Volume 2015 Article 196

2015

FM 8 at Hog Creek, Eastland County, Texas Brownwood District

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Report for Archeological Survey

FM 8 at Hog Creek, Eastland County, Texas Brownwood District

CSJ: 0550-01-026

Jon Budd, Texas Antiquities Permit No. 7140

March 18, 2015

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 March 11, 2015, and on behalf of the Texas Department of Transportation (TxDOT), SWCA Environmental Consultants conducted an intensive cultural resources survey with systematic mechanical excavations at the Farm-to-Market (FM) 8 and Hog Creek crossing in Eastland County. These investigations for the Austin District were conducted for the proposed replacement of an existing bridge. The work was conducted in compliance with Section 106 of the National Historic Preservation Act (54 USC 306108) and the Antiquities Code of Texas (9 NRC 191). Jon Budd served as Principal Investigator under Texas Antiquities Code Permit No. 7140.

The maximum depth of impacts is estimated to be up to 40 feet below the current ground surface for the bridge supports and 6 feet for the remainder of the project. The area of potential effects (APE) is therefore defined as the 126- to 210-foot-wide (38- to 64-meter [m]-wide) FM 8 right-of-way (ROW).

There have been several surveys in the area, but no sites have been recorded in or immediately adjacent to the project area. In February 2011, AmaTerra surveyed the project area on behalf of TxDOT and recorded no cultural resources (Atlas 2015). However, the survey did not entail backhoe trenching, which is the reason for the current work. In 2013, Bill Moore with Brazos Valley Research Associates recorded site 41EA36, the Desdemona Jail, which was likely constructed in the early part of the 20th century and is located approximately 500 m east of the current survey area (Atlas 2015). Historical markers for Desdemona Cemetery (approximately 500 m east), Fort Blair C.S.A. (approximately 900 m east), and Desdemona First Baptist Church (approximately 1,338 m northeast) are located within a 1-mile radius of the project area (Atlas 2015).

The ground surface was inspected for the entire APE and a total of four backhoe trenches were excavated, two BHTs were placed in the northeast quadrant and two BHTs were placed in the northwest quadrant of the FM 8 bridge crossing. Existing utilities precluded placement of additional trenches.

The excavations encountered thick sands, silts, and clays in all trenches with some level of disturbance noted in all trenches. No cultural material was observed on the surface or within any of the backhoe trenches. As such, no further cultural resources investigations are recommended within the existing FM 8 ROW at Hog Creek.

Project Identification

- **Date:** 3/16/2015
- **Date(s) of Survey:** 03/11/2015
- **Archeological Survey Type:** Reconnaissance ☐ Intensive ☒
- **Report Version:** Draft ☒ Final ☐
- **Jurisdiction:** Federal ☒ State ☒
- **Texas Antiquities Permit Number:** 7140
- **District:** Brownwood
- **County or Counties:** Eastland County
- **USGS Quadrangle(s):** Desdemona (3298-241)
- **Highway:** Farm-to-Market (FM) 8 at the Crossing of Hog Creek
- **CSJ:** 0550-01-026
- **Report Author(s):** Ken Lawrence, Steve Carpenter, and Mercedes Cody
- **Principal Investigator:** Jon Budd

Texas Historical Commission Approval

Signature Date

Project Description

- **Project Type:** Bridge replacement
- **Total Project Impact Acreage:** 4.5 acres
- **New Right of Way (ROW) Acreage:** 0.1 acre
- **Easement Acreage:** 0.0 acre
- **Area of Pedestrian Survey:** 4.5 acres
- **Project Description and Impacts:** The proposed project would widen the existing bridge and approaches on FM 8 at Hog Creek in Eastland County, Texas. The existing 120-foot-long by 30-foot-wide bridge would be widened to 44 feet. The bridge length will remain the same. The approaches would be widened to match the new structure. Approximately 0.1 acre of new ROW would be required and would be located on the southwest quad of the crossing.
- **Area of Potential Effects (APE):** The undertakings area of potential effects (APE) is defined as the existing 93- to 123-foot-wide FM 8 ROW extending 600 feet on either side of the Hog Creek waterline. In addition, the APE includes approximately 0.1 acre of proposed new ROW located in the southwest quadrant of the crossing and is illustrated on the attached plan view. Depth of impacts is estimated to be up to 40 feet below the current ground surface for the bridge supports and up to 6 feet for the remainder of the project. The entire APE is comprised of 4.5 acres.
- **Parcel Number(s):** E.C. May estate; parcel number not listed.
- **Project Area Ownership:** Existing TxDOT ROW, 0.1 acre of proposed new ROW on E.C. May estate.

Project Setting

- **Topography:** The project area is situated along a down cut drainage that has incised through the Rolling Plains of north central Texas. This area is generally characterized as having a gradual, undulating topography with geologic strata derived from limestones and marls. Specific to the project area, elevation ranges from approximately 1350 to 1330 feet above means sea level (Figure 1). The approaches on both banks cross alluvial terraces and fine colluvial sediments. The left bank of Hog Creek (on the eastern side) is more gently sloping compared to the western right bank, which has a steeper incline.
- **Geology:** The surface geology for the project area is mapped as Lower Cretaceous Twin Mountains formation (Ktm), with exposures of the underlying Pennsylvanian Brazos River formation (IPbr) exposed by down cutting of Hog Creek. The Twin Mountains formation consists of claystone and sandstone that contains some pebbles of chert and quartz (Barnes 1972). Quaternary alluvium is mapped in the narrow terraces along the drainage

to the north and south of the project area, and consists of clay, silt, sand, and siliceous (chert and quartzite) gravel or pebbles.

- **Soils:** In order of predominance, the soils mapped for the project area consists of Chaney loamy sand in the upland areas to the east and west of the bridge crossing, Bunyan frequently flooded soils forming the lower drainage terraces, and Pedernales fine sandy loam east of the crossing (Natural Resources Conservation Service [NRCS] 2015) (Figure 2). Chaney soils form on 1 to 5 percent slopes and are moderately well drained, consisting of loamy sand over sandy clay and clay at depths of 52 to 80 inches. Bunyan soils form in alluvial deposits on floodplains and consist of fine sandy loams, over sandy loam and fine sandy loams to depth of 46 to 60 inches. The Pedernales fine sandy loam (3 to 5 percent slopes) is derived from calcareous alluvium parent material and occupy ridge slopes and hills and characterized as alluvial plain remnants (NRCS 2015).
- **Land Use:** The APE is primarily existing ROW with utilities along both sides. Surrounding the project area is residential and commercial development and associated improvements (e.g., driveways and fence lines) of Desdemona, Texas community associated improvements.
- **Vegetation:** The surrounding vegetation consists of mixed hardwood timber of variable density with an understory of mixed grasses and shrubs. The APE consists of mixed grasses (80 percent) that are regularly maintained and riparian vegetation (mixed hardwoods and wetland species) along the margins of Hog Creek.
- **Estimated Ground Surface Visibility:** __30–80__%
- **Previous Investigations and Known Archeological Sites:** There have been several surveys in the area, but no sites have been recorded in or immediately adjacent to the project area. In February 2011, AmaTerra surveyed the project area on behalf of TxDOT. The work recorded no cultural resources. However, the survey did not entail backhoe trenching, which is the reason for the current work. In 2013, Bill Moore with Brazos Valley Research Associates recorded site 41EA36, the Desdemona Jail, which was likely constructed in the early part of the 20th century (Atlas 2015). Site 41EA36 is approximately 500 meters (m) east of the current survey area.
- Historical markers for Desdemona Cemetery, Fort Blair C.S.A., and Desdemona First Baptist Church are located within a 1-mile radius of the project area (Atlas 2015).
- A historical marker for Desdemona Cemetery is located approximately 500 m east of the project area and reads (Atlas 2015):

  > The town of Desdemona was a well-established frontier community by the 1870s; a post office opened there in 1877. J. S. and Rosa Jones deeded one acre from the D. W. Funderburgh land survey for a "public graveyard" in 1880. The earliest marked grave is that of William E. Wright (1815-1878). It is likely that older unmarked burials exist among the oak trees here. Native rocks incised with initials or dates

mark some early graves. Those buried here include pioneer settlers and their descendants; frontier matriarch Mrs. Kate (Kizzie) Shuler; veterans of the Civil War, World War I and World War II; Capt. A. J. O'Rear, a county commissioner and postmaster; S. E. Snodgrass, a physician who served the area for 50 years; local citizens who profited from the 1918 oil boom; Joe and Almeda Duke, owners of the site of the first oil gusher; and many young children. In 1918-19 oil discoveries surrounded the cemetery with flowing wells and oil derricks. H. H. Williams' estate donated two acres of land in 1965. The Desdemona Cemetery association manages and maintains the site. The cemetery continues to serve the area as it has for more than a century.

- A historical marker for Fort Blair, C.S.A. is located roughly 900 m east of the project area and reads in part (Atlas 2015):

  A few miles to the southwest. Largest far western "family fort" used throughout Civil War. Started by C.C. Blair, 1857 settler. 1861-1865 occupants were Wm. Arthur, Blair, J.M. Ellison; Jasper, Jim and Tom Gilbert; W.C. McGough, W.H. Mansker and sometimes others. The fort had 12 log cabins, 14 ft. square, 14 ft. apart in two parallel rows. Pickets walled spaces between cabins. Ammunition and supplies could be bought only by making long, dangerous trips to the Brazos settlements or to the south. After the war, Desdemona was established as a stop on the Old Waco-Ft. Griffin Road. It boomed to fame when oil was discovered in 1918. Its call for help to end lawlessness added new glory to Texas Rangers.

- A historical marker for Desdemona First Baptist Church is located roughly 1338 m northeast of the project area and reads (Atlas 2015):

  This church was organized by nine charter members in 1872. Religious observances began with brush arbor meetings organized in the summer of 1872 by The Rev. Johnnie Northcutt. Early settlers traveled by wagon, horseback, buggy, and on foot to meet under the canopy of Spanish oaks along the banks of nearby Hog Creek (about 1 mile south) to hear Northcutt's Baptist sermons. Beginning in the fall of 1872, monthly services were held in a schoolhouse built near the Hog Creek site by Johnny Carruth and Charlie Mitchell. The congregation, originally called Rockdale Baptist Church, built their first sanctuary in the village of Desdemona shortly after the establishment of the community's first post office in 1877. About that time the church was renamed Desdemona First Baptist Church. Box suppers, baptisms, picnic services at area lakes and water tanks, and lengthy revivals soon became routine activities for the congregation. The discovery of oil here transformed Desdemona from a small village to a booming oil town by 1919. To escape the crowded conditions of Desdemona the congregation built a new sanctuary at this site in 1921-22 on land donated by C.H. and Fannie Genoway. The congregation, active in various missionary efforts, continues to serve the local community.

- **Comments on Project Setting:** The project area crosses Hog Creek, a small incised drainage. The project area primarily comprises existing ROW and numerous buried and overhead utilities have affected the integrity of the area. Additionally, an earlier roadbed that predates the existing bridge combined with fill section for the current roadway has created modifications to the area.

Survey Methods

- **Surveyors:** Ken Lawrence, Jessica Ulmer, and Jared Weirsema.
- **Methodological Description:** A pedestrian inspection was conducted across the entire APE, located within the existing TxDOT ROW, but also including a 0.1-acre segment of proposed new ROW. To augment the previous survey conducted by AmaTerra, backhoe trenching was conducted to fully assess the potential for deeply buried deposits.

  The SWCA archaeologist determined trench placement at the project area crossing based on the level of disturbance; the location of any impacted areas such as previous construction and existing buried utility locations; and the preservation potential for archaeological sites. A total of four backhoe trenches (BHTs) were excavated; two BHTs were placed in the northeast quadrant and two BHTs were placed in the northwest quadrant of the bridge crossing (Figure 3). No BHTs were placed in the southern quadrants due to an existing high pressure gas line (ATMOS) within a narrow ROW corridor. BHTs were excavated to a depth sufficient to determine the presence/absence of buried cultural materials and to allow the complete recording of all features and geomorphic information to depths of project impacts. Generally, trenches were 5 to 6 feet (1.6 to 1.8 m) deep, 12 feet (3.6 m) long, and 3 feet (1 m) wide. An experienced archaeologist monitored all trenching while excavations were underway and a portion of soil from one of every three backhoe buckets was screened through ¼-inch wire mesh. Once the trench was excavated to 5 feet in depth, an SWCA archaeologist scraped down a minimum of 6 feet (1.8 m) of one trench wall and examined the profiles for artifacts, features, or other cultural manifestations, and recorded stratigraphic descriptions for each trench (Table 1). Trenches excavated beyond this depth were not entered in accordance with Occupational Safety and Health Administration (OSHA) (29 Code of Federal Regulations Part 1926) regulations. When necessary to assess the potential for buried deposits beyond 5 feet (1.5 m) below the surface, using the methods noted above, a portion of soil from every third backhoe bucket was screened through ¼-inch wire mesh to assess presence or absence of cultural materials and the profile was observed from the surface. The entire process was thoroughly documented and photographed. Upon completion of excavation, all trenches were backfilled and returned as closely as possible to their original surface contours.

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Temporary Easements	Total Number per Acre
Shovel Test Units	0	n/a	n/a	0
Auger Test Units	0	n/a	n/a	0
Mechanical Trenching	4	n/a	n/a	1.15

- **Other Methods:** None
- **Collection and Curation:** NO ☒ YES ☐ If yes, specify facility.
- **Comments on Methods:** Investigations exceed the recommended THC/Council of Texas Archeologists survey standards for a project of this size (i.e., 5.0 acres). The survey standards recommend one trench for every 3 acres in floodplain settings such as the current APE.

Survey Results

- **Project Area Description:** Where Hog Creek crosses FM 8, the drainage is approximately 5 feet (1.5 m) wide, containing gradually moving water at the time of investigation due to recent rains (Figure 4).
- A pedestrian inspection was conducted across the 4.5-acre APE. As noted, disturbance as a result of roadway construction, ROW maintenance, and buried and overhead utilities is fairly extensive. Much of the existing ROW consists of a sloping embankment and bar ditch (Figures 5–7). Buried waterlines and utility lines run the length of the APE, mainly along the southern side of the roadway (Figures 5 and 6). Backhoe trench placement was limited to areas within the existing ROW with adequate clearance of marked utilities (i.e., northern quadrants).
- Backhoe trenches (BHT01–04) were excavated in the northeast and northwest quadrants of the crossing (see Figure 3). Two backhoe trenches (BHT01-02) were placed in the northeast quadrant while the remaining trenches (BHT03-04) were placed in the northwest quadrant. All of the backhoe trenches exhibited some extensive disturbance from the construction of the current bridge (Figures 8–11). The intact deposits in these excavations varied in depth from 60 to 170 centimeters below surface (cmbs) with the greatest disturbance evident in the northeast quadrant. The disturbed deposits

contained recent debris fragments (i.e., plastic, metal, braided wire, and an aluminum can). The intact stratigraphy (when encountered) most closely resembled that described for the Pedernales series (NRCS 2015). The Pedernales series soils are characterized as very deep soils formed in loamy and clayey, calcareous alluvium parent material (SoilWeb 2015). A typical pedon for this soil series consists of an Ap horizon to 28 cmbs with fine sandy loam and a clear and smooth lower boundary. Below this are three Bt horizons extending to 109 cmbs consisting of sandy clay to sandy clay loam with gradual to clear and smooth lower boundaries overlying a BCtk horizon. The BCtk horizon is described as a sandy clay loam with calcium carbonate masses of 25 percent of the matrix (SoilWeb 2015).

- **Archeological Materials Identified:** No cultural material was documented within the APE.
- **APE Integrity:** The survey area within the TxDOT easement has variable integrity and appears to have been modified to a minimum depth of 15 to 24 inches (40–60 cm) below surface. Disturbance at the surface is primarily attributed to road construction and/or utilities-related disturbance. The original FM 8 roadway appears to have crossed through the middle of the northwest and northeast quadrants and parallel the existing road. The existing FM 8 roadway, embankments, and bar ditch occupy the majority of the APE. Utilities located within the APE include a buried AT&T fiber optic line (northeast and southeast quadrants), a water line, and overhead utility poles (northwest and southwest quadrants) (see Figures 4–7).

Recommendations

- **Archeological Site Evaluations:** No archaeological sites were documented within the APE.
- **Comments on Evaluations:** None.
- **Further Work:** No further cultural resources investigations are recommended within the existing ROW or the 0.1 acre of newly proposed ROW of FM 8 at Hog Creek, the subject of the current investigation (i.e., the APE). Although existing utilities limited the amount of trenching that could be conducted, available exposures and trenches provided sufficient visibility to adequately assess the area (Figure 11).
- **Justification:** The upper 2–5.5 feet (60–170 cm) of the APE has been disturbed and modified as a result of roadway and utilities construction. Below the zone of disturbance, natural deposits were generally observed, however, no cultural materials were identified. Based on the soil development characteristics, the deposits below roughly 5 feet (1.5 m) appear to have negligible potential for cultural materials.
- As per 36 CFR 800, 36 CFR 60, and 13 Texas Administrative Code 26, SWCA has made an effort to identify all cultural resources within the APE and recommends no further investigation prior to construction.

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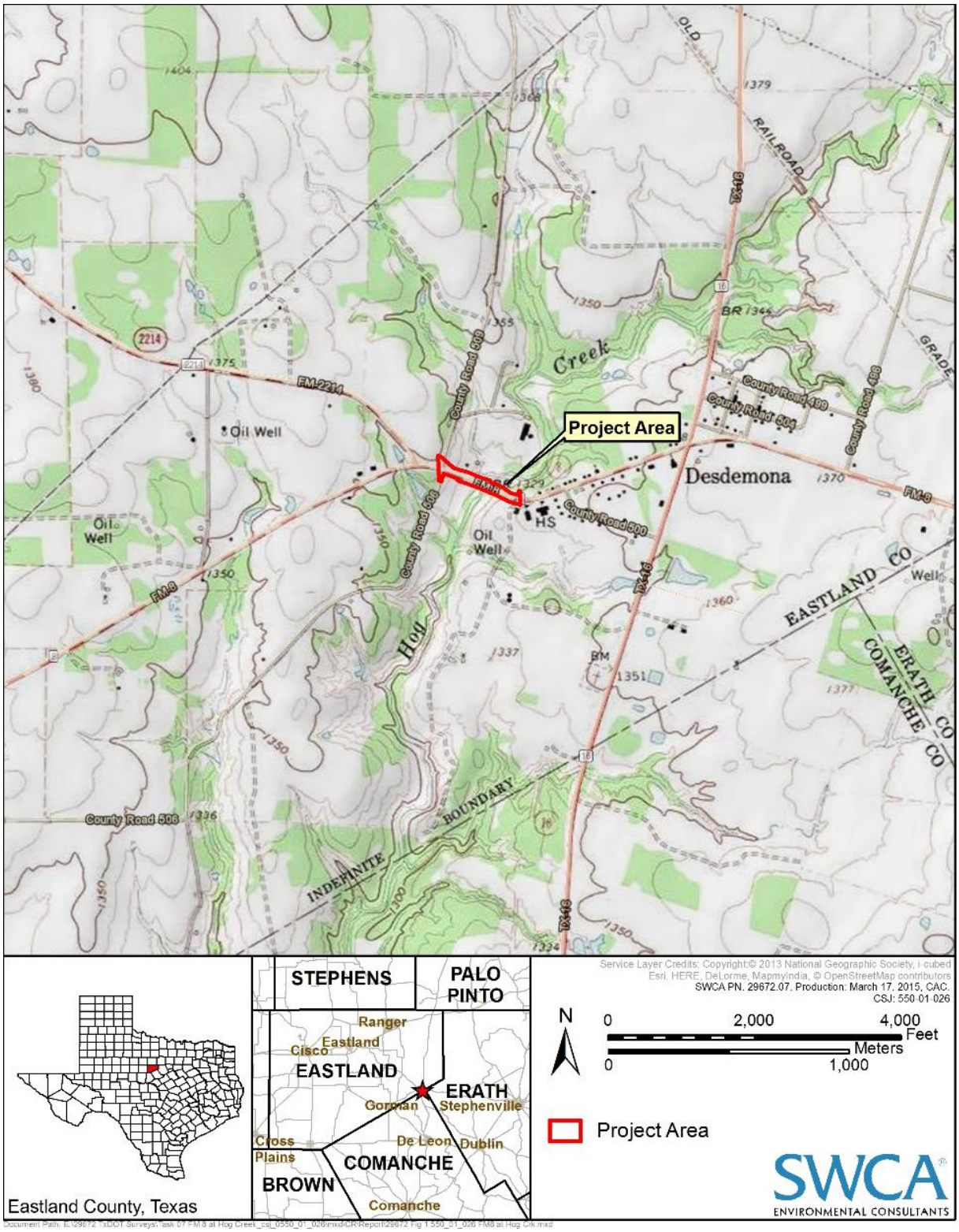

Figure 1. Project location map.

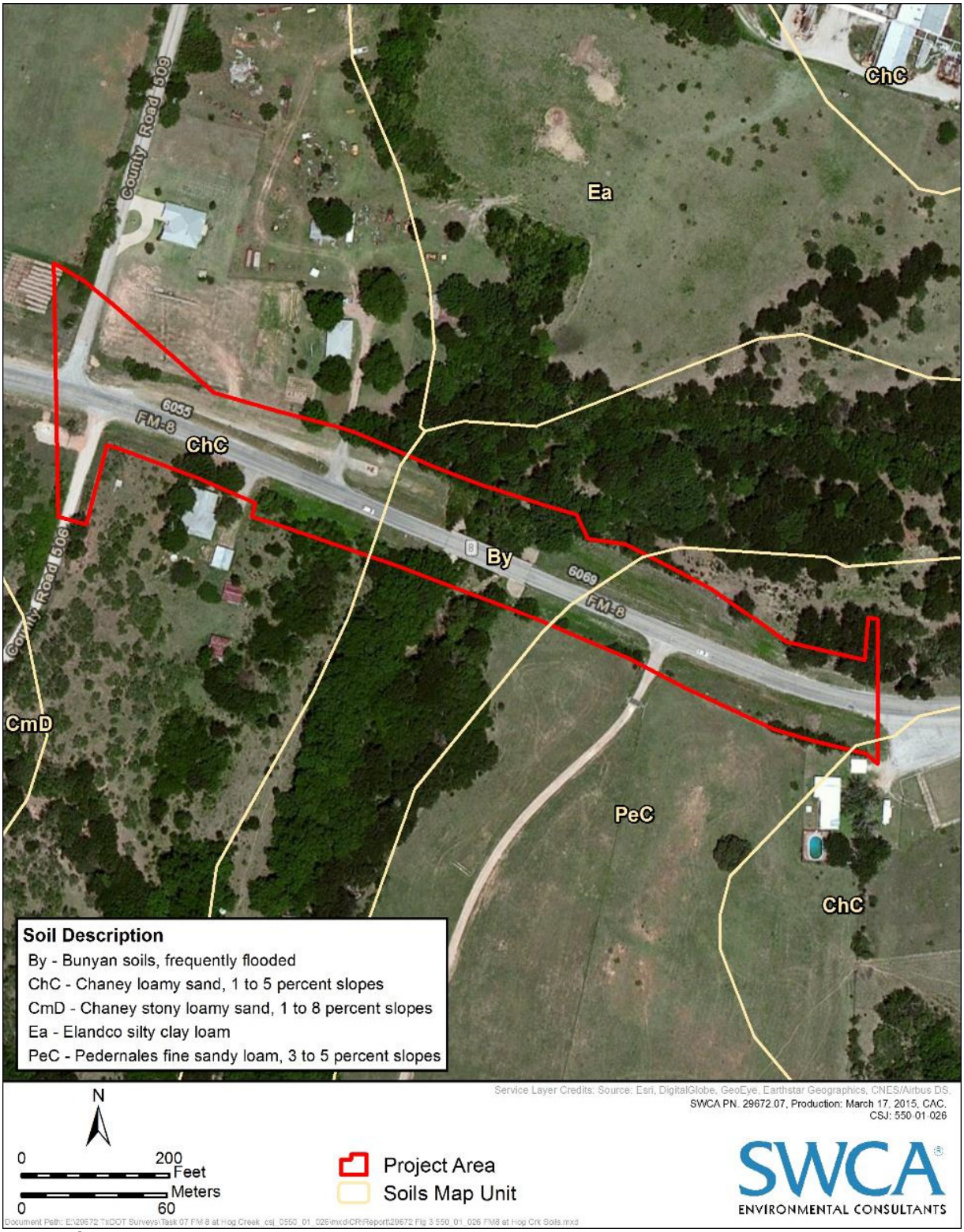

Figure 2. Project area soils.

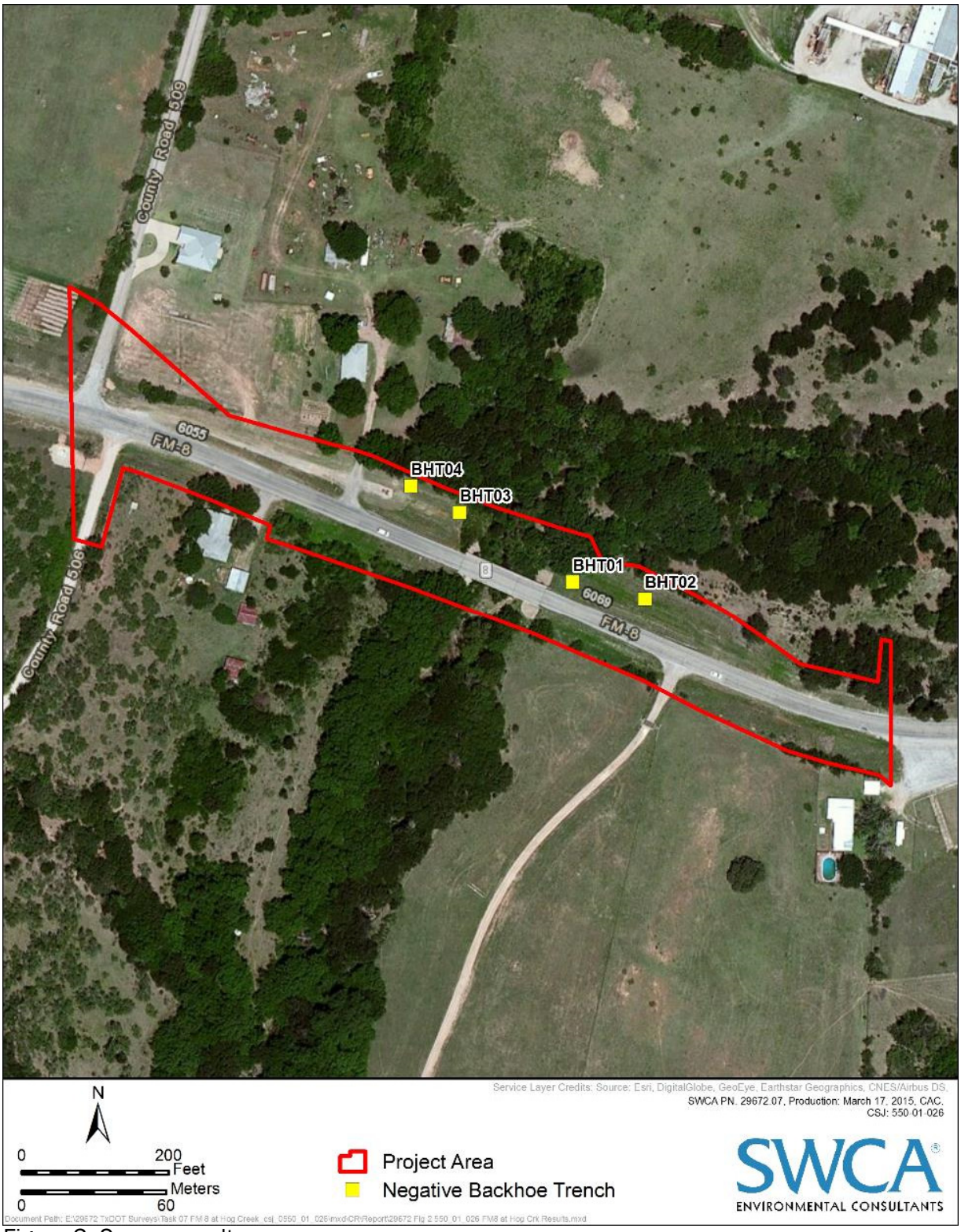

Figure 3. Survey results.

Table 1. Backhoe Trench Data

Trench	Strat	Depth (cmbs)	Munsell*	Soil Color	Soil Texture Description	Inclusions	Lower Boundary	Comments
BHT01	I	0–40	10YR3/1	very dark gray	silt loam	roots, rootlets	abrupt and irregular	Road construction disturbance. No cultural materials encountered.
	II	40–85	7.5YR4/6	strong brown	silt loam	asphalt fragments	abrupt and irregular	Road construction disturbance. No cultural materials encountered.
	III	85–96	10YR6/6	brownish yellow	silty clay loam	gravels and pebbles	abrupt and irregular	Disturbed-No cultural materials encountered.
	IV	96–110	10YR4/3	brown	silt loam	asphalt fragments	abrupt and irregular	Road construction disturbance. No cultural materials encountered.
	V	110–170	10YR4/3	brown	sandy loam	asphalt fragments, concrete fragments, modern trash, metal debris	abrupt and irregular	Disturbed-debris includes a pull-tab soda can, braided cable, and a metal plate.
	VI	170–257	10YR4/2	dark grayish brown	silt loam-sand loam	loose consistency, 40–70% pebbles and sub-rounded gravels, matrix-clast supported	clear and smooth	No cultural materials encountered.
	VII	257–310+	10YR3/2–10YR4/2	very dark grayish brown to dark grayish brown	clay	firm consistency, massive structure, 20–30% ferrous redox inclusions, gray mottling	unobserved	No cultural materials encountered.
BHT02	I	0–25	10YR3/1	very dark gray	silt loam	modern trash	abrupt and smooth	Debris includes plastic fragments and a green plastic bottle.
	II	25–30	7.5YR4/6	strong brown	silt loam	friable disturbed matrix	abrupt and smooth	Disturbed-No cultural materials encountered.
	III	30–36	10YR7/2–10YR7/3	light gray to very pale brown	silt loam	friable disturbed matrix; very mottled	abrupt and smooth	Disturbed-No cultural materials encountered.

Trench	Strat	Depth (cmbs)	Munsell*	Soil Color	Soil Texture Description	Inclusions	Lower Boundary	Comments
	IV	36–67	10YR6/6	brownish yellow	silt loam	friable disturbed matrix	abrupt and irregular	Disturbed-No cultural materials encountered.
	V	67–76	10YR3/3	dark grayish brown	clay	friable-firm disturbed matrix	abrupt and irregular	Disturbed-No cultural materials encountered.
	VI	76–96	10YR6/6	brownish yellow	silt loam	friable disturbed matrix	abrupt and irregular	Disturbed-No cultural materials encountered.
	VII	96–110	10YR4/3	brown	silt loam	cobbles, angular boulders	abrupt and irregular	Disturbed-No cultural materials encountered.
	VIII	110–140	5YR4/4–5YR4/6	reddish brown to yellowish red	sandy clay	massive; 15–20% $CaCO_3$ nodules (2–5 mm in diameter)	unobserved	No cultural materials encountered.
BHT03	I	0–8	10YR3/1	very dark gray	silt loam	friable consistency, rootlets, roots, gravels, modern trash	abrupt and irregular	Disturbed root zone. No cultural material encountered.
	II	8–17	10YR6/6	brownish yellow	fine silt	sub-rounded and angular gravels and pebbles, abundant ferrous staining	abrupt and irregular/wavy	Disturbed fill section. No cultural material encountered.
	III	17–23	10YR4/1	dark gray	fine sandy loam	30–40% sub-angular quartz pebbles, rootlets	abrupt and irregular/wavy	Disturbed fill section. No cultural material encountered.
	IV	23–64	10YR4/2–10YR5/2	dark grayish brown to grayish brown	silty clay loam	friable consistency; 3% rootlets, 1% white filaments (possible $CaCO_3$), 3% earthworm burrows, 15–20% sub-rounded quartz pebbles	abrupt and smooth	No cultural materials encountered.
	V	64–131	10YR5/2	grayish brown	sandy loam-clay loam	friable consistency; 3% rootlets, 20% pin hole burrows, 50% tan matrix following root lines with cobweb lattice dispersion	abrupt and smooth	No cultural materials encountered.

Trench	Strat	Depth (cmbs)	Munsell*	Soil Color	Soil Texture Description	Inclusions	Lower Boundary	Comments
	VI	131–257	10YR7/2–10YR7/3	light gray to very pale brown	sandy loam	friable consistency; 10% $CaCO_3$ nodules (20–60 mm in diameter), 10% distinct ferrous staining	gradual-clear and smooth	No cultural materials encountered.
	VII	257–310+	10YR6/8	brownish yellow	sandy loam	friable consistency; 10% pin hole burrows, 20–30% burrows containing matrix upper strat	unobserved	No cultural materials encountered. Large $CaCO_3$ filaments, 5% degrading ferrous stains (1 cm in diameter)
BHT04	I	0–8	7.5YR4/6	strong brown	sandy clay loam	discontinuous pockets of clay	abrupt and irregular	Disturbed root zone. No cultural material encountered.
	II	8–45	10YR6/6	brownish yellow	loose sandy loam	5% gravels, 40% pebbles, 5% bioturbation, corroded ferrous	abrupt and irregular	Corroded ferrous at 40–45 cmbs. No cultural material encountered.
	III	45–68	10YR4/3–10YR5/3	brown	loose sandy loam	<1% gravels, <2% pebbles	abrupt and irregular	Bioturbation slightly blurring lower boundary. No cultural material encountered.
	IV	68–133	10YR4/1	dark gray	friable silty clay loam to clay loam	3% pin hole burrows, 3% rootlets, 20% white filaments following root lines,	clear and smooth	No cultural materials encountered. <1% sub-rounded pebbles, 5% ferrous staining
	V	133–257	10YR5/1–10YR6/1	gray	silty clay loam	10% pin hole burrows, 10–15% ferrous staining	gradual-clear and smooth	No cultural materials encountered.
	VI	257–310+	10YR6/8	brownish yellow	friable sandy loam	10% pin hole burrows, 20–30% micro burrows containing matrix from upper strat,	unobserved	No cultural materials encountered. Large $CaCO_3$ filaments, 5% degrading ferrous stains (1 cm in diameter)

Figure 4. Overview of upstream at Hog Creek at FM 8, facing north. Note buried pipelines.

Figure 5. Southwest quad facing east. Flags denote buried utilities.

Figure 6. Southeast quad facing west. Arrow denotes buried gas line.

Figure 7. Northwest quad of bridge replacement, facing east toward Hog Creek.

Figure 8. BHT01 (Northeast quadrant) south wall profile.

Figure 9. BHT02 (Northeast quadrant) north wall profile.

Figure 10. BHT03 (Northwest quadrant) north wall profile.

Figure 11. BHT04 (Northwest quadrant) south wall profile.

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

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