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Cultural Resources Survey of the Proposed Bonnie Wenk Park Phase II, City of McKinney, Collin County, Texas

Kevin Stone

Joshua Hamilton

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Cultural Resources Survey of the Proposed Bonnie Wenk Park Phase II, City of McKinney, Collin County, Texas

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CULTURAL RESOURCES REPORT



Cultural Resources Survey of the Proposed Bonnie
Wenk Park Phase II, City of McKinney, Collin County, Texas

Prepared for:
Texas Historical Commission
Texas Antiquities Permit #7217

On Behalf of:
Nathan D. Maier Consulting Engineers

&

City of McKinney



August 2015

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Cultural Resources Survey of the Proposed Bonnie Wenk Park Phase II, City of McKinney, Collin County, Texas

by

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&

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Cultural Resources Report
August 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 Bonnie Wenk Park Phase II project in McKinney, Collin County, Texas. As the City of McKinney 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.

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). 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 cultural resources inventory was conducted on the 23 and 26 March 2015, under Texas Antiquities Permit No. 7217. During the IES survey, no cultural resources were documented within APE. No further work is warranted. However, if any cultural resources are unearthed during construction, the operators should cease work immediately in that area, and the THC/SHPO should be 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 project area, 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 Nathan D. Maier Consulting Engineers, Integrated Environmental Solutions, LLC (IES) performed a cultural resources inventory to locate any prehistoric or historic-period cultural resources northeast of the intersection of Hardin Boulevard and Virginia Parkway in the City of McKinney, Collin County, Texas. The project area is plotted on the McKinney West 7.5-minute series U.S. Geological Survey (USGS) Quadrangle sheet and recent aerial photograph (**Figures 1.1 and 1.2**).

1.2 Area of Potential Effects

1.2.1 Archeological Resources

Although project design details are still in the early stages of planning, current plans call for the construction of a network of trails, parking lots, restroom facilities, recreational fields, and roads within a 39-acre area referred to as the project area or APE. Although the exact depth of ground disturbing activities has not yet been determined, subsurface investigations within the APE were assessed to culturally sterile soil.

1.2.1 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. Thus, any structure of historic age, encountered within the footprint of proposed construction, or within 300 feet (approximately 100 meters [m]) of the project area, were photographed and assessed for their potential eligibility for listing on the National Register of Historic Places (NRHP).

1.3 Administrative Information

Sponsor: City of McKinney

Review Agency: Texas Historical Commission (THC)

Principal Investigator: Kevin Stone, MA, RPA

IES Project Number: 04.051.034

Days of Field Work: 23 and 26 March 2015

Area Surveyed: Approximately 39 acres (15.7 hectare [ha])

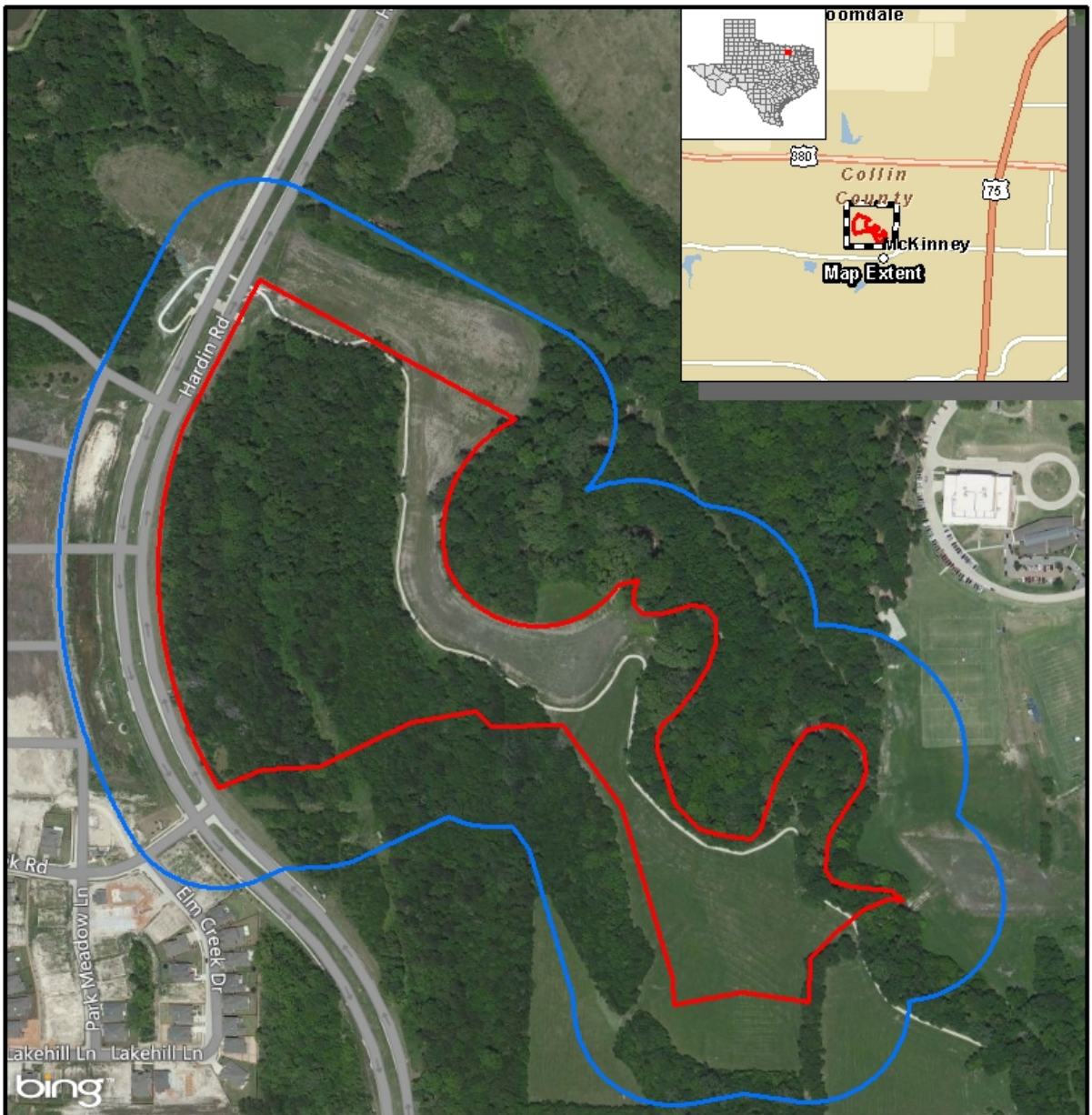
Sites Recommended as Eligible for National Register Listing Under Criteria in 36 Code of Federal Regulations (CFR) 60.4:

None

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

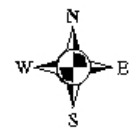
None

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

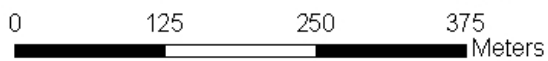


**Figure 1.1
Project Location**

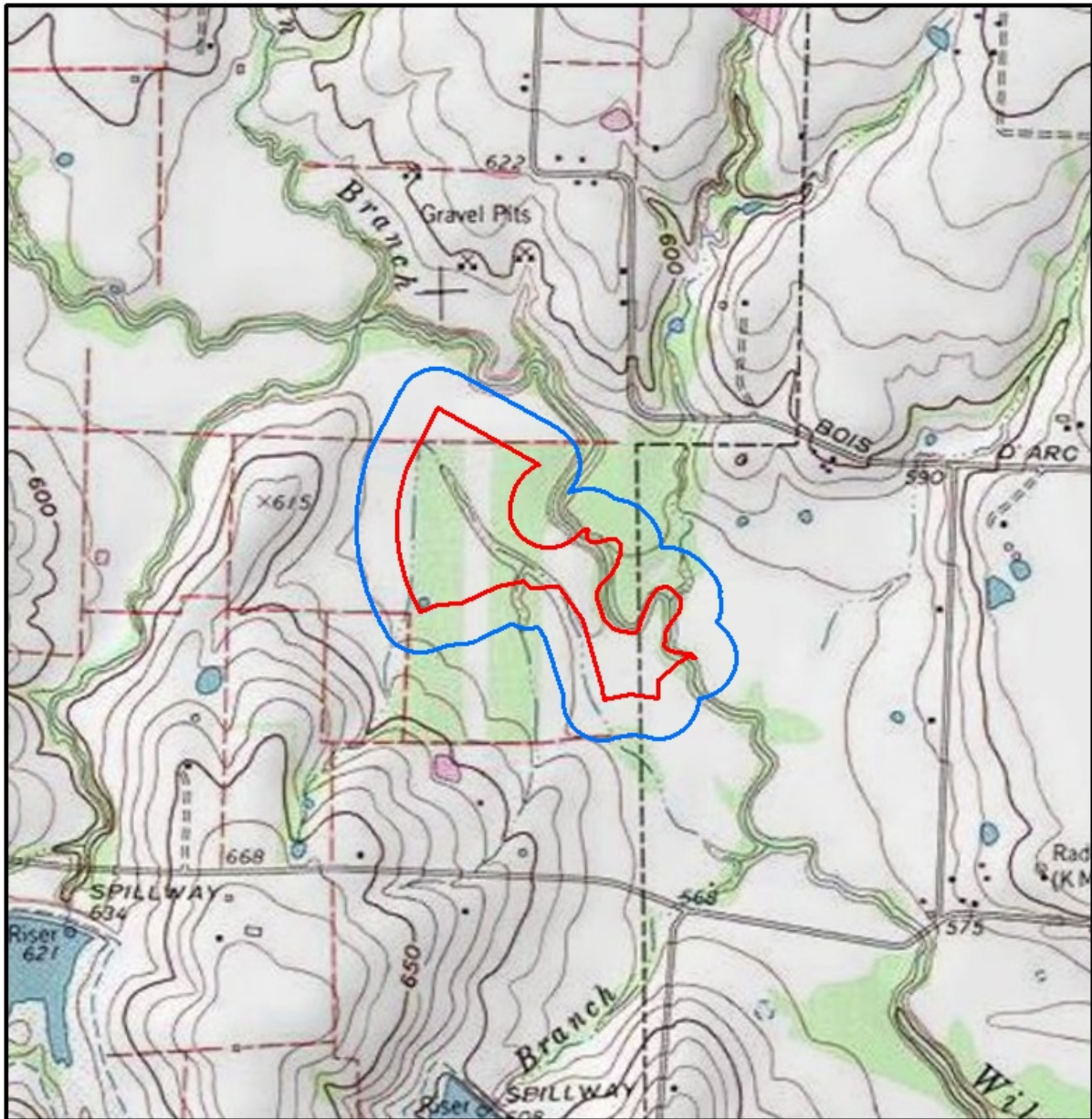
- Area of Potential Effects - Direct
- Area of Potential Effects - Indirect



1 inch = 400 feet

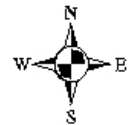


Counties: Collin
 State: Texas
 Date map created: 4/7/2015
 Source: (c) 2009 Microsoft Corporation
 and its data suppliers; ESRI 10.2
 Streetmap

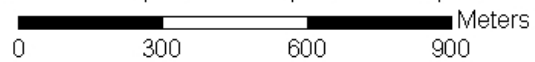
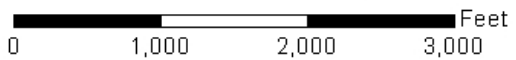


**Figure 1.2
Topographic Setting**

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



1 inch = 1,000 feet



County: Collin
 State: Texas
 Date map created: 4/7/2015
 Source: Copyright:© 2013 National Geographic Society, i-cubed

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CHAPTER 2: ENVIRONMENTAL BACKGROUND

2.1 Environmental Setting

2.1.1 *Climate*

The APE is located in Collin County and lies in the north-central part of the state of Texas. Annual rainfall averages between approximately 35.01 to 42.01 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 periods (Estaville and Earl 2008).

2.1.2 *Topographic Setting*

The APE lies within a lowland setting that encompasses Wilson Creek and its associated floodplain. The northernmost portion of the APE is approximately 400 feet (ft) southwest of Wilson Creek. However, the eastern half of the APE shares its northern boundary with the southern bank of Wilson Creek. The 1960 McKinney West 7.5' Quadrangle topographic map indicated that two unnamed tributaries entered the APE from the south. The headwaters of the tributaries come from "V-"shaped contours from the northern slope of a prominent hill southwest of the APE. The first tributary traversed to the northwestern portion of the APE and then continued to the southeast, where it merged with the second unnamed tributary. The second unnamed tributary entered the center portion of the APE and merged with the first unnamed water feature. The converged tributaries continued along a general southeasterly direction and merged into Wilson Creek 0.25-mile from the APE. The west and southwest portions of the APE maintained a relatively uniform surface that was occasionally dissected by shallow drainage depressions. The elevation of the APE generally slopes from the northwest to northeast and ranged between approximately 575 to 553 ft above mean sea level (amsl).

2.1.3 *Vegetation Communities*

The vegetation communities were divided into three distinct communities: **Bermudagrass, wetland, and riparian**. The maintained **Bermudagrass** vegetation community is primarily composed of Bermudagrass (*Cynodon dactylon*) and lies within the maintained fields and floodway easement. The **Wetland** vegetation communities were dominated by crowfoot sedge (*Carex crus-corvi*), green ash (*Fraxinus pennsylvanica*), and sugarberry (*Celtis laevigata*). The **riparian** community was dominated by green ash, Johnsongrass (*Sorghum halepense*), giant ragweed (*Ambrosia trifida*), goldenrod (*Solidago* spp.), wood-oats (*Chasmanthium latifolium*) Canada wild-rye (*Elymus canadensis*), bristly scaleseed (*Spermolepis echinata*), sugarberry, saw greenbrier (*Smilax bona-nox*), cedar elm (*Ulmus crassifolia*), Osage orange (*Mauclura pomifera*), and cottonwood (*Populus deltoids*).

2.1.4 *Physiographic Setting*

The Blackland Prairies region is characterized by low-relief topography containing "dark, thick, plastic clay soils" (Hill 1901). Although tall grass prairies dominate the Blackland Prairies' ecozone, wooded areas are also present along primary rivers and streams, in isolated patches, within particular soils, and within abrupt topographic transitions (Diggs et al. 1999). The APE is located upon Quaternary alluvial deposits that consist of clay, sand, silt, and gravels found in flood plain areas (**Figure 2.1**). These deposits are a result of storms moving large volumes of water with enough energy to erode, transport, and deposit sediments (Scoggins 2004).

2.1.5 *Soil Descriptions*

Soils within the APE primarily pertain to the Frio clay loam, frequently flooded; Frio clay loam, occasionally flooded; and Lewisville silty clay, 1 to 3 percent slopes; which are respectively distributed across 71.6, 26.7, and 1.8 percent of the APE (**Figure 2.2**). The low-lying setting of the APE was confirmed as having frequently flooded soils as flooded areas and hydric soils were identified within the APE. Soils data were viewed from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (Web Soil Survey 2015).

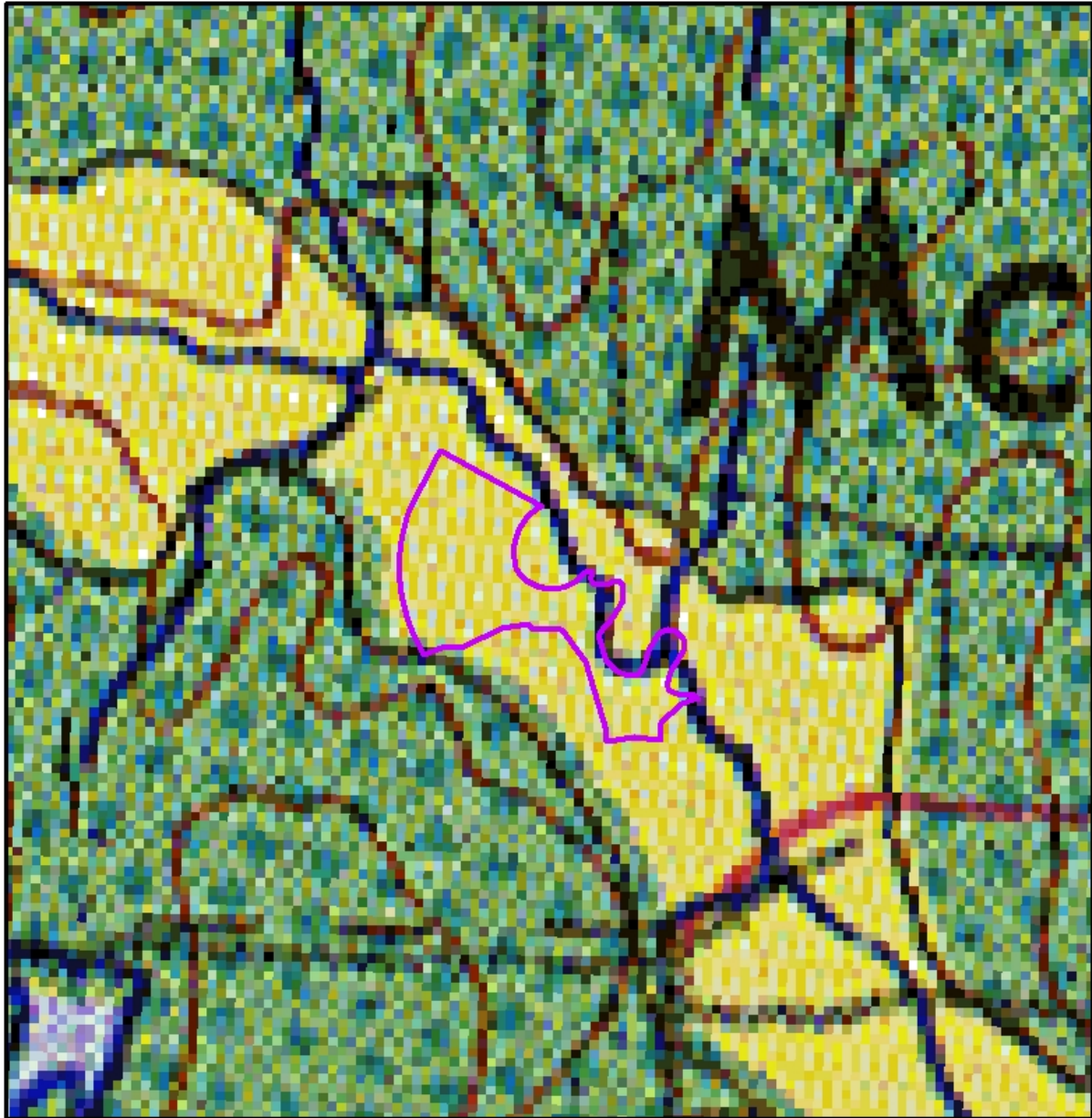



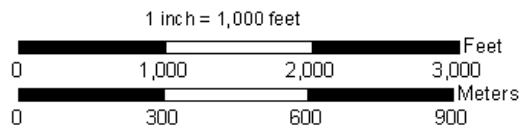
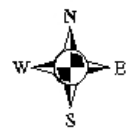


Figure 2.1
Geologic Setting

County: Collin
 State: Texas
 Date map created: 4/7/2015
 Source: TNRIS Geologic Atlas
 of Texas; Sherman Sheet

-  Area of Potential Effects - Direct
- Geologic Formation
-  Kef - Eagle Ford Formation
-  Qal - Floodplain deposits



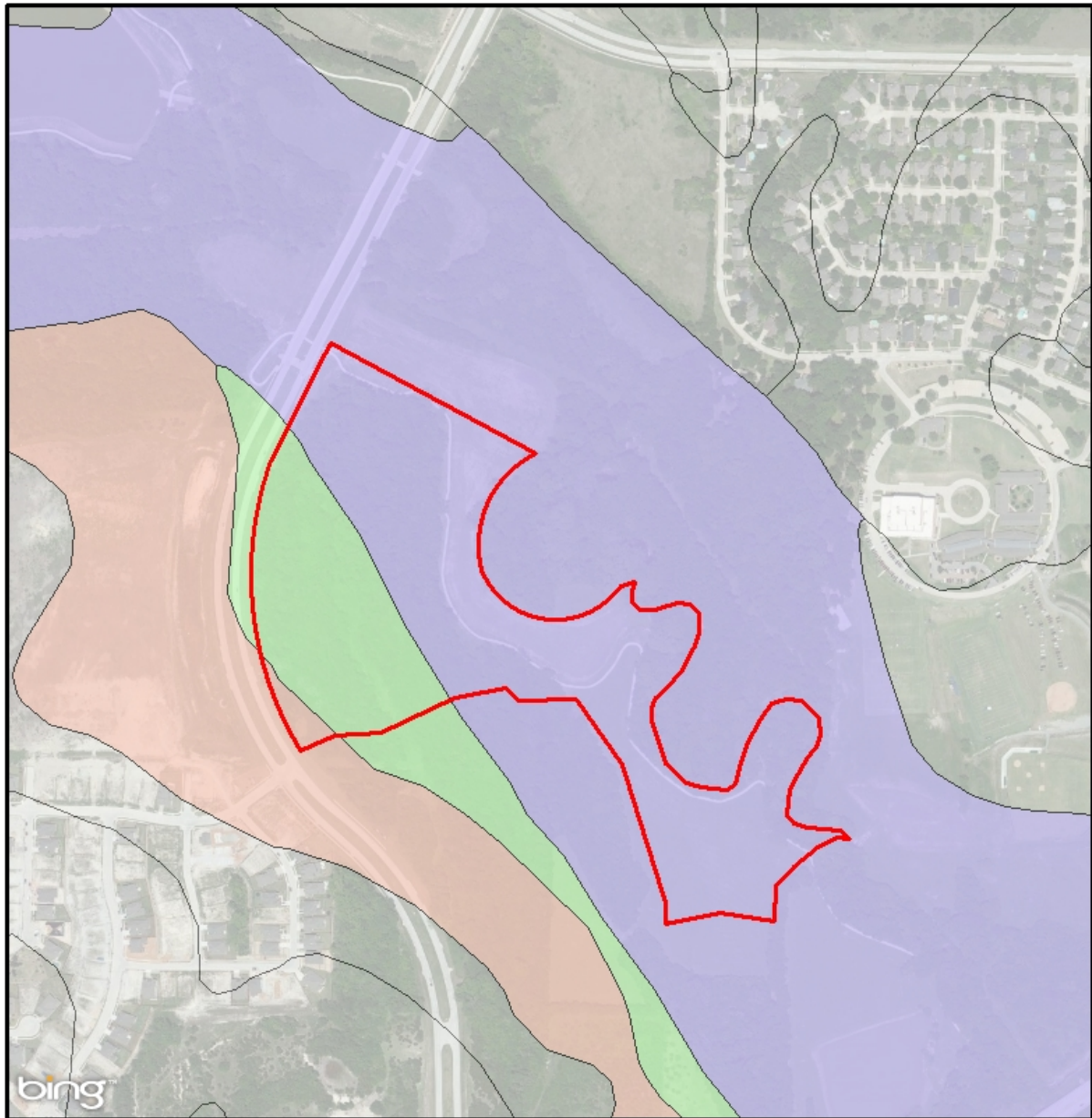


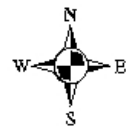
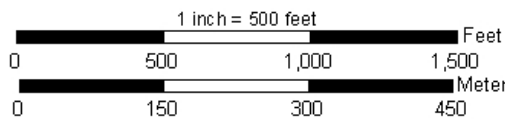
Figure 2.2
Soil Types Located Within
and Adjacent to the APE

County: Tarrant
State: Texas
Date map created: 04/07/2015
Source: (c) 2010 Microsoft
Corporation and its data suppliers;
2013 USDA NRCS Digital Soils
Database

Area of Potential Effects - Direct

Soil Descriptions

- <all other values>
- Frio clay loam, frequently flooded
- Frio clay loam, occasionally flooded
- Lewisville silty clay, 1 to 3 percent slopes



CHAPTER 3: CULTURAL BACKGROUND

3.1 Previous Investigations

The Texas Archeological Sites Atlas (TASA) database, maintained by the THC, indicated that the current APE had not been previously surveyed for cultural resources. The TASA archives indicated four additional archeological surveys have been conducted within one-mile of the APE (Figure 3.1). These surveys are summarized in Table 3.1.

Table 3-1: Previous Surveys within One-Mile of the APE

Agency	Firm/Institution	Antiquities Permit #	Date	Survey Type	Location (Approximate)
NRCS	Unknown		2002	Block	0.3-mile west of APE
NRCS	AR Consultants		2003	Block	0.2-mile southwest of APE
NRCS	Geo-Marine		2003	Block	0.6-mile south of the APE
City of McKinney	IES	5626	2010	Block	Adjacent to APE southern boundary

3.2 Previous Recorded Sites within Vicinity

A file search within the TASA maintained by the THC identified that there are no previously recorded archeological sites, National Register Properties, historical markers, or cemeteries located within the proposed APE (TASA 2015). According to the TASA records, there are two recorded sites within one-mile (~1600m) of the APE. These sites are 41COL190 and 41COL209 and are summarized in Table 3.2.

Table 3-2: Recorded Archeological Sites within One-Mile of the APE

Site	Time Period	Site Type	Site Size (meters)	Depth Extent (centimeters)	Cultural Materials	Topographic Setting	Reference
41COL190	Historic	Bridge	75 x 50	Unknown	Remains of bridge abutments	Crosses Wilson Creek	Fisher 2006
41TR209	Prehistoric	Open Campsite	40 x 24	Surface	Lithic debitage, projectile points, bison faunal remains, FCR	Lowland terrace	Elliott and Byers 2010

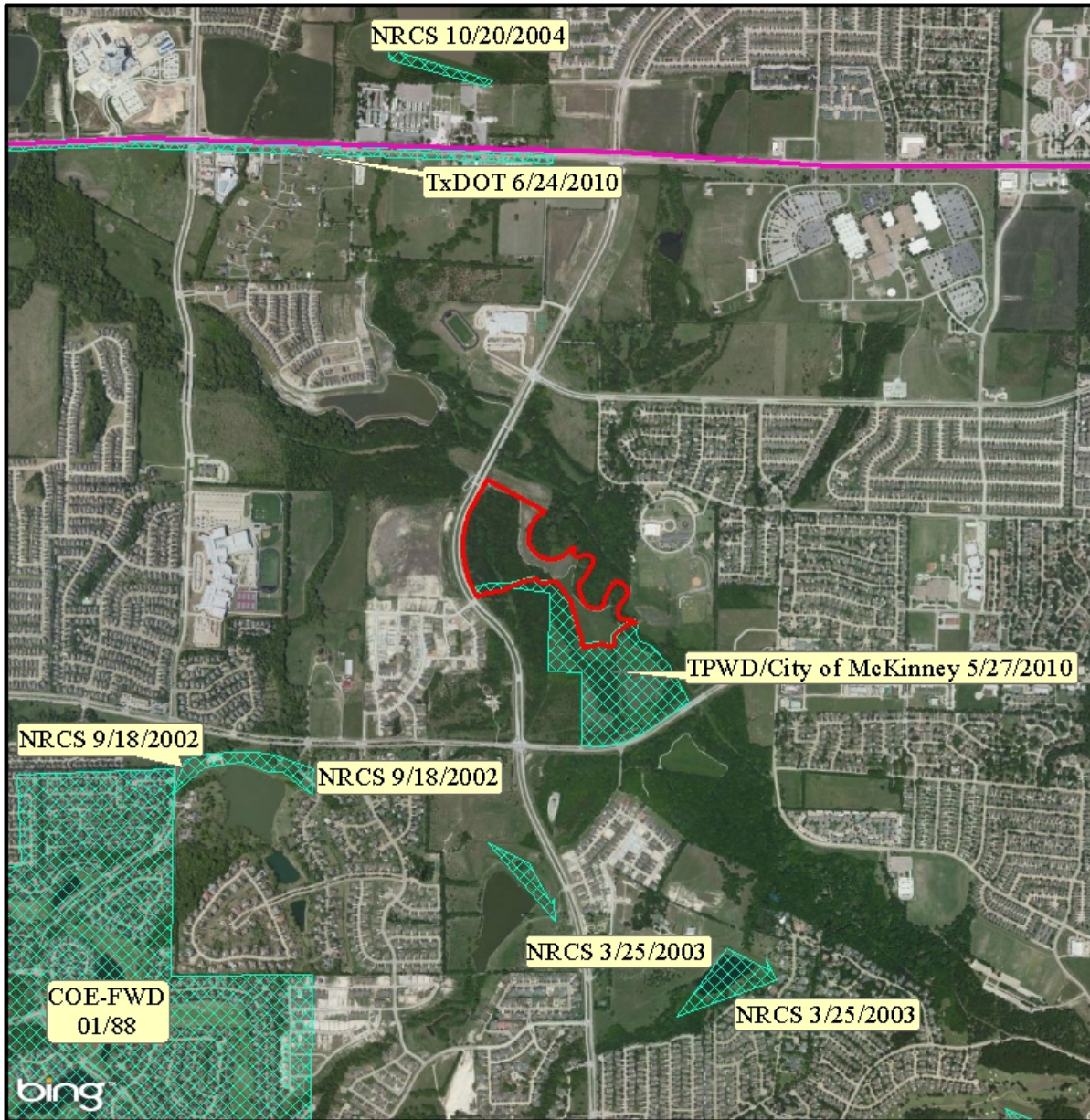
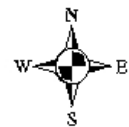


Figure 3.1
Previous Investigations Within
One-Mile of the APE

County: Collin
State: Texas
Date map created: 04/07/2015
Source: (c) 2010 Microsoft Corporation
and its data suppliers; Texas Historical
Commission FTP Site Data

- Area of Potential Effects - Direct
- Previously Conducted Archeological Survey (Linear)
- Previously Conducted Archeological Survey



0 0.25 0.5 0.75 1 Miles

0 0.5 1 1.5 Kilometers

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

3.3.1 Archeological Resources

Previous archeological surveys within the Blackland Prairie ecoregion have indicated that the majority of prehistoric sites are located along major perennial streams or springs (Shelton and Boxwell 2013). Although the APE is located within a low-lying setting along Wilson Creek, several factors have greatly reduced the potential for both shallow and deeply buried archeological deposits. The band of clear-cut land along the easternmost portion of the APE, closest to Wilson Creek, has been heavily impacted by the creation of a flood conveyance channel. Records from archeological site 41COL209 indicate that the majority of soil that could potentially contain cultural deposits had been removed, which in turn had exposed the archeological site (Elliott and Byers 2010). In addition, backhoe trenching conducted directly south of the APE, by IES in 2010 for the City of McKinney Bonnie Wenk Phase I project, indicated the soil that could potentially contain deeply buried cultural deposits remained relatively shallow along this portion of Wilson Creek and did not exceed 150 centimeters (cm) in thickness. It was reported that the excavated trench units were heavily bioturbated with thick clay soils. While the majority of the APE has remained undeveloped, ground-disturbing activities pertaining to past agricultural use, the removal of vegetation, and extensive grading have had varying degrees of impact within the APE. For these reasons, the APE is considered to have a moderate potential for containing shallowly buried cultural deposits and a low potential for deeply buried.

3.3.2 Historic-Period Resources

Historical aerial photographs and topographic maps illustrated that the land within the APE was used as agricultural land as early as 1968. These resources indicated that no structures were present within the current APE before 1929. By the late 1960s, large portions of the APE have been cleared of vegetation. The exception to this activity is along the banks along Wilson Creek, which have maintained a thin riparian corridor since the late 1960s, and the western and eastern extent of the forested area located in the western portion of the APE.

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CHAPTER 4: METHODOLOGY

The archeological inventory for the Bonnie Wenk Park Phase II project was conducted on the 23 and 26 March 2015. The methods and density of excavating shovel tests met the minimum requirements for field tactics stipulated by the THC and CTA Archeological Survey Standards for Texas (CTA 1996, 2001). 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 above. Additionally, IES staff reviewed ecological, geological, soils data, as well as, historic and recent topographic maps and aerial photography.

4.1 Survey

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 spaced at 30m intervals across the project area. 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 Tests Excavation

In areas with potential for archeological materials, shovel tests were excavated to the top of culturally sterile deposits. 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. If clay content was high and could not be efficiently screened, material was troweled through by hand and inspected for cultural deposits. In addition, the physical properties of each arbitrary level were recorded. All test locations were recorded on paper and plotted using hand-help global positioning system (GPS) units. Investigators documented the results of each test on standardized shovel test forms. CTA survey standards recommend that an APE with an area of 39 acres (15.7 ha), displaying little to no disturbance, should have approximately 20 shovel tests (one shovel test per two acres) excavated during the pedestrian survey. However, shovel tests numbers varied from this amount due to the level of disturbance observed during the pedestrian survey. All positive shovel tests, cultural features, and other site data were geospatially recorded using Trimble XT handheld GPS.

4.3 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.

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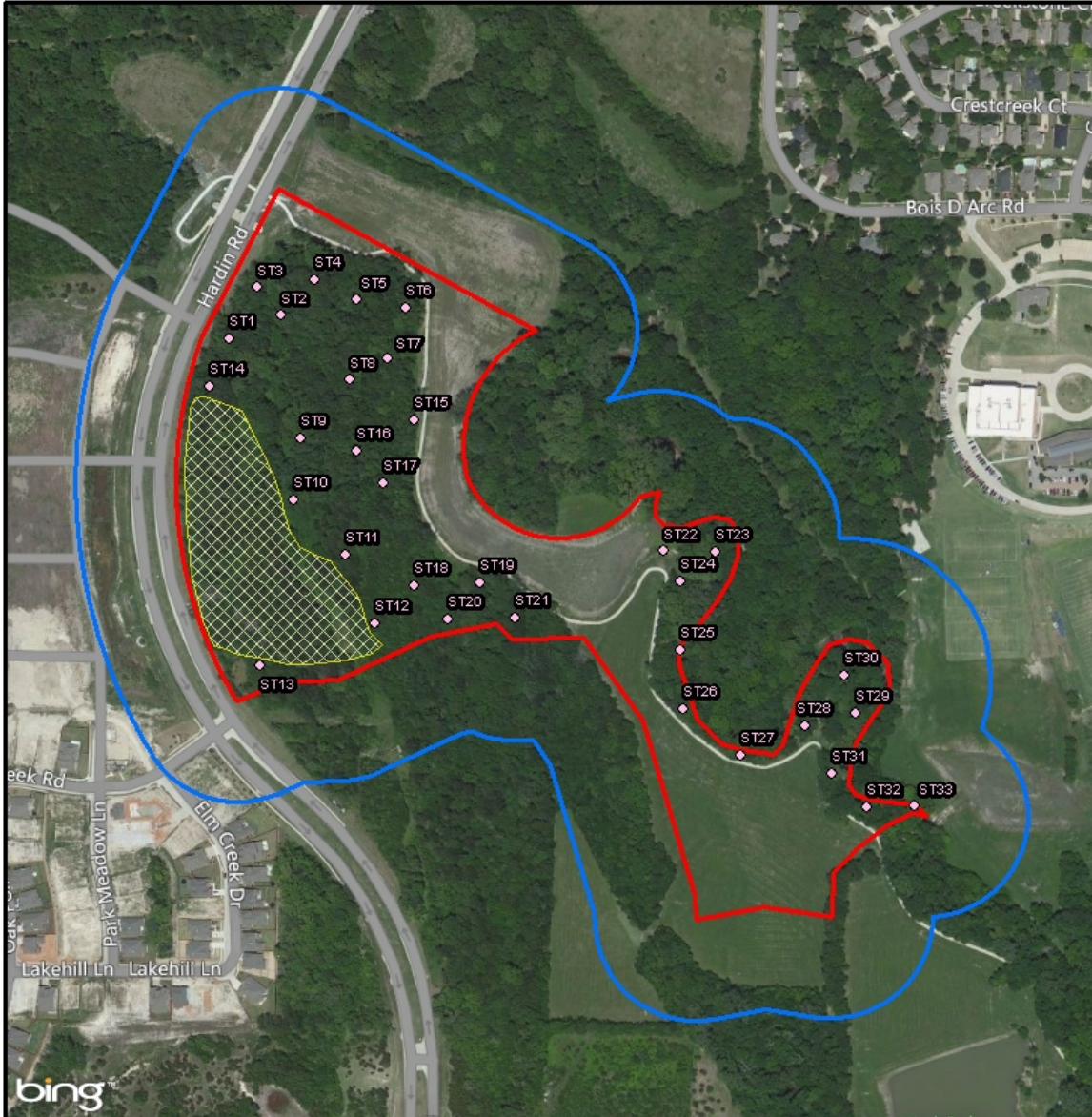
CHAPTER 5: RESULTS

5.1 Survey Area

The APE encompassed the lowland setting of Wilson Creek and its associated floodplain. The west and southwest portions of the APE were covered by a forested riparian vegetation and were dissected by small drainages. At the time of the survey, recent precipitation had caused the water level of the two small unnamed tributaries to overtop their cutbanks and flood the surrounding area. The nearly level elevation and thick clay soils have restricted surface water percolation and created disbursed shallow pools in the western section of the APE (**Appendix A, Photographs 11 through 28**). Based on historical and modern aerial images, the APE has been exposed to variable amounts of previous ground disturbing activities since the mid-20th century. The most widespread level of disturbance was related to vegetation removal that occurred before 1968. Although the entirety of the APE was never clear-cut, obvious signs of land clearing throughout much of the APE were identified from historic aerial photographs. Only the riparian corridors along Wilson Creek and the western and eastern portions of the forested area within the western extent of the APE remain undisturbed from early agricultural activities. The area was further modified between 2007 and 2008 during the construction of Hardin Road. A bridge and a paved walkway were constructed over the potential floodplains of Wilson Creek. In preparation for possible flooding and additional runoff from recent urban development, a ground conveyance channel was developed beneath the bridge to channel excess water into Wilson Creek. The ground conveyance channel enters the direct APE in the northwestern section and continues to the middle of the northern boundary of the APE where it empties into Wilson Creek. The paved walkway dissects through the APE and traverses from Virginia Parkway to Hardin Road. In summary, approximately 64 percent of the APE has been exposed to some form of ground disturbing activities. Most of the ground disturbance pertained to the conveyance channel, which removed any Holocene-aged soils.

5.2 Pedestrian Survey and Shovel Testing

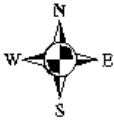
During the pedestrian survey, 33 shovel tests were excavated on transect, of which all tested negative for cultural material (**Figure 5.1**). Excavating shovel tests within the APE revealed the three predominant soil types across the APE and was consistent with data received from the soil survey. The majority of the APE was dominated by Frio clay loam, frequently and occasionally flooded soils. The soil contained a very dark gray (10YR 3/1) to a black (10YR2/1) clay from the surface to a depth that did not exceed 50 cmbs. Most of the shovel tests excavated did not exceed 30 cmbs before arriving at a hardpan clay soil. In addition to excavating shovel tests, subsurface exposures including animal burrows, disturbed patches, and cutbanks along any erosional feature were examined



**Figure 5.1
Archeological Shovel
Test Locations**

County: Collin
State: Texas
Date map created: 4/7/2015
Source: (C) 2010 Microsoft Corporation and its data suppliers

Area of Potential Effects - Direct
 Area of Potential Effects - Indirect
◆ Negative Archeological Shovel Test
 Flooded Area


 N
W E
S

1 inch = 400 feet

Feet
 0 400 800 1,200

Meters
 0 120 240 360

CHAPTER 6: SUMMARY AND RECOMMENDATIONS

During the pedestrian survey and site delineations, 33 negative shovel tests were excavated within the 39-acre (15.7 ha) APE. No cultural resources were encountered. Therefore, the City of McKinney is requesting concurrence for the APE, and that no historic properties are affected under 36 CFR 800.4 (d)(1). It is the recommendation of IES that the SHPO/THC concur with these findings and the Bonnie Wenk Park Phase II project be permitted to continue without the need for further cultural resource investigations. However, if any cultural resources are unearthed during construction, the operators should cease work immediately in that area, and the THC/SHPO should be prior to resuming any construction activities.

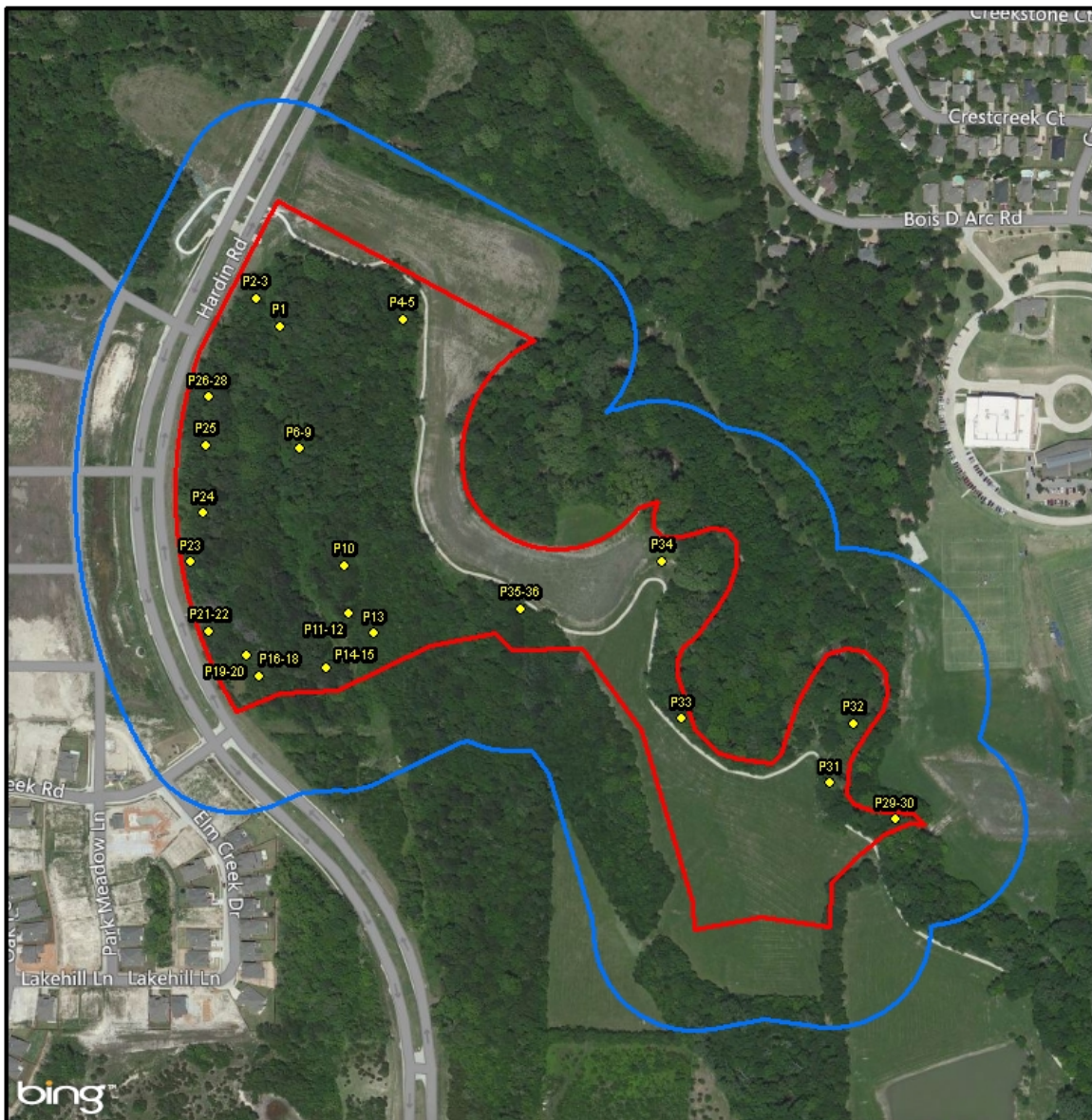
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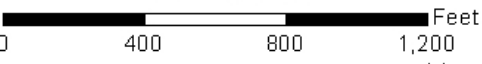
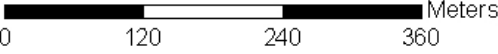
CHAPTER 7: REFERENCES CITED

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2001 *Revised Archeological Survey Standards for Texas*. CTA Newsletter, Vol. 25, No. 2
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**Appendix A:
Photograph Location Map and Photographs**



<p align="center">Attachment A Photograph Location Map</p>	<p> Area of Potential Effects - Direct</p> <p> Area of Potential Effects - Indirect</p> <p> Photograph Location</p>	
<p>County: Collin State: Texas Date map created: 4/7/2015 Source: (C) 2010 Microsoft Corporation and its data suppliers</p>	<p align="center">1 inch = 400 feet</p> <p align="center">  Feet  Meters </p>	

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Photograph 1 – Facing South



Photograph 2 – Facing North



Photograph 3 – Facing East



Photograph 4 – Facing East



Photograph 5 – Facing South



Photograph 6 – Facing North



Photograph 7 – Facing East



Photograph 8 – Facing South



Photograph 9 – Facing West



Photograph 10 – Facing West



Photograph 11 – Facing West



Photograph 12 – Facing Southwest



Photograph 13 – Facing West



Photograph 14 – Facing North



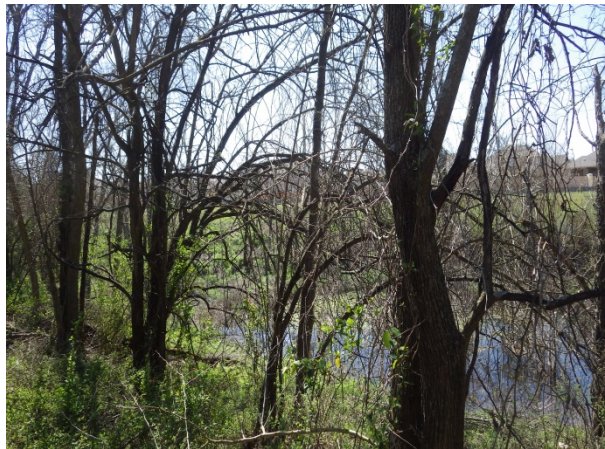
Photograph 15 – Facing West



Photograph 16 – Facing North



Photograph 17 – Facing East



Photograph 18 – Facing West



Photograph 19 – Facing North



Photograph 20 – Facing East



Photograph 21 – Facing North



Photograph 22 – Facing East



Photograph 23 – Facing East



Photograph 24 – Facing Southwest



Photograph 25 – Facing West



Photograph 26 – Facing North



Photograph 27 – Facing East



Photograph 28 – Facing South



Photograph 29 – Facing North



Photograph 30 – Facing East



Photograph 31 – Facing North



Photograph 32 – Facing East



Photograph 33 – Facing South



Photograph 34 – Facing North



Photograph 35 – Facing East



Photograph 36 – Facing South