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Hooks Road at Tributary of Bear Creek, Polk County, Texas Lufkin District

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Report for Archeological Survey

Hooks Road at Tributary of Bear Creek, Polk County, Texas

Lufkin District

CSJ: 0911-04-062
Principal Investigator Eric Oksanen, Texas Antiquities Permit No. 7267

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 December 16, 2014, and executed by FHWA and TxDOT.

Abstract

On May 5, 2015, SWCA Environmental Consultants conducted an intensive cultural resources survey at Hooks Road and Tributary of Bear Creek crossing in Polk County. These investigations for Texas Department of Transportation (TxDOT) 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 (16 USC 470) and the Antiquities Code of Texas (9 Natural RC 191). Eric Oksanen served as Principal Investigator under Texas Antiquities Code Permit No. 7267.

The maximum depth of impacts is currently undetermined but the majority of the project will be limited to less than 60 centimeters (cm) (2 feet) near the current natural grade. The area of potential effects (APE) is therefore defined as the variable 13.9 to 14.6-meter-wide (45.6 to 48-foot-wide) proposed right-of-way (ROW) north of the Hooks Road ROW extending a distance of 279 meters (916.45 feet) along the roadway, totaling approximately 1 acre.

Shovel tests were excavated on both sides of the tributary. The excavations encountered disturbed stratigraphy down to roughly 30 cm (1 foot) (generally from road and bridge construction and residential disturbance) above intact alluvial deposits.

No further cultural resources investigations are recommended within the existing ROW of Hooks Road and Tributary of Bear Creek or within the new easement corridor.

Project Identification

- **Date:** 5/8/2015
- **Date(s) of Survey:** 5/5/2015
- **Archeological Survey Type:** Reconnaissance ☐ Intensive ☒
- **Report Version:** Draft ☐ Final ☒
- **Jurisdiction:** Federal ☒ State ☒
- **Texas Antiquities Permit Number:** 7267
- **District:** Lufkin
- **County or Counties:** Polk
- **USGS Quadrangle(s):** Wakefield (3194-221)
- **Highway:** Hooks Road
- **CSJ:** 0911-04-062
- **Report Author(s):** Dan Rodriguez
- **Principal Investigator:** Eric Oksanen

Texas Historical Commission Approval

Signature Date

Project Description

- **Project Type:** Bridge replacement
- **Total Project Impact Acreage:** 0.24 acre
- **New Right of Way (ROW) Acreage:** 0.10 acre
- **Easement Acreage:** 0.00 acre
- **Area of Pedestrian Survey:** 1 acre
- **Project Description and Impacts:**

  The Project area is located approximately 0.7 kilometer (km) northwest of Corrigan in central Polk County, Texas (Figure 1). The existing timber bridge is 8.8 meters (m) (29 feet) long with one 4.5- to 6-m-wide (15- to 20-foot-wide) lane that crosses an unnamed tributary of Bear Creek on Hooks Road. This structure will be replaced with a new bridge that is 15.2 m (50 feet) long with two 3.6-m-wide (12-foot-wide) lanes. Further, the approaches of the bridge will be modified for a distance of 85 m (279 feet) on the western side and 47.2 m (155 feet) on the eastern side of the bridge.

- **Area of Potential Effects (APE):** The replacement of the bridge will involve modifying (i.e., widening, contouring, and paving) each Hooks Road approach. The maximum depth of impacts is estimated to be limited to less than 60 centimeters (cm) (2 feet) near the current natural grade. The APE is therefore defined as the 7.2-m-wide (24-foot-wide) Hooks Road right-of-way (ROW) extending a distance of 132.3 m (434 feet) along the roadway, totaling approximately 0.24 acre, which includes a narrow area of new ROW on the southern side of the existing ROW.
- **Parcel Number(s):** Not available
- **Project Area Ownership:** Existing ROW is owned by the state or a political subdivision thereof. New ROW is privately owned.

Project Setting

- **Topography:** The project area is situated on a rolling surface within the Interior Coastal Plains (Wermund 2012). These areas are characterized as hilly, dissected uplands with geologic strata derived from recent unconsolidated sand and mud alluvium (Wermund 2012). Specific to the project area, both sides of the crossing have erosional banks along the drainage tributary (Figures 2 and 3). The approaches on both sides cross a narrow, low-lying area consisting of lower terraces. The approaches continue to be level for about 15 m away from the bridge in each direction where it rises gradually in elevation 3 m (10 feet).
- **Geology:** The surface geology for the project area is mapped as Eocene or Oligocene-aged deposits of the Whitsett Formation (Figure 4; Barnes 1992). The Whitsett Formation is described as fine- to medium-grained quartz sand that is tuffaceous, lignitic, argillaceous, and locally silica cemented. The deposits are light gray weathering to a dark gray with abundant fossilized wood (Barnes 1992).

- **Soils:** The soils for the project area are mapped as the Hatliff-Pluck-Kian Complex (0–1 percent slopes), frequently flooded (see Figure 4) (Natural Resources Conservation Service [NRCS] 2015). This soil mapping unit comprises 38 percent Hatliff soils, 35 percent Pluck soils, 24 percent Kian soils, and 3 percent soils of minor extent (NRCS 2015). All three of the major soils in this complex are characterized as very deep soils that formed in loamy alluvium of Holocene age. The Hatliff soils are located on natural levees and point bars, and the Pluck and Kian series soils are on meandering channels of creeks and streams.
- **Land Use:** Residential properties with houses and cleared areas surround the immediate project area. Beyond the residences, to the north and west, are large pine farms; to the south and east are hunting leases and further residential parcels.
- **Vegetation:** The crossing contained mixed grasses (60 percent) along the roadway in all quadrants. The drainage in all quadrants is bracketed by a 10-m-wide (33-foot-wide) swath containing mature, mixed hardwoods (15 percent), and an abundance of vines and shrubs (25 percent) (Figure 5).
- **Estimated Ground Surface Visibility:** Ground surface visibility ranged between 0 and 10 percent, with the predominance of the crossing having 0 percent visibility.
- **Previous Investigations and Known Archeological Sites:** The background literature review determined that the APE has not been previously surveyed for cultural resources and no previously recorded archaeological sites are within or adjacent to the current APE. In addition, there are no reported surveys and no recorded cultural resources within a 1-km radius of the APE. However, one cemetery and two historical markers are within a 1-km radius of the APE.

  The Union Springs Missionary Baptist Church Cemetery is located across from the church at the end of Albert Cemetery Road, which intersects Howell Road approximately 0.4 km (0.25 mile) north of the APE. According to the Texas Archaeological Sites Atlas (Atlas 2015) the cemetery contains "many, many graves" with the earliest interments dating to the 1870s.

  A historical marker was erected at the Union Springs Baptist Church in 1967. The church was organized in the 1860s by seven local families with Brother Jimmy Knox serving as the first pastor. The original church was a pegged log cabin with split-log floors and seats. The church was rebuilt in 1885 and then again in 1955 (Atlas 2015).

  A historical marker erected in 1970 for the town of Corrigan is located 0.7 km southeast of the APE at the intersection of US 59 and Ben Franklin Street. The town was founded in 1860 by James B. Hendry who donated portions of his property for the original townsite. The town became prosperous in the early 1880s after the Texas & New Orleans Railroad was built through the town allowing the timber-based economy to flourish. The town was subsequently named "Corrigan" after railroad official Pat Corrigan (Atlas 2015).

  The Texas Historic Overlay digital map collection and historic maps from HistoricAerials.com were reviewed for evidence of historic-age structures that may be in the APE or that may have become

part of the archaeological record (Foster et al. 2006). No structures are depicted within or immediately adjacent to the APE on any of the maps reviewed.

- **Comments on Project Setting:** The project area is positioned over a tributary of Bear Creek, a small-sized drainage within a narrow (30-meter-wide), level valley. The tributary meets Bear Creek, which is a tributary of the Neches River that is about 11 miles downstream of the project area. Much of the project area has been highly disturbed through residential modification and utility construction. Much of the drainage basin within the project area has been modified by the construction of the road visible on the U.S. Geological Survey topographic map.

Survey Methods

- **Surveyors:** Daniel Rodriguez

Methodological Description: To assess the previously noted potential for buried archaeological sites, shovel tests served as the primary method for quickly and efficiently exploring areas and deposits.

The SWCA archaeologist determined shovel test placement at the project area crossing based on the level of disturbance, the location of any impacted areas such as previous construction, and the preservation potential for archaeological sites (Table 1). Shovel tests were placed along the northern fence line for the Texas Department of Transportation (TxDOT) road right-of-way where new ROW will be acquired.

SWCA performed all work in accordance with Occupational Safety and Health Administration (OSHA) (29 CFR Part 1926). SWCA screened all sediments from every shovel test through ¼-inch mesh hardware cloth to assess presence or absence of cultural materials. The entire process was thoroughly documented and photographed. Upon completion of excavation, all shovel tests were backfilled, levelled, and returned as much as possible to their original state.

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

- **Other Methods:** With regards to TxDOT ROW, parcel access, and disturbances, two shovel tests were placed on each side of the bridge crossing, for a total of four (see Figure 2). These excavations exceed the recommended Texas Historical Commission (THC) / Council of Texas Archeologists (CTA) survey standards for a project of this size (i.e., three shovel tests per 1 acre).
- **Collection and Curation:** NO ☒ YES ☐ If yes, specify facility. No artifacts were recovered, but the files will be curated at the center for Archeological Studies at the Texas State University.

Survey Results

Project Area Description: At the survey area, the tributary of Bear Creek is a small drainage with an approximately 3-m-wide (10-foot-wide) base that had slow-moving water at the time of investigation. At the crossing, the tributary has been highly modified by residential and road construction in all quadrants (Figure 6). Push piles, buried and raised utilities, and driveways are all found within the proposed project area. Two shovel tests were excavated in the southeastern and southwestern quadrants of the crossing, for a total of four (Table 1). These shovel tests were placed within the existing TxDOT ROW, near the southern boundary, and avoiding the buried utility line (Figure 7).

At the crossing, the tributary is a highly modified, paired terrace system consisting of eroding alluvial terraces containing little remaining alluvial deposits that bracket the drainage. Both banks of the crossing have one landform, the T_0 terrace that is the current floodplain (see Figure 1). The riser of the T_0 terrace at the drainage is sloping and covered with vegetation, which prevented a clear profile inspection. The typical tread of the T_0 landform is level about 1.5 m (5 feet) above the channel, and extends beyond the limits of the project area.

The overall stratigraphic deposits at the crossing most closely resemble that described for the alluvial Hatliff series loams (NRCS 2015. A typical pedon for this soil series consist of an A horizon, with plow zone (Ap), to approximately 30 cm below surface. Below the A horizon are red pre-Holocene C horizons. The shovel test data from the tributary of Bear Creek all correlate very closely to the Hatliff series. The red C horizon was encountered at approximately 30 to 40 cm below surface within the shovel tests on both sides of the tributary. Subsurface inclusions, such as small gravels, found 0 to 20 cm below surface are likely the result of road, utility, and residential disturbance.

- **Archeological Materials Identified:** No cultural materials were observed during the investigations.
- **APE Integrity:** The survey area within the new and existing ROW has low integrity and appears to have been highly modified to a depth of generally 40 cm (15 inches) below surface. These disturbances at the surface are attributed to previous road and bridge construction, residential construction, and buried utilities. The southern quadrants of the crossing, the proposed project area, appear to be the most heavily modified, including large gravel driveways and raised utilities.

Recommendations

- **Archeological Site Evaluations:** No cultural materials or archaeological sites were encountered at this crossing.
- **Comments on Evaluations:** None.
- **Further Work:** No further cultural resources investigations are recommended within the existing ROW of Hooks Road at the tributary of Bear Creek or within the new ROW. Specifically, no further cultural resources investigations are warranted at the crossing extending for a distance of 40 m (130 feet) from the road centerline.

- **Justification:** The investigations, conducted in compliance with Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas, exceeded CTA and THC standards for a project of this acreage. The surface and upper 40 cm (1.5 feet) of the APE have been disturbed and significantly modified from road and bridge construction, utilities, and residential modification. Below the disturbed zone, intact natural deposits were observed, although no definitive cultural materials were identified. Based on pedogenic soil development characteristics, the basal clays below roughly 40 cm (1.5 feet) have a low potential for cultural materials. Therefore, no further investigations are recommended to assess deep impacts below roughly 40 cm (1.5 feet).

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Table 1. Shovel Test Data

ST ID	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Inclusions	Comments/ Reason For Termination
DR05	0-10	10YR 6/4	light yellowish brown	Sandy Loam	None	Terminated at massive root.
	10-50	10YR 7/3	very pale brown	Sand	None	
DR06	0-30	10YR 5/4	yellowish brown	Sandy Clay Loam	Pebbles	Terminated at basal clay.
	30-40	5YR 5/6	yellowish red	Clay Loam	None	
DR07	0-30	10YR 6/4	light yellowish brown	Sand	None	Terminated at disturbed.
DR08	0-30	10YR 5/4	yellowish brown	Sandy Clay Loam	Pebbles	Terminated at basal clay.
	30-35	5YR 5/6	yellowish red	Clay Loam	None	

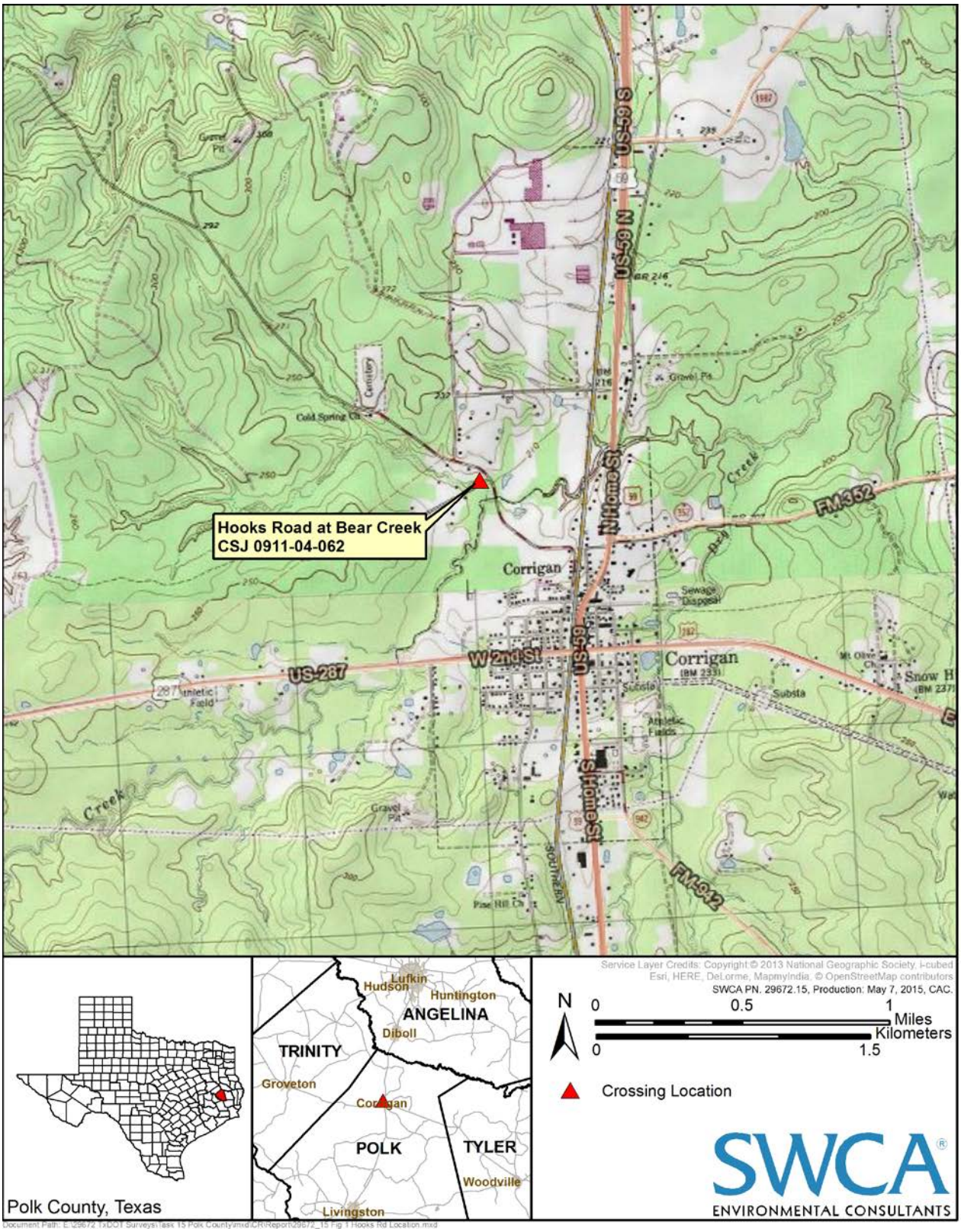

Figure 1. Project location map of Dick Skinner Road at an unnamed tributary.

Figure 2. Photo of unnamed tributary and erosional cutbanks, facing north.

Figure 3. Photo of unnamed tributary and erosional cutbanks, facing southeast.

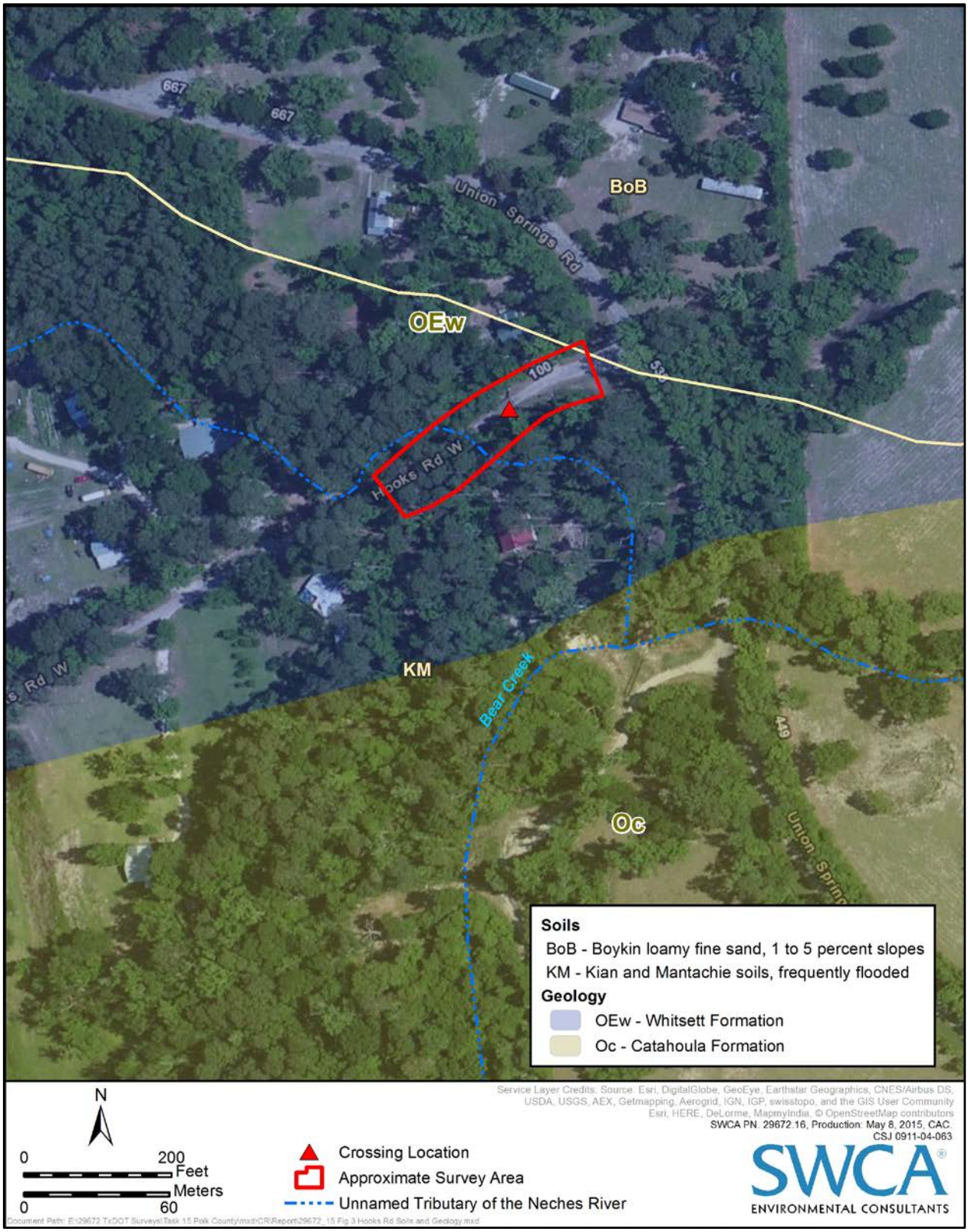

Figure 4. Soils and geology of the survey area.

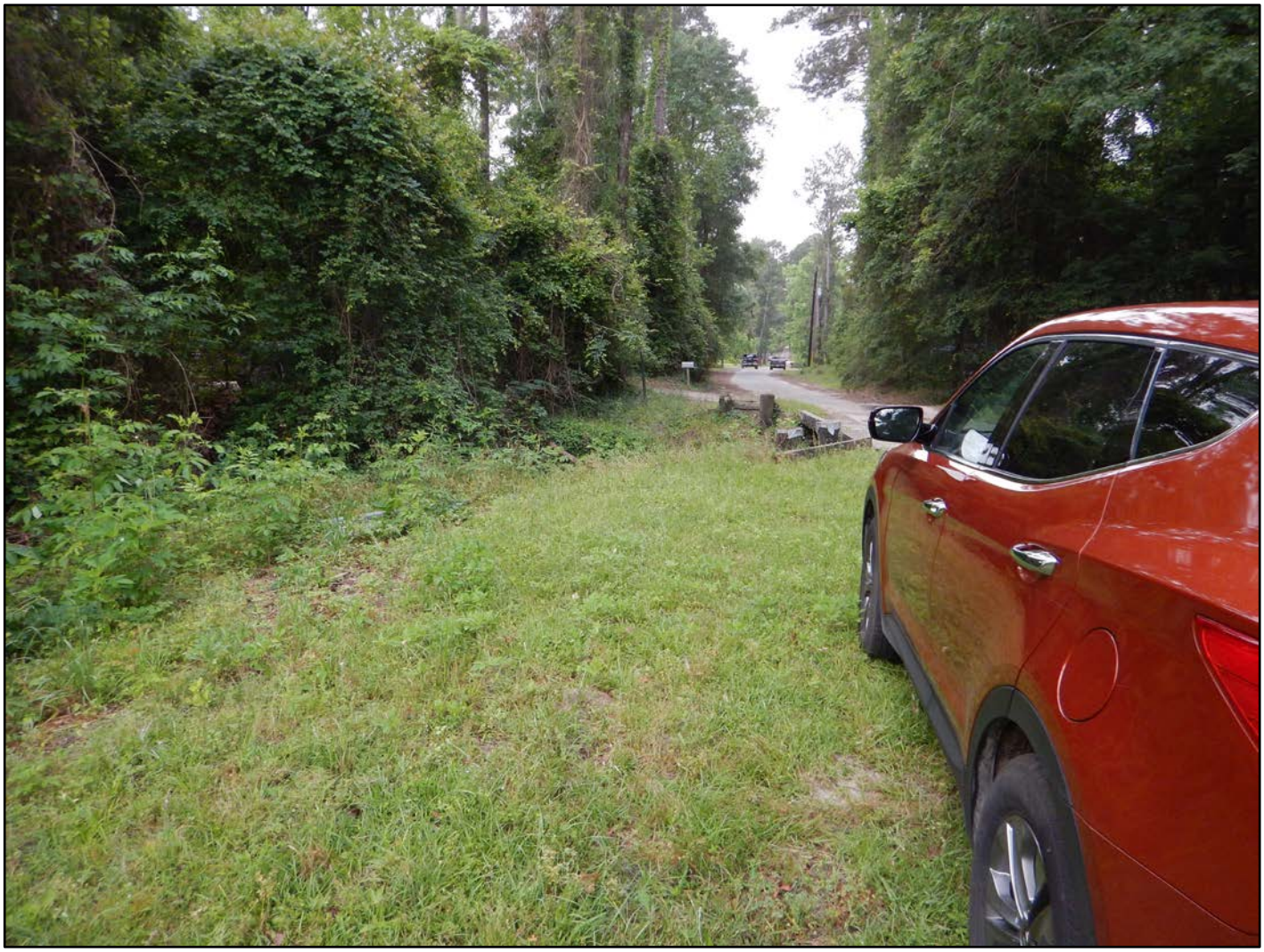

Figure 5. Overview of bridge replacement area, facing west.

Figure 6. Map of investigations within APE.

Figure 7. Photo of disturbances and fill in southwestern quadrant of APE.

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

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