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Intensive Mechanical Scraping near the Mitchell Cemetery, Tarrant County, Texas, Fort Worth District

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Intensive Mechanical Scraping near the Mitchell Cemetery, Tarrant County, Texas, Fort Worth District

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Report for Archeological Survey

Intensive Mechanical Scraping near the Mitchell Cemetery, Tarrant County, Texas, Fort Worth District

Jon Budd, Principal Investigator, Antiquities Permit No. 8013

CSJ: 0094-01-032 May 31, 2018

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated 12-16-14, and executed by FHWA and TxDOT.

Abstract

On behalf of the Texas Department of Transportation (TxDOT), SWCA Environmental Consultants (SWCA) conducted an intensive archeological survey in April 2018 of 0.22 acres of existing TxDOT right of way (ROW) adjoining the western side of the Burlington Northern/Santa Fe railroad located within the City of Fort Worth in Tarrant County. This survey was conducted in support of the proposed State Highway (SH) 183 improvements. Investigations included pedestrian survey and intensive mechanical scraping to assess the presence of or potential for unmarked extramural graves associated with the historic Mitchell Cemetery. Because the project will receive funding from the Federal Highways Administration, it qualifies as an undertaking as defined in Title 36 Code of Federal Regulations Part 800.16(y) and, therefore, was conducted in compliance with Section 106 of the National Historic Preservation Act (54 U.S. Code 306108). Furthermore, the project must also comply with the Antiquities Code of Texas (9 Natural Resources Code 191). Jon Budd served as Principal Investigator under Texas Antiquities Code Permit No. 8013.

The background review identified five previous archeological investigations and one previously recorded archeological site near the 0.22-acre project area, but no sites or surveys within the area. Other than the Mitchell Cemetery, no other cemeteries are located within 0.6 mile (1 km) of the project area. A review of historic maps indicated that numerous historic buildings are present within 0.6 mile (1 km) of the project area associated with the establishment and growth of the historic city of Fort Worth, though no structures were depicted within the proposed project area.

Field investigations consisted of systematic mechanical scraping across the project area. The excavations identified numerous buried utilities, including abandoned sewer pipes, and three abandoned modern septic tanks. In addition, modern and historic refuse was observed. The investigations identified no interments or other features associated with mortuary contexts. Based on the results of the survey, SWCA recommends a finding of "no historic properties affected," and no further archeological investigations are recommended within the surveyed portions of the project area.

In addition to reporting the findings of the cemetery investigations, this report also contains a brief memorandum on the reburial of three human bone fragments recovered from Mitchell Cemetery in 2013 by a Tarrant County Deputy Sheriff, who found the remains in a disturbed context. The recovery and reburial are unrelated to the Section 106 and Antiquities Code investigations reported herein but is included as part of TxDOT's ongoing Mitchell Cemetery investigations.

Project Identification

Date: May 31, 2017							
Date(s) of Survey: April 17 to 19 and April 24-25, 2018							
Archeological Survey Type:	Reconnaissance \Box	Intensive					
Report Version:	Draft 🖂	Final 🛛					
Jurisdiction:	Federal 🖂	State ⊠					
Texas Antiquities Permit Number: 8013							
District: Fort Worth							
County or Counties: Tarrant County							
USGS Quadrangle(s): Haltom City (3297-421) 7.5' USGS Map							
Highway: State Highway (SH) 183							
CSJ: 0094-01-032							
Report Author(s): Christopher Shelton and Steve Carpenter							
Principal Investigator: Jon Budd, Texas Department of Transportation (TxDOT)							

Texas Historical Commission Approval

Signature

Date

Project Description

Project Type: Roadway improvement Total Project Impact Acreage: 0.22 acre New Right-of-Way Acreage: 0.00 acre Existing Right-of-Way Acreage: 0.22 acre Easement Acreage: 0.00 Area of Pedestrian Survey: 0.22 acre

Project Description and Impacts: Investigation of Mitchell Cemetery is part of the larger SH 183 Improvement that would to widen approximately 2.5 miles of SH 183 through Fort Worth, Tarrant County. To accommodate this widening, two existing railroad overpasses over SH 183 would be widened. These include the existing Burlington Northern/Santa Fe/Union Pacific Railroad (BNSF& UPRR) and the Dallas Area Rapid Transit (DART) Railroad overpasses. For the DART Railroad Overpass, compliance with Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas are being addressed under a separate project. The current scope addresses only to the widening of the BNSF/UPRR.

The project requires a 40-foot-wide section of additional ROW located along the western side of the existing BNSF/UPRR ROW (Figure 1). This swath of additional ROW begins at SH 183 and extends 0.3 miles south to the intersection of the BNSF/UPRR and DART. However, only approximately 240 feet of the 0.3 miles of new ROW were recommended for intensive archeological survey to assess the potential for unmarked graves.

Proposed Project Area: The project area is defined as an area located immediately west of the existing BNSF/UP RR ROW measuring 240 feet north/south by 40 feet east/west (Figure 2). Depth of impacts is estimated to be up to 6 feet below the current ground surface. The project area encompasses a total of 9,600 square feet (0.22 acres).

Project Area Ownership: The proposed project area is currently owned by TxDOT.

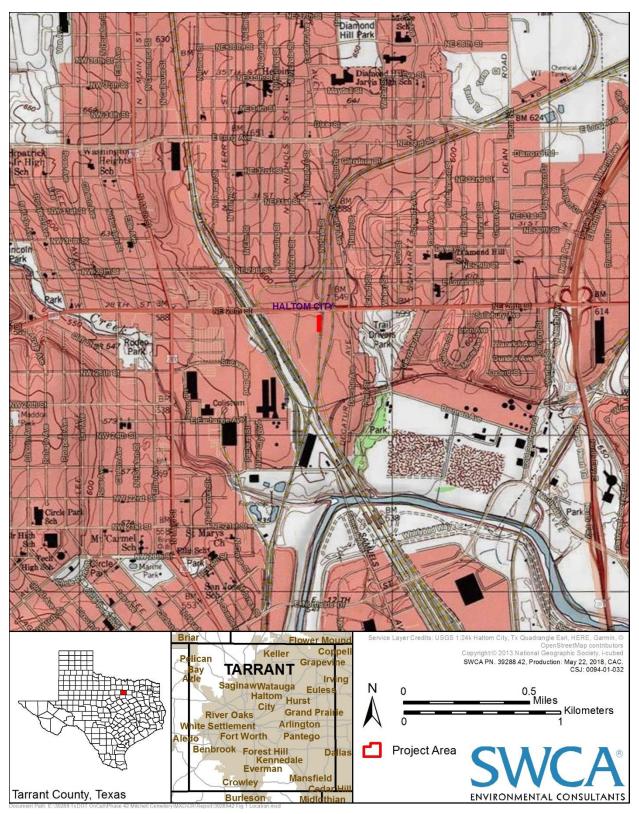


Figure 1. Project location.

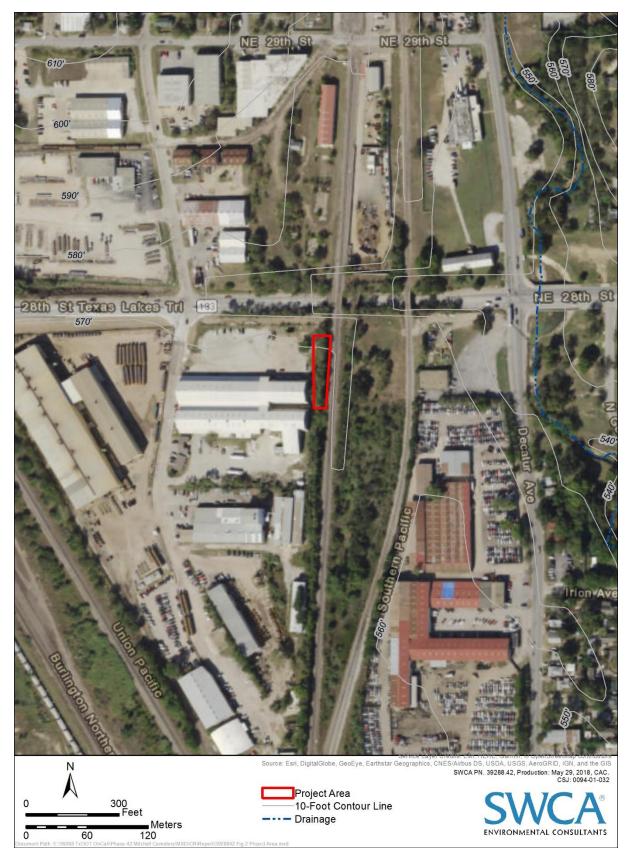


Figure 2. Project area.

Project Setting

Topography: The project area is located within the urban development of Fort Worth. The ground surface is relatively flat with an elevation of approximately 565 feet above mean sea level.

Geology: The Geologic Atlas of Texas, Dallas Sheet, indicates that the project area is underlain by Quaternary age terrace deposits (Figure 3) (Barnes 2018). These terrace deposits consist of sand, silt, and clay, with gravel being present in the older deposits on higher landforms (U.S. Geological Survey [USGS] 2018a).

Soils: The entirety of the project area is mapped as urban land (Figure 4) (Natural Resources Conservation Service 2018). This unit is characterized as heavily disturbed by commercial and residential development; disturbances from modern activities are expected to be common throughout this unit.

Land Use: The project area is located within the urban development of Fort Worth and is bound by raised railroad beds to the east, by SH 183 to the north, and a large steel building with an associated parking lot to the west. Mitchell Cemetery was actively in use from the mid-nineteenth century to the beginning of the twentieth century. There are numerous buried and overhead utilities and two concrete foundations within the APE.

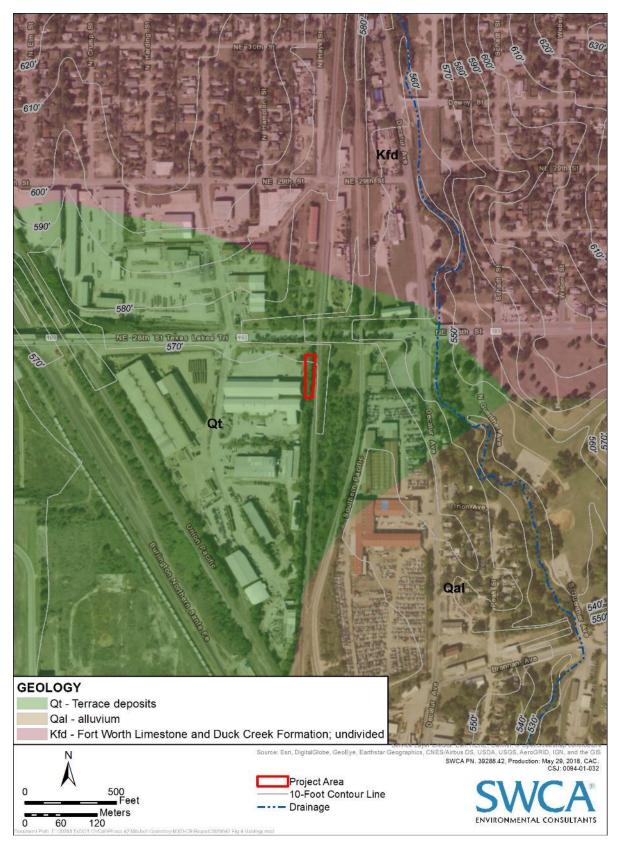
Vegetation: The project area has been partially cleared in preparation for the scraping. Trees line the existing railroad ROW on the eastern side of the project area, and several small trees remain within the scraping area.

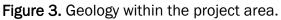
Estimated Ground Surface Visibility: 40 percent.

Previous Investigations, Known Archeological Sites, Cemeteries and Historical Markers: A background literature review determined that there have been five intensive archeological investigations and one archeological site previously recorded in the vicinity of the project area.

The first recorded archeological survey near the project area was conducted by TXDOT in 1999, during which mechanical scraping was conducted to the north of Mitchell Cemetery in preparation for SH 183 improvements (THC 2018). No interments were identified. In 2009, Geo-Marine conducted an investigation on behalf of TXDOT; however, no subsurface testing was conducted in or near the cemetery. Subsequently in 2013, URS conducted an investigation on behalf of the Federal Railroad Administration. No subsurface testing was conducted in or near the cemetery, but URS recommended the cemetery as eligible for the National Register of Historic Places (NRHP) and the THC concurred.

TxDOT conducted additional investigations in 2000 and 2001 in preparation for installation of a fence that was to be constructed around the known cemetery boundaries. These investigations included the use of a Gradall for trench scraping. No human interments were identified during these investigations. To, date, the fence has not been installed.





Between 2013 and 2014, TxDOT conducted an intensive, subsurface investigation near the project area, including Gradall scraping. The goal of the investigation was to determine the presence of unmarked graves beyond the eastern boundary of Mitchell Cemetery within DART Railroad ROW. Five unmarked graves were recorded in this survey. As a result of these investigations, TxDOT recorded the Mitchell Cemetery as 41TR283 in 2015 with site boundaries extending along the railroad ROWs east of the project area. The site form describes the cemetery as being active between 1848 and the beginning of the twentieth century. Articles in the Fort Worth Star-Telegraph dating from 1937 suggest that there were a total of 75 or 125 internments many of which are unmarked. However, some of these interments may have been relocated during the construction of the railroad grades in the early to mid-twentieth century (Texas Historical Commission [THC] 2018).

Two additional previously recorded archeological sites (i.e., 41TR281 and 41TR282) and an NRHP listed historic district are located within 0.6 miles (1 km) of the proposed APE. Site 41TR281, located approximately 0.44 miles (0.7 km) to the north, is a historic artifact scatter that has been determined not eligible for the NRHP (THC 2018). Site 41TR282 is located approximately 700 feet (0.21 km) to the east of the project area and was recorded as a historic artifact scatter following the removal of historic residences (THC 2018). Site 41TR282 has also been determined not eligible for the NRHP.

The Fort Worth Stockyards Historic District is located approximately 0.26 miles (0.41 km) to the west of the proposed project area. This NRHP district was first listed in 1976, citing its industrial, commercial, architectural, and agricultural significance of the area (THC 2018). The district contains one NRHP property and 12 historical markers.

No additional cultural resources, including other cemeteries, were identified within 0.6 mile (1 km) of the current project area. An SWCA archeologist reviewed historic maps in the Texas Historic Overlay (Foster et al. 2006), which includes historic topographic maps. The maps reviewed ranged in date from 1894 to 1985, none of which depicted a structure within the proposed APE (USGS 2018b).

Related to the ongoing cemetery assessment, but not part of the current investigations, on Wednesday, April 18, 2018, a total of three human bone fragments that were recovered during an earlier phase of the investigation were reinterred in Mitchell Cemetery (Appendix A). These three bone fragments were reportedly discovered by a Tarrant County Deputy on April 30, 2013. They were reburied in a 4-by-4-inch wooden box a little less than four feet below the current ground surface. They were reinterred above the unmarked grave No. 5 that was found in 2014. After the reburial, a small granite stone labeled, "unknown" was placed over the reburial on the ground surface. Ervin Hauk, Mitchell Cemetery advocate, Steve Baker, TxDOT Fort Worth District staff GIS specialist, Jon Budd, TxDOT staff archeologist, and Raul Orozco TxDOT Fort Worth District survey crew staff member all participated in the reburial. Although the brief report of the reburial is appended to this report, the repatriation of the remains is not part of the current Section 106 or Antiquities Code investigations.



Figure 4. Mapped soils within the Project Area.

Comments on Project Setting: The project area has been extensively modified by railroad construction and maintenance, subsurface and overhead utilities, and commercial and/or industrial development.

Survey Methods

Surveyors: Steve Carpenter and Miles Martin, SWCA; Curtis Loftus, Steve Baker, Jon Budd and Jim Abbott, TxDOT; Ervin Hauk, Mitchell Cemetery Advocate

Methodological Description: A pedestrian inspection combined with systematic backhoe trenching and scraping was conducted across the entire 0.22-acre project area to determine the presence of unmarked burials and other cultural resources. The mechanical scraping comprised north-south oriented trenches separated by narrow balks. Several constraints precluded scraping in some areas; these included existing overhead and buried utilities, a septic system, and trees.

Mechanical Scraping

Mechanical excavations were conducted to a depth sufficient to determine the presence/absence of interments and buried cultural materials, as well as to allow the complete recording of all features and geomorphic information to depths of at least (6 feet [1.8 meters]). The mechanical scraping involved gradually removing strips of soil until reaching a depth unlikely to contain burials. A total of seven large trenches, the equivalent of 206 trenches (defined as 8-x-3-foot excavations), were excavated within the project area (Table 1).

Generally, trenches were 6 to 7 feet (1.8 to 2.2 meters [m]) deep, 8 feet (2.5 m) long, and 3 feet (0.9 m) wide. Successive trenches were excavated end-to-end to form a long linear exposure; each 8-foot trench within the longer exposure was recorded separately and given a separate trench number. An experienced archeologist monitored all trenching while excavations proceeded. Once the trench was excavated to depth, an SWCA archeologist scraped representative profiles, checking for anomalies that could indicate graves. The instability of backfilled trenches and balks precluded entry into several of the trenches. Nevertheless, the SWCA archeologist recorded stratigraphic descriptions for each trench, and thoroughly documented and photographed the entire process. Upon completion of excavation, all trenches were backfilled and returned as closely as possible to their original surface contours. SWCA performed all work in accordance with Occupational Safety and Health Administration regulations (29 Code of Federal Regulations [CFR] 1926).

Table 1. Excavations in Project Area

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Temporary Easements	Total Number per Acre
Survey Shovel Test Units	0	0	N/A	0
Auger Test Units	0	0	N/A	0
Mechanical Trenching	0	206	N/A	936

Other Methods: None

Collection and Curation:	NO 🖂	YES \Box If yes, specify facility.
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Comments on Methods: Although THC survey standards do not specify the amount of scraping around cemeteries, for the objectives of the investigations (i.e., identification of interments), the methods met typical survey standards. The mechanical scraping exposed 4,950 square feet (0.11 acre) within the project area.

Survey Results

Project Area Description: The pedestrian survey revealed the project area was predominantly cleared of vegetation, bordered by a thin band of trees and understory to the east along the railroad ROW and a high security fence along the western side. An overhead utility and numerous buried utilities, most unmarked, run approximately north-south through the southern part of the project area. Additionally, modern debris discarded from the adjacent railroad and businesses is common across the ground surface.

Mechanical Scraping

TxDOT and SWCA archeologists systematically scraped the project area using the previously described methodology. The trenching was limited to the 0.22-acre area bordered by an existing railroad to the east and industrial building with associated parking lot to the west (Figure 5). The previously described disturbances and utility placement precluded trenching in the remainder of the project area. The investigated area is partially cleared ROW, bordered by dense forest along the railroad ROW (Figures 6 and 7). Anchored guy wires from an overhead utility intrude into the trenching area, and the aforementioned utilities were common throughout much of the project area.



Figure 5. Results of investigations within the project area.

A total of 7 long backhoe trenches were excavated within the 0.22-acre area. Each long trench consists of multiple smaller trenches excavated successively to create a continuous trench series (see Figure 5). Each of the 7-trench series were then labeled "A" through "G." Trench series A to C are located south of the concrete foundations and encountered numerous utilities. Trench series D through G are parallel trenches north of the foundations, an area displaying fewer utilities.

The soil profiles varied widely based on the level of disturbance (Appendix B). The typical soil profile contained three strata. Stratum I is a heavily modified silt loam with common gravels and pebbles to a depth of 30 cm below surface (cmbs). This upper stratum includes introduced sediments, probably serving as a gravel driveway. Stratum II, which consists of a very dark grayish brown (10YR 3/2) clay to a depth of about 120 cmbs. Stratum III is a brown (7.5YR 5/3) clay to a depth of 180+ cmbs. Some trenches in the southern project area contain a layer of caliche or gravel at about 30 cmbs. In addition to recording specific trenches, geoarcheologist Jim Abbott recorded a representative profile of project area sediments. A typical profile contains upper, heavily disturbed strata to a depth of 50 to 60 cmbs, overlying an Ak horizon with calcium carbonate nodules to a depth of about 130 cmbs. The lower strata include Bk horizons in dense, massive clays to 200 cmbs.



Figure 6. Overview of northern project area with BHT D under excavation. Facing north.



Figure 7. Overview of southern project area with partially buried concrete slabs in foreground. Facing south.

Archeological Materials Identified: No interments or other features that could be associated with the Mitchell Cemetery were identified within the 0.22-acre project area. Although a few midtwentieth century historic-aged artifacts were identified, the preponderance of materials are recent. Based on the age and pervasive disturbances, the scant historic materials were not recorded as an archeological site.

Although the investigations identified no components associated with the cemetery, modern and historic debris were identified in the project area. These include an elaborate abandoned system of ceramic sewer pipe and three septic tanks. In addition, recent to mid-twentieth century trash pit and two small concrete foundations that likely supported outbuildings associated with industrial operations to the west were also observed. The concrete slabs appear to be more recent than the trash pit, and consequently the features may not be directly associated. No standing structural components remain on the site.

The two foundations include a smaller slab approximately 12 feet (3.66 m) northwest of a slightly larger one to the southeast (see Figure 5). The southeastern slab measures approximately 10 feet (3.04 m) east-west by 15 feet (4.57 m) north-south, oriented along cardinal directions. Bolts protrude from the concrete along the western, southern, and eastern margins, but none along the northern side. The northwestern slab measures 10 feet square (3.04 m), and the interior is devoid of concrete forming a square void of undetermined function.

The trash pit, consisting of burned and unburned refuse, measures at least 10 feet in diameter to a depth of 86 cm below ground surface. The horizontal dimensions could not be clearly determined for lack of access beyond the APE and buried utilities. The feature is partially intact but has been disturbed by utilities and other ground disturbance. The artifact assemblage comprised shoe parts, slag metal, various beverage bottles, cans, pull tabs, car parts, and industrial implements. The glass containers included beer, soda, liquor, and bleach bottles.

The manufacturer' marks on two bottles indicate a 1930s to 1940s production dates, but most of the remains appear to be later. One bottle has an embossed "Uncle Jo" across the upper shoulder. The Uncle Jo Bottling Company, which also created a line of Uncle Jo sodas, was established by Jo Glazer (1876-1944), who emigrated from Russia in the late nineteenth century (Glazer 2015). After learning the bottling and soda-making craft in St. Louis, Missouri, Glazer moved to the Fort Worth area and founded the company at 1109 East Lancaster Street in the early 1920s. Uncle Jo sodas were discontinued in 1942 (Glazer 2015). A second bottle has a base stamp "THE JOHN PUHL PRODUCTS CO. CHICAGO, ILL." with a stippled background. This bottle is a Fleecy White Bleach bottle that dates to the 1930s or 1940s. Several "stubbie" beer bottles were also recovered. This short and wide beer bottle style was first introduced in 1935 and reached its popularity in the 1940s through 1960s but remains in current use by some bottling companies.

Plastic fragments, pull tabs, aluminum cans, and other bottles indicate later dates. Pull tab cans were invented in 1962, and the tab ring was added in 1965; most pull tab cans were discontinued in the 1975 when "sta-tabs" were introduced (De Pastino 2017).

The large structures currently located immediately west of the project area do not appear on the 1974 USGS topographic map but do appear on the 1989 maps (Figure 6), indicating construction between those dates. The earliest available topographic map dates to 1955 and does not depict structures in the APE. A review of recent aerials shows standing structures in 2001 where the slabs are now located, but shows they were removed by 2009 (Figure 9). These data indicate the large industrial buildings immediately west of the project area were likely built between 1974 and 1989, and the small outbuildings within the project area being constructed after 1989 and removed between 2001 and 2009.

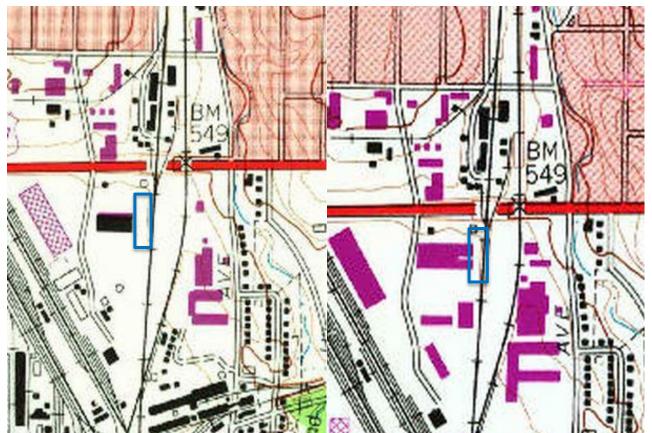


Figure 6. 1974 (left) and 1969 (light) 0565 topographical maps, showing the lack of structures in Project area. Current buildings to the west of project area appear in the later map. Approximate project area depicted in blue squares.

Project Area Integrity: The proposed project area exhibits extensive prior disturbance from railroad development, industrial use, adjacent ditches, and overhead and buried utilities. These have compromised the integrity of deposits and any cultural resources that might be present within them.

Recommendations

Further Work: No further work is recommended within the 0.22-acre project area.

Justification: Investigations were conducted in compliance with the Antiquities Code of Texas and Section 106 of the NHPA. The excavations identified no interments or other cultural features. As per the federal and state implementing regulations at 36 CFR 800.4(b)(1) and Texas Administrative Code Title 13, Chapter 26, SWCA has made a reasonable and good faith effort to identify all cultural resources within the project area and recommends the project will have no effect on historic properties; no further cultural resources investigations are recommended.



Figure 9. 2001 (left) and 2009 (right) aerial photos, showing the structures in project area, followed by their removal prior to 2009. Approximate project area depicted in blue squares.

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Appendix A. Memorandum on Reburial of Recovered Human Remains

FTW: Tarrant: SH 183 at the Mitchell Cemetery: 0094-01-032 April 18, 2018 Reburial of Human Remains Jon Budd – TxDOT Staff Archeologist May 15, 2018

On Wednesday, April 18, 2018, a total of three human bone fragments that were recovered during an earlier phase of the investigation were reinterred into the Mitchell Cemetery. They were re-buried in a 4 by 4 inch wooden box, a little less than four feet below the current ground surface. They were re-interred above the unmarked grave No. 5 that was found in 2014. A manual posthole digger and sharp shooter type shovel were used. After the reburial, a small granite stone labeled, "unknown" was placed over the re-burial on the ground surface. Ervin Hauk, Mitchell Cemetery advocate, Steve Baker, TxDOT Fort Worth District staff GIS specialist, Jon Budd, TxDOT staff archeologist, and Raul Orozco TxDOT Fort Worth District survey crew staff member all participated in the re-burial.

These three bone fragments were reportedly discovered by Tarrant County Deputy Sheriff Orrin Beckham on April 30, 2013. Deputy Beckham was at the cemetery with Deputy Russell Rojas and Sargent David Pena. Sargent Pena was there to strategize with Mr. Hauk regarding upcoming cleanup work to be conducted by the Tarrant County Sheriff's Department work detail. There were no TxDOT employees present when the bones were discovered. Deputy Beckham reportedly observed these bone fragments as he walked over a portion of the recently filled backhoe trenches excavated by TxDOT on April 9, 2013. It had also just recently rained. The bones could have come from grave sites that were believed to be trenched through by a gas pipeline installed in 1927. No graves were observed at this location during the trenching conducted by TxDOT in 2013. The bones were confirmed to be human on June 13, 2013 by Dr. Kate Spradley, physical anthropologist from Texas State University, San Marcos.

Jon Budd met with Mr. Hauk, Deputy Beckham, and his supervisor, Sargent Pena at the Mitchell Cemetery on August 20. 2013. All three of these latter individuals were present on April 30, 2013 when Deputy Beckham reportedly found human bones on the ground surface. On August 20, 2013, Deputy Beckham, Sargent Pena, and Mr. Hauk could not agree on the exact location where the bones were found. Therefore, an area measuring 25.33 square meters was shovel scraped and screened by Budd with assistance from TxDOT Fort Worth district personnel in the agreed upon general area in an attempt to find more human bones. This shovel scraping extended to a depth of up to 20 centimeters below the ground surface. No human bones were observed during this phase of hand shovel scraping and screening. However, a relatively robust collection of non-archeological historical trash was recovered.

Attached are photos of the mapped location of the reburial, the three bones, the burial box, the granite marker, and the location at the cemetery facing west.



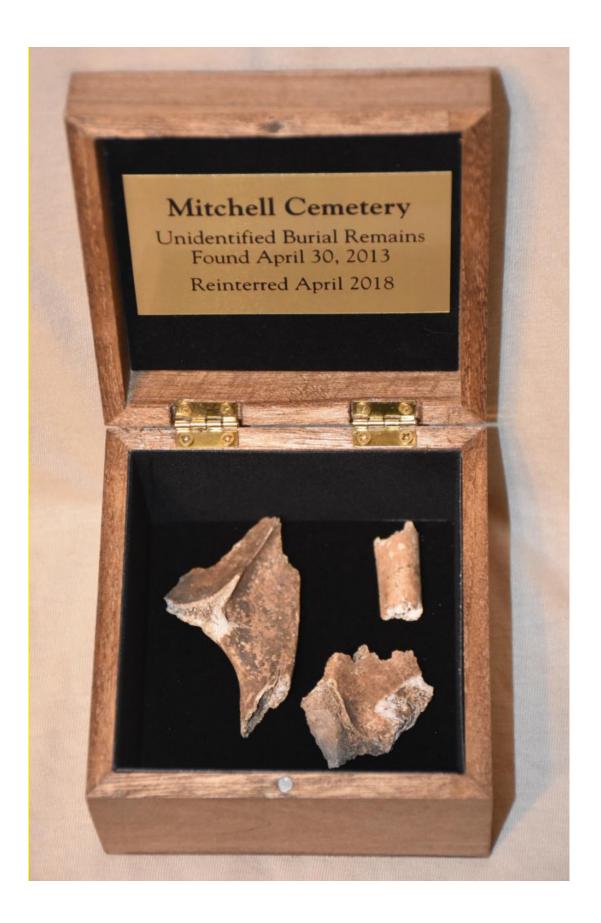


Figure 1: Right scapula fragments, anterior view.



Figure 2: Radius shaft fragment, unsided.









Appendix B. Representative Profiles of Backhoe Trenches

Trench	Depth	Munsell	Soil Color	Soil	Horizon Discussion	Lower	Comments
Trenon	(cmbs)	Mulloci		Texture		Boundary	
BHT A	0-36	Varied (Disturbed soil)	Disturbed Fill	Loam	Granular, fine size with modern debris inclusions	Clear and smooth	Recent fill with modern debris inclusions.
	36-166	10YR 4/2	Dark grayish brown	Clay	Firm, subangular blocky, coarse size and moderate grade.	Gradual and smooth	Appears to be intact soil.
	166- 193+	7.5YR 4/3	Brown	Clay loam	Firm, subangular blocky, coarse size and moderate grade.	NA	Soil appears to be intact. Possibly Pre- Holocene soil deposit.
BHT B	0-23	10YR 5/3	Brown	Silt loam	Loose, subangular blocky, coarse size and moderate grade; with modern debris inclusions.	Abrupt and smooth	Recent overburden, heavily disturbed.
(Southern Portion)	23-41	10YR 8/1	White	Gravel	Loose, granular and coarse size; modern gravel fill.	Abrupt and smooth	Modern gravel fill.
	41-145+	10YR 3/2	Brown	Clay	Firm, sub-angular, coarse size and moderate grade.	NA	At least 5 buried utilities in the first 60 cm of the level.
BHT B (Center portion)	0-28	10YR 3/2	Brown	Silt loam	Loose, Granular, coarse to fine size; with modern debris inclusions.	Clear and smooth	Recent fill with modern debris inclusions.
	28-36	10YR 8/1	White	Gravel	Loose, granular and coarse to medium size; modern gravel fill.	Abrupt and smooth	Modern gravel fill.
pontiony	36-149	10YR 2/1	Black	Clay	Firm, Massive grade.	Gradual and smooth	Appears to be intact soil.
	149- 179+	7.5YR 3/2	Dark brown	Clay Ioam	Firm, Massive grade.	NA	-
	0-17	10YR8/1	White	Gravel	Loose, granular and coarse to medium size; modern gravel fill.	Abrupt and smooth	Modern gravel fill.
BHT C	17-86	Varied (Disturbed soil)	Disturbed soil	Clay Ioam	Firm consistency; Common modern and (possibly historic) trash throughout	Abrupt and smooth	Disturbed trash pit
	86-124	10YR 3/1	Very dark gray	Clay	Firm consistency	Clear to abrupt and irregular	-
	124- 165+	10YR 3/2	Dark brown	Clay loam	Firm consistency	NA	-
	0-29	Varied (Disturbed soil)	Gravel fill	Gravel	Granular, coarse size and moderate grade; Modern debris	Abrupt and smooth	Disturbed soil with modern debris thorughout
BHT D	29-119	10YR 3/2	Brown	Clay	Firm, subangular blocky, coarse size and moderate grade; some modern debris inclusions	Gradual and smooth	Some modern debris throughout strat, Sewer line located at the bottom of the strat (90-139 cmbs).

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Comments
	119- 179+	7.5 YR 5/3	Brown	Clay	Firm, subangular blocky, coarse size and moderate grade; common calcium carbonate nodules	NA	-
BHT E	0-36	7.5YR 4/4	Brown	Sandy Ioam	Loose consistency with common roots	Gradual	-
	36-122	10YR 3/2	Brown	Clay Ioam	Firm consistency with common large rock fragments	Gradual	-
	122- 170+	10YR 4/3	Brown	Clay	Extremely firm consistency with large rock fragments and caliche gravels thorughout	NA	-
BHT F	0-36	7.5YR 6/3	Light brown	Sandy Ioam	Loose consistency with roots and rootlets common	Gradual	-
	36-77	10YR 3/1	Very dark gray	Clay	Firm consistency with common large rock fragments	Gradual	-
	77-112	10YR 3/1	Very dark gray	Clay	Firm consistency with common moderate sized gravels	Gradual	-
	112- 183+	10YR 3/1	Very dark gray	Clay	Firm consistency with common caliche gravels	NA	-

This report was written on behalf of the Texas Department of Transportation by

