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Report for Archeological Survey

Howell Road at Paces Creek,
Polk County, Texas
Lufkin District

CSJ: 0911-04-063

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 Howell Road and Paces Creek crossing in Polk County, Texas. On behalf of Texas Department of Transportation (TxDOT), the investigations 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 NRC 191). Eric Oksanen served as Principal Investigator under Texas Antiquities Code Permit No. 7267.

The area of potential effects includes new and existing right-of-way (ROW) covering an area approximately 12 to 18 meters (m) wide (40 to 60 feet wide) extending a distance of 241 m (790 feet) along the roadway, totaling approximately 1 acre. The depth of impacts will be limited to less than 60 centimeters (cm) (2 feet) in the approaches with deeper impacts expected where the bridge piers or footings will be constructed.

The background review revealed no previous surveys or recorded cultural resources in the vicinity of the project area. SWCA excavated shovel tests on both sides of the tributary south of the roadway where new ROW will be acquired. Lack of access precluded shovel testing within new ROW, but the investigations immediately adjacent, within existing ROW, allowed adequate assessment to provide recommendations on the archaeological potential in the new areas. The excavations encountered disturbed stratigraphy down to roughly 30 cm (1 foot) (generally from road and bridge construction and residential disturbance) above intact sediments. No cultural resources were identified in the shovel tests, cutbanks, or surface exposures. No further cultural resources investigations are recommended within the existing or new ROW of Hooks Road and Paces Creek.

Project Identification

- **Date:** 5/11/2015
- **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):** Trevat (3194-222)
- **Highway:** Howell Road
- **CSJ:** 0911-04-063
- **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:** 1 acre
- **New Right of Way (ROW) Acreage:** 0.3 acre
- **Easement Acreage:** 0.0
- **Area of Pedestrian Survey:** 0.0
- **Project Description and Impacts:**
 - The project area is in northern Polk County, approximately 1.2 kilometers (km) north of U.S. Highway (US) 287 (Figure 1). The existing timber bridge is 8.8 meters (m) (29 feet) long with one 2.7 to 5.5-m-wide (9 to 18-foot-wide) lane that crosses Paces Creek on Howell Road. This structure will be replaced with a new bridge that is 18.3 m (60 feet) long with two 4-m-wide (13.1-foot-wide) lanes. Further, the approaches of the bridge will be modified for a distance of 126.5 m (415 feet) on the northern side and 96 m (315 feet) for the southern side of the bridge.
- **Area of Potential Effects (APE):** The replacement of the bridge will involve modifying (i.e., widening, contouring, and paving) each approach and installation of a new bridge. On the approaches, the depth of impacts is expected to be less than 60 centimeters (cm) (2 feet) with deep impacts expected where the footings or piers will be constructed. The APE is therefore defined as the 8-m-wide (26.2-foot-wide) Howell Road new and existing right-of-way (ROW) extending a distance of 222 m (730 feet) along the roadway, totaling 1 acre.
- **Parcel Number(s):** Not available
- **Project Area Ownership:** Existing ROW is owned by the state or a political subdivision of the state. 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 alluvial and colluvial sediments along Paces Creek (see Figure 1). The approaches on both banks cross raised terraces to the creek. The approaches are level to gently sloping for about 0.5 mile away from the bridge in each direction where it rises gradually in elevation 3 m (10 feet) above the elevation of the bridge.
- **Geology:** The surface geology for the project area is mapped as Oligocene-aged deposits of the Catahoula Formation (Barnes 1992). The Catahoula Formation is described as mostly mudstone and sand. The upper deposits are 300 to 500 feet thick, comprising mudstone overlying 10 to 80 feet of coarse-grained sand and quartz (Barnes 1992).

- **Soils:** The soils for the project area are mapped as the Hatliff-Pluck-Kian Complex (0–1 percent slopes), frequently flooded (Figure 2) (Natural Resources Conservation Services [NRCS] 2015). This soil mapping unit consists of 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:** Pine farms occupy most of all four quadrants that surround the project area. The banks of the creek appear to be undisturbed beyond a grassy parcel boundary.
- **Vegetation:** The crossing contains mixed grasses (5 percent) along the roadway in all quadrants. The drainage in all quadrants is bracketed by a 30-m-wide (100-foot-wide) or more swath containing mature, mixed pine and other hardwoods (90 percent), and an abundance of vines and secondary growth (5 percent).
- **Estimated Ground Surface Visibility:** Ground surface visibility was zero percent due to leaf litter and other plant detritus. However, the creek banks provided profiles of the terraces, although as discussed below rubble and modern debris obscured clear views of the intact sediments.
- **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, no surveys have been reported and no cultural resources have been previously recorded within a 1-km radius of the APE. One cemetery, the Abbott Springs Meadow Cemetery, is within a 1-km radius of the APE. The review of the Texas Department of Transportation (TxDOT) Historic Overlay and HistoricAerials.com maps revealed no historic-age structures within or immediately adjacent to the APE (Foster et al. 2006).

The Abbott Springs Meadow Cemetery is on the east side of Union Springs Road, approximately 0.4 mile (0.64 km) north of Hooks Road. The cemetery contains approximately 80 graves with the earliest interments dating to the 1850s (Atlas 2015).
- **Comments on Project Setting:** The project area is positioned over Paces Creek, a small to moderate-sized drainage within a broad (0.5-mile-wide), level valley. Paces Creek feeds into Piney Creek, a prominent drainage system located about 2 miles downstream of the project area.

Survey Methods

- **Surveyors:** Daniel Rodriguez

Methodological Description: To assess the 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). As noted, the testing was limited to existing ROW since right of entry had not been granted for the new ROW. Shovel tests were placed along the northern fence line adjacent to new ROW.

SWCA performed all work in accordance with Occupational Safety and Health Administration (OSHA) (29 CFR Part 1926). To assess the potential for buried deposits up to 80 cm (2.6 feet) below surface, SWCA screened all sediment from each 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. 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 Archaeological Studies at the Texas State University.

Survey Results

Project Area Description: At the survey area, Paces Creek is a small drainage with an approximately 7-m-wide (23-foot-wide) base that had slow-moving water at the time of investigation (Figures 3 and 4). At the crossing, the tributary has been moderately modified by bridge construction in the northwest quadrant. Push piles, concrete rubble, and buried utilities are all found within the proposed project area. The buried telephone line parallels the existing gravel road on the west side, in the proposed ROW. Two shovel tests were excavated in the southeastern and southwestern quadrants of the crossing, for a total of four (Figure 5; Table 1). These shovel tests were placed within the existing TxDOT ROW near the southern boundary to avoid a buried utility line (Figure 6).

At the crossing, the tributary is a slightly modified paired terrace system consisting of terraces containing deep alluvial deposits that bracket the drainage. Both banks of the crossing have one landform, the T₀ terrace that is the current floodplain (see Figure 1). The riser of the T₀ terrace at the drainage is sloping and covered with vegetation, concrete rubble, and fallen trees, which prevented

a clear profile inspection (Figure 7). The typical tread of the T₀ landform is level about 1.5 m (5 feet) above the channel, and extends beyond the limits of the project area (Figure 8).

The overall stratigraphic deposits at the crossing most closely resemble that described for the alluvial Hatliff and Kian series loams (NRCS 2015). The shovel tests placed furthest away from the crossing resembled the Hatliff series. 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 Bt and C horizons. Near the crossing soils were alluvial resembling Kian series sandy loams with multiple depositional events represented within. These interior shovel tests indicated deep alluvial deposits and were terminated due to depth. All of the shovel tests suggested disturbance from road and bridge construction in the top 20 to 30 cm.

- **Archeological Materials Identified:** No cultural materials were observed during the investigations.
- **APE Integrity:** The existing ROW has been heavily disturbed by the original roadway construction and maintenance and at least one existing buried utility. The survey area within the new TxDOT ROW has high integrity and appears to have been only slightly modified to a depth of generally 30 cm (12 inches) below surface. The northern quadrants of the crossing appear to be the most heavily disturbed, including concrete rubble (possibly for erosion control) and the buried utility.

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 new or existing ROW of Howell Road and Paces Creek.
- **Justification:** The surface and upper 30 cm (1 foot) of the APE have been disturbed from road and bridge construction and buried utilities. Below the disturbed zone, intact natural deposits were observed, although no cultural materials were identified within the APE

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Table 1. Shovel Test Data

ST ID	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Inclusions	Comments/ Reason For Termination
DR09	0-50	10YR 6/4	light yellowish brown	Sandy Loam		Terminated at basal clay.
	50-55	7.5YR 5/6	strong brown	Sandy Clay	Mottles	
DR10	0-20	10YR 7/4	very pale brown	Sand	Gravels	Terminated at depth.
	20-30	10YR 4/4	dark yellowish brown	Loamy Sand	Gravels	
	30-50	10YR 7/4	very pale brown	Sandy Loam		
	50-70	10YR 8/1	white	Sand		
	70-80	10YR 7/4	very pale brown	Sand		
DR11	0-30	10YR 7/4	very pale brown	Sandy Loam		Terminated at compact soil.
DR12	0-55	10YR 6/4	light yellowish brown	Sandy Loam		Terminated at basal clay.
	55-60	7.5YR 5/6	strong brown	Sandy Clay	Mottles	

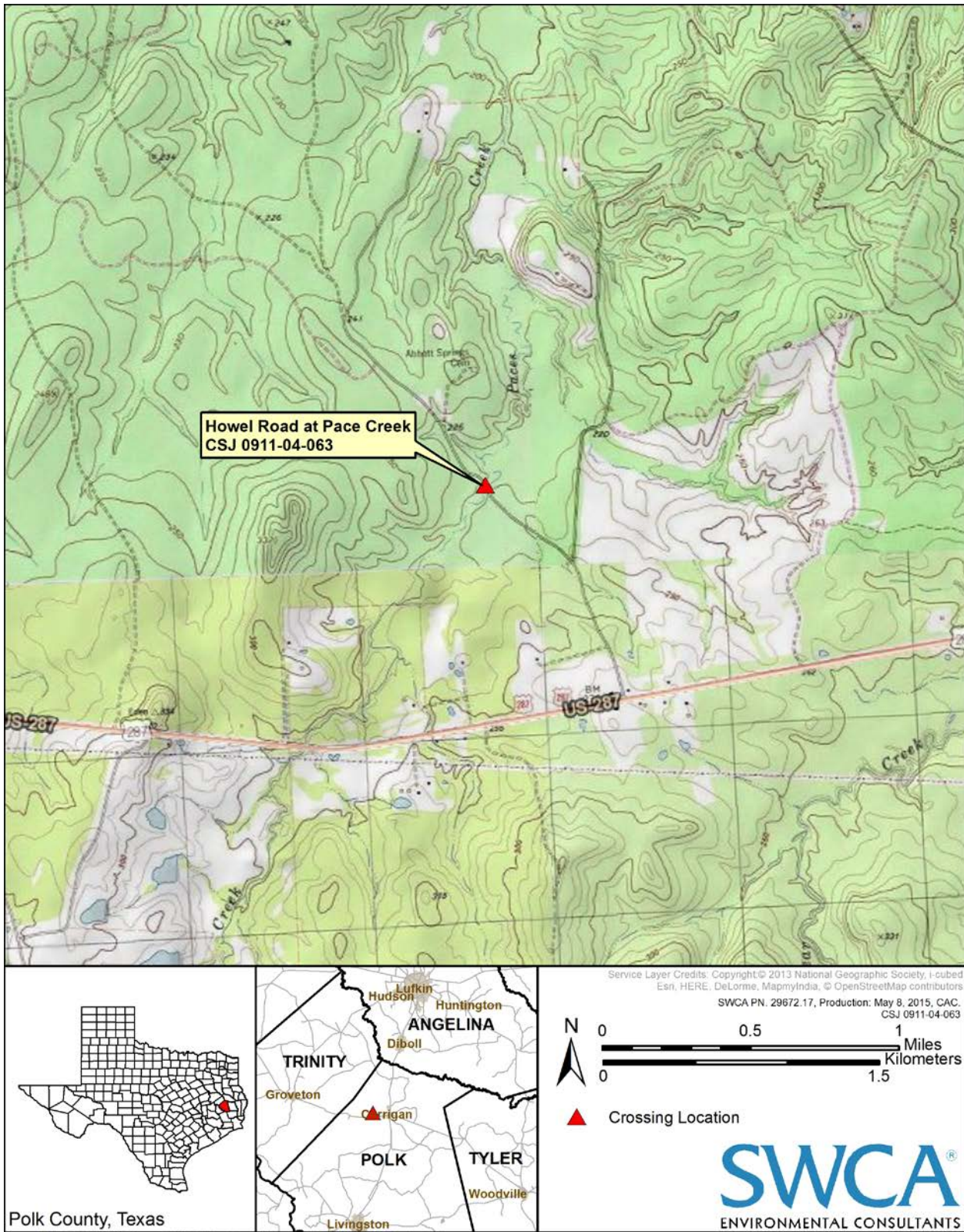


Figure 1. Project location map of Paces Creek at Howell Road.

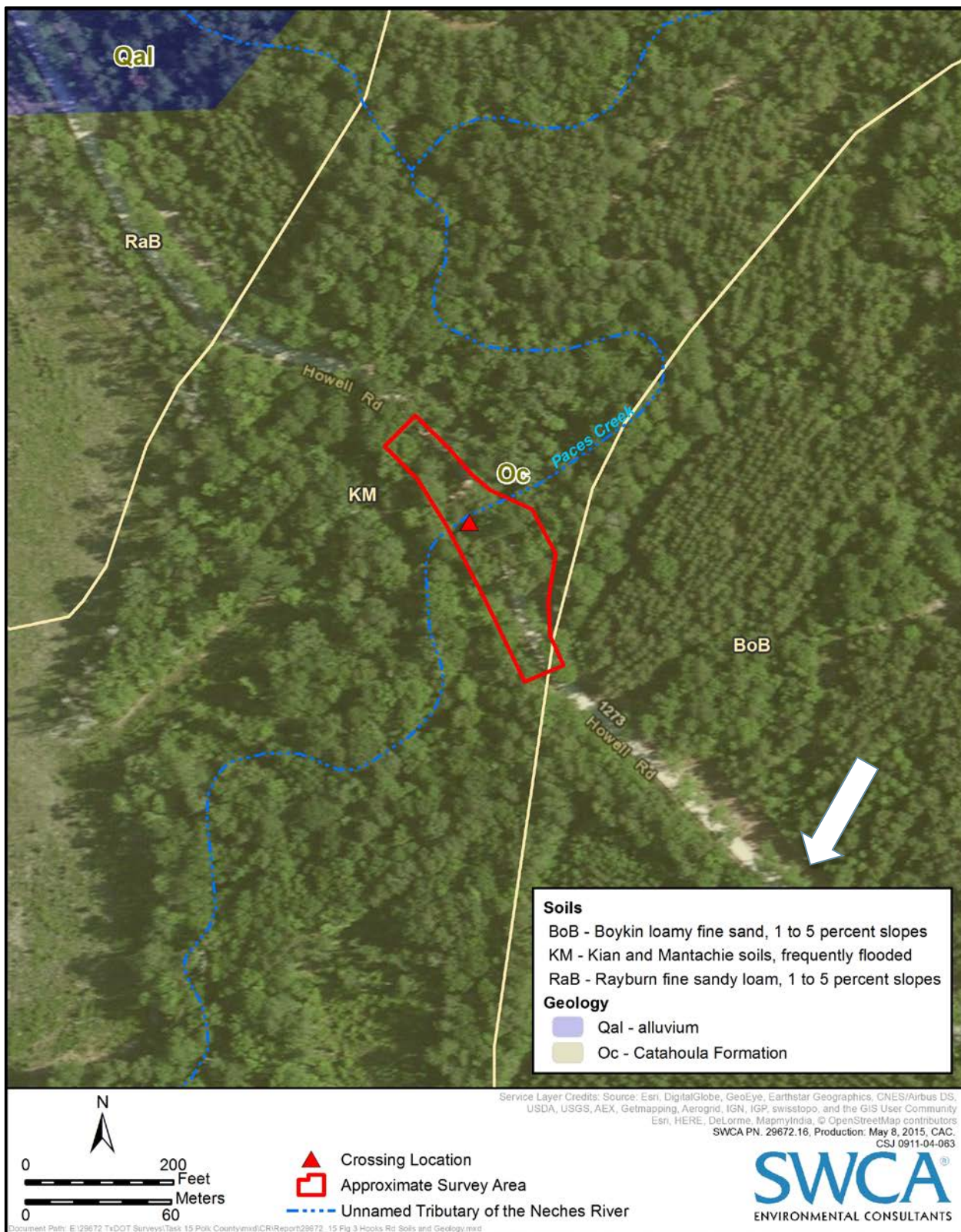


Figure 2. Soils and geology.



Figure 3. Photo of Paces Creek, facing west.



Figure 4, Photo of Paces Creek, facing east.



Figure 5. Map of results.



Figure 6. Photo of buried utility marker and location of shovel test on the southwestern quadrant, facing southwest.



Figure 7. Photo of northwestern quadrant, facing northwest, showing profile that contains rubble and fill.



Figure 8. North side of project area, facing west.

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



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