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An Archeological Survey Of The City Of Arlington's Proposed Bowman Branch Hike-And-Bike Trail, Tarrant County, Texas

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AN ARCHEOLOGICAL SURVEY OF

THE CITY OF ARLINGTON'S PROPOSED

BOWMAN BRANCH HIKE-AND-BIKE TRAIL,

TARRANT COUNTY, TEXAS

TEXAS ANTIQUITIES PERMIT NUMBER 7870

Jesse Todd, MS, MA
Principal Investigator

Submitted to:

BENCHMARK ENVIRONMENTAL CONSULTANTS
5307 Mockingbird Lane, Suite 650
Dallas, Texas 75206

Submitted by:

AJC ENVIRONMENAL, LLC
1752 Northview
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Cultural Resources Report 2016-02
December 29, 2016

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ABSTRACT

The City of Arlington in Tarrant County, Texas proposes to construct the Bowman Branch Hike-and-Bike trail in southeastern Arlington. In addition, portions of the trail will be constructed within the floodplain of the Bowman Branch which falls under the purvey of the Fort Worth District of the United States Army Corps of Engineers. Since the City of Arlington is a political entity of the State of Texas and land controlled by an entity of the State of Texas is involved, a Texas Antiquities Permit is required. In addition, the Archeology Division of the Texas Historical Commission acts as the Section 106 review agency for the US Army Corps of Engineers. Antiquities Permit Number 7870 was issued the Texas Historical Commission for the archeological survey. Records and photographs made during the intensive pedestrian archeological survey will be curated at the Texas Archeological Research Laboratory, University of Texas at Austin.

Benchmark Environmental Consultants which is doing the environmental permitting contracted with AJC Environmental LLC Consulting to perform an intensive pedestrian archeological survey of the proposed trail. The archeological survey was done during the later part of December of 2016. No cultural materials older than 50 years were discovered on the ground surface or uncovered in sixteen shovel tests that averaged approximately 34 centimeters below the ground surface.

Based upon the absence of cultural materials and the lack of buried cultural materials in the shovel tests, it is recommended that further cultural resource investigations are unwarranted and that the City of Arlington be allowed to construct the Bowman Branch Hike-and-Bike Trail without further cultural resource investigations. However, if cultural materials are encountered during the construction, work should stop in that area and the Texas Historical Commission should be notified. Work should not continue until the proper investigations have been carried out after consultation with the Texas Historical Commission.

MANAGEMENT SUMMARY

Sponsor:	Benchmark Environmental Consultants which is conducting the environmental permitting for the City of Arlington
Project Location:	Start – 580 feet north of Ballweg Road and about 695 feet southeast of Stephanie Ann Court End - south of and adjacent to the intersection of Chambers Creek and New York Avenue
Review Agency:	Texas Historical Commission and the U. S Army Corps of Engineers, Fort Worth District Commission
Principal Investigator:	Jesse Todd, MS, MA
Field Crew:	Jesse Todd
Fieldwork Date(s):	December 26 and 27, 2016
Acres Surveyed:	Approximately 1.46
Sites Recorded:	None
Curation Facility:	Texas Archeological Research Laboratory

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CHAPTER 1. INTRODUCTION

The City of Arlington in Tarrant County, Texas proposes to construct the Bowman Branch Hike-and-Bike trail in southeastern Arlington. In addition, portions of the trail will be constructed within the floodplain of the Bowman Branch which falls under the purvey of the Fort Worth District of the United States Army Corps of Engineers. Since the City of Arlington is a political entity of the State of Texas and land controlled by an entity of the State of Texas is involved, a Texas Antiquities Permit is required. In addition, the Archeology Division of the Texas Historical Commission acts as the Section 106 review agency for the US Army Corps of Engineers. Antiquities Permit Number 7870 was issued the Texas Historical Commission for the archeological survey. Records and photographs made during the intensive pedestrian archeological survey will be curated at the Texas Archeological Research Laboratory, University of Texas at Austin.

The proposed hike-and-bike trail will begin approximately 580 feet north of Ballweg Road and about 695 feet southeast of Stephanie Ann Court. The proposed trail will run northeast in a loop/zig-zag fashion and terminate south of and adjacent to Chambers Creek Lane approximately 100 feet southwest of the intersection of Chambers Creek Lane and Lake Jackson Drive (Figures 1 and 2).

Benchmark Environmental Consultants which is doing the environmental permitting contracted with AJC Environmental LLC Consulting to perform an intensive pedestrian archeological survey of the proposed trail. The purpose of the archeological survey is to determine if archeological sites or cultural materials older than 50 years are present, and if so, determine how they might be impacted by construction of the trails. In addition, recommendations of the significance of the archeological site or cultural materials are to be made to the Texas Historical Commission. The intensive pedestrian archeological survey of the proposed trail route was conducted on December 26 and 27, 2016.

The following report contains a brief description of the natural environment and then a summary of the cultural history of eastern North Central Texas which includes Tarrant County. This is followed by the research design and the methodology. The description of the results of the field investigation constitutes the major part of the report. The last chapter presents recommendations that arise from the study. A list of references cited concludes the report.

CHAPTER 2. NATURAL ENVIRONMENT

Tarrant County is located in North Central Texas and contains gently sloping to level terrain. The Clear Fork and the West Fork of the Trinity River drains the western half of the county while smaller tributaries drain the eastern half. Four econiches are found in the count and going from east to west, they are the Blackland Prairie which is located in the southeastern portion of the county. The prairie consists of rolling grassland with rich clayey and loamy soils. The Eastern Cross Timbers is made up of deep loamy soil that supports blackjack oak and post oak while the Grand Prairie has shallow, clayey soils and alternating layers of limestone and marl. The Western Cross Timbers has very shallow to deep loamy and clayey soils that support shinnery oak and post oak. Trees such as American elm, pecan, and box elder are found throughout most of the county

along rivers and creeks. Exposed rock formations in the area are almost exclusively of the Cretaceous period (Kelton 2016:1)

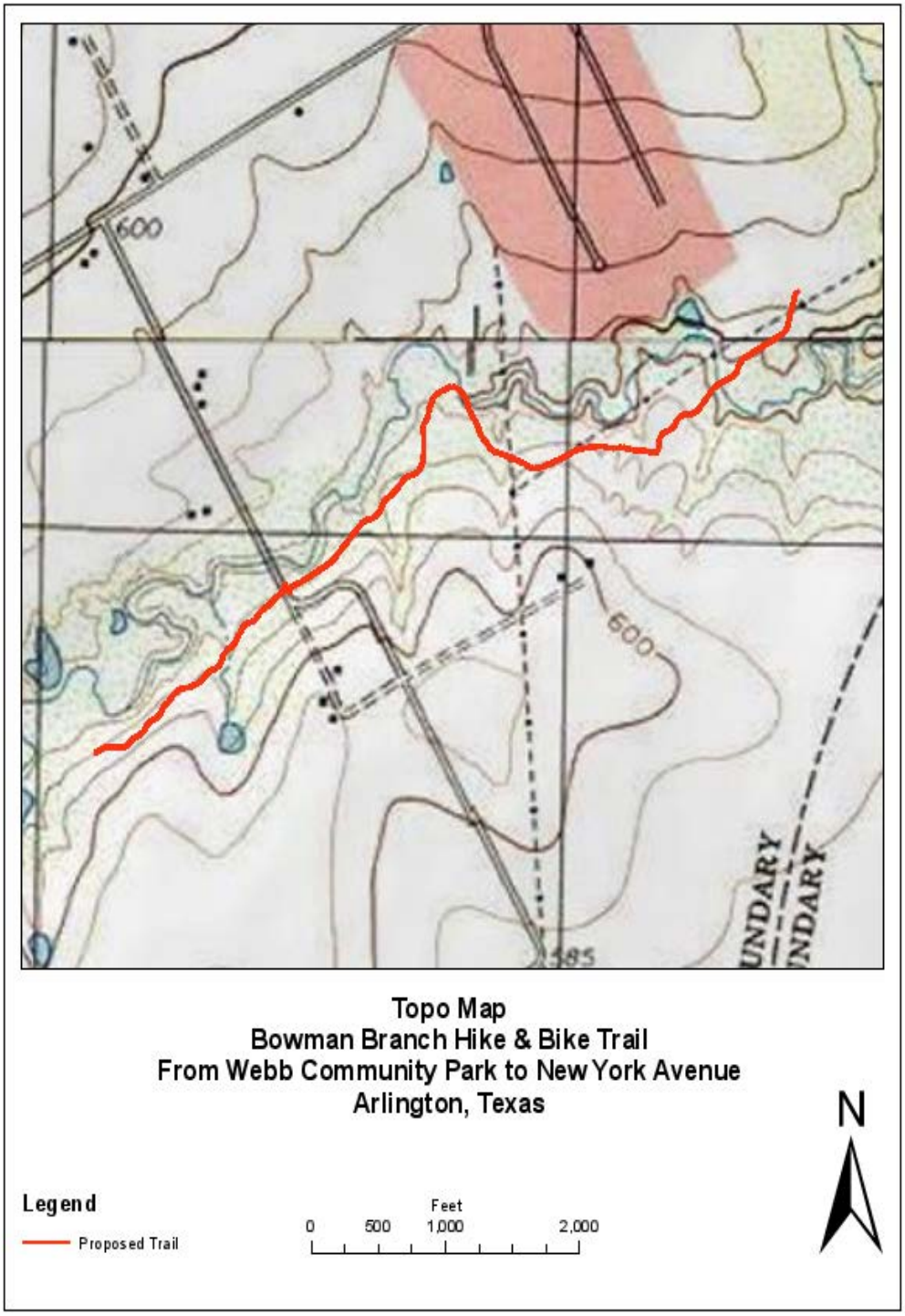

Figure 1. Location of the proposed Bowman Branch Hike-and-Bike Trail plotted on portions of the Arlington and Britton, Texas 7.5-minute U. S. Geological Survey quadrangles. Map provided by Benchmark Environmental Consultants.

Figure 2. Location of the proposed Bowman Branch Hike-and-Bike Trail plotted on a 2016 GoogleEarth aerial photograph. Photograph provided by Benchmark Environmental Consultants.

The study area lies within the northern portion of the Gulf Coastal Plain and the Texan biotic province. Forty-nine species of mammals occur in the Texan province, including deer, raccoon, rabbits and opossum. Both species of terrapins (*Terrapene ornata* and *Terrapene carolina*) occur, as well as nine species of lizards. In addition, thirty-nine types of snakes occur, as well as thirteen species of anuran fauna (Blair 1950:101-102).

The major aquifers in the county are the Trinity Outcrop and Subcrop while the minor aquifers are the Woodbine Outcrop and Subcrop (Texas Water Development Board 2016). The nearest water resource is Bowman Branch which is mapped as perennial on the U. S. Geological Survey quadrangles.

According to the Natural Resources Conservation Agency website (2016), Ferris-Heiden complex with 2 to 5 percent slopes comprise the soil within the study area. The B horizon (subsoil) for the Ferris series is listed as being 10 inches (~20.5 centimeters) below the ground surface while the Heiden series has a subsoil described as being 15 inches (37.5 centimeters) below the ground surface.

CHAPTER 3. CULTURAL HISTORY

Numerous archeological surveys have been conducted in Tarrant County, but few excavations have been conducted in the county (Texas Archeological Sites Atlas 2016). Most of the prehistoric archeological sites are located along the West Fork of the Trinity River and major drainages such as Rush Creek. Prehistoric sites along the West Fork usually are buried.

The following chronology for eastern North Central Texas and Tarrant County has been taken from Prikryl (1990:62). The Historic Native American and Historic Anglo-American periods have been added (Table 1). The general discussion of the prehistory of North Central Texas has been taken from Prikryl (1990) and Lintz and others (2008:15-19). The historical discussion has been taken from Hightower (2016).

Table 1. General chronology for Eastern North Central Texas and Tarrant County.

Historic Anglo-American	A.D. 1840 to the present
Historic Native American	A.D. 1700 to1850
Late Prehistoric	A.D. 700 to 1700
Late Prehistoric II	A.D. 1200 to 1700
Late Prehistoric I	A.D. 700 to 1200
Archaic	6,000 B.C. to A.D. 700
Late	1500 B.C. to A.D. 700
Middle	4000 to 1500 B.C.
Early	6000 to 4000 B.C.
Paleoindian	prior to 6,000 B.C.

Paleoindian

Although Prikryl (1990:49) mentions that Paleoindian points have been found in Tarrant County, neither Prewitt (1995) or Belver and Meltzer (2007) list any points from the county. Excavated Paleoindian sites are scarce in North Central Texas with only four having been tested/excavated. The Lewisville Lake site (41DN72) (Crook and Harris 1957, 1958) and the Aubrey Clovis site (41DN479) (Ferring 2001) are in Denton County, the Dickie Carr site (41PR26) (Byers 2007) is in Parker County and the Brushy Creek site (41HU74) (Crook, Hughston and McGraw 2009) is in Hunt County. Bever and Meltzer (2007:76) believe that one reason that the presence of Paleoindian sites is not abundant in North Central Texas is due to their being deeply buried and only sporadically available to researchers. Spear points from Paleoindian sites include Clovis, Folsom, Midland, San Patrice and Scottsbluff. The Paleoindian people have been viewed as big game hunters but this view is changing based upon the fauna recovered from the excavated sites (Johnson 1977; Ferring 2001). It appears that the Paleoindian inhabitants of North Central Texas were nomadic and either directly acquired or traded for exotic materials from which they made their tools. The climate began to become dryer and warmer near the end of the Pleistocene.

Archaic

During the Early Archaic, it appears that the aboriginal inhabitants were mobile, with poorly defined territories and a generalized hunting-and-gathering economy. Although, there is no evidence to support it, it has been hypothesized that bottomland forests were being more exploited than during Paleoindian times. Sites appear to have been on terraces. An emphasis on hunting changed from the Paleoindian times and probably focused upon deer because spear points were replaced by dart points. Early Split-stemmed and possibly Angostura points are associated with the Early Archaic. The climate trend continued from the Late Pleistocene.

Fewer sites have been recorded in North Central Texas during the Middle Archaic than the Early Archaic. Cultural differences may have appeared at the end of the Middle Archaic based upon the dart point types such as Calf Creek, Wells, Dawson, Carrollton, and Bulverde. Sites on terraces above stream floodplains appear to have been preferred. The period appears to have been dryer and warmer than before.

There was a population boom during the Late Archaic because more sites than any other time are found. The generalized hunting-and-gathering life way continued but probably territories were present based upon the use of local lithic materials instead of exotic materials. Sites are found adjacent to first order drainages as well as first and second order tributaries, especially at the confluence of the drainages. Wetter conditions prevailed and probably floral resources such as mast were exploited. Burials are found during this period. Dart point types include Godley, Ellis, Elam, Edgewood and Yarborough.

Late Prehistoric

The Late Prehistoric period in North Central Texas is marked by the presence of arrow points and pottery. The period is divided into the Late Prehistoric I and II periods.

The hunting-and-gathering life ways found in the Late Archaic still continued to the end of the Late Prehistoric and sites probably were seasonally and temporarily occupied. The Late Prehistoric I period is characterized by the presence of sand- and grog-tempered ceramics and by Scallorn, Steiner, Catahoula, and Alba arrow points. Ceramics probably were trade items from the Caddos to the east. Burials appear to be more abundant during this time and indications of fishing are found in some of the sites. During this time, remains of what appear to be houses have been found in various areas of North Central Texas but none in Tarrant County. The closest residential site to the study area is the Cobb-Pool site (41DL148) at Joe Pool Lake (Peter and McGregor 1988). Possibly three house structures were found at the site as well as maize cupules although it appears that the maize was not relied on as the primary vegetable subsistence resource. A variety of lithic tools, faunal and floral species, ceramics, burned-rock features and other features also were found at the site.

During the Late Prehistoric II times, site occupations also appear to be short term in nature without any architectural features. Sites appear to be along stream terraces where some form of horticulture may have been practiced although wild plant resources appear to have been used. Bison was hunted opportunistically. Chert materials appear to have been imported through long-distance trade. Southern Plains influence is shown by the presence of the shell-tempered Nocona Plain and unstemmed triangular points such as Maud, Fresno, Harrel and Washita points. Perdiz points also make their appearance. Based upon sherds recovered from sites, especially in the eastern portion of North Central Texas, some trade continued with the Caddo to the east.

Historic Native American

Historic Native American nations that probably occupied Tarrant County were the Tonkawas and the Hasinai Caddos, but by the late 1700s, the Comanches, Kiowas, and Wichitas had also moved into the region. These nations were removed by the late 1870s by early American settlers.

Historic Anglo-American

The most noted fort in the area was Fort Bird which was constructed near Village Creek in 1841. The fort was abandoned due to a possible Comanche attack but was re-occupied by 1843. After a treaty was signed with the Native Americans, immigrants from Tennessee, Virginia, and Kentucky settled in the region. Tarrant County was formed by Texas Congress in August of 1850. Slaves made up a small portion of the county's population and various opinions were expressed about secession from the United States. However, Texas seceded from the Union which brought about economic decline. After the Civil War, Tarrant County began to prosper with cattle ranching and the appearance of railroads, but by the 1920s, farms producing such crops as cotton, corn and wheat appeared. Also during the 1920s, the petroleum industry (mainly oil refineries) sprang up in the county.

During World War I, several training camps were established in the county, including three airfields, Hicks, Benbrook and Barron (Hightower 2010:3). One of the concrete airplanes used for target practice at Hicks Field was discovered by AR

Consultants, Inc. (Skinner 2002) and preserved by the land owner. During the 1920s, more than 250 commercial businesses were established. The Great Depression affected Tarrant County and the economy did not recover until the 1940s when World War II occurred and war related industries were established. After the war, the aviation industry aided the growth of the county with the establishment of companies such as General Dynamics and Bell Helicopter. In addition, the Strategic Air Command operated out of Carswell Air Force Base from the 1940s into the 1980s. Today, the county continues to grow with an economy based upon various industries, farming, ranching, the petroleum industry and other economic activities.

The City of Arlington was created due to the advent of the railroad in Tarrant County. Citizens moved from the nearby Johnson Station, and, when they residents wanted to name the town Johnson, they were refused due to the town's proximity to Johnson Station. The town was named Arlington to honor the birthplace of Robert E. Lee. Although gin mills used to process cotton was the major industrial activity, a wide variety of agricultural crops and ranching was present. Another economic resource was the mineral water. By 1910, Arlington was established as a major city in the State of Texas due to its booming population and its various economic pursuits (Shannon 2006).

Previous Investigations

No archeological sites were recorded within or immediately adjacent to the proposed hike-and-bike trail according to the Texas Archeological Sites Atlas (2016). However, two archeological surveys were conducted in the past which include portions of the proposed trail. The portion of the proposed trail from the western beginning in Webb Community Park to Webb Ferrell Road was surveyed by Geo-Marine, Inc. in 2000 (Clow 2000) as shown on Figure 5. AR Consultants, Inc. (Todd 2004) conducted an archeological survey just south of the proposed trail from Webb Ferrell Road east. The survey also is shown on Figure 5. Despite these intensive investigations, no archeological sites were discovered where the proposed trail will be constructed.

CHAPTER 4. RESEARCH DESIGN AND METHODOLOGY

Research Design

No historic archeological sites are expected to be present since the study area is in a floodplain which would result in seasonal flooding. Although archeological surveys have not discovered the presence of a prehistoric archeological site along Bowman Branch, there is the potential to discover a prehistoric site since Bowman Branch is mapped as being perennial.

Methodology

The total length of the proposed trail is approximately a mile (~ 1,760 meters) with a maximum width of 12 feet (~4 meters). In total, approximately 63,360 feet (~1.46 acres, ~0.89 hectares) will be examined during the intensive pedestrian archeological survey of the proposed Bowman Branch Hike-and-Bike Trail. The maximum depth of

impact for trail construction is about 2 inches (10 centimeters) and the trail will be constructed of concrete. The archeologist walked the center of the proposed trail.

As suggested by the Texas Historical Commission (2016), shovel tests were intended to be excavated at 100 meter intervals. This was not done in cases of disturbed areas, exposed bedrock, etc. In addition, both banks of Bowman Branch were investigated by shovel testing. The shovel tests were dug at least 30 centimeters below the ground surface due to the shallow impact of the trail construction. The clay matrices were broken manually and visually inspected for cultural materials as were the pit walls. The soil color was determined by using the Munsell Soil Color chart. Shovel tests were located using a hand-held Garmin GPS unit. Notes on the soil, vegetation, landforms and other relevant information were made and photographs were taken using a Nikon Coolpix. Deep testing was not done due to the shallow depth of construction impact.

CHAPTER 5. THE SURVEY AND RESULTS

In this portion of the report, the intensive pedestrian archeological survey of the Bowman Branch Hike-and-Bike Trail is discussed. Shovel tests are described generally in the text, but specific information is listed in Table 2. Shovel test locations are plotted on Figure 5.

The Survey Area and the Survey

The survey was broken into three parts which are presented below. The description of the survey area (terrain, vegetation, etc.) is presented along with the description of the intensive pedestrian archeological survey with shovel testing. Survey began in the Webb Community Park and went generally northeast. The survey terminated at Chambers Creek Lane.

From Webb Community Park to Webb Ferrell Road

Survey began the trail and went generally northeast. This portion of the study area was previously investigated by Geo-Marine, Inc. (Clow 2000) and no cultural materials were discovered during the intensive pedestrian archeological survey. However, upon a recommendation of the Texas Historical Commission, the proposed new trail was visually inspected to insure no cultural materials were present. The proposed trail was either flagged or staked. The terrain is gently undulating and generally level. Grasses include johnson, bermuda, grama grass species, and rabbitgrass. Trees include hackberry, elm, and mesquite (Figure 3). Grassy areas alternated with forested/savanna areas along the proposed trail route. Ground visibility averaged 15 percent and eye-height visibility was excellent. A cottontail rabbit was seen during the archeological survey. Since the area previously had been investigated, no shovel testing was done, but numerous animal burrows and food-seeking burrows were present which provided the archeologist an excellent view of the soil subsurface along the proposed trail.

Figure 3. Forested area between the existing Webb Community Park Trail and Webb Ferrell Road. View is to the northeast.

From Webb Ferrell Road to South Collins Road

The terrain from Webb Ferrell Road to South Collins Road ranges from generally level to moderately sloping to the north (towards Bowman Branch). The terrain also is gently rolling, consisting of small drainages with benches on either side of the drainages. Vegetation is similar to that already described except that along high areas adjacent to an existing pipeline, hog brush is extremely abundant and in the forested areas, hawthorne (?) trees are present. The forested area (Figure 4) is also much thicker than west of Webb Ferrell Road. Ground visibility was less than 5 percent whereas eye-height visibility ranges from good to excellent. The proposed trail route will be placed south of and adjacent to an existing pipeline for approximately 100 meters. Then the proposed trail route turns and runs generally northeast to South Collins Street. The trail route runs beneath the South Collins Road bridge and then turns and runs generally southeast.

Shovel test 1 was excavated approximately 30 meters east of Webb Ferrell Road. Shovel tests 2 and 3 were not excavated at 100 meter intervals but were placed in the benches which were more likely to contain cultural resources. Shovel test 4 was excavated 100 meters from Shovel test 3 and Shovel test 5 was excavated 100 meters from Shovel test 4 (Figure 5). All of the shovel tests encountered culturally sterile moist clay or silty clay.

Jesse Todd of AR Consultants, Inc. (Todd 2004) investigated the area just southeast (Figure 5) of the proposed trail. At the time of the survey, much of the area had been disturbed. At least two of the six shovel tests were placed on benches and less than

100 meters from those excavated during this survey. As previously mentioned, no cultural materials were discovered during the 2004 survey.

Figure 4. Thick forested area east of Webb Ferrell Road. View is to the northeast.

From South Collins Road to Chambers Creek Lane

After exiting from beneath the South Collins Road bridge, the terrain rises moderately steeply to the south. The proposed trail runs through what appears to be an existing lane before entering a grassy area. After existing the grassy area, the proposed trail route crosses an existing pipeline route and an Oncor transmission power line corridor (Figure 3). The terrain slopes to the east between Shovel tests 8 and 9 and as one goes east, the terrain is rolling. The proposed trail route, however, will be constructed on generally level terrain except for steeply sloping areas just northwest of Timberview High School. About 25 meters northeast of Shovel test 9, the proposed trail will run through a thick to generally thick forested area. Understory vegetation is similar to that already described. Trees that have been previously mentioned also are present, but, in addition, salt cedar trees and bois d'arc tress are present close to the high school and scattered cedar trees can be found between the trail close to the high school and west of Bowman Branch.

The terrain east of Bowman Branch ranges from sloping to the south to generally level. The proposed trail route runs for approximately 200 meters northeast of Bowman Branch in the tree line adjacent to and parallel to an Oncor power line right-of-way. The proposed route then turns and runs northeast for approximately 75 meters before terminating at Chambers Creek Lane. Ground visibility from South Collins Road to

where the proposed trail route terminates at Chambers Creek Lane was less than 5 percent while eye-height visibility ranged from good to excellent.

Bowman Branch is approximately 4 meters wide and deep (Figure 4). Clear water ranging from 0.5 to 0.75 meters deep was flowing over a silty clay substrate that contained rocks and concrete blocks.

Figure 4. Bowman Branch. View is to the southwest.

Shovel test 6 was placed approximately 50 meters southeast of the South Collins Road bridge. Shovel test 7 was placed 100 meters from Shovel test 6. Shovel tests 8 through 12 were excavated at 100 meter intervals. Shovel test 13 was placed approximately 22 meters northeast of Shovel test 12 and about 2 meters of the west bank of Bowman Branch. Shovel test 14 was excavated about 2 meters from the east bank of Bowman Branch. Shovel tests 15 and 16 were placed at 100 meter intervals northeast of Shovel test 14 (Figure 5). All of the shovel tests uncovered moist, culturally sterile clay, silty clay, or loamy clay.

CHAPTER 6. CONCLUSIONS AND RECOMMENDATIONS

Based upon the absence of cultural materials over 50 years of age on the ground surface and the lack of cultural materials in the shovel tests, it is recommended that further cultural resource investigations are unwarranted and that City of Arlington be allowed to construct the Bowman Branch Hike-and-Bike Trail. However, if cultural materials are encountered during the construction, work should stop in that area and the

Texas Historical Commission should be notified. Work should not continue until the proper investigations have been carried out after consultation with the Texas Historical Commission.

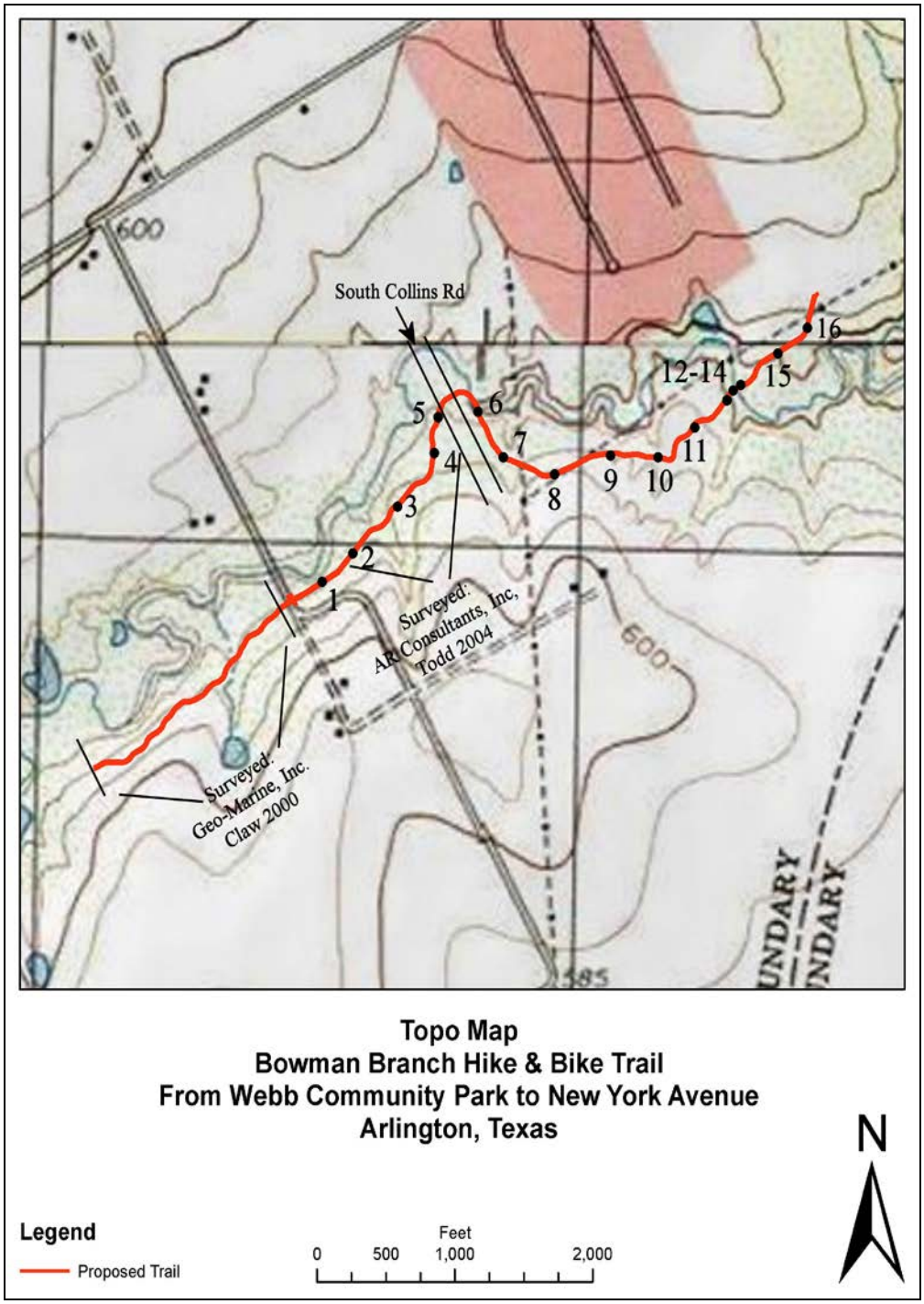

Figure 5. Shovel test locations plotted on portions of the Arlington and Britton, Texas 7.5-minute U. S. Geological Survey quadrangles.

Table 2. Shovel test information.

ST No.	Depth (cm)	Description*	Results
1	0-34+	Dark gray (10YR4/1) clay	Negative
2	0-35+	Dark gray clay	Negative
3	0-33+	Very dark gray (10YR3/1) silty clay	Negative
4	0-35+	Black (10YR2/1) clay	Negative
5	0-36+	Black clay containing gastropod shells	Negative
6	0-35+	Black clay	Negative
7	0-33+	Yellowish-brown (10YR5/4) clay	Negative
8	0-32+	Dark grayish-brown (10YR4/2) clay	Negative
9	0-32+	Dark grayish-brown clay	Negative
10	0-34+	Yellowish-brown clay	Negative
11	0-35+	Brown (10YR5/3) loamy clay	Negative
12	0-36+	Black clay	Negative
13	0-32+	Dark brown (10YR3/3) silty clay	Negative
14	0-35+	Dark brown silty clay	Negative
15	0-33+	Very dark brown (10YR2/2) silty clay	Negative
16	0-21 22-35+	Brown (10YR4/3) silty clay Very dark brown silty clay	Negative

*** Note: Munsell color numbers are presented only the first time that they occur in the table. Bolded descriptions indicate either C horizon, B horizon or bedrock.**

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