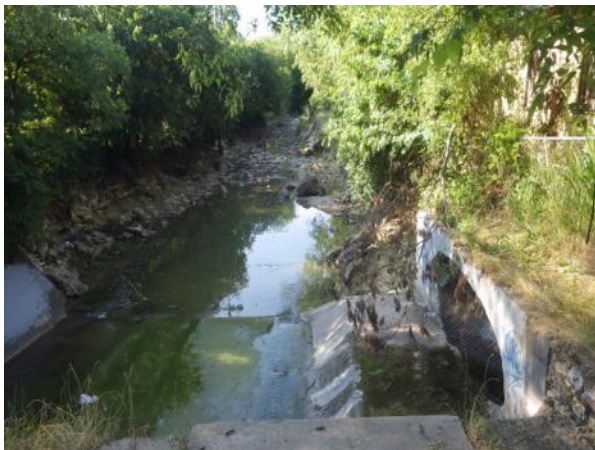
Photograph 8



Photograph 9



Photograph 10



Photograph 11



Photograph 12



Photograph 13



Photograph 14



Photograph 15



Photograph 16



Photograph 17



Photograph 18



Photograph 19



Photograph 20



Photograph 21



Photograph 22



Photograph 23



Photograph 24



Photograph 25



Photograph 26



Photograph 27



Photograph 28



Photograph 29



Photograph 30



Photograph 31



Photograph 32



Photograph 33



Photograph 34



Photograph 35



Photograph 36



Photograph 37



Photograph 38



Photograph 39



Photograph 40



Photograph 41



Photograph 42



Photograph 43



Photograph 44



Photograph 45



Photograph 46



Photograph 47



Photograph 48



Photograph 49

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APPENDIX C
Archeological Site Locations

