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Dan Rodriguez

Ken Lawrence

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Intensive Archeological Survey of Burleson-Retta Road at Village Creek, Tarrant County, Texas

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Report for Archeological Survey

Intensive Archeological Survey of
Burleson-Retta Road at Village Creek,
Tarrant County, Texas

Fort Worth District

Kevin Hanselka, Principal Investigator, Antiquities Permit No. 8097

CSJ: 0902-48-744

October 31, 2017

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, SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey with mechanical trenching on September 18, 2017, of 8.8 acres of new and existing right-of-way (ROW) along Burleson-Retta Road in Tarrant County, Texas. 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 (CFR) Part 800.16(y) and, therefore, survey 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). Kevin Hanselka served as Principal Investigator under Texas Antiquities Permit No. 8097.

The area of potential effects (APE) is defined as a total of 8.8 acres comprising the bridge, new approaches on either side of the bridge, as well as 2.39 acres of new ROW.

A background literature review determined that the APE has not previously been surveyed for cultural resources and no archeological sites, historical markers, or State Antiquities Landmarks (SALs) are within 0.6 miles (1 km) of the APE. One possible cemetery is located approximately 0.17 miles south of the APE on the western side of Village Creek.

The survey identified substantial disturbances within the APE, including prior infrastructure development, such as utilities and bridge construction, and a variety of other land use practices. SWCA assessed the entire 8.8-acre survey area, but focused on the 2.39 acres of proposed new ROW. SWCA excavated four backhoe trenches to assess the potential for deeply buried cultural deposits. The survey identified deep subsurface disturbance close to Village Creek. Moderately intact soils were found away from the creek; however, these soils contained negligible potential for deeply buried cultural materials and these investigations identified no cultural resources. Due to the heavy disturbance observed throughout the existing ROW and the negligible potential for deeply buried deposits or intact cultural material, no further archeological investigations are recommended. SWCA recommends that a finding of “no historic properties affected” be made for the current undertaking.

Project Identification

- **Date:** 9/29/2017
- **Date(s) of Survey:** 9/18/2017
- **Archeological Survey Type:** Reconnaissance Intensive
- **Report Version:** Draft Final
- **Jurisdiction:** Federal State
- **Texas Antiquities Permit Number:** 8097
- **District:** Fort Worth
- **County or Counties:** Tarrant
- **USGS Quadrangle(s):** Burleson (3297-421)
- **Highway:** Burleson-Retta Road
- **CSJ:** 0902-48-744
- **Report Author(s):** Dan Rodriguez and Ken Lawrence
- **Principal Investigator:** Kevin Hanselka

Texas Historical Commission Approval

Signature

Date

Project Description

- **Project Type:** Bridge replacement
- **Total Project Impact Acreage:** 8.8 acres
- **Area of Pedestrian Survey:** 8.8 acres
- **Project Description and Impacts:** The proposed project would replace the existing bridge and approaches on Burleson-Retta Road at Village Creek in Tarrant County, Texas (Figure 1). Located entirely within Tarrant County, the existing bridge will be replaced by a new structure and approaches to the north. Most of the work is limited to the existing right-of-way (ROW), with new ROW predominately on the north side of the area of potential effects (APE).
- **Area of Potential Effects (APE):** The APE is defined as 8.8 acres comprising the existing bridge and approaches, as well as 2.39 acres of new ROW (Figure 2).
- **Parcel Number(s):** No parcel numbers.
- **Project Area Ownership:** The existing Burleson-Retta Road ROW is owned and managed by the Texas Department of Transportation (TxDOT). The 2.39-acre new ROW is privately owned.

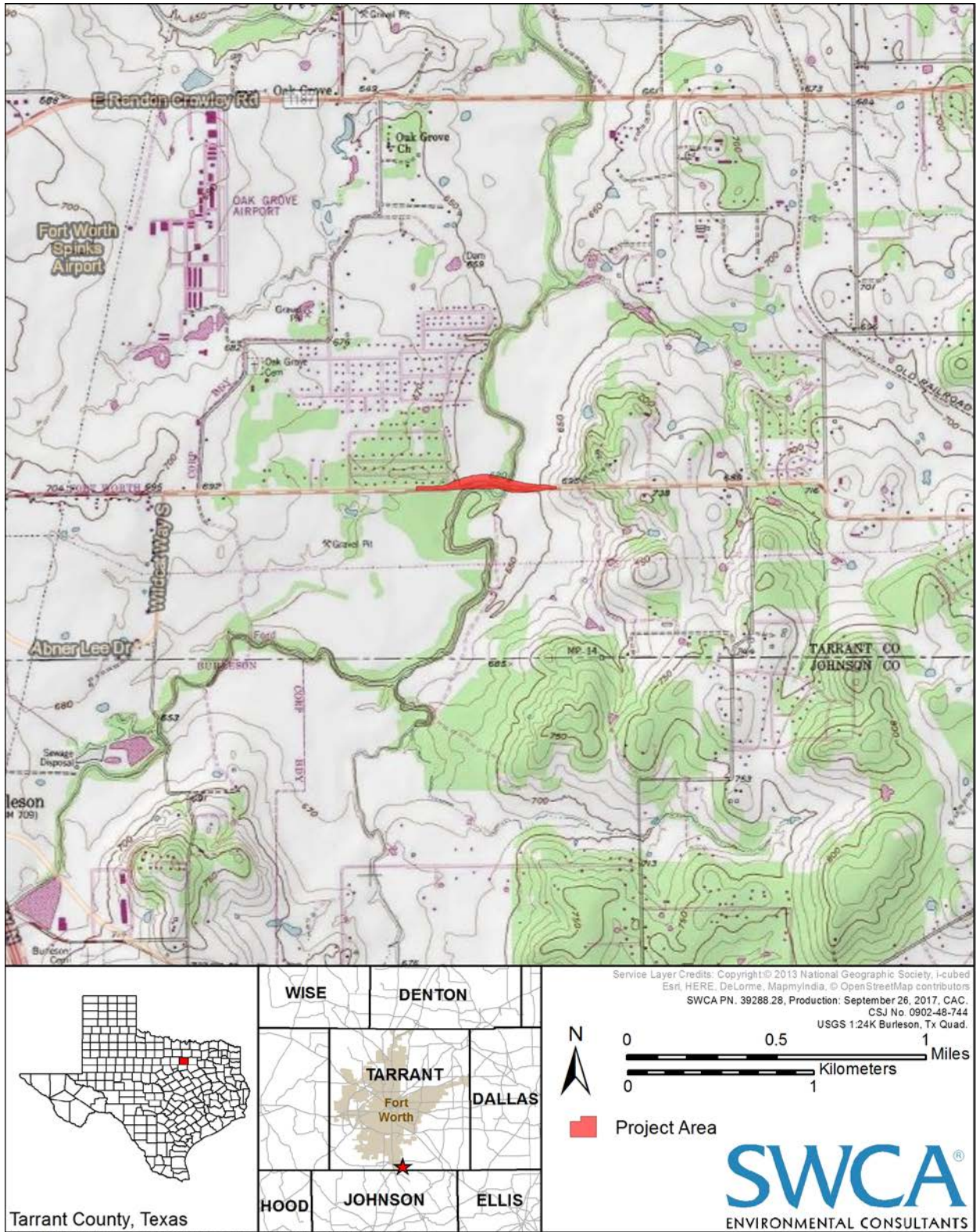


Figure 1. Project location.

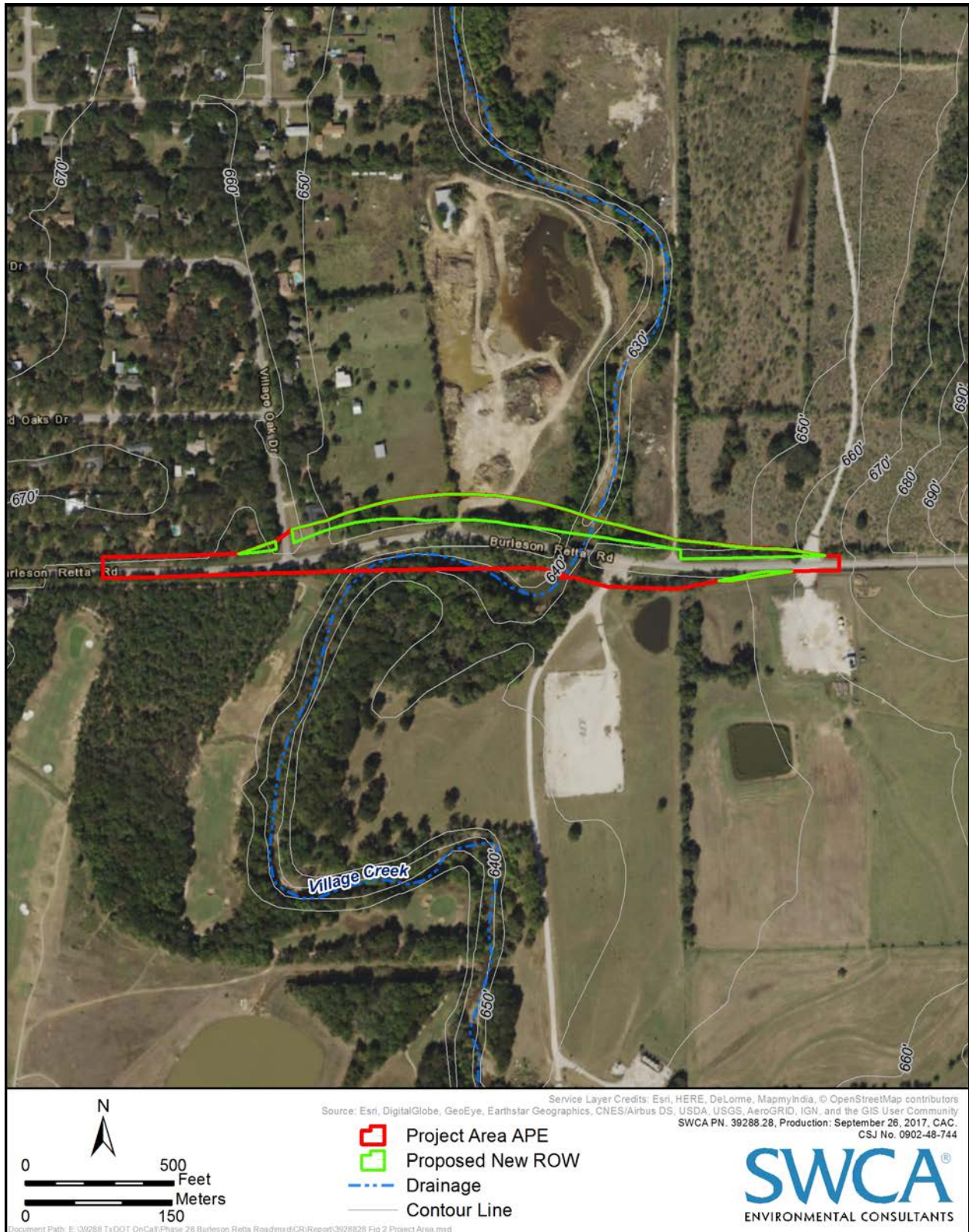


Figure 2. Project Area.

Project Setting

- **Topography:** The APE runs roughly southeast to northwest across low rolling terrain of the Eastern Cross Timbers ecoregion (Wermund 2017). Elevation ranges from a maximum of 665 feet above mean sea level (amsl) on the west bank of the APE, to a low of 642 feet amsl at the bottom of the Village Creek.
- **Geology:** According to the Geologic Atlas of Texas, Sherman sheet, the east portion of the APE is underlain by Grayson Marl and Main Street Limestone (Kgm) and the western portion is underlain by alluvium (Qal). Grayson Marl and Main Street Limestone is interbedded fossiliferous marl and sandstone of Cretaceous age. The recent alluvium is composed of Holocene-aged sediments laid down by Village Creek (Barnes 1967) (Figure 3).
- **Soils:** The APE is underlain by four soil series: Frio, Silawa, Whitesboro, and Bastsil (Figure 4). The Frio silty clay consists of very deep, well drained soils formed in calcareous loamy and clayey alluvium. Frio soils are located on nearly level to gently sloping flood plains with slope ranges from 0 to 2 percent. Silawa fine sandy loam consists of very deep, well drained soils formed in sandy and loamy sediments. The Silawa series is located on nearly level to strongly sloping terraces with slopes ranging from 0 to 12 percent. The Whitesboro loam consists of very deep, moderately well drained soils formed in loamy alluvium. The Whitesboro series is located on nearly level flood plains with slopes ranging from 0 to 1 percent. Finally, the Bastsil loamy fine sand consists of very deep, well drained soils formed in loamy alluvial sediments. Bastsil soils are located on nearly level to gently sloping stream terraces on river valleys with slopes ranging from 0 to 5 percent (Natural Resources Conservation Service [NRCS] 2017).
- **Land Use:** The proposed project is a mix of agricultural and developed urban properties. The eastern portion of the APE consisted of semi-wooded agricultural and pastoral fields, and the west portion has been developed into a suburban housing. A sand quarry is also located directly north along the western bank of Village Creek.
- **Vegetation:** Vegetation within the project area is primarily short, mixed grasses within the existing ROW. The area surrounding the APE consists of manicured grasses and dense trees and secondary growth along the creek.
- **Estimated Ground Surface Visibility:** 0 percent within existing ROW.

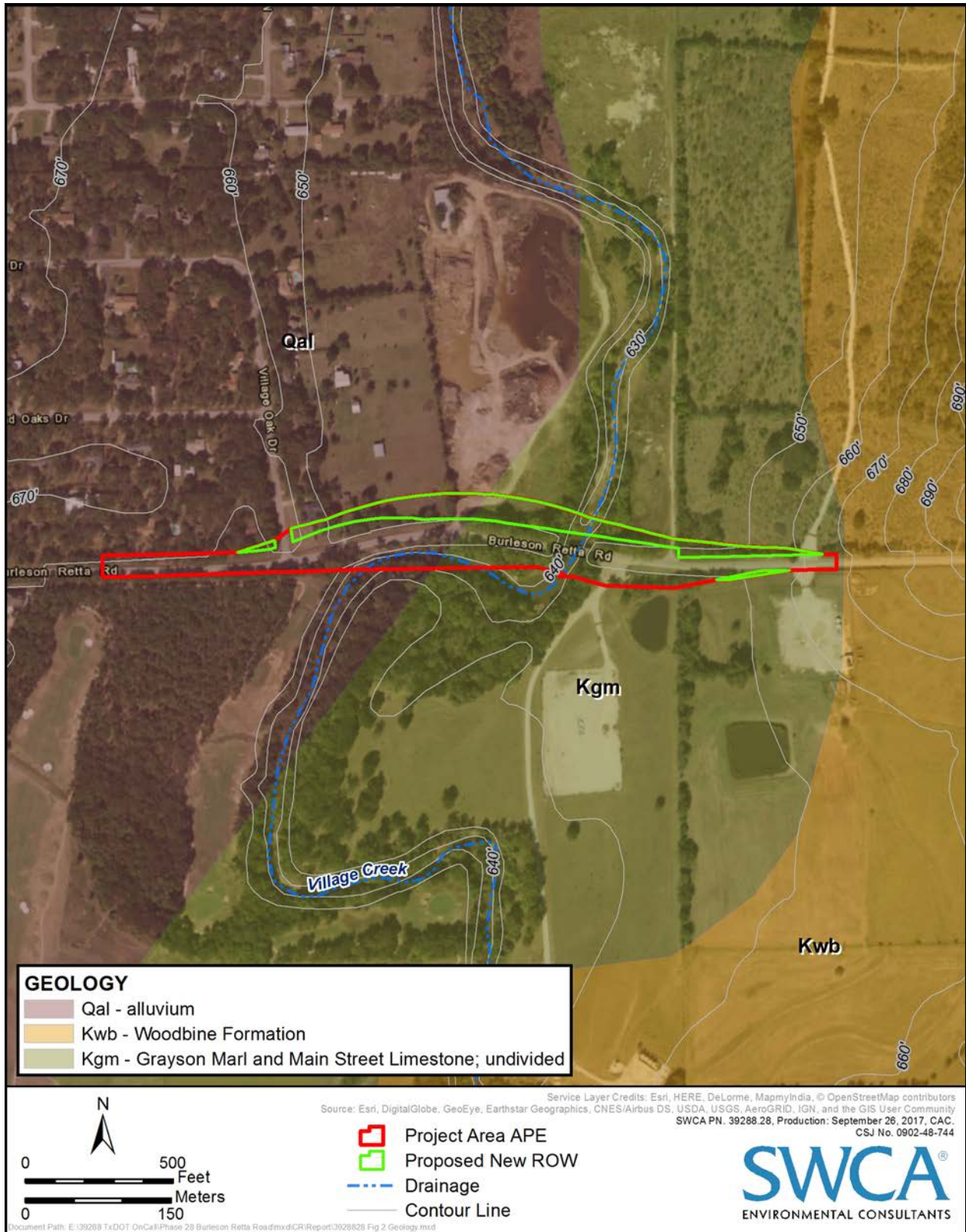


Figure 3. Project area geology.

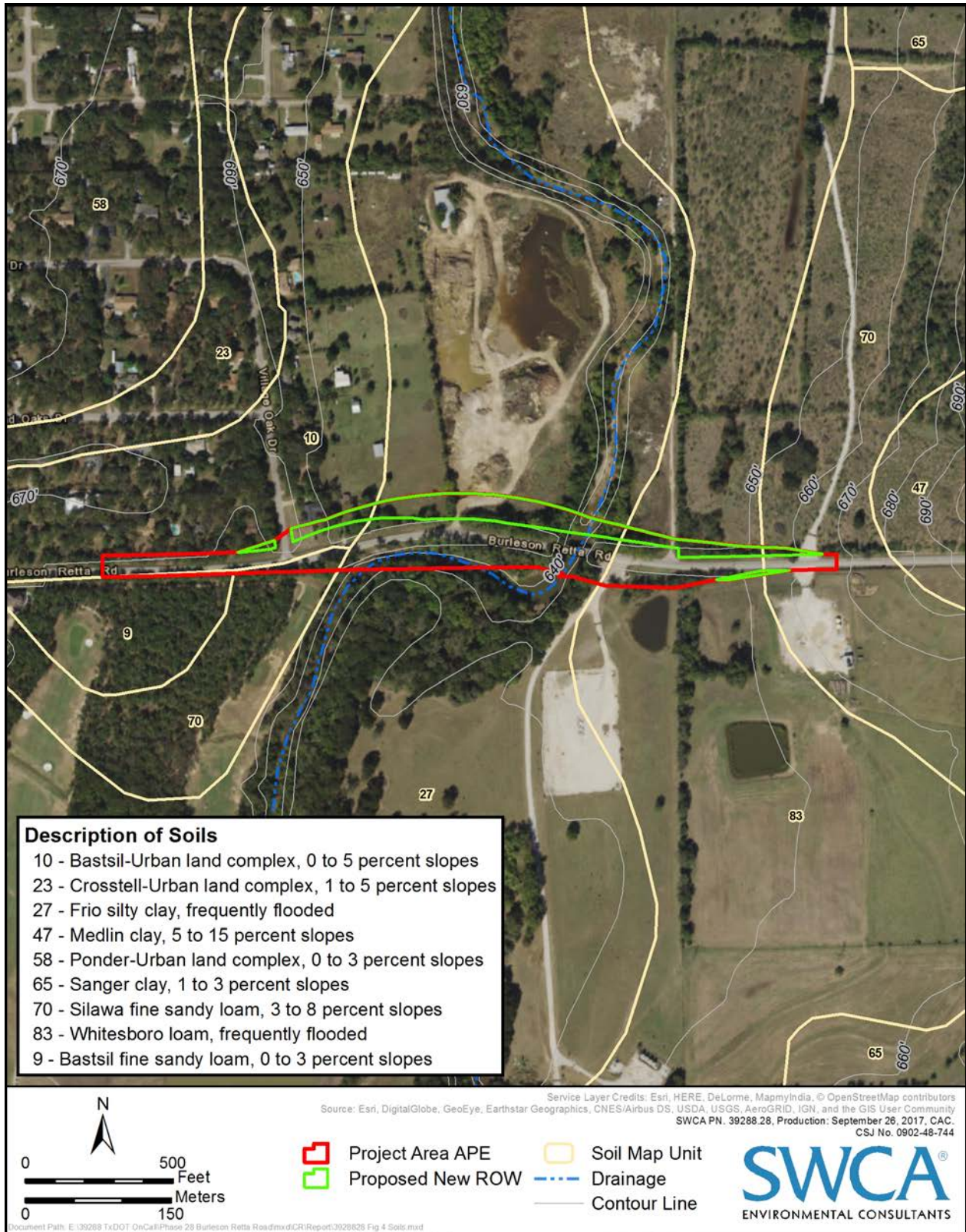


Figure 4. Project area soils.

- **Previous Investigations and Known Archeological Sites:** A background literature review determined that no portion of the APE has been previously surveyed for cultural resources. No archeological sites, historic markers, or State Antiquities Landmarks (SALs) are located within 0.6 miles (1 km) of the APE. One cemetery is located 0.17 miles south of the APE. This cemetery, named Tucker or Tuche, is currently located near a fairway of Southern Oaks Golf Course. The cemetery had the grave markers removed some time ago; however, remnant grave stones were more recently recorded near the site (Texas Historical Commission [THC] 2017a). Due to the suburban development, numerous potential historic structures are depicted on 1955 U.S. Geological Survey (USGS) topographic maps; however, no structures are depicted within the APE (Foster et al. 2006).
- **Comments on Project Setting:** A review of the Fort Worth District Hybrid Potential Archeological Liability Map revealed that the proposed project APE is within a floodplain setting with high potential for the preservation of archeological sites with reasonable integrity.

Survey Methods

- **Surveyors:** Ken Lawrence, Ashley Eyeington, and Jared Wiersema
- **Methodological Description:** SWCA conducted mechanical trenching across accessible portions of the proposed APE. SWCA archeologists excavated a total of 4 mechanical trenches within the APE (Appendix A) (Table 1).

Table 1. Excavations in Project APE.

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Temporary Easements	Total Number per Acre
Column Samples	0	0	0	0
Auger Test Units	0	0	0	0
Mechanical Trenching	0	4	0	0.45

Backhoe trenches (BHTs) were excavated entirely within the new ROW. The trench locations were chosen at the discretion of the project archeologist and focused on accessible areas with the least disturbance within the APE. Archeologists thoroughly documented and photographed the entire excavation process. Upon completion of each trench, the BHTs were backfilled, levelled, and returned as much as possible to their original state.

- **Other Methods:** None
- **Collection and Curation:** NO YES If yes, specify facility.

- **Comments on Methods:** Due to the presence of numerous buried utilities and heavy subsurface disturbance within the existing ROW, much of the APE could not be trenched.

THC archeological survey standards do not specify a density of BHTs per unit area (THC 2017b). However, per TxDOT contractual requirements, a total of no more than 10 mechanical trenches could be placed within the project area. As a result of limitations imposed by utilities and existing roadway, SWCA excavated four (4) BHTs within the proposed project area.

Survey Results

- **Project Area Description:** SWCA archeologists conducted backhoe trenching in soils with high potential for buried cultural material (Figure 5). The investigations revealed that the proposed project APE has been significantly disturbed from the construction of the current Burleson-Retta road and bridge, and its associated shoulders and other infrastructure. In addition, at least three buried utilities are present within the existing ROW, two of which parallel Burleson-Retta Road. Due to evident disturbances throughout most the APE, subsurface investigations were restricted to the new ROW (see Figure 5).

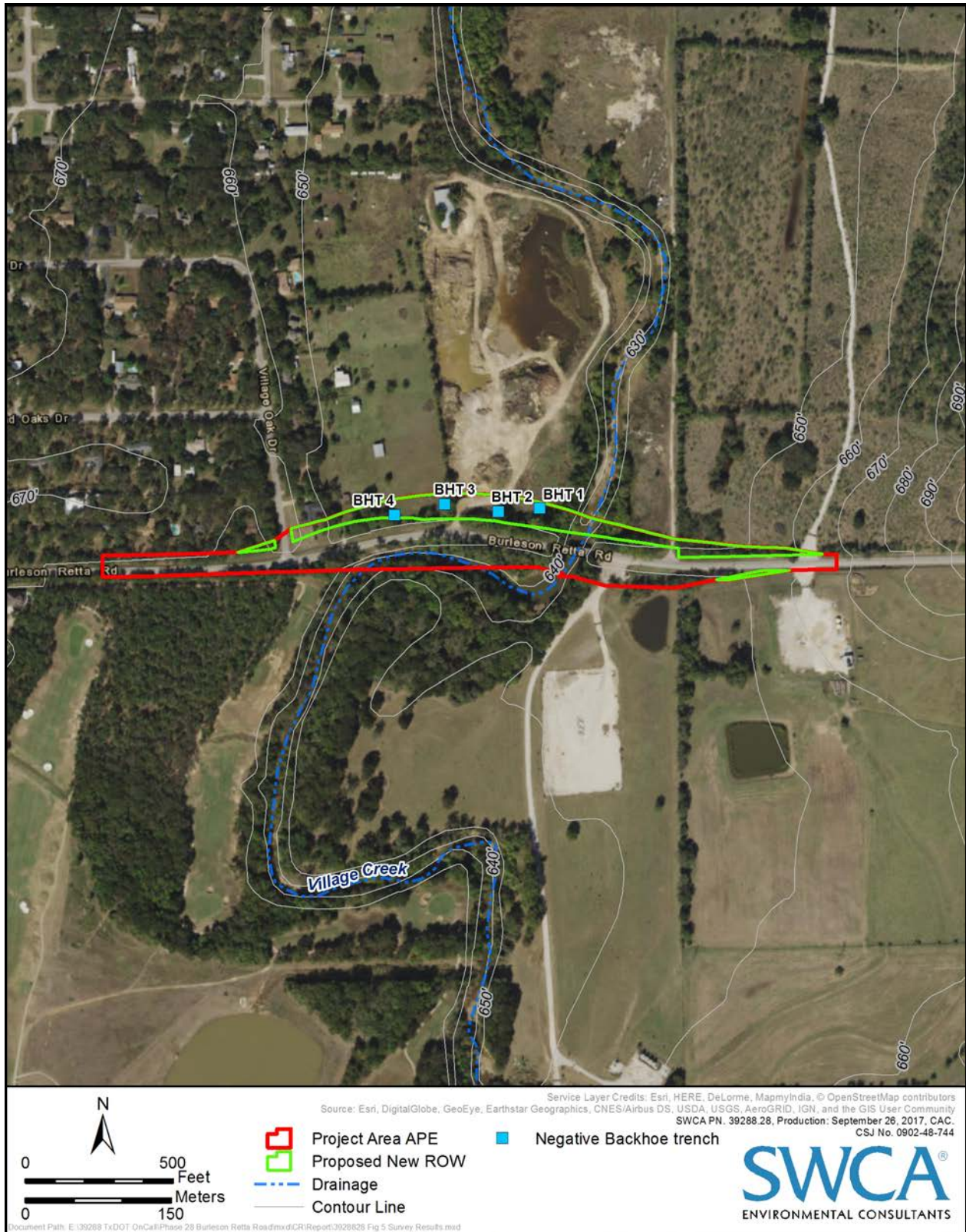


Figure 5. Survey results.

- **Backhoe Trenching:** SWCA excavated a total of 4 BHTs within the new ROW of the proposed project APE (Appendix A). All 4 trenches (BHT1-BHT4) were placed to the north of the existing ROW, on the west side of Village Creek. The BHTs were excavated to varying depths, ranging from a minimum of 133 cm below surface (cmbs) (BHT3) to a maximum of 333 cmbs (BHT2), to assess the potential for deeply buried cultural deposits. Trench dimensions were typically 90 cm wide, 7 m long, and excavated to pre-Holocene deposits.

The stratigraphy in the trenches varied somewhat; however, the identified stratigraphy typically consisted of three strata in profile. The upper disturbed stratum consisted of a brown (10YR 4/3) sandy loam to dark brown (10YR 3/3) sandy loam or silt loam. Below Stratum II, the soil became a dark yellowish brown (10YR 4/6-4/4) sandy loam to depth (Stratum III). BHT1 and BHT2, near Village Creek, also presented with modern trash and construction fill to the depth of trench or 180 cmbs (Figure 6). All three stratigraphic layers exhibited limestone gravels throughout with the lower strata containing calcium carbonate filaments (Figure 7). The bottom stratum is likely a pre-Holocene unit, likely representing Pleistocene formation deposits mapped in the area.



Figure 6. Soil profile of BHT2 to 333 cmbs. Note the layers of disturbed fill.



Figure 7. Soil profile of BHT3 showing three strata.

- **Archeological Materials Identified:** No archeological materials were identified within the APE.
- **APE Integrity:** The survey area within the new ROW has low stratigraphic integrity close to Village Creek. The areas immediately adjacent to Village Creek on both sides of the channel were indicated to have been quarried for fill material down to bedrock for local residential development (Darren Cornum (landowner), personal communication, September 19, 2017). The area east of Village Creek was reportedly backfilled in the recent past while the area west of Village Creek is actively being backfilled (Darren Cornum (landowner), personal communication, September 19, 2017). The deeper investigations (BHTs 01 and 02) verified the presence of deeply buried fill material exceeding 3 m in depth and consisting of asphalt, concrete, and disturbed soils. The soils encountered away from the creek have moderate to high stratigraphic integrity; however, they possess a low probability for containing deeply buried cultural deposits. All areas along the current Burleson-Retta Road ROW have been substantially modified by prior road and bridge construction, utilities, fences, agriculture, and other activities.

- Additionally, the westernmost extent of the proposed project near the intersection of Village Oak Drive and Burleson Retta Road have been extensively modified from residential development and associated impacts (e.g., fill material and buried and overhead utilities).

Recommendations

- **Further Work:** No further cultural resources investigations are recommended within the new and existing 8.8-acre ROW.
- **Justification:** The available exposures, disturbances, and BHTs afforded sufficient archeological data to adequately assess the survey areas. The evaluated portions of the new ROW lack integrity along both sides of Village Creek and at the western end of the proposed project area. The soils away from the creek have negligible potential for deeply buried cultural deposits. As per the federal and state implementing regulations at 36 CFR 800.4(b)(1) and 13 Texas Administrative Code 26, SWCA has made a reasonable and good faith effort to identify all cultural resources within the APE and recommends no further archeological investigation prior to construction. SWCA recommends that a finding of “no historic properties affected” be made for the current undertaking.

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Appendix A. Backhoe Trench Data

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Comments
BHT-01	0-13	10YR 4/3	Brown	Silt Loam	Loose, sub angular, fine, weak, 20% roots	Clear, Irregular	Surface horizon, trench is entirely fill/ disturbed
	13-81	10YR 4/3	Brown	Silt Loam	Loose, sub angular, fine, weak, 10% roots, matrix is 20% of horizon	Clear, Very Irregular	Fill material: asphalt, concrete, brick fragments, aluminum can, PVC pipe fragments, soda lid and straw (McDonalds)
	81-202	10YR 3/3	Dark Brown	Silt Loam	Loose, sub angular, fine, weak, matrix is about 60% of horizon	Unobserved	Fill material: partially burned tree, concrete slab, brick fragments, plastic bottle label, asphalt, hit large boulder of concrete slab
BHT-02	0-8	10YR 4/3	Brown	Silt Loam	Loose, sub angular, fine, weak, 20% roots	Clear, Irregular	Surface horizon, trench is entirely fill/ disturbed
	8-148	10YR 2/1 Clay and 10YR 4/4 Sandy Loam	Black and Dark Yellowish Brown	Sandy Loam and Clay-Clay Loam	Clay: extremely firm, angular, medium, strong, 40% rootlets, 20% limestone gravels, plastic, asphalt, metal Sandy Loam: friable, sub angular, fine to medium, weak, 40% rootlets, <1% red clay	Abrupt, Smooth	Alternating internal strata of clay and sandy loam; fill
	148-333+	10YR 4/2	Dark Grayish Brown	Clay Loam	Friable, sub angular, medium, weak to moderate, 2% rootlets, <5% sandstone gravels, 10% limestone gravels -2 cm, 5-10% strat 2 clay pockets	Unobserved	Green, plastic pallet straps at 148 and 180 cmbs; fill, disturbed
BHT-03	0-43	10YR 4/3	Brown	Sandy Loam	Friable, sub angular, medium, moderate, 5% rootlets, 5% pinhole burrows, 1% roots	Abrupt, Smooth	Root zone 0-15 cmbs, roots 20%
	43-74	10YR 3/2	Very Dark Grayish Brown	Sandy Loam	Friable, sub angular to angular, medium, moderate, 5% rootlets, 1% roots, 2% pinhole burrows, 5% sub angular gravels - dispersed / no orientation	Gradual, Smooth	Buried soil? Some mottling of strat 3 in root tracks 2-5% concentrated at base
	74-133	10YR 4/6	Dark Yellowish Brown	Silt Loam	Friable, angular, medium, moderate, 2% rootlets, 1% roots at top, 20% white filaments thread 1-2mm (consistent), 5% sub rounded gravels - dispersed	Unobserved	

Appendix A. Backhoe Trench Data

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture	Horizon Discussion	Lower Boundary	Comments
BHT-04	0-45	10YR 3/4	Dark Yellowish Brown	Sandy Loam	Friable to firm, sub angular, medium, moderate, 2% roots, 5% rootlets, 2% sub angular gravels, 5% sub rounded gravels, 2% pinhole burrows	Abrupt, Smooth	Root zone 0-10 cmbs
	45-118	10YR 3/3	Dark Brown	Sandy Loam	Friable, sub angular to angular, medium, moderate, 2% roots, 5% rootlets, 5% sandstone pebbles 2-5 mm, 1% sub rounded gravels, 2% pinhole burrows, <1% snail fragments, white filaments ~60 cmbs increases with depth (1-2 mm threads 50%-15-20% at base)	Diffuse, Smooth	Buried soil?
	118-155+	10YR 4/4	Dark Yellowish Brown	Sandy Loam	Friable, sub angular to angular, medium, moderate, 1% rootlets, <1% sandstone pebbles 1-5 mm, 25-30% white filament threads 1-2 mm and increasing, 2% pinhole burrows, <1% rounded limestone gravels, <1% degrading limestone pebbles lower than 15 cm below the horizon	Unobserved	

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



SWCA Environmental Consultants
4407 Monterey Oaks Boulevard
Building 1, Suite 110
Austin, Texas 78749
www.swca.com