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Intensive Cultural Resources Survey Of The 8.9-Mile-Long Ranch Road 335 Fiber Optic Cable Extension Project, Edwards And Real Counties, Texas

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Intensive Cultural Resources Survey Of The 8.9-Mile-Long Ranch Road 335 Fiber Optic Cable Extension Project, Edwards And Real Counties, Texas

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INTENSIVE CULTURAL RESOURCES SURVEY
OF THE 8.9-MILE-LONG RANCH ROAD 335
FIBER OPTIC CABLE EXTENSION PROJECT,
EDWARDS AND REAL COUNTIES, TEXAS

TEXAS ANTIQUITIES PERMIT NO. 8390
MAY 2018

PREPARED FOR

Southwest Texas Telephone Company Inc.

PREPARED BY

SWCA Environmental Consultants

REDACTED

**INTENSIVE CULTURAL RESOURCES SURVEY OF THE
8.9-MILE-LONG RANCH ROAD 335
FIBER OPTIC CABLE EXTENSION PROJECT,
EDWARDS AND REAL COUNTIES, TEXAS**

Prepared for

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SWCA Project No. 49263

Texas Antiquities Permit No. 8390

SWCA Cultural Resources Report No. 18-257

May 23, 2018

ABSTRACT

On behalf of Southwest Texas Telephone Company Inc. (SWTTC), SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey for the Ranch Road (RR) 335 Fiber Optic Cable Extension Project (Project) on state-owned lands in Edwards and Real Counties, Texas. The Project involves the installation of approximately 8.9 miles (14.3 kilometers [km]) of fiber optic telecommunication cable for SWTTC. Approximately 4.6 miles (7.4 km) of the cable will be installed within the right-of-way (ROW) of RR 335, and the remaining 4.3 miles (6.9 km) will be installed within private lands; portions of the line will be installed overhead, with the remainder being installed underground via trenching and boring. Overall, the Project Area is approximately 8.9 miles (14.3 km) long, 20 feet (6 meters [m]) wide, and between 4–5 feet (1.2–1.5 m) in depth, encompassing about 21.7 acres. In specific locations (e.g., roads and drainages) where the buried utility will be horizontally directional drilled (HDD), the depth of impacts may extend to approximately 10 feet (3.1 m). The portion of the Project on state-owned land (Survey Area) is approximately 4.6 miles (7.4 km) long and 20 feet (6 m) wide, encompassing 11.2 acres.

Because the proposed Project occurs on land owned by the Texas Department of Transportation (TxDOT), a political subdivision of the state, the work was performed in compliance with the Antiquities Code of Texas (ACT) under Texas Antiquities Permit No. 8390. Investigations consisted of a cultural resources background review of the Project Area and an intensive pedestrian archaeological survey with shovel testing of the Survey Area.

The background literature review determined that no cultural resources surveys have been conducted and that no prehistoric or historic resources have been recorded within the Project Area. Fifteen archaeological sites (i.e., 41ED17, 41ED86, 41ED90, 41ED165, 41ED166, 41ED170, 41ED233–235, 41RE12, 41RE13, 41RE18, and 41RE84–86), one cemetery (Vance Cemetery), and one historical marker (Marker No. 5638) are located within 1 mile (1.6 km) of the Project Area. The historic map review revealed eight potentially historic-age structures adjacent to (within 350 feet [107 m] of) the current Project Area (USGS 2018b). Current aerial imagery indicates that all structures are extant; however, none are within either the Project or Survey Areas.

Field investigations involved the excavation of 57 shovel tests and examination of the ground surface and exposed profiles within the Survey Area. An additional 18 shovel tests were attempted but not excavated, due to the presence of exposed bedrock and upland gravels on the surface. The proposed Project is situated in a highly modified easement along the edges of RR 335, and as such, there was a significant amount of disturbance throughout the Survey Area. During these investigations, SWCA documented one standing structure (a small historic-age cabin) immediately adjacent to the Survey Area; however, the cabin is 26 feet (8 m) west of the survey corridor and will not be affected by the proposed Project.

In accordance with the ACT, SWCA made a reasonable and good faith effort to identify cultural resources within the Survey Area. No archaeological sites were identified that meet the criteria for designation as a State Antiquities Landmark, per 13 Texas Administrative Code 26.12; therefore, SWCA recommends that no additional cultural resources investigations should be warranted within the Survey Area, as currently defined.

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INTRODUCTION

On behalf of Southwest Texas Telephone Company Inc. (SWTTC), SWCA Environmental Consultants (SWCA) conducted an intensive cultural resources survey for the Ranch Road (RR) 335 Fiber Optic Cable Extension Project (Project) on state-owned lands in Edwards and Real Counties, Texas (Figure 1). The Project involves the installation of approximately 8.9 miles (14.3 kilometers [km]) of fiber optic telecommunication cable for SWTTC. Approximately 4.6 miles (7.4 km) of the cable will be installed within the right-of-way (ROW) of RR 335, and the remaining 4.3 miles (6.9 km) will be installed within private lands; portions of the line will be installed overhead, with the remainder being installed underground via trenching and boring. Because the proposed Project would occur on land owned by the Texas Department of Transportation (TxDOT), a political subdivision of the state, the work was performed in compliance with the Antiquities Code of Texas (ACT).

Investigations consisted of a cultural resources background review of the Project Area and an intensive pedestrian archaeological survey with shovel testing of the portions of the Project Area on state-owned lands (Survey Area). The purpose of the work was to locate and identify prehistoric and historic cultural resources within the Survey Area, establish vertical and horizontal site boundaries as appropriate with regard to the Survey Area, and evaluate the significance and eligibility of any site recorded within the property for designation as a State Antiquities Landmark (SAL). Archaeological investigations were performed to comply with the ACT under Texas Antiquities Permit No. 8390. All investigations were conducted in accordance with Texas Historical Commission (THC) and Council of Texas Archeologists (CTA) standards.

Project Personnel

Tina Nielsen, M.A., served as Principal Investigator and Harris Frampton served as Project Manager for the duration of the Project, overseeing overall logistics and organization, managing reporting, and agency consultation. The survey was completed by Field Director Mercedes Cody, B.A., and Archaeologist Jessica Ulmer, B.A., on April 11–12, 2018, under Texas Antiquities Permit No. 8390. Architectural Historian, Victoria Myers, M.A., performed a desktop review of the standing structure documented adjacent to the Survey Area. Jayme Fontenot and Jason Kainer expertly produced all field and report maps for the Project and Lauri Logan provided technical editing and document preparation.

PROJECT AREA DESCRIPTION

The approximately 8.9-mile-long (14.3-km-long) Project alignment appears on portions of the *Hackberry, TX* (2900-444) and *Vance, TX* (2900-441) U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps. The project parallels RR 335 extending from Vance, Texas (on the south end) in Real County to Hackberry, Texas (on the north end) in Edwards County. The Project Area is within a rural setting that is largely ranchland with occasional rural residences and scattered pastures (Figure 2).

Overall, the Project Area is approximately 8.9 miles (14.3 km) long, 20 feet (6 meters [m]) wide, and between 4–5 feet (1.2–1.5 m) in depth, encompassing about 21.7 acres. In specific locations (e.g., roads and drainages) where the buried utility will be horizontally directional drilled (HDD), the depth of impacts may extend to approximately 10 feet (3 m). The portion of the Project Area on state-owned land (Survey Area) is approximately 4.6 miles (7.4 km) long and 20 feet (6 m) wide, encompassing 11.2 acres.

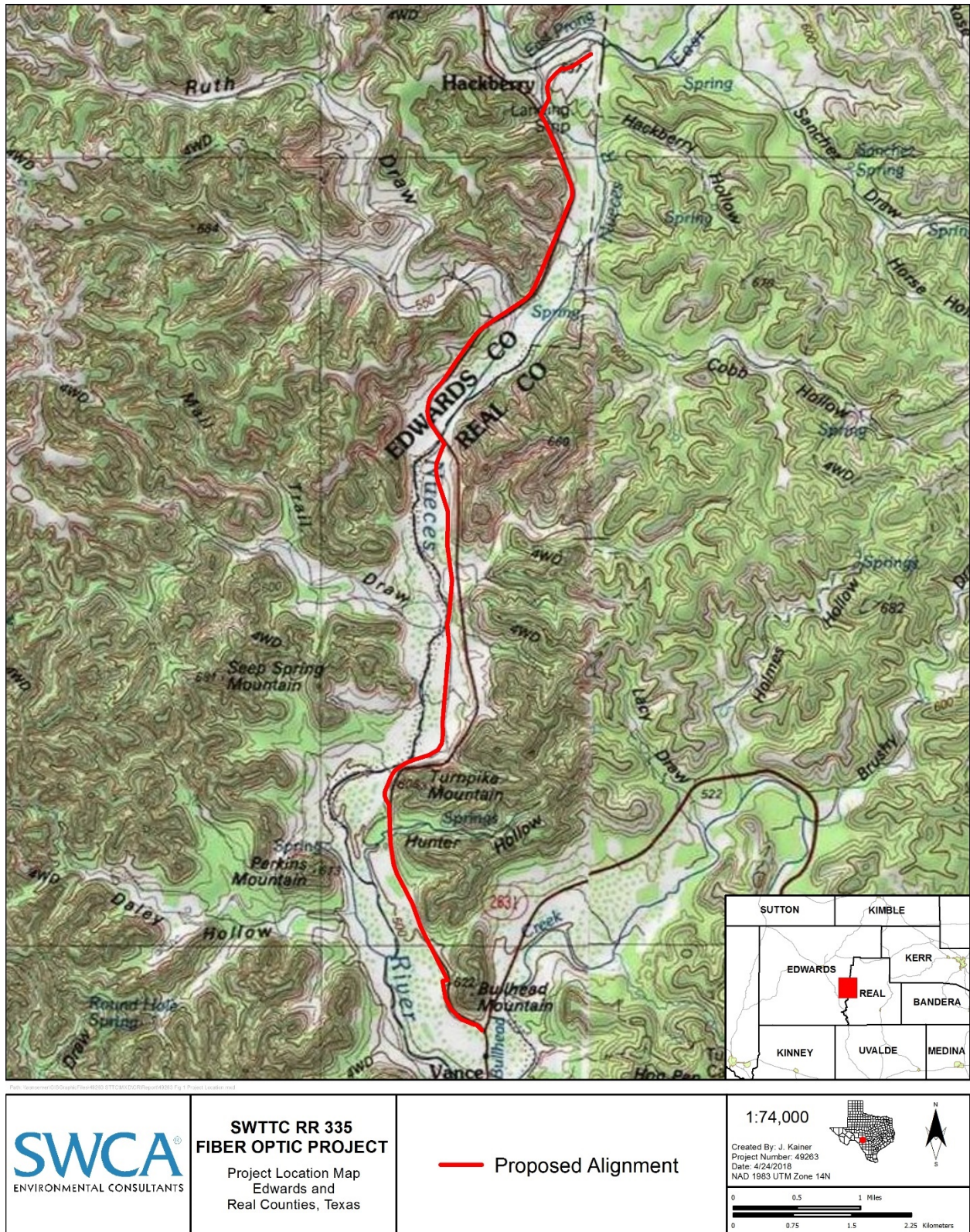


Figure 1. Project Location.

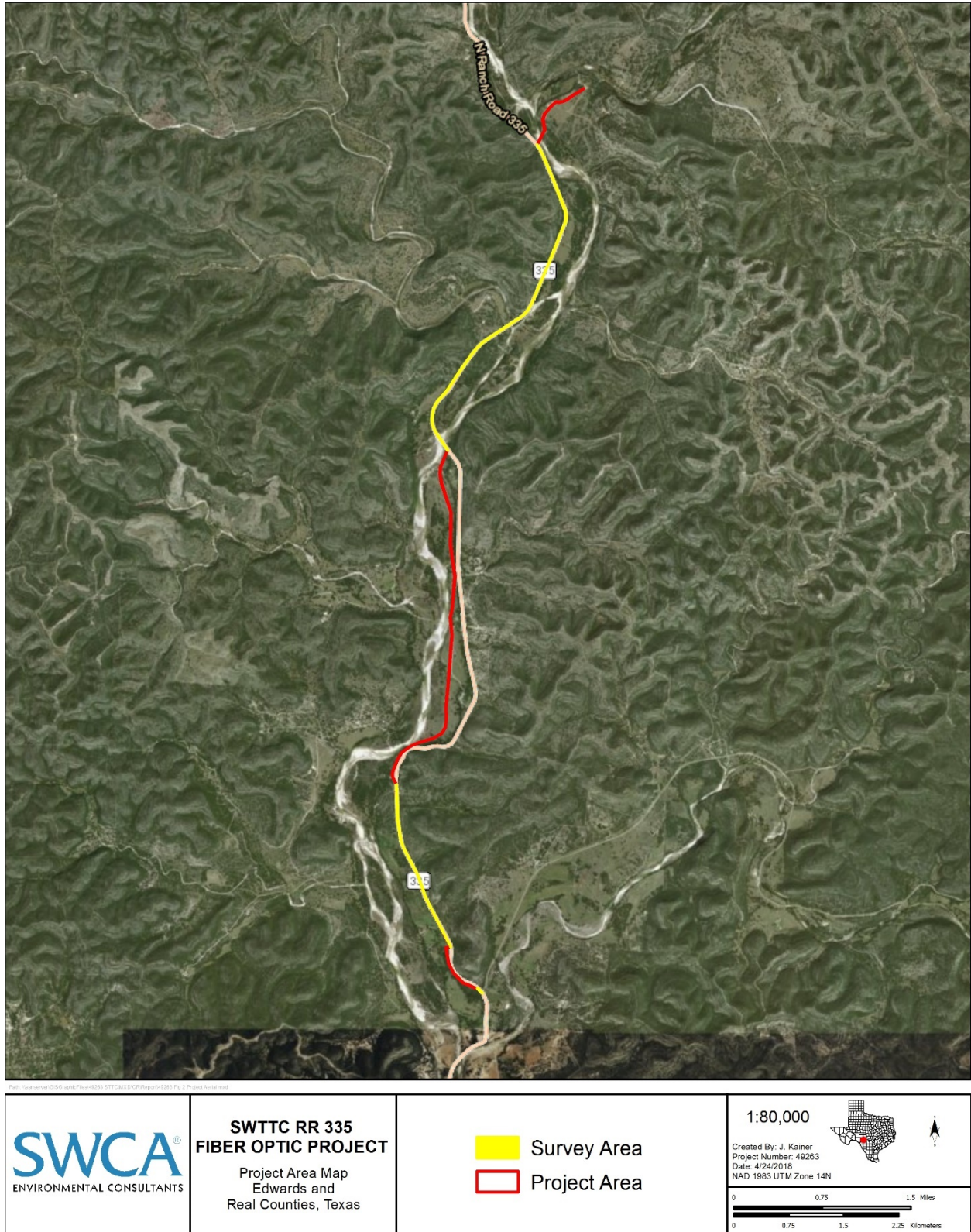


Figure 2. Project Area and Survey Areas.

ENVIRONMENTAL DESCRIPTION

The proposed Project alignment traverses southeastern Edwards County and western Real County in south-central Texas. The Project Area is located at the southern edge of the Edwards Plateau physiographic region of Texas (Wermund 2018). A physiographic province is characterized as a region with shared geology, vegetation, fauna, and climate. The Edwards Plateau is distinguishable from surrounding physiographic regions by its prominent Cretaceous-age limestone, dolomite, sandstone, and shale deposits. The eastern and southern extent of the Edwards Plateau is clearly demarcated by the uplifted and elevated Balcones Escarpment, which divides the plateau from the Blackland Prairie and South Texas Plain physiographic regions. The northern and western extent of the Edwards Plateau is relatively flat in comparison to the eastern and southern plateau margin, with the plateau slowly grading into mountain and basin physiographic regions in the west and plains regions to the north. Additionally, the Project Area is situated within the Balconian biotic regions and Edwards Plateau vegetative region (Blair 1950; Correll and Johnston 1979).

Geology and Soils

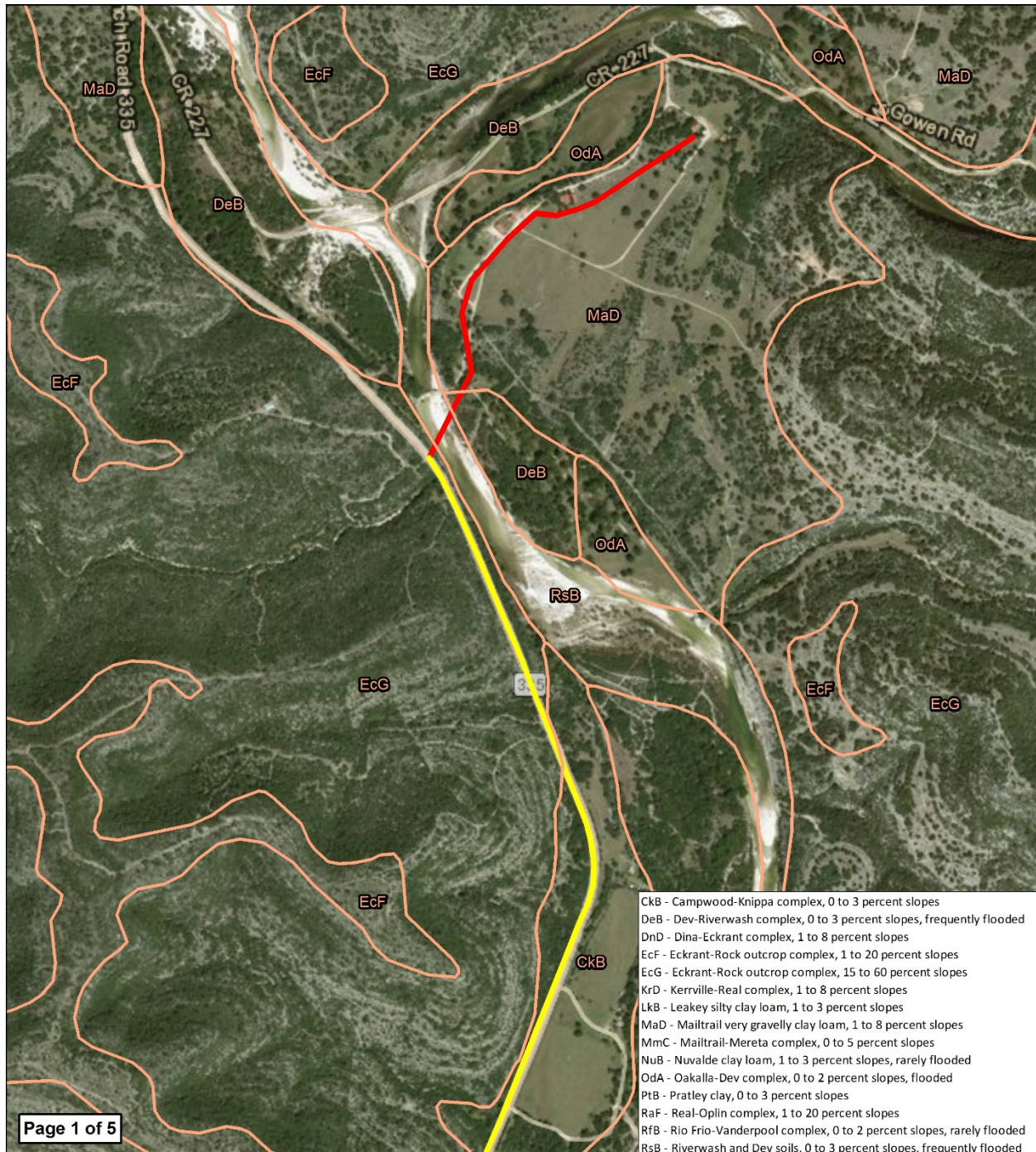
The underlying geology throughout the Project Area consists of Cretaceous-aged Edwards Limestone (USGS 2018a). The Edwards formation consists of limestone, dolomite, and chert (nodules); based on the age and physical properties of this formation, it has virtually no potential to contain buried archaeological resources, although prehistoric groups would have exploited the available chert nodules for manufacturing stone tools and sites are therefore anticipated in the rocky uplands.

Project Area soils are a mosaic of several soil units (Table 1; Figures 3a–3e). These include in order of predominance: Dev-Riverwash complex (29 percent); Campwood-Knippla complex (21 percent); Mailtrail-Mereta complex (13.9 percent); Real-Oplin Complex (11.2 percent); Eckrant-Rock outcrop complex (11.2 percent); Mailtrail very gravelly loam (7.5 percent); Oakalla-Dev complex (3.2 percent); and Riverwash and Dev soils (2.9 percent) (Natural Resources Conservation Service [NRCS] 2018).

The soils with the best potential to contain buried archaeological materials within the Project Area are the Dev-Riverwash complex, Riverwash and Dev soils, and Oakalla-Dev complex, as these soils are found near stream terraces and developed from calcareous loamy alluvium derived from limestone parent material. The remainder of the soils within the Project Area are typically shallow to very shallow over limestone bedrock (NRCS 2018).

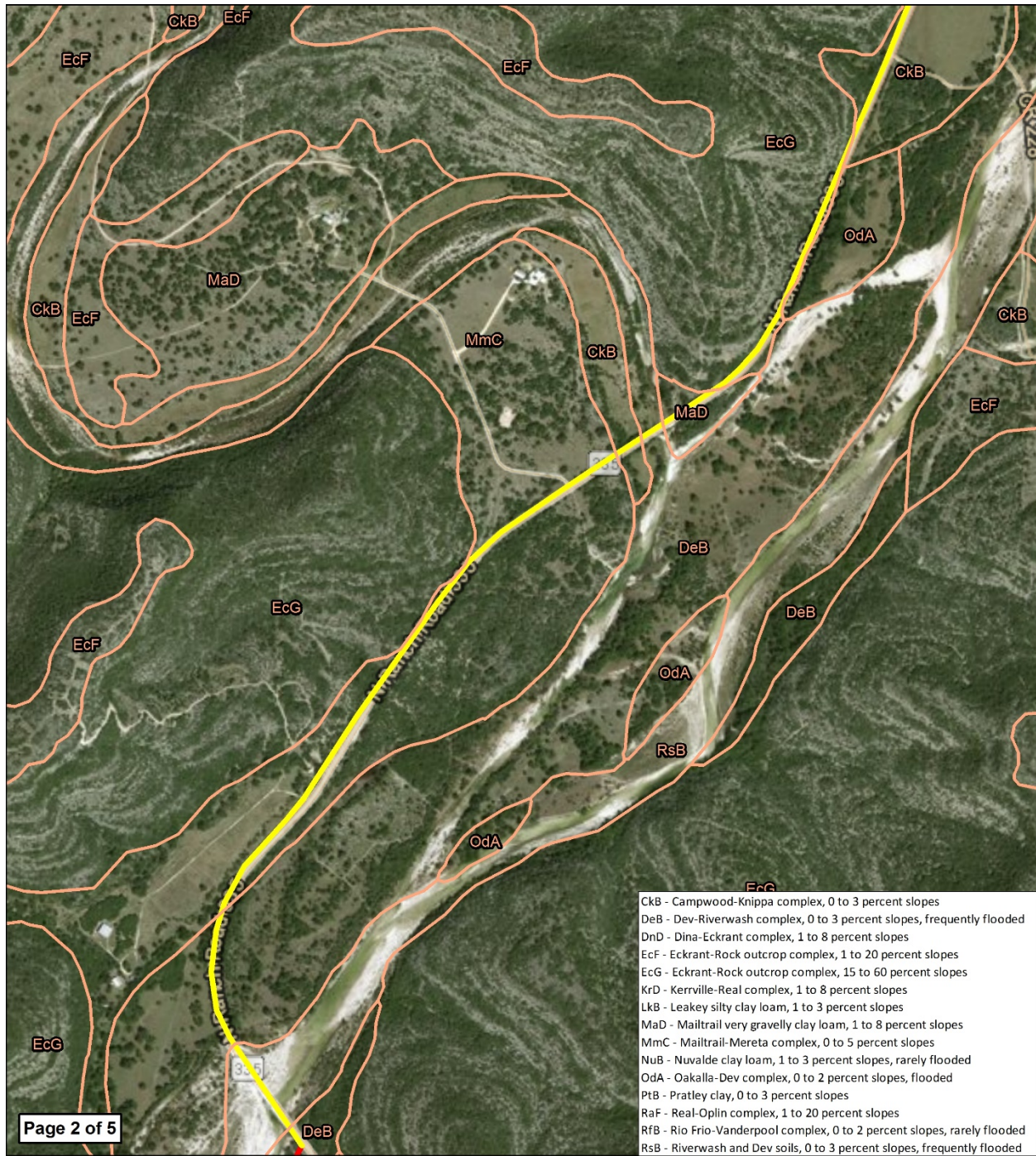
Table 1. Soils within the Project Area

Symbol	Name	Acres	Percent
DeB	Dev-Riverwash complex, 0 to 3 percent slopes, frequently flooded	6.3	29.0
CkB	Campwood-Knippla complex, 0 to 3 percent slopes	4.6	21.0
MmC	Mailtrail-Mereta complex, 0 to 5 percent slopes	3.0	13.9
RaF	Real-Oplin complex, 1 to 20 percent slopes	2.4	11.2
EcG	Eckrant-Rock outcrop complex, 15 to 60 percent slopes	2.4	11.2
MaD	Mailtrail very gravelly clay loam, 1 to 8 percent slopes	1.6	7.5
OdA	Oakalla-Dev complex, 0 to 2 percent slopes, flooded	0.7	3.2
RsB	Riverwash and Dev soils, 0 to 3 percent slopes, frequently flooded	0.6	2.9
Total		21.7	100



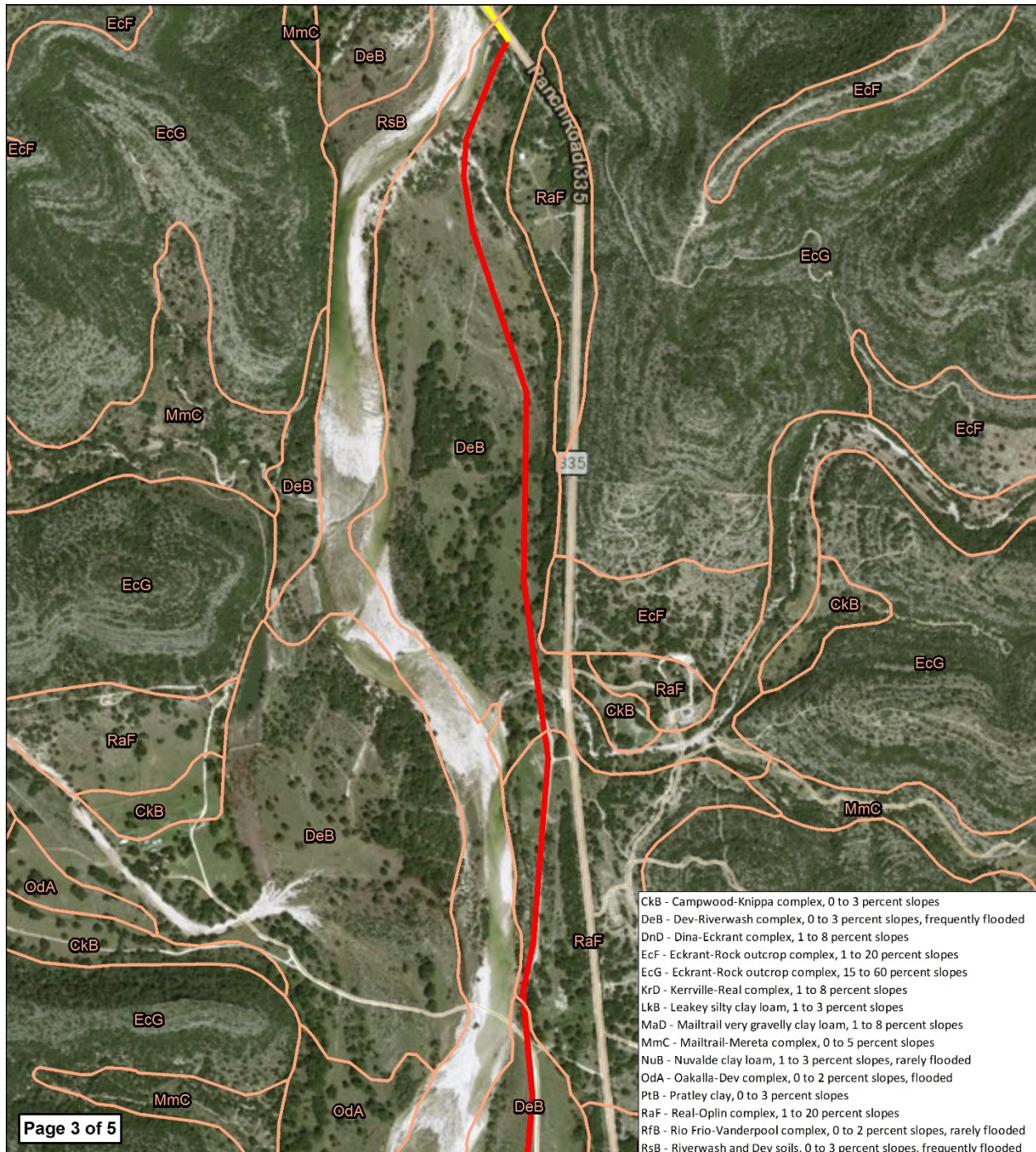
	<p align="center">SWTTC RR 335 FIBER OPTIC PROJECT</p> <p align="center">Soil Map Edwards and Real Counties, Texas</p>	<p> Soil Unit Survey Area Project Area </p>	<p>1:15,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/24/2018 NAD 1983 UTM Zone 14N</p>
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Figure 3a. Project Area soils.



	<p>SWTTC RR 335 FIBER OPTIC PROJECT</p> <p>Soil Map Edwards and Real Counties, Texas</p>	<p> Soil Unit Survey Area Project Area </p>	<p>1:15,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/24/2018 NAD 1983 UTM Zone 14N</p>
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Figure 3b. Project Area soils.



	<p align="center">SWTTC RR 335 FIBER OPTIC PROJECT</p> <p align="center">Soil Map Edwards and Real Counties, Texas</p>	<p> Soil Unit Survey Area Project Area </p>	<p>1:15,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/24/2018 NAD 1983 UTM Zone 14N</p>
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Figure 3c. Project Area soils.

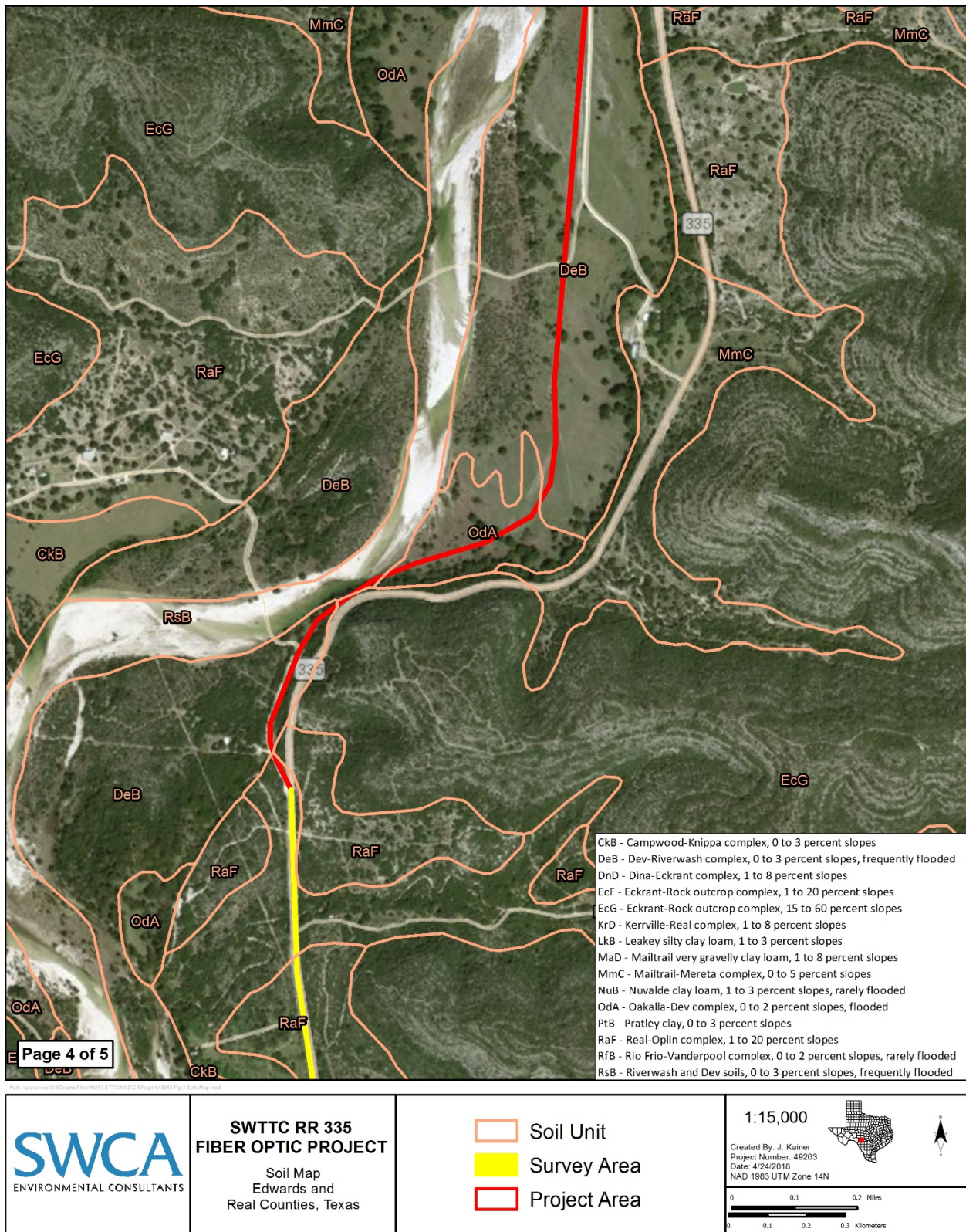
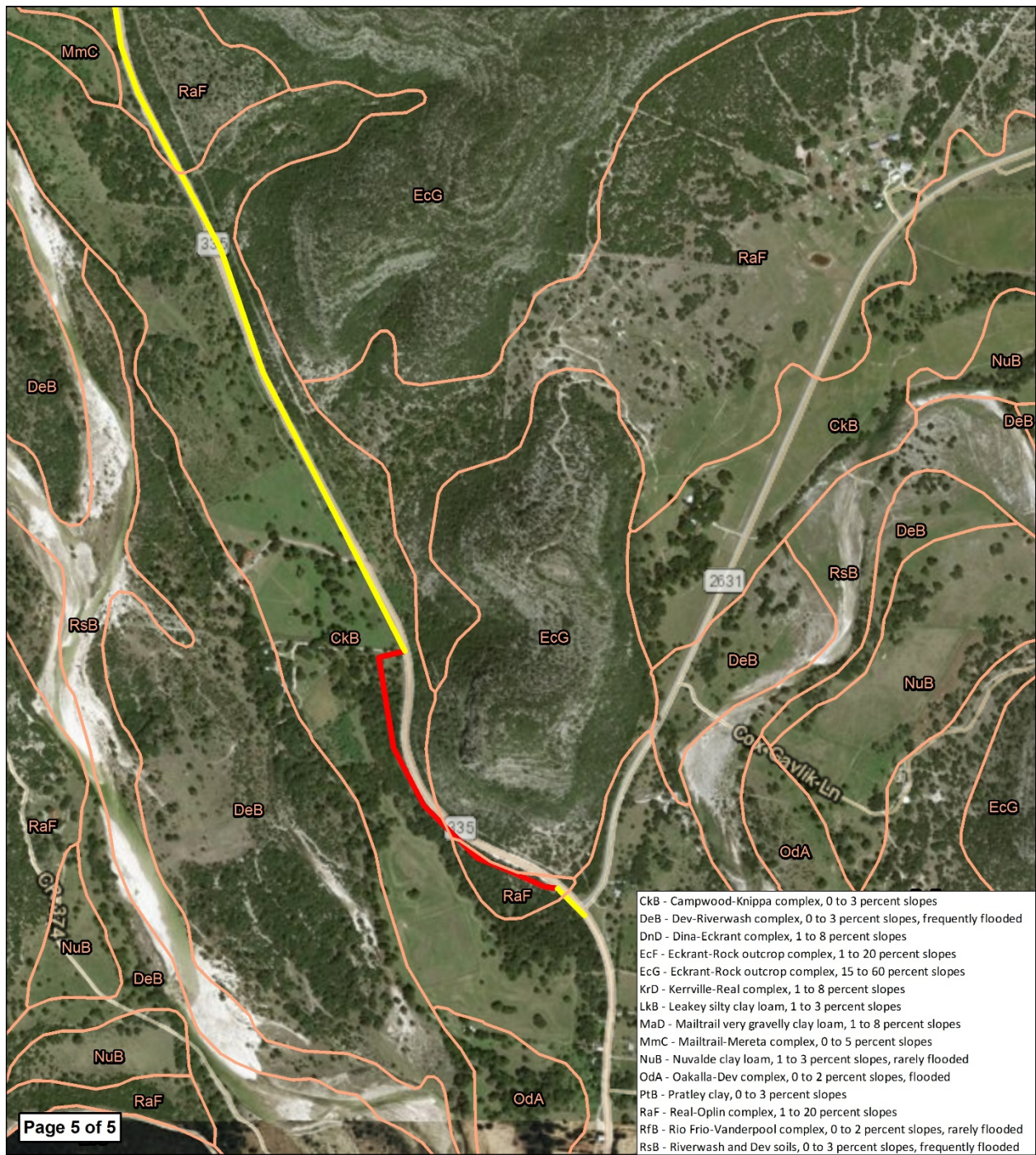


Figure 3d. Project Area soils.



	<p align="center">SWTTC RR 335 FIBER OPTIC PROJECT</p> <p align="center">Soil Map Edwards and Real Counties, Texas</p>	<p> Soil Unit Survey Area Project Area </p>	<p>1:15,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/24/2018 NAD 1983 UTM Zone 14N</p>
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Figure 3e. Project Area soils.

Flora

The Project Area is situated on the Edwards Plateau within the Balconian biotic province, an Edwards Plateau vegetative region (Blair 1950; Correll and Johnston 1979). The Edwards Plateau forms a sharp boundary in floral distribution between the thin-soiled limestone uplands and the wide coastal plains to the southeast. Upland areas are dominated by a mixed live oak (*Quercus virginiana*) and Ashe juniper (*Juniperus ashei*) woodland interspersed with occasional grassy openings. Other tree species present in low densities throughout these areas include cedar elm (*Ulmus crassifolia*) and Texas oak (*Quercus fusiformis*). Shrub density varies from low to dense in upland areas. Species occurring in low densities include Texas persimmon (*Diospyros texana*), agarita (*Berberis trifoliolata*), and prickly pear (*Opuntia* spp.) with thick, mixed grasses in some areas (Van Auken 1988). The lower elevation areas along the riparian zone often include a dense understory of acacia (*Acacia* spp.), prickly pear, and other brushy species (Petrides 1988; Simpson 1988).

Fauna

The Balconian biotic province is a transitional zone from the mesic forests of eastern North America to the xeric grasslands of the central United States; thus, this province has a high faunal diversity. Blair (1950) identified at least 57 species of mammals, over 42 species of reptiles, and 15 species of amphibians. None of the fauna for the Balconian is restricted solely to this province (Blair 1950).

Some mammals common to the Balconian province include: coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), mink (*Mustela vison*), muskrat (*Ondatra zibethica*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), white-tailed deer (*Odocoileus virginianus*), opossum (*Didelphis virginiana*), eastern pipistrelle (*Pipistrellus subflavus*), eastern fox squirrel (*Sciurus niger*), eastern cottontail rabbit (*Sylvilagus floridanus*), pocket gopher (*Geomys breviceps*), pallid bat (*Antrozous pallidus*), valley pocket gopher (*Thomomys bottae*), and badger (*Taxidea taxus*) (Burt and Grossenheider 1976). Historically, red wolf (*Canis rufus*), bison (*Bison bison*), and black bear (*Ursus americanus*) ranged into or near this region (Burt and Grossenheider 1976).

The general reptilian assemblage for this province include the Great Plains rat snake (*Elaphe guttata emoryi*), eastern yellowbelly racer (*Coluber constrictor flaviventris*), yellow mud turtle (*Kinosternon flavescens flavescens*), bullfrog (*Rana catesbiana*), southern leopard frog (*Rana utricularia*), and the Gulf Coast toad (*Bufo valliceps*) (Blair 1950; Conant and Collins 1998; Kutac and Caran 1994).

CULTURAL BACKGROUND AND SETTING

The Project Area lies within the Central Texas archaeological region, as defined by Collins (2004), Prewitt (1981, 1985), Suhm (1960), and other researchers. The Central Texas archaeological region is an artificial construct and its boundaries are somewhat arbitrary (Collins 2004:102). As Collins (2004:103) points out, it is unlikely that any group in the past 11,000 years had their key resources, geographic range, or political sphere conform to these boundaries. This area is noted by its distinctive environmental conditions, as it is located at the boundary of the moist, humid forests to the east and drier, savannah-like grasslands to the west, which greatly influenced cultural development. The following cultural-historic outline is based on the regional chronologies proposed by Collins (2004) and Johnson and Goode (1994), which build upon the seminal efforts of Prewitt (1981, 1985) and Suhm (1960). Using standard terminology, the cultural sequence is divided into four periods: Paleoindian, Archaic, Late Prehistoric, and Historic. The Archaic period is subdivided into four subperiods: Early, Middle, Late, and Transitional.

Paleoindian Period

Paleoindian artifacts and sites date from about 11,500 to 8,800 years before present (B.P.) and are not uncommon in Central Texas (Collins 2004). The period begins at the close of the Pleistocene with the earliest evidence of humans in the Central Texas region. Diagnostic artifacts of the period include lanceolate-shaped, fluted projectile points such as Clovis, Folsom, and Plainview types. These projectile points were hafted onto wooden spears, launched from atlatls (spear throwers), and used to hunt a variety of game, including mammoth, mastodons, bison, camel, and horse (Black 1989). During the Paleoindian period, the prominent interpretation suggests a hunter-gatherer adaptation strategy with increased harvesting of flora and small game as the big game died off and the climate warmed following the end of the Pleistocene ice age (Bousman et al. 2004). Representative Central Texas Paleoindian sites include Kincaid Rockshelter, Wilson-Leonard, Gault, and St. Mary's Hall.

Archaic Period

As the Paleoindian period came to a close, humans began to harvest local floral and faunal resources more intensively (Collins 2004). Material culture became more diverse and the use of burned rock middens and ovens became widespread. This period is known as the Archaic and dates from approximately 8800 to 1200 B.P. in Central Texas (Collins 2004; Johnson and Goode 1994). While Collins (2004) and Johnson and Goode (1994) subdivide the Archaic into Early, Middle, and Late subperiods, we have added a transitional subperiod after the Late Archaic for reasons discussed below.

Early Archaic

The Early Archaic is commonly dated to ca. 8800 to 6000 B.P. (Collins 2004:119). Research suggests that Early Archaic people became increasingly reliant on local resources and residential mobility decreased (Prewitt 1981:73; Suhm et al. 1954:18). Early Archaic populations utilized base camps for longer periods, perhaps seasonally, and hunted a diverse array of small (e.g., snakes, turtles, rodents, rabbits), medium (e.g., opossums and raccoons), and large (e.g., deer and antelope) game, fished local rivers, and cooked wild plant bulbs in earth ovens. It is likely that the reduction in residential mobility was related to a variety of factors including diminished bison populations, population increase, tribal territoriality issues, and climatic change. By the start of the Early Archaic, well-established resident populations lived in every biogeographical region of Texas.

Collins (2004:120) and McKinney (1981) observe that a large number of Early Archaic sites are documented along the eastern and southern margins of the Edwards Plateau. They argue that if our current understanding of Early Archaic site distribution reflects prehistoric land use, then the Early Archaic was a period when people were living in the better-watered parts of the Edwards Plateau. With very low population densities across the state at the beginning of the Archaic, it makes sense that the environmentally desirable zones, such as the well-watered ecotone along the margins of the Edwards Plateau, would be the first areas to have been more heavily settled.

During the Early Archaic, projectile points became more regionally diversified, and stemmed forms replaced the lanceolate points of the Paleoindian period. This technological shift may have been due, in part, to the development of a more localized, broad-based hunting and gathering economy that necessitated differing point types for different game (Johnson and Goode 1994; Story 1985). Early Archaic populations supplemented their hunting diet with a diverse assemblage of processed plant foods. This is most evident through the use of hot rock cooking technologies, which become commonplace at Early Archaic sites. Early Archaic burned rock features are most often small- to medium-sized hearths, with minimal evidence of reuse. However, at a few Early Archaic sites (e.g., Wilson-Leonard), larger

earth ovens have been documented (Collins et al. 1998; Prewitt 1985); these are believed to be the precursors to burned rock middens.

A burned rock midden is a large, dense feature of burned rocks and ash-stained soil that accumulates from use and reuse as a thermal cooking feature (Black et al. 1997; Mahoney et al. 2003; Suhm 1960). The number of burned rock middens increased throughout the Archaic period and it seems clear that their technological roots lie in the first earth ovens of the Early Archaic (Black et al. 1997; Collins et al. 1998; Decker et al. 2000). Burned rock midden technology appears to have first developed in the eastern plateau around 8500 to 8000 B.P. and gradually spread into the western plateau by ca. 6500 to 5000 B.P. (Decker et al. 2000:301). These large features vary greatly in size and form, but share the common functional purpose of serving as an earth oven or similar cooking device (Black et al. 1997; Weir 1976).

Work completed on the Gatlin site, 41KR621, in southern Central Texas highlighted the complexity and diversity in the Early Archaic settlement system noted by previous researchers (Houk et al. 2008). As Johnson (1991:159) states, “people acquired different foods at different suitable places,” meaning that certain sites were visited repeatedly on a seasonal basis. Johnson (1991:160) speculated that people in the eastern part of Central Texas may not have had large base camps, instead they traveled from site to site in small groups; the Gatlin site data for the Early Archaic period supports this hypothesis. In fact, based on a study conducted as part of the Gatlin site analysis, only the Wilson-Leonard site was classified as an Early Archaic base camp out of 16 well-documented Early Archaic components in Central Texas. The other sites all appear to represent short-term, specialized activity sites (Houk et al. 2008).

Middle Archaic

The Middle Archaic is commonly dated to ca. 6000 to 4000 B.P. (Collins 2004:120). During the beginning of the Middle Archaic, from approximately 5750 to 5250 B.P., Johnson and Goode (1994:73) contend that a brief warm and dry period arose. Hudler (2000) also documents a major climatic shift towards warmer and drier conditions ca. 5300 B.P., followed by a very brief wet interval. Johnson and Goode (1994:73) also believe this dry period was followed by a short period of climatic amelioration between 5250 to 4600 B.P., with moderately wet and cool conditions.

The Middle Archaic is marked by a significant increase in archaeological sites on the Edwards Plateau. It is difficult to determine if this increase is due to a larger, denser population or an increase in residential mobility. In either case, there is abundant evidence that settlement and subsistence became more regionally specialized during this time. Burned rock hearths, scatters, and concentrations are common at Middle Archaic sites; however, none of these features is more pronounced than the burned rock midden, the use of which proliferated during the Middle Archaic (Black et al. 1997; Prewitt 1981; Shafer 1988). Widespread evidence supports an increased reliance on the processing of geophytes and succulent plant bulbs such as sotol, yucca, and lechuguilla in burned rock middens (Dering 1999).

The three distinct types of burned rock middens documented during the Middle Archaic are 1) sheet middens, 2) dome middens, and 3) annular middens (Mahoney et al. 2003). Sheet middens are loose accumulations of displaced and mixed burned rocks, usually derived from several burned rock features. The rock displacement may be caused by natural or cultural processes, including erosion, flooding, feature maintenance, and/or reuse. Dome middens are round, dome-shaped accumulations of burned rock that can be several feet thick. Dome middens form through repeated feature use and maintenance, thus resulting in a massive, dense accumulation of burned rock. Annular middens (also called crescent, ring, or donut middens) are circular or semicircular-shaped accumulations of burned rock with a centralized depression. Like dome middens, they may be several feet thick.

Early triangular dart points appear in the beginning of the Middle Archaic subperiod, around 5300 B.P. at the Gatlin site (Houk et al. 2008:Figure 13.2). This unstemmed type co-occurs with Bell and Andice points, which are basally notched, stemmed point forms (Mahoney et al. 2003; Sorrow et al. 1967). Wyckoff's (1995) research suggests that Bell and Andice points (also known as Calf Creek points) are intrinsically linked to bison hunting. Their appearance at the beginning of the Middle Archaic is presumably related to the return of bison to the area ca. 5000 B.P. Nolan and La Jita points, which have square to rectangular stems with weak, rounded, or abrupt shoulders, appear in the Central Texas archaeological record ca. 4800 B.P., and persist into the beginning of the Late Archaic (Houk et al. 2008: Figure 13.2).

Late Archaic

The Late Archaic began around ca. 4000 B.P. and lasted until ca. 1200 B.P., ending when the bow and arrow was introduced into Central Texas (Collins 2004:121). Late Archaic sites are more numerous than earlier Archaic period sites (Black 1989; Collins 2004), and some researchers argue that population increased during the Late Archaic (Johnson and Goode 1994; Prewitt 1981; Weir 1976). Increasingly complex cultural manifestations are characterized in the Late Archaic archaeological record and increased population size may have contributed to this complexity (Johnson and Goode 1994).

Territoriality issues may have also been more commonplace in the Late Archaic. This argument is somewhat supported by the development of more formal cemeteries in many areas of Texas (Hall 1981; Lukowski 1987; Taylor and Highley 1995). Burials from these cemeteries often contain grave goods, such as marine shell ornaments (from the Texas coast), boatstones (from Arkansas), and corner tang knives (from the Edwards Plateau). The presence of these items ultimately suggests that plateau populations participated in some form of a trade system during the Late Archaic (Hall 1981).

Compared to previous subperiods, an extremely diverse assemblage of projectile point forms was utilized during the Late Archaic. Pedernales, Kinney, and Tortugas points appeared at the beginning of the period. Pedernales points have bifurcated stems and a narrow to broad, often leaf-shaped blade (Turner and Hester 1999). Montell, Lange, Marshall, Williams, Marcos, Castroville, and Shumla points appear slightly later and for the most part are all broad-bladed points that generally have expanding stems and prominent, barbed shoulders. Many of these early Late Archaic points were apparently used for bison hunting (Dibble and Lorrain 1968).

Hot rock cooking technologies that developed in previous periods continued to be employed during the Late Archaic, and burned rock middens are a very common Late Archaic site feature. Many of the burned rock middens that formed during the Middle Archaic continued to be used by Late Archaic peoples (Black et al. 1997).

Late Archaic to Late Prehistoric Transition

As Collins (2004:122) notes, "diverse and comparatively complex archaeological manifestations toward the end of the Late Archaic attest to the emergence of types of human conduct without precedent in Texas." As is discussed in detail elsewhere in this report, various labels—Transitional Archaic (Johnson et al. 1962; Turner and Hester 1999), Terminal Archaic (Black 1989), and Late Archaic II (Johnson and Goode 1994)—have been applied to the end of the Archaic period. Although the names differ, these competing schemes generally begin after Marcos points appear in Central Texas, encompass the Fairland-Ensor-Frio point style intervals, and end with the Darl point type. The succeeding Late Prehistoric period began ca. 1200 B.P. with the introduction of the bow and arrow into Central Texas; the first widespread arrow point type was Scallorn, and it is commonly associated with the Austin phase/interval, or Late

Prehistoric I (Collins 2004; Johnson and Goode 1994). Bone-tempered ceramics are also indicative of the Late Prehistoric period, specifically the Toyah phase/interval, as will subsequently be discussed.

By the early part of the Late Archaic period, Central Texas was occupied by broad-spectrum foragers specializing in the resources available within specific ranges or territories. Arnn (2007:274–275) argues that the stabilization of climatic patterns during the Late Archaic allowed area-specific cultural material to emerge throughout the region. For example, the intensification in plant processing, evidenced by increased accumulation of rock oven features and burned rock middens, suggests an increasing reliance on a resource that is essentially fixed on the landscape (Arnn 2007:277).

Late Archaic groups did not exist in isolation, and the eventual spread of most Late Archaic point styles, particularly the later style types, as well as exotic materials such as marine shell and perhaps religious ideas, throughout the state suggests their participating in a “vast web of social relations” (Arnn 2007:277). Decorated bone ornaments, Gulf whelk shells, and atlatl weights of exotic stone are among the new types of materials to appear during the Late Archaic (Johnson and Goode 1994). Exotic materials are recovered from domestic contexts, as well as burials, suggesting they were a pervasive component in the life of Late Archaic peoples (Arnn 2007:277).

The end of the Archaic, then, was an interesting time in Central Texas; one that we are still struggling to understand. Arnn (2007:278–279) argues “that the Late Archaic Period may be viewed as a precursor (in terms of technology, subsistence, and settlement practices) to similar technologies and practices observed during the Late Prehistoric.” Framing the research within that context, one of continuity rather than change, may be a useful approach for investigating the transition from the Archaic to the Late Prehistoric. As is discussed elsewhere, Johnson and Goode (1994:40) characterize the termination of the Late Archaic as the most difficult and complex of all the period boundaries, noting that it may have ended either 400 years later with the Toyah phase, or even 400 years earlier, when small dart point types like Darl appeared.

As previously noted, the end of the Archaic period is marked by the appearance of a variety of small, side- and corner-notched dart point types including Fairland, Frio, Ensor, Ellis, and Edgewood (Turner and Hester 1999). Johnson and Goode (1994:37) point to social interaction with the eastern United States as a possible source for these new point types. These projectiles may have been part of a package of new cultural items related to the spreading of Eastern religious ideas as far as the Edwards Plateau—these included the exotic items noted above, such as marine shells and atlatl weights (Johnson and Goode 1994:37).

An important cultural trait of the Late Archaic is the appearance of formal cemeteries off the Edwards Plateau; on the plateau, sinkholes continued to be used as repositories for the dead. Cemeteries, where many of the exotic items noted above have been found, suggest that groups were tied to specific territories. Cemeteries are more common in the early Late Prehistoric, and many individuals buried in them show clear evidence of violent deaths (Johnson and Goode 1994:40). Prewitt (1982:Table 4) provides an exhaustive, if somewhat dated, list of cemeteries and burials in eastern Central Texas, and notes many incidences of Scallorn arrow points either with a skeleton or clearly imbedded in the skeleton.

Late Prehistoric Period

Introduction of the bow and arrow and later, ceramics, into Central Texas, marked the Late Prehistoric period. Population densities dropped considerably from their Late Archaic peak (Prewitt 1985:217). Subsistence strategies did not differ greatly from the preceding period, although bison again became an important economic resource during the late part of the Late Prehistoric period (Prewitt 1981:74). Use of rock and earth ovens for plant food processing and the subsequent development of burned rock middens

continued throughout the Late Prehistoric period (Black et al. 1997). Horticulture came into play very late in the region, but was of minor importance to overall subsistence strategies (Collins 2004:122).

In Central Texas, the Late Prehistoric period generally is associated with the Austin and Toyah phases (Jelks 1962; Prewitt 1981:82–84). Austin and Toyah phase horizon markers and Scallorn-Edwards and Perdiz arrow points, respectively, are distributed across most of the state. Violence and conflict often marked introduction of Scallorn and Edwards arrow points into Central Texas, with many excavated burials containing these point tips in contexts indicating they were the cause of death (Prewitt 1981:83). Subsistence strategies and technologies (other than arrow points) did not change much from the preceding Late Archaic period. Prewitt's (1981) use of the term "Neoarchaic" recognizes this continuity. In fact, Johnson and Goode (1994:39–40) and Collins (2004:122) state that the break between the Austin and Toyah phases could easily and appropriately represent the break between the Late Archaic and the Late Prehistoric.

Historic Period

Landscape features have dictated human movement and subsistence patterns for thousands of years. Specifically, geographical influences during the Historic Period (A.D. 1630 to present) confined settlements to riparian zones and limited farming to these areas. The surrounding rugged landscape was used for sheep, goat, and cattle ranching. These practices were introduced and promoted by the Spanish as part of their colonial agenda and many were carried through to the twentieth century, giving Texas a strong agricultural history which dominated economic, social and cultural patterns over the years (Freeman 1994). Accordingly, the following historic context emphasizes the changes to rural Texas in terms of its agricultural and economic history. These developments in effect dictate the social and political development of Central Texas as seen against the backdrop of broader Texas history in and around the Project Area.

The beginning of the late seventeenth and early eighteenth centuries was an era of more permanent contact between Europeans and Native Americans as the Spanish moved northward out of Mexico to establish settlements and missions on their northern frontier (see Castañeda [1936–1958] and Bolton [1970] for extended discussions of the mission system and Indian relations in Texas and Central Texas region). There is little available information on aboriginal groups and their ways of life, except for the fragmentary data Spanish missionaries gathered. In the San Antonio area and areas to the south, these groups have been referred to collectively as Coahuiltecan because of an assumed similarity in way of life, but many individual groups may have existed (Campbell 1988). This area also served as a point of contact between the southward-advancing Apaches and the Spanish, with native groups often caught in between. Disease and hostile encounters with Europeans and intruding groups such as the Apache were already wreaking their inevitable and disastrous havoc on native social structures and economic systems by this time.

Spanish Colonial/Mexican Independence Period (1630–1820)

The Spanish Colonial period (A.D. 1630–1821) may be characterized as the initial period of Aboriginal/European contact and European settlement in Texas. During this time, Central Texas was inhabited by several aboriginal groups including the Comanche, Kiowa, Apache, and Lipan Apache (Thompson 2018). Motivated more by a fear of French expansion than anything else, the Spanish explored and established missions in eastern and Central Texas during the latter part of the seventeenth century (Foster 1995). These early overland Spanish entradas utilized established aboriginal trade routes, with the first being led by Governor Alonso de León (1689 and 1690) (Foster 1995). José de Urrutia led the Spanish campaign against Apaches in 1739. In 1754, Pedro de Rabago y Teran passed through on his

way to the lands surrounding the San Saba River. Other early Spaniards in the area included Diego Ortiz Parrilla, who led a campaign against the Apaches in 1759, and the Marques de Rubi, who led an inspection of the northern Frontier of New Spain in 1767 (Thompson 2018). In 1808, Capt. Francisco Amangual commanded a military expedition from San Antonio to Santa Fe intended as a show of strength to the Plains Indians.

Establishment of the mission system in the first half of the eighteenth century to its ultimate demise around 1800 brought the peaceful movement of some indigenous groups into mission life, but others were forced or moved in to escape the increasing hostilities of southward-moving Apaches and Comanches. Many of the Payaya and Juanca lived at Mission San Antonio de Valero (the Alamo), but so many died there that their numbers declined rapidly (Campbell 1988:106, 121–123). By the end of the mission period, European expansion and disease and intrusions by other Native American peoples had decimated many local indigenous Native American groups. The small numbers of surviving Payaya and Juanca were acculturated into mission life, with the last references to the Payaya and Juanca recorded in 1754 and 1789, respectively, in the waning days of the mission (Campbell 1988:98, 123). By that time, intrusive groups such as the Tonkawa, Apache, and Comanche had moved into the region to fill the void. Outside of the missions, few sites attributable to these groups have been investigated. To complicate matters, many aboriginal ways of life endured even after contact with the Spanish. For example, the manufacture of stone tools continued even for many groups settling in the missions (Fox 1979). The nineteenth century brought the final decimation of the Native American groups and the U.S. defeat of the Apaches and Comanches and their removal to reservations.

Republic of Texas/Pre-Civil War (1836–1860)

During the Republic of Texas era, from 1836 to 1845, the Central Texas area remained an Indian stronghold until the 1860–1870s. On December 29, 1845, Congress signed the Texas Admission Act, the result of several years of annexation debate. A few months later, on February 19, members of the newly formed state government conducted a ceremony in front of the Capitol at Austin marking Texas' official annexation into the Union and the end of the Republic of Texas (Campbell 2003:186; Miller and Faux 1997:78).

The Post-Civil War to Twentieth Century (1865–1950)

Subsequent to the Civil War, Texas entered the Reconstruction period. To begin reconstruction, federal troops, in part, had to spread the word of the Emancipation Proclamation (Campbell 2003:268). In Galveston on June 19, 1865, General Gordon Granger and the Union army spread the word of the slaves' emancipation (Campbell 2003:268). Thus, this day became known as 'Juneteenth' and has been celebrated by Texas African Americans ever since (Campbell 2003:268).

Lawlessness became a problem during the 1880s, and Central Texas counties experienced a period of "mob rule." Citizens formed an anti-mob organization, but competing groups conducted essentially open warfare. After several people were killed, the Texas Rangers were dispatched to the area and order was eventually restored (Murphy 2018).

Recovery during this period was gradual, but was assisted by a diverse agricultural economy particularly cattle. In the 1870s, several major cattle trails heading to markets passed through Central Texas. One invention that had an effect on Texas and its economy during this time was barbed wire. Barbed wire, first demonstrated in 1871, enabled ranchers to alter land and control cattle in a less-intrusive, more profitable manner, and brought additional commerce and trade to central and South Texas (Campbell 2003). Though barbed wire was one of the largest influences on Texas in general, the most influential 'invention' on the

region was the railroad. The railroads effectively served as a means of transportation and, to varying degrees, generally bolstered growth in the economies of the region.

It was during this period that the communities of Hackberry and Vance were first established. Settlers moved into the area known as Hackberry in the 1880s. The town grew slowly, but enough to add a general store (the Hackberry Store) in the early 1900s, a post office within the general store in 1914, a private school (The Crawley School), run by an Englishman named Crawley in the early 1900s, and a one-room public school in the 1920s (Odintz 2018). By 1925, the community had an estimated population of 75 and by the 1930s Hackberry had two businesses. The population started to decline in the 1940s with only approximately 50 people now living in the community, and by 1948 Hackberry only had one school and a number of scattered dwellings. In 1953, the Hackberry school was consolidated with the Nueces Canyon School District, and by 1971 all that remained in the community was a cemetery and a few scattered dwellings. The community of Hackberry was still listed on state highway maps in 1990, however, in 2000 the estimated population was down to three (Odintz 2018).

In the early 1870s, Henry Wells settled near the confluence of the Nueces River and Bullhead Creek, just south of Bullhead Mountain. He was followed by others and they named their community Bullhead. A cemetery was established in 1875 when a man visiting Wells died and was buried on the family's land. In the early 1900s, Rancher Z. H. Pannell donated nearby land for the cemetery and a church, which was constructed in 1917 (THC 2018). The town was renamed in the 1880s after Xavier Wanz, noted for having pursued Indian raiders to recover stolen horses in the 1860s. His name was sometimes written Vance, and that was adapted for the new town name. Prior to the name change, the community served as the Edwards County seat until it was moved to Leakey. In 1913, parts of Edwards, Bandera, and Kerr Counties were combined to create Real County. By that time, Vance was already in decline. The post office lasted until 1955 and by the 1980s, only the church, cemetery, and a few dwellings remained (Minton 2018).

Throughout the twentieth century, trade, transportation, and tourism continued to bring economic prosperity to the region. The establishment of military facilities (e.g., Fort Hood and the activity surrounding World War I and World War II kept the railway system active and commercial activity in the east prospered. Through the remainder of the twentieth century, population in Central Texas increased largely due to expansion and commercial opportunities in urban and rural areas. The construction of public highways and automobiles facilitated the commuting of Central Texas citizens to urban employment.

BACKGROUND REVIEW AND SURVEY METHODS

Background Review

SWCA performed a cultural resources records review to determine if the proposed Project has been previously surveyed for cultural resources or if any archaeological sites have been recorded within or adjacent to the Project Area. To conduct this review, an SWCA archaeologist reviewed portions of the *Vance and Hackberry, Texas* USGS 7.5-minute topographic quadrangle maps on the THC Texas Archeological Sites Atlas (Atlas). These sources provided information on the nature and location of previously conducted archaeological surveys, previously recorded cultural resource sites, locations of National Register of Historic Places (NRHP) properties, sites designated as SALs, Official Texas Historical Markers, Registered Texas Historic Landmarks, cemeteries, and local neighborhood surveys. The review examined aerial photographs, Bureau of Economic Geology Maps, and the NRCS Web Soil Survey. SWCA archaeologists also examined the TxDOT Historic Overlay to identify the presence of potential historic-age structures.

The background literature review determined that no cultural resources surveys have been conducted and that no prehistoric or historic resources have been recorded within the Project Area. Fifteen archaeological sites (i.e., 41ED17, 41ED86, 41ED90, 41ED165, 41ED166, 41ED170, 41ED233–235, 41RE12, 41RE13, 41RE18, and 41RE84–86), one cemetery (Vance Cemetery), and one historical marker (Marker No. 5638) are located within 1 mile (1.6 km) of the Project Area (THC 2018; Figure 4). The historic map review revealed eight potentially historic-age structures adjacent to (within 350 feet [107 m] of) the current Project Area (USGS 2018b).

Fifteen archaeological sites have been recorded within 1 mile (1.6 km) of the current Project Area (see Figure 4; Table 2). Most of these sites are characterized as prehistoric burned rock middens; however, one site also has a historic-age farmstead component and another site contains a possible prehistoric burial and rock art (THC 2018). Several of the sites had very limited data available on the Atlas and therefore the site types and eligibility are considered unknown. All of the sites have an undetermined eligibility for inclusion in the NRHP or for designation as an SAL.

The background review determined that one cemetery, the Vance Cemetery, is within 1 mile (1.6 km) of the Project Area (see Figure 4). The cemetery is in Vance, Texas, in western Real County approximately 0.3 mile (483 m) south of the Project. This cemetery identification number is RE-C013 and is recorded as containing 550 interments that date from the late 1800s to the present (THC 2018). The cemetery will not be affected by the proposed Project.

The background review determined that one historical marker (Marker No. 5638) is located near the Project Area (see Figure 4). The marker commemorates the Vance Cemetery within Vance, Texas, and was erected in 1988 (THC 2018).

Historic Map Review

The historic map review revealed eight potentially historic-age structures adjacent (within 350 feet) to the Project Area (Foster et al. 2006; USGS 2018b). These structures are depicted on the 1971 *Joy Hollow*, 1971 *Hackberry*, and 1973 *Vance* USGS Quadrangle maps; four of the structures are located along the eastern side of the Project Area and the remaining four structures are along the western side. Current aerial imagery indicates that all these structures are extant; however, none are within the Project Area. One additional structure, not depicted on historic maps, was identified during the field investigations immediately adjacent (i.e., within 50 feet) to the Survey Area and, as such, was assessed by an architectural historian. A discussion of the historic standing structure is presented below.

Pedestrian Survey Field Methods

SWCA conducted an intensive archaeological survey of the Survey Area augmented by subsurface shovel testing. The investigations were of sufficient intensity to determine the nature, extent, and SAL eligibility of all cultural resources located within the Survey Area. The THC's minimum survey standards, require 16 shovel tests per mile, per 100 feet of corridor width with thorough documentation of all exceptions (e.g., disturbance, slope, and impervious surfaces). Based on these standards, the SWTTC Project Area required 74 shovel tests. SWCA attempted to excavate 75 shovel tests; however, 18 shovel tests were ultimately not excavated due to the presence of exposed bedrock and upland gravels on the surface. Given the prevalent exposed bedrock throughout the Survey Area and narrow Project corridor (i.e., 20 feet) the excavation of 57 shovel tests is considered to meet these standards.

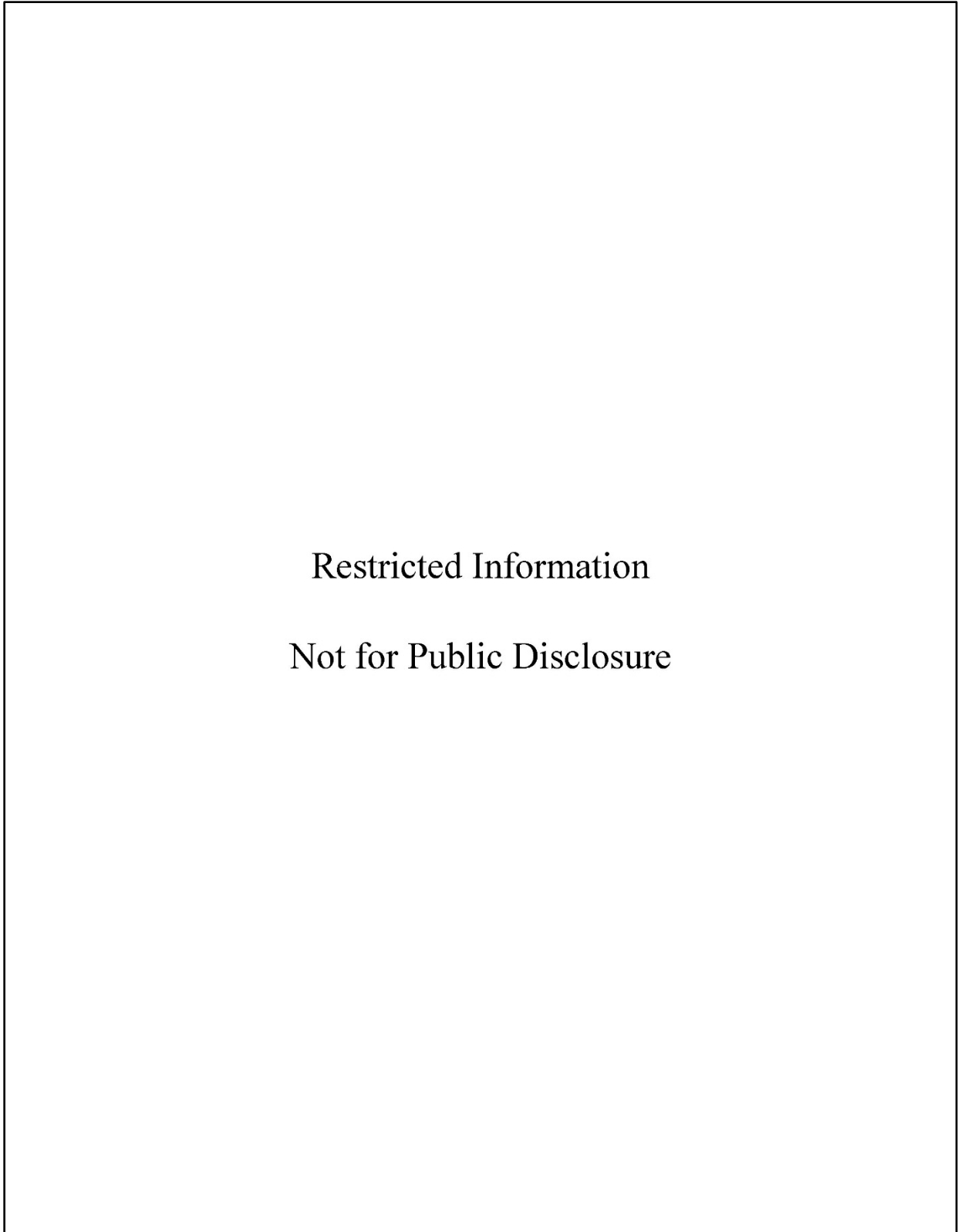


Figure 4. Background review results map.

Table 2. Previously Recorded Cultural Resources within a 1-mile Radius of the Project Area

Site Trinomial	Location	Site Type	Time Period	NRHP and SAL Eligibility Status	NRHP and SAL Recommendations	Comments
41ED17	West of Project Area	Unknown	Unknown	Unknown	Unknown	No site form available.
41ED86	Northwest of Project Area	Unknown	Unknown	Unknown	Unknown	No site form available.
41ED90	Northwest of Project Area	Unknown	Unknown	Unknown	Unknown	No site form available.
41ED165	West of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Three burned rock middens. Site location is approximated based on local informant.
41ED166	West of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Three burned rock middens. Site location is approximated based on local informant.
41ED170	West of Project Area	Unknown	Unknown	Unknown	Unknown	No site form available.
41ED233	West of Project Area	Burned rock midden; Farmstead	Late Prehistoric; 1880s	Undetermined	None on site form	Site does not appear to have well preserved buried deposits, however central ovens could be detected within middens.
41ED234	West of Project Area	Burned rock midden	Late Archaic	Undetermined	Further work	Site has well preserved, buried cultural deposits. It is likely that central features can be detected within middens.
41ED235	West of Project Area	Rockshelter; lithic procurement; rock art; burial site	Late Archaic; Late Prehistoric; Neo-American	Undetermined	Further work	Site is in danger of looting.
41RE12	East of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Limited data on site form.
41RE13	East of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Limited data on site form.
41RE18	East of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Limited data on site form.
41RE84	East of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Eleven burned rock middens. Site location is approximated based on local informant.
41RE85	South of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Four burned rock middens. Site location is approximated based on local informant.
41RE86	South of Project Area	Burned rock midden	Unknown prehistoric	Undetermined	None on site form	Two burned rock middens. Site location is approximated based on local informant.

The field survey consisted of a team of SWCA archaeologists systematically walking the entire Survey Area and examining the ground surface and erosional profiles for cultural resources. The utilization of subsurface exploration (i.e., shovel testing) was keyed to the level of disturbance and the nature of the soils, geology, and topography.

SWCA archaeologists employ both metric (centimeters and meters) and English units of measurement (inches and feet) when conducting investigations within the Project Area. In compliance with archaeological standard practices, investigations such as shovel tests, auger probes, and backhoe trenches are recorded using metric units. Prehistoric archaeological resources, such as camp sites, features, and artifacts, are also recorded using metric units, while historic resources, such as farmsteads and associated historic features, are recorded using English units.

Shovel tests measured approximately 30 centimeters (cm) in diameter and were excavated in arbitrary 20-cm levels to 1 m in depth, unless soil characteristics or bedrock precluded reaching that depth. The matrix from each shovel test was screened through ¼-inch mesh, and the location of each excavation was plotted using a hand-held global positioning system (GPS) receiver. Each shovel test was recorded on a standardized form to document the excavations. Archaeologists conducted one survey transect along the western side of the RR 335 where either cable or pole installation will occur.

If encountered, all archaeological sites located within the proposed Project would have been explored as much as possible with consideration to land access constraints to make recommendations for proper resource management (i.e., avoidance, non-avoidance, or further work). Additional shovel tests would have been excavated as appropriate based on field conditions in accordance with THC standards at all sites to define horizontal and vertical boundaries. SWCA would have completed appropriate State of Texas Archaeological Site Data Forms for each site discovered during the investigations. A detailed plan map of each site would have been produced and locations mapped with a Trimble GPS unit and plotted on USGS 7.5-minute topographic maps and relevant Project maps. SWCA conducted a non-collection survey. If discovered, artifacts would have been documented through notes and photographs in the field and then left in place.

FIELD SURVEY RESULTS

On April 11–12, 2018, SWCA archaeologists conducted an intensive pedestrian survey of the portions of the 8.9-mile-long (14.3-km-long) proposed Fiber Optic Cable Extension Project on state-owned lands (Appendix A). From north to south, the fiber optic line begins within private property on the east side of RR 335, within the community of Hackberry, Texas, and runs southwest for approximately 0.68 mile (1.1 km), where the Project alignment meets RR 335. The Project alignment follows the west side of RR 335 for approximately 3.1 miles (5.0 km), where it then shifts to the southwest back onto private property and runs south and southwest for approximately 3.1 miles (5.0 km) until it meets back up with RR 335 and follows the west side of RR 335 for the remainder of the Project alignment to the community of Vance, Texas. SWCA's investigations were limited to the 4.6-mile (7.4-km) long Survey Area within the RR 335 ROW.

The Survey Area is characterized by rolling uplands with prevalent bedrock and upland gravel exposures allowing for 50 to 100 percent ground surface visibility (Figure 5). Visual examination revealed the Survey Area has been extensively impacted by artificial and natural disturbances. In many cases the TxDOT RR 335 roadway has cut into the upland landscape by use of explosives and excavators, whereas other areas have been elevated with imported fill up to 30 feet (9.1 m) above the natural ground surface (Figures 6 and 7). Maintenance of the existing ROW (e.g., vegetation clearing and mowing) has hastened erosion, due to the lack of native vegetation. Archaeologists also noted overhead power lines, gravel driveways, and culverts within and adjacent to the existing ROW throughout the Survey Area (Figure 8).



Figure 5. Typical eroded surface with exposed bedrock and upland gravels, facing south.



Figure 6. Typical road cut through limestone bedrock, facing south.



Figure 7. Typical elevated roadway conditions with driveway disturbances, facing northwest.



Figure 8. Bridge-class culvert at the Nueces River crossing, facing north.

These modern disturbances have significantly altered the natural landscape and have minimized the potential for intact buried cultural deposits throughout the proposed Project corridor.

SWCA excavated a total of 57 shovel tests within the Survey Area, all of which were negative for subsurface cultural materials (Appendix A). An additional 18 shovel tests were attempted, but not excavated, due to the presence of exposed bedrock and upland gravels on the ground surface. Shovel tests typically revealed dark grayish brown (10YR 4/2) gravelly silt loam or clay loam overlying limestone bedrock. Most shovel tests (n=45) encountered bedrock between 5–15 cm below surface (cmbs) (2–6 inches), but a few shovel tests encountered bedrock as deep as 45 cmbs (18 inches) (Appendix B). No archaeological sites were identified within the Survey Area during the intensive pedestrian survey; however, SWCA identified one potentially historic standing structure immediately adjacent to the Survey Area (Appendix A: Figure A-3).

Standing Structure

SWCA archaeologists photographed one possible historic-age structure adjacent to the Survey Area for desktop review by the SWCA architectural historian. The structure is a small cabin located on the east side of RR 335, approximately 2.4 miles (3.9 km) south of the community of Hackberry, Texas (Appendix A: Figure A-3). The structure is a single-story, wood-frame cabin with a moderate pitch side gable roof clad with corrugated metal (Figure 9). Exterior cladding appears to have originally been wood board-and-batten siding; however, many of the battens are no longer extant. Only the openings for windows and doors remain. The cabin is elevated approximately 1.5 feet (0.5 m) on a pier and beam foundation and the piers are wood logs. Additional wood log piers extend beyond the east elevation, indicating the presence of a porch, which is no longer extant. The wood siding and log piers used to construct the cabin indicate that it is likely historic age; however, an exact date of construction could not be determined. The cabin is 26 feet (8 m) west of the Survey Area and will not be affected by the proposed Project.



Figure 9. Overview of historic-age cabin immediately adjacent to the Survey Area, facing west.

SUMMARY AND RECOMMENDATIONS

On behalf of SWTTC, SWCA conducted an intensive cultural resources survey for the RR 335 Fiber Optic Cable Extension Project in Edwards and Real Counties, Texas. The Project involves the installation of approximately 8.9 miles (14.3 km) of fiber optic telecommunication cable for SWTTC. Approximately 4.6 miles (7.4 km) of the cable will be installed within the ROW of RR 335, and the remaining 4.3 miles (6.9 km) will be installed within private lands; portions of the line will be installed overhead, with the remainder being installed underground via trenching and boring. Overall, the Project Area is approximately 8.9 miles (14.3 km) long, 20 feet (6 m) wide, and between 4–5 feet (1.2–1.5 m) in depth, encompassing about 21.7 acres. In specific locations (e.g., roads and drainages) where the buried utility will be HDD, the depth of impacts may extend to approximately 10 feet (3 m). SWCA systematically assessed the 4.6 mile-long (7.4-km-long) and 20-foot-wide (6-m-wide) portion of the Project Area on state-owned lands, encompassing 11.2 acres.

As the proposed Project occurs on land owned by TxDOT, a political subdivision of the state, the work was performed in compliance with the ACT under Texas Antiquities Permit No. 8390. Investigations consisted of a cultural resources background review of the Project Area and an intensive pedestrian archaeological survey with shovel testing of the Survey Area.

The background literature review determined that no cultural resources surveys have been conducted and that no prehistoric or historic resources have been recorded within the Project Area. Fifteen archaeological sites (i.e., 41ED17, 41ED86, 41ED90, 41ED165, 41ED166, 41ED170, 41ED233–235, 41RE12, 41RE13, 41RE18, and 41RE84–86), one cemetery (Vance Cemetery), and one historical marker (Marker No. 5638) are located within 1 mile (1.6 km) of the Project Area. The historic map review revealed eight potentially historic-age structures adjacent to (within 350 feet [107 m] of) the current Project Area (USGS 2018b). Current aerial imagery indicates that all these structures are extant; however, none are within either the Project or Survey Areas.

The intensive pedestrian survey revealed that the Project is within an eroded upland environment with a lack of Holocene deposition; shallow limestone bedrock; and prevalent disturbance related to roadway construction and maintenance, existing utilities, and erosion. The THC's survey standards require a minimum of 16 shovel tests per mile for linear surveys with a corridor width of less than 100 feet, in areas with less than 30 percent surface visibility and less than a 20 percent slope. Based on these standards, the SWTTC Project area required 74 shovel tests. SWCA attempted to excavate 75 shovel tests; however, 18 shovel tests were ultimately not excavated due to the presence of exposed bedrock and upland gravels on the surface. Given the prevalent exposed bedrock throughout the Survey Area and narrow Project corridor (i.e., 20 feet) the excavation of 57 shovel tests is considered to meet these standards. As a result of SWCA's investigations, one standing structure (a small historic-age cabin), was documented immediately adjacent to the Survey Area; the cabin is 26 feet (8 m) west of the Survey corridor and will not be affected by the proposed Project.

In accordance with the ACT, SWCA made a reasonable and good faith effort to identify cultural resources within the Survey Area. No archaeological sites were identified that meet the criteria for designation as an SAL, per 13 Texas Administrative Code 26.12; therefore, SWCA recommends that no additional cultural resources investigations should be warranted within the Survey Area, as currently defined.

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APPENDIX A

Survey Results Maps





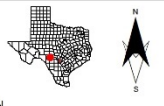
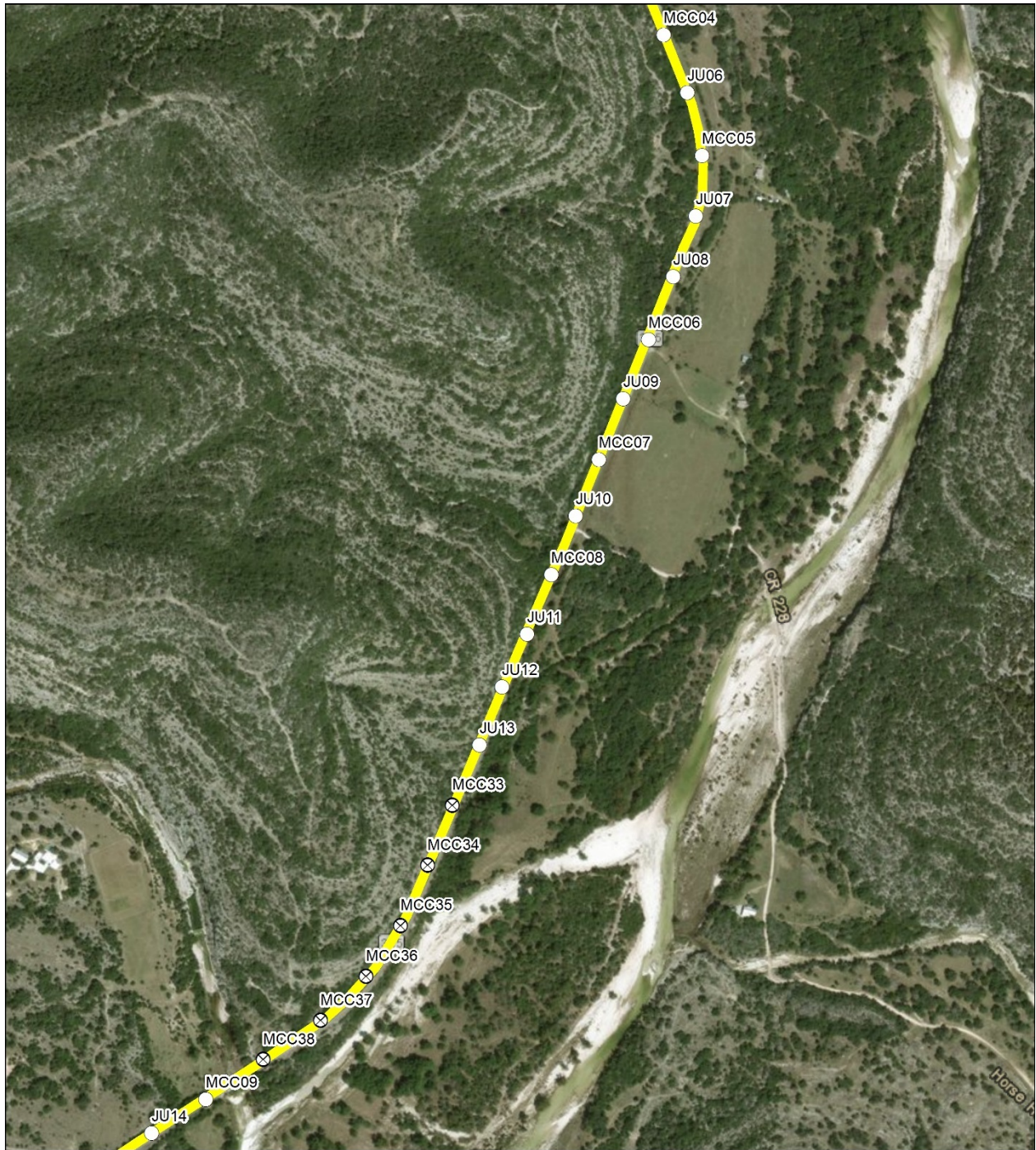
	<p>SWTTC RR 335 FIBER OPTIC</p> <p>SURVEY RESULTS MAP</p> <p>Page 1 of 7</p>	<ul style="list-style-type: none"> — Centerline Survey Area ○ Negative Shovel Test ⊗ Not Excavated 	<p>1:10,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>  
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Figure A-1










 <p>SWCA ENVIRONMENTAL CONSULTANTS</p>	<p>SWTTC RR 335 FIBER OPTIC</p> <p>SURVEY RESULTS MAP</p> <p>Page 2 of 7</p>	<ul style="list-style-type: none">  Centerline  Survey Area  Negative Shovel Test  Not Excavated 	<p>1:10,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>  
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Figure A-2






	<p>SWTTC RR 335 FIBER OPTIC</p> <p>SURVEY RESULTS MAP</p> <p>Page 3 of 7</p>	<ul style="list-style-type: none"> — Centerline Survey Area Negative Shovel Test ⊗ Not Excavated Historic Cabin 	<p>1:10,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>  
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Figure A-3





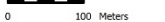

	<p>SWTTC RR 335 FIBER OPTIC SURVEY RESULTS MAP</p> <p>Page 4 of 7</p>	<p>— Centerline</p>	<p>1:10,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>   
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Figure A-4








	<p>SWTTC RR 335 FIBER OPTIC SURVEY RESULTS MAP</p> <p>Page 5 of 7</p>	<p>— Centerline</p>	<p>1:10,000</p>   <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>  
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Figure A-5





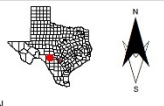
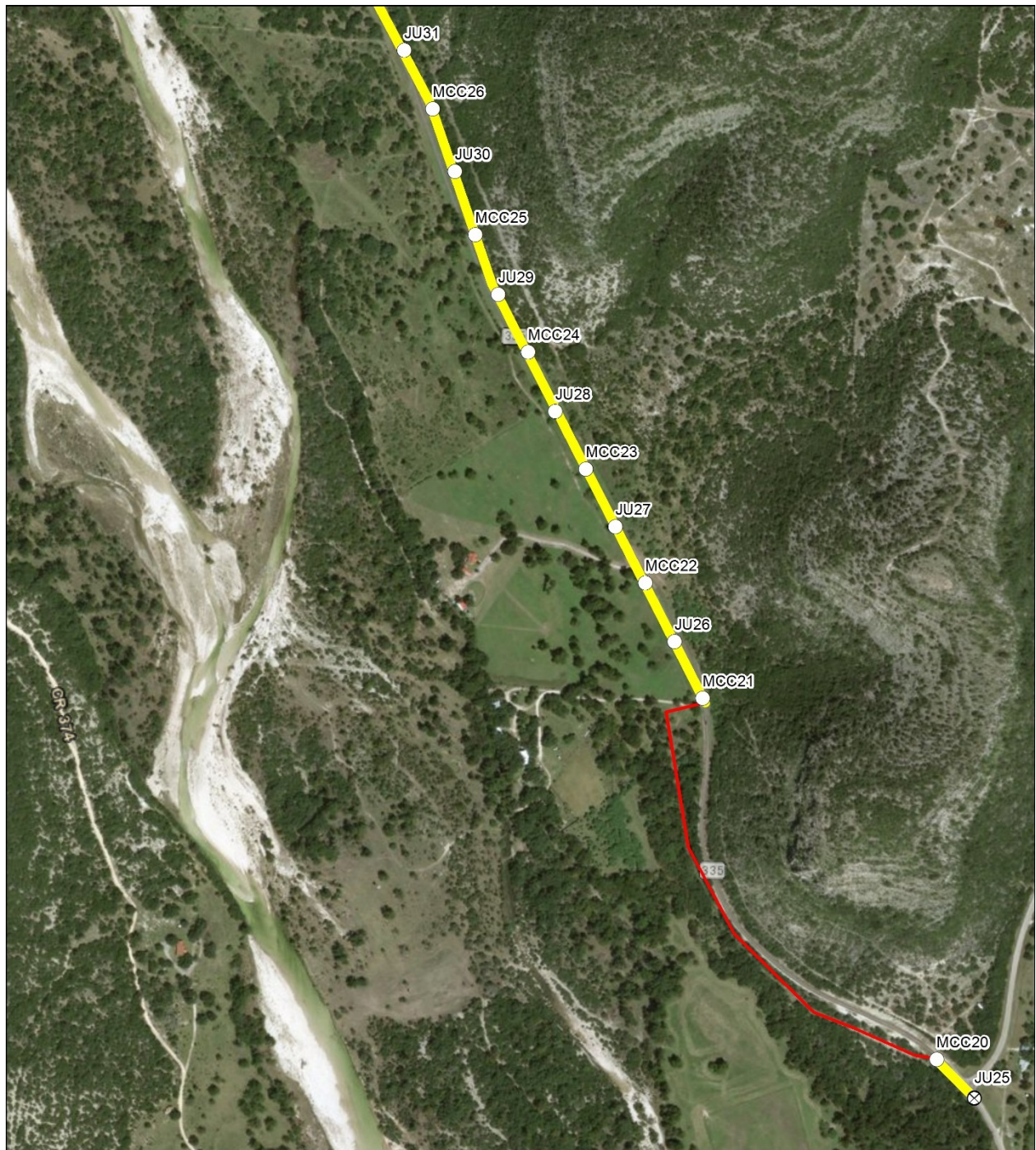
	<p>SWTTC RR 335 FIBER OPTIC</p> <p>SURVEY RESULTS MAP</p> <p>Page 6 of 7</p>	<ul style="list-style-type: none"> — Centerline Survey Area ○ Negative Shovel Test ⊗ Not Excavated 	<p>1:10,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>  
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Figure A-6










 <p>SWCA ENVIRONMENTAL CONSULTANTS</p>	<p>SWTTC RR 335 FIBER OPTIC SURVEY RESULTS MAP</p> <p>Page 7 of 7</p>	<ul style="list-style-type: none">  Centerline  Survey Area  Negative Shovel Test  Not Excavated 	<p>1:10,000</p> <p>Created By: J. Kainer Project Number: 49263 Date: 4/25/2018 NAD 1983 UTM Zone 14N</p>  
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Figure A-7

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APPENDIX B

Shovel Test Data

Intensive Cultural Resources Survey of the 8.9-Mile-Long Ranch Road 335 Fiber Optic Cable Extension Project, Edwards and Real Counties, Texas

Shovel Test No.	Level	Depth	Munsell	Texture	Inclusions	Positive/Negative	Comments
JU01	-	-	-	-	-	N	Not excavated due to roadway disturbance.
JU02	-	-	-	-	-	N	Not excavated due to bedrock on surface.
JU03	1	0-5	10YR 6/4	Sandy Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU04	1	0-5	10YR 6/4	Sandy Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU05	1	0-5	10YR 6/4	Sandy Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU06	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU07	1	0-5	10YR 6/4	Sandy Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU08	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU09	1	0-15	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU10	1	0-20	10YR 3/2	Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU11	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU12	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU13	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU14	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU15	1	0-15	10YR 3/2	Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU16	-	-	-	-	-	N	Not excavated due to bedrock on surface.
JU17	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU18	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.

Intensive Cultural Resources Survey of the 8.9-Mile-Long Ranch Road 335 Fiber Optic Cable Extension Project, Edwards and Real Counties, Texas

Shovel Test No.	Level	Depth	Munsell	Texture	Inclusions	Positive/Negative	Comments
JU19	1	0-5	10YR 6/4	Sandy Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU20	1	0-45	10YR 3/2	Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU21	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU22	1	0-10	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
JU23	-	-	-	-	-	N	Not excavated due to impervious cover.
JU24	-	-	-	-	-	N	Not excavated due to impervious cover.
JU25	-	-	-	-	-	N	Not excavated due to roadway disturbance.
JU26	1	0-15	10YR 3/2	Clay Loam	>20% Cobbles, Gravels	N	No cultural material encountered. Terminated at bedrock.
JU27	1	0-15	10YR 3/2	Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU28	1	0-5	10YR 5/2	Sandy Loam	>20% Road Gravels, Asphalt	N	No cultural material encountered. Terminated at disturbance.
JU29	1	0-10	10YR 6/3	Silt Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU30	1	0-25	10YR 4/3	Sandy Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU31	1	0-35	10YR 3/2	Clay Loam	>20% Cobbles, Gravels	N	No cultural material encountered. Terminated at bedrock.
JU32	1	0-5	10YR 4/3	Sandy Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU33	1	0-5	10YR 4/3	Sandy Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU34	-	-	-	-	-	N	Not excavated due to road gravels on surface.
JU35	1	0-5	10YR 3/2	Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU36	1	0-5	10YR 4/3	Sandy Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.
JU37	1	0-25	10YR 4/3	Sandy Clay Loam	>20% Gravels, Pebbles	N	No cultural material encountered. Terminated at bedrock.

Intensive Cultural Resources Survey of the 8.9-Mile-Long Ranch Road 335 Fiber Optic Cable Extension Project, Edwards and Real Counties, Texas

Shovel Test No.	Level	Depth	Munsell	Texture	Inclusions	Positive/Negative	Comments
MCC01	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC02	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC03	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC04	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC05	1	0-25	10YR 3/2	Silt Loam	5-10% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC06	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC07	1	0-40	10YR 4/2	Silt Loam	1-5% Gravels	N	No cultural material encountered. Terminated at thick clay..
MCC08	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC09	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC10	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC11	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC12	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC13	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC14	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC15	1	0-20	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC16	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC17	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC18	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC19	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.

Intensive Cultural Resources Survey of the 8.9-Mile-Long Ranch Road 335 Fiber Optic Cable Extension Project, Edwards and Real Counties, Texas

Shovel Test No.	Level	Depth	Munsell	Texture	Inclusions	Positive/Negative	Comments
MCC20	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC21	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC22	1	0-20	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC23	1	0-20	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC24	1	0-25	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC25	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC26	1	0-15	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC27	1	0-20	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC28	1	0-10	10YR 4/2	Silt Loam	10-20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC29	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC30	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC31	1	0-15	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC32	1	0-5	10YR 5/2	Silt Loam	>20% Gravels	N	No cultural material encountered. Terminated at bedrock.
MCC33	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC34	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC35	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC36	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC37	-	-	-	-	-	N	Not excavated due to bedrock on surface.
MCC38	-	-	-	-	-	N	Not excavated due to bedrock on surface.