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## Intensive Archeological Survey Of The Kegley Road Improvements City Of Temple, Bell County, Texas

Caitlin Gulihur

Ann M. Scott

David Yelacic

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## Intensive Archeological Survey Of The Kegley Road Improvements City Of Temple, Bell County, Texas

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# Cultural Resources Survey

## INTENSIVE ARCHEOLOGICAL SURVEY OF THE KEGLEY ROAD IMPROVEMENTS CITY OF TEMPLE, BELL COUNTY, TEXAS

January 22, 2018

Final Report – Public Copy

Terracon Project No. 96177014

Antiquities Permit No. 7963

Ann M. Scott, PhD, RPA, Principal Investigator



**Prepared for:**

Kasberg Patrick and Associates, LP  
Temple, Texas

**Prepared by:**

Caitlin Gulihur, MA, RPA, Ann M. Scott, PhD, RPA,  
and David Yelacic, MS, RPA  
Terracon Consultants, Inc.  
Austin, Texas

[terracon.com](http://terracon.com)

**Terracon**

Environmental



Facilities



Geotechnical



Materials

## ABSTRACT

The City of Temple has proposed the Kegley Road Improvements project where approximately 11,985 linear feet of Kegley Road, from Charter Oak Drive to Adams Avenue, will be expanded in southwest Temple, Bell County, Texas. The project engineer, Kasberg Patrick and Associates, LP, retained Terracon Consultants, Inc. to conduct a systematic, intensive pedestrian survey of the approximately 55-acre project area. Because the City of Temple, a political subdivision of the State of Texas, sponsored the project, the proposed undertaking is subject to compliance with the Antiquities Code of Texas and oversight from the Texas Historical Commission. In addition, the survey meets the standards for compliance under Section 106 of the National Historic Preservation Act of 1966, as amended, should a US Army Corps of Engineers permit be necessary or federal funding be utilized for the project. The cultural resources survey was carried out in advance of ground disturbance under Texas Antiquities Permit Number 7963, issued to Ann M. Scott, PhD, RPA, Principal Investigator. Fieldwork was carried out by Dr. Scott, with assistance from Project Geoarcheologist David Yelacic, MS and Project Archeologist Caitlin Gulihur, MA . Records from the project will be curated at the Center for Archaeological Studies at Texas State University.

The 11,985-linear-foot by 200-foot-wide alignment (55 acres) was considered the Area of Potential Effect (APE). Survey of the APE consisted of systematic pedestrian coverage, including discretionary shovel tests, as well as trenching to examine deeply buried soils. The work was carried out of April 13-14, 20, 2017. Several hundred linear feet of the alignment were recently plowed fields with 100 percent visibility. Several more hundred linear feet were heavily disturbed by utilities, a golf course, and the existing Kegley Road. Nine shovel tests were excavated in areas that had less than 30 percent ground visibility or placed in areas previously undisturbed. Two backhoe trenches were excavated. No artifacts were discovered during the excavation of the shovel tests or backhoe trenches. One isolated artifact, a historic ceramic sherd, and one isolated feature, a historic pit, were observed during this survey. No sites were recorded or revisited as a result of the survey. Therefore, there are no historic properties present within the alignment. It is Terracon's recommendation that there are no historic properties eligible for State Antiquities Landmark designation or National Register for Historic Places inclusion that will be affected by future construction of the Kegley Road expansion. Given the absence of historic properties within the APE, it is Terracon's recommendation that the proposed project be allowed to proceed as currently designed. In the unlikely event that human remains or intact cultural deposits are discovered during construction, those activities should cease in the vicinity of the remains and Terracon, the Texas Historical Commission's Archeology Division, or other proper authorities should be contacted.



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# **INTENSIVE ARCHEOLOGICAL SURVEY OF KEGLEY ROAD IMPROVEMENTS, CITY OF TEMPLE, BELL COUNTY, TEXAS**

Terracon Project No. 96177014

Antiquities Permit No. 7963

January 22, 2018

## **1.0 INTRODUCTION**

This report presents the findings from an intensive pedestrian survey of approximately 11,985 linear-foot by 200 linear-foot alignment, for proposed road improvements for the City of Temple, Bell County, Texas (Appendix A, Exhibits 1 and 2). The 55-acre survey was performed on behalf of the City of Temple, a political subdivision of the State of Texas. Therefore, the project is under the purview of the Texas Historical Commission (THC) in compliance with the Antiquities Code of Texas. In addition, the survey meets the standards for compliance under Section 106 of the National Historic Preservation Act of 1966, as amended, should a US Army Corps of Engineers permit be necessary or federal funding be utilized for the project. All work described herein was performed under Texas Antiquities Permit Number 7963, issued to Ann M. Scott, PhD, RPA Principal Investigator, and in adherence to Title 13, Chapter 26 of the Texas Administrative Code. The work was carried out on April 13-14, 20, 2017 by Dr. Scott, with assistance from Caitlin Gulihur, MA, and David Yelacic, MS.

Abiding by standards set forth by the Council of Texas Archeologists (CTA), this report includes descriptions of the project area, environmental setting, cultural and historical contexts, methods, results, and recommendations. The report was authored by Caitlin Gulihur, Project Archeologist, Ann M. Scott, Principal Investigator, and David Yelacic, Project Geoarcheologist.

## **2.0 AREA OF POTENTIAL EFFECT**

The project area, which is the same as the area of potential effect (APE), is approximately 55 acres. The project area is located at Kegley Road in Temple (See Appendix A, Exhibits 1 and 2). The project area begins on the south at the intersection of Kegley Road and Charter Oak Drive and ends just south of the intersection of Kelgey Road and Adams Avenue. This project will involve the construction of additional lanes for Kegley Road, sidewalks, and other safety features on both sides of the existing roadway.

## 3.0 ENVIRONMENTAL SETTING

Environments are composed of various interconnected elements such as underlying bedrock geology, soil, flora, fauna, and climate. It is important to consider environmental conditions of the past and present when assessing cultural resources.

In general terms, the project area is located near the transition between two large-scale biotic provinces or biomes, the Texas Cross Timbers Limestone Cut Plain and the Blackland Prairie (Griffith et al. 2007). Each of these biomes is characterized by a distinct set of physical and biological properties, and the transitional zone is known to have endemic plant and animal communities as well (Blair 1950). These transitional zones are known as ecotones, and they typically support relatively increased biological richness and diversity (Crumley 1994). Locally, the site is in the Northern Blackland Prairie ecoregion. Limestone Cut Plain begins west of the site. More specifically, the APE is nestled in the gently sloping plain and floodplain of Pepper Creek in the Brazos River Basin.

### 3.1 Geology

A factor that greatly contributes to the site setting is its location within the Balcones Fault Zone, which is a southwest to northeast aligned group of normal faults situated at the contact between the Edwards Plateau and the Gulf Coastal Plains. The fault system was most active during the Miocene as the Gulf subsided and pulled the Gulf Coastal Plain from the adjacent Edwards Plateau, and the normal fault created a physiographic feature known as the Balcones Escarpment (Spearing 1991; Swanson 1995). In this area, the Balcones Escarpment marks the boundary between the adjacent biomes, it affects weather patterns on either side, and its local topography creates ecological refuges for flora and fauna. The escarpment, however, is a relatively complex mosaic of underlying bedrock, some of which contain voids capable of holding vast amounts of freshwater and others containing chert that is used for stone tool-making.

The bedrock geology of the project area is identified as Buda Limestone and Del Rio Clay, undivided (Phanerozoic | Mesozoic | Cretaceous-Late periods) (Kbd) consisting of limestone, marlstone, mudstone, and interbedded clays, as well as marine mega fossils and chert nodules, which are common (Barnes 1992).

### 3.2 Soils

Soil formation is a function of local climate, biology, parent material, topography, and time, and so it is clearly tied to environment as defined above. Accordingly, soil can serve as a proxy for environmental conditions of the present and past. Defining soils as they are relevant to investigations of cultural resources, however, is useful because of how they are characterized and mapped by the Natural Resources Conservation Service, formerly Soil Conservation Service. Though agricultural in nature, county soil surveys provide a description of soil characteristics, including depth, color, inclusions, etc., which can be used to elucidate site formation processes.

Ten soils are mapped within the APE and are presented in Appendix A, Exhibit 3 (Huckabee et al. 1977; USDA NRCS 2017). Branyon clay, 1 to 3 percent slopes (ByB) is a deep (80 inches to bedrock), moderately well drained soil located on stream terraces. Branyon clay, 0 to 1 percent slopes (ByA) is a deep (80 inches to bedrock), moderately well drained soil located on stream terraces. Heiden clay, 1 to 3 percent slopes (HeB) is a deep (70 inches to bedrock), well drained soil located on ridges. Heiden clay 3 to 5 percent slopes (HeC) is a deep (70 inches to bedrock), well drained soil located on ridges. Ferris-Heiden complex, 5 to 12 percent slopes, moderately eroded (FeE2) is a deep (80 inches to bedrock), well drained soil located on ridges. Houston Black clay, 0 to 1 percent slopes (HoA) is a deep (104 inches to bedrock), moderately well drained soil located on plains. Lewisville silty clay, 1 to 3 percent slopes (LeB) is a deep (62 inches to bedrock), well drained soil located on stream terraces. Patrick soils, 1 to 8 percent slopes (PaD) is a deep (120 inches to bedrock), well drained soil located on paleoterraces. Payne loam, 1 to 3 percent slopes (PcB) is a deep (72 inches to bedrock), well drained soil located on stream terraces. Tinn clay, 0 to 1 percent slopes, frequently flooded (Ty) is a deep (80 inches to bedrock), moderately well drained soil located on flood plains.

### **3.3 Vegetation and Wildlife**

Flora and fauna of the ecotone include species that are representative of both the Texas Cross Timbers and the Texas Blackland Prairies as well as endemic species (Blair 1950). Major game species of the region include whitetail deer, javelina, and several species of bird, and pronghorn and bison were periodically present further back in history. The region's natural vegetation is typically a grassland-woodland-forest mosaic (Ellis et al. 1995).

The natural vegetation of the region was dominated by tallgrass prairie on uplands. Deciduous bottomland woodland and forest were common along rivers and creeks (Diamond and Smeins 1993). The Blackland Prairie is characterized by a high degree of plant community diversity. This diversity, which is in part represented by four major prairie community types, is attributable to the ecoregion's variety of soil orders and their variation in texture and soil pH (Diamond and Smeins 1985).

The Blackland Prairie was a disturbance-maintained system. Prior to European settlement (pre-1825 for the southern and pre-1845 for the northern half) important natural landscape-scale disturbances included fire and periodic grazing by large herbivores, primarily bison and to a lesser extent pronghorn. Fire and infrequent but intense, short-duration grazing suppressed woody vegetation and invigorated herbaceous prairie species. Bison herds, though reported for the Blackland Prairie, were far smaller than those found further west in the mixed and shortgrass prairies (Strickland and Fox 1993). Their impact was probably local with long intervals between grazing episodes. Bison were probably extirpated in the region by the 1850s.

### 3.4 Current and Past Climates

Temple has a climate classified as warm temperate (hot summers and cool winters), with precipitation ranging from 35 to 40 inches in an average year. Precipitation is less in the western part of the ecoregion and greater in the east (Bailey 2014).

Because most cultural resources originate in the period of time between the Last Glacial Maximum and the colonization of the western hemisphere by emigrants of the European continent, it is necessary to consider past climates, too. Since past climatic conditions cannot be observed (i.e., measurements did not begin in this region until the late 19<sup>th</sup> century), proxy data must be relied upon to reconstruct past conditions. Proxy data do not directly reflect past environments, but they can be used to infer conditions under which they form (Ellis et al. 1995).

Based on fossil pollens (Bousman 1998), phytoliths (Joines 2005), microfaunal remains (Toomey 1993), soil chemistry (Nordt et al. 2002), and speleothems (Musgrove et al. 2001), it is pretty clear that climatic conditions of the past approximately 20,000 years have steadily become warmer and increasingly arid with several punctuated episodes. The transition from the Pleistocene to the Holocene at approximately 11,700 years ago was marked by an increase in warmth and aridity. In addition to increased warmth and aridity, the Holocene has been characterized by increasing seasonal variation of temperatures and precipitation. Peak warmth and aridity occurred during the mid- to late-Holocene Altithermal. Following the Altithermal, conditions similar to the early-Holocene returned, but warmth and aridity increase to the present.

## 4.0 CULTURAL HISTORY

Generally, the cultural chronology of Central Texas can be divided into three periods, prehistoric, protohistoric, and historic. The protohistoric effectively marks the boundary between the prehistoric and historic periods, and is characterized by the initial introduction of Europeans into the western hemisphere. The following description of Central Texas' cultural history is a gross compilation of a vast suite of data and interpretations (cf. Collins 1995, 2004).

### 4.1 Prehistoric

The prehistoric people of Central Texas were primarily hunter-gatherers. Through the last 75-plus years of archaeological research in the region, identifiable and repeated patterns in artifact assemblages have indicated major shifts in subsistence strategies and technology through time. As a result, the prehistoric period now has three subdivisions: Paleoindian, Archaic, and Late Prehistoric.

The Paleoindian period (ca. 12,500-8800 years ago) includes the earliest human occupation of North America, which extends back into the late Pleistocene. During this time, people hunted large game, but they generally had a broad diet. This included plant foods, small game, in addition to megafauna that went extinct with the close of the Pleistocene (i.e., mammoth, mastodon, bison,

horse, camel, etc.). Technological traditions further subdivide the Paleoindian period into Early and Late.

The Archaic period (ca. 8800-1250 years ago) of Central Texas was the longest period in prehistory, and it is generally marked by the introduction of hot rock cooking in addition to the proliferation of a wide variety of diagnostic projectile points. Cooking with fire-heated rocks developed with increased reliance on plant foods, which may have been a response to diminishing game resources and ultimately climatic change or variation. This is not to say that human agency did not play an important role in the shift of economic and subsistence strategies. The Archaic period is subdivided into Early-, Middle-, and Late-Archaic periods, each with a slight variation in response to cultural shifts and ambient conditions.

The Late Prehistoric (ca. 1250-250 years ago) was a relatively brief period, but it was marked by a shift in weapon technology: the introduction of the bow-and-arrow. Like the Archaic, the Late Prehistoric people utilized hot rock cooking to process plants to edible forms. There also appeared to be increasing contact among groups, which resulted in increased trade of materials and evident competition over resources.

## **4.2 Protohistoric and Historic**

Spanish Entradas (expeditions) mark the onset of European influence in the New World. These explorations effectively scouted the new land and resulted in the settlement and establishment of missions spread throughout what has become northern Mexico and Texas. The Spanish entered into what is now central Texas along the *El Camino Real de los Texas*, but there is no evidence for a Spanish presence in what is now Bell County. During this time, European populations and influence steadily increased as native populations steadily diminished.

The area which would become Bell County was first settled in the 1830s. The county was formed in 1850 with Belton, then called Nolanville, as the county seat. The current boundaries of Bell County were established in 1860 (Connor and Odintz 2016). In the 1850s and 1860s, the economy of the county was largely focused on agriculture, mostly raising livestock such as cattle and sheep, although wheat, corn, and later cotton were also grown. Farming and ranching is still a major economic force in Bell County. During World War II, Fort Hood was established in the western part of the county. The fort, which is still in use today, greatly contributed to economic and population growth (Connor and Odintz 2016). Manufacturing is also an important part of the economy. As of 2014, the population of Bell County was roughly 329,000, with Killeen (138,000) as the largest city.

Temple was established in 1880 as a railroad construction camp. The population rose rapidly with the construction of stores, a post office, and a second rail line. Temple was incorporated in 1882 (Smyrl 2010). The population continued to grow due to the railroads and medical facilities in the city. Despite the population growth and the important railroad junctions, Temple never became the county seat of Bell County. From the 1920s until the 1990s, population grew to roughly 50,000,

with the manufacturing of many products as the basis of the economy (Smryl 2010). Temple was also the location for the state office of the United States Soil Conservation Services, as well as an agricultural experiment station. In 2000, the population was roughly 54,500.

## **5.0 METHODS**

The methods described below were employed to identify and characterize cultural resources present within the APE to the extent practicable. Desktop review focused on identifying previously known cultural materials, while fieldwork was used to both search for unknown cultural resources and gather more information based on the desktop review.

### **5.1 Desktop Review**

To search for known cultural resources within and in proximity to the APE, reviews of the Texas Archeological Sites Atlas (Atlas), the list of State Archeological Landmarks, and the National Register of Historic Places were conducted. Historic-period maps and aerial images that include the project area were reviewed for evidence that the location contained buildings or other features that may be considered historic (at least 50 years old).

### **5.2 Intensive Pedestrian Survey**

In order to examine the approximately 55-acre APE for previously unknown cultural resources, and to gather additional information based on the desktop review, an intensive pedestrian survey was conducted. Overall, the APE was covered in short grasses in pasture or consisted of grass and oak tree vegetation; overall ground surface visibility varied from 100 percent in plowed agricultural fields to 0 percent in other areas. The southern part of the alignment had generally poor ground surface visibility, but much of it was heavily disturbed by existing utilities (Appendix B, Photo 1). The northern end of the alignment on the western side of the road was mostly agricultural fields with 100 percent ground visibility (Appendix B, Photo 2). The northern end of the alignment on the eastern side of the road was severely disturbed from existing utilities and the construction of a golf course (Appendix B, Photo 3). The central part of the alignment on the western side of the road was severely disturbed by utilities. The central part of the alignment on the eastern part of the road had generally poor ground surface visibility (Appendix B, Photo 4). This part of the alignment was generally less disturbed than other portions, but it contained areas which were waterlogged and could not be surveyed (Appendix B, Photo 5). The ground surface in the APE was systematically inspected by two archaeologists walking parallel transects spaced not more than 10 meters (33 feet) apart, for 100 percent coverage of the alignment. Shovel tests were placed in areas that appeared to be previously undisturbed or had less than 30 percent visibility, which best describes the central portion of the project area, on the eastern side of the road (Appendix A, Exhibit 4b).

Shovel tests were excavated to varying depths that targeted Holocene-aged soils. Sediment was excavated in arbitrary 20-cm levels to depth and was passed through ¼-inch hardware mesh. Characteristics and contents of shovel tests were recorded with photographs, forms and notes,



and a hand-held global positioning system (GPS) unit; upon completion of excavation and documentation the unit holes and artifacts, if present, were backfilled.

Because the mapped soils within the alignment indicated deep soils, a condition that could potentially harbor buried archeological remains, mechanical trenching was also used during the survey. In addition, a review of the potential archeological liability maps (PALMs) developed by Texas Department of Transportation (TxDOT) geoarcheologist indicated that the majority of the project area has moderate to high potential for preserved, buried archeological resources. During the course of the field investigation, mechanical trenching was used to evaluate the potential for deeply buried materials in the APE. Trenches were approximately 3 to 5 meters long and about 1.5 meters wide and dug sufficiently to reach Holocene deposits. Trench excavation met safety standards set forth by Occupational Safety and Health Administration (OSHA). Select five-gallon bucket samples were examined from each arbitrary 50-centimeter excavation level. Samples were passed through ¼-inch hardware mesh and remaining sediment may be troweled through for evidence of cultural material. Trench data were recorded on forms and the trench locations were recorded with a GPS device. Photographs were also taken of the trench profiles. If present, artifacts discovered in trenches were examined in the field and not collected.

### **5.3 Artifact Analysis**

Artifacts encountered through the course of investigations were described and photographed on-site, and then returned to their respective places. The importance of the artifacts is in their capacity to relate temporal and other information about the former occupants of the site, and as such they are categorized according to their material and subdivided by unique or diagnostic characteristics.

### **5.4 National Register of Historic Places and State Antiquities Landmark Criteria**

For a historic resource to be deemed eligible for inclusion in the National Register of Historic Places (NRHP), the resource must be at least 50 years old and must possess significance and integrity. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location design, setting, materials, workmanship, feeling, and association and:

- a. That are associated with the events that have made a significant contribution to the broad patterns of our history; or
- b. That are associated with the lives of persons significant in our past; or
- c. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d. That have yielded, or may likely to yield, information important in our prehistory or history (36 CFR 60.4).

Additionally, the State of Texas affords important cultural resources a level of protection beyond that of NRHP status if the resource meets the criteria for listing as a SAL. SAL criteria are divided into four categories based on the type of resource: archaeological sites shipwreck, cache and collection, and historic structure. The criteria for archaeological sites are:

- 1) The site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
- 2) The site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interest of the site;
- 3) The site possesses unique or rare attributes concerning Texas prehistory and/or history;
- 4) The study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; and
- 5) There is a high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively, further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected (Title 13, Rule 26.10).

## **6.0 RESULTS**

### **6.1 Desktop Review**

A review of the Texas Archeological Sites Atlas database with emphasis on 0.5-mile buffer indicates that four previously known sites may be located within the APE and that only a portion of the APE has been previously surveyed. No State Antiquities Landmarks (SALs), Registered Texas Historic Landmarks (RTHLs), or NRHP properties are present in the buffer search. In addition, no mapped cemeteries or historical markers are present in the search area.

Four archeological sites are marked in the Atlas database as occurring adjacent to, and possibly within, the project area. The sites occur on the western side of the road, two in the northern portion of the APE and two in the southern portion. Two of the sites, 41BL1068 and 41BL1084, are recorded as having prehistoric and historic components. The other two sites, 41BL1066 and 41BL1067, are recorded as prehistoric archeological sites. Sites 41BL1066, 41BL1067, and 41BL1068 were recorded in 1996 by Brazos Valley Research Associates. Site 41BL1084 was also recorded by Brazos Valley Research Associates, in 1998. Site 41BL1066 was recorded as a campsite with surface and subsurface components. Lithic artifacts, mostly flakes, were observed on the surface; a scraper and a hearth discovered during mechanical trenching. Site 41BL1067 is recorded as a thin lithic scatter. Site 41BL1068 contains both historic and prehistoric components, although historic artifacts make up the majority of the artifacts at the site. Site 41BL1084 is also recorded as having both historic and prehistoric components. The prehistoric component was noted to be shallow, and the historic house which was at the site had been removed. The four sites were determined to be ineligible for listing in the NRHP by the THC.

Historic-period topographic maps dating back over 100 years cover the project area. Several years were examined including 1890, 1918, 1924, 1965, 1974, 1993, and 2012. The 7.5-minute quadrangle maps show one structure possibly within the APE, and several structures which appear to be outside the APE. Historic aerials were also reviewed, the earliest of which was dated 1943. Others were dated 1952, 1964, 1976, 1985, 1996, 2004, 2012, and 2014. The 1943 and later aerials show the historic structure possibly within the APE, and several historic structures which appear to be outside the APE.

## **6.2 Intensive Pedestrian Survey**

The intensive pedestrian survey resulted in the excavation of nine shovel tests in areas that were undisturbed and had less than 30 percent visibility (Appendix B, Photo 6). Two backhoe trenches were also excavated (Appendix A, Photo 7). The excavation of more backhoe trenches was planned, but the presence of buried utilities including electrical lines, water lines, wastewater lines, and gas lines greatly limited the locations in which trenches could be safely excavated. A high pressure gas line paralleled the western side of Kegley Road for almost the entire length of the APE, so no trenches could be safely excavated on the west side of the road.

One isolated artifact, a historic whiteware ceramic sherd with brown decoration, was observed (Appendix B, Photo 8). No other artifacts or historic features were observed in the vicinity of this isolated find, and the artifact had likely been deposited in the area by sheetwash from recent rains. One isolated historic feature, a rectangular pit, was also observed (Appendix B, Photo 9). No historic artifacts or other features were observed near the pit. The feature could not be dated, but it appears to be pre-1960s in age. The pit is located near where site 41BL1066 is marked in the Atlas database, but is not part of the site, as site 41BL1066 did not contain a historic component. No prehistoric features or artifacts or features which might be associated with 41BL1066 were observed in the area.

No other cultural material was observed during the course of this survey (Appendix A, Exhibit 4a, 4b, 4c). No cultural material was observed near the locations of site 41BL1067, site 41BL1068, or site 41BL1084. The sites are likely located outside of the APE of this project.

The soil in the shovel tests was predominately clay. Shovel tests were terminated at 50-60 centimeters below surface due to increasing amounts of calcium carbonates. No cultural material was observed during the excavation of the shovel tests. See Appendix C for details in the Shovel Tests Log.

### **6.2.1 Geoarcheology**

Two backhoe trenches were placed in the alignment (See Appendix A, Exhibit 4a and 4b). Samples of soil were screened for artifacts as presented in Methods section. Trenching did not reveal historic or prehistoric artifacts or features. David Yelacic, Project Geoarcheologist, summarizes the results of the trenching program below.

Backhoe Trench (BHT) 1 was located near the south end of Wildflower Country Club Golf Course just north of the club's maintenance road. The location was identified as having the potential for site burial because of proximity to Pepper Creek. BHT 1 was excavated approximately perpendicular to the creek and to Kegley Road, and the excavated pit measured approximately one meter wide, four meters long, and 1.5 meters deep. The profile exposure revealed what appeared to be a well-developed soil with an A horizon sitting atop a calcareous and clayey subsoil (Appendix B, Photo 10). No cultural materials were identified in the excavated sediment or in the profile exposure.

BHT 2 was excavated at the northern-most crossing of Pepper Creek into the top of a terrace situated more than 10 feet above the modern channel. The trench was oriented southwest-northeast, approximately perpendicular to the long axis of the channel, and the trench measured approximately one meter wide, four meters long, and 1.35 meters deep. The profile exposure of BHT 2 revealed a relatively thin soil atop gravelly clay parent material conveying water downslope (Appendix B, Photo 11). In other words, the trench was excavated below a water table, which was present in the gravelly subsoil. Trench excavation ceased at the water table, and so it was not clear if the sediment and water table was perched atop bedrock or another impenetrable material. Nonetheless, soil formation at the top of the profile indicated that the surface had been stable for relatively great period of time. No cultural materials were identified in the excavated sediment or in the profile exposure.

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

Terracon archaeologists conducted an intensive pedestrian survey of an approximately 11,985-linear-foot by 200-foot-wide (55-acre) area in advance of the proposed improvements to Kegley Road in Temple, Bell County, Texas. Nine shovel tests and two backhoe trenches were excavated. One isolated historic artifact and one isolated historic feature were observed. No archeological sites were recorded or revisited during the survey.

It is Terracon's opinion that there are no historic properties in the APE eligible for listing on the NRHP or designated as a SAL. Therefore, Terracon recommends that the project be allowed to proceed as future construction of the road expansion will not affect historic properties. In the unlikely event that human remains or intact cultural resources are discovered after the THC's review, activities should cease in the vicinity of the discovery and Terracon, the Texas Historical Commission's Archeology Division, or other proper authorities should be contacted.

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**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

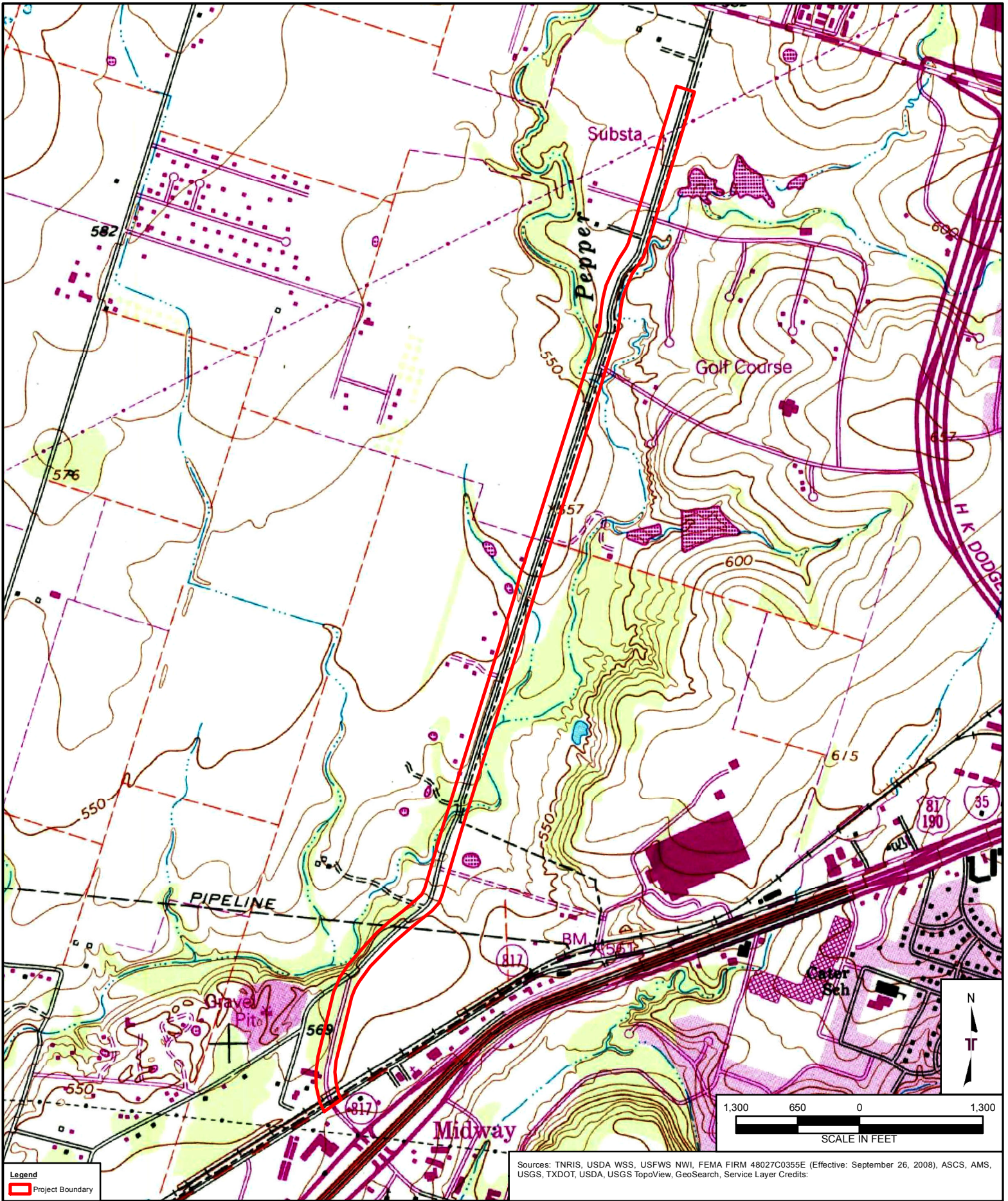
January 22, 2018 ■ Terracon Project No. 96177014



# **APPENDIX A**

## **Exhibit Maps**





Project Mng:	AS
Drawn By:	Terracon
Checked By:	JC
Approved By:	JH

Project No.	96177014
Scale:	AS SHOWN
File No.:	96177014
Date:	Feb 28, 2017

**Terracon**  
 Consulting Engineers & Scientists  
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735  
 PH. (512) 442-1122 FAX. (512) 442-1181

1993 USGS Topographic Map: Belton


**Kegley Road-Phases II, III & IV**  
 Kegley Road from Charter Oak Drive to Adams Avenue  
 Temple, Bell County Texas

EXHIBIT

1





**Legend**  
 Project Boundary

Sources: TNRIS, USDA WSS, USFWS NWI, FEMA FIRM 48027C0355E (Effective: September 26, 2008), ASCS, AMS, USGS, TXDOT, USDA, USGS TopoView, GeoSearch, Service Layer Credits:

Project Mngr:	AS
Drawn By:	Terracon
Checked By:	JC
Approved By:	JH

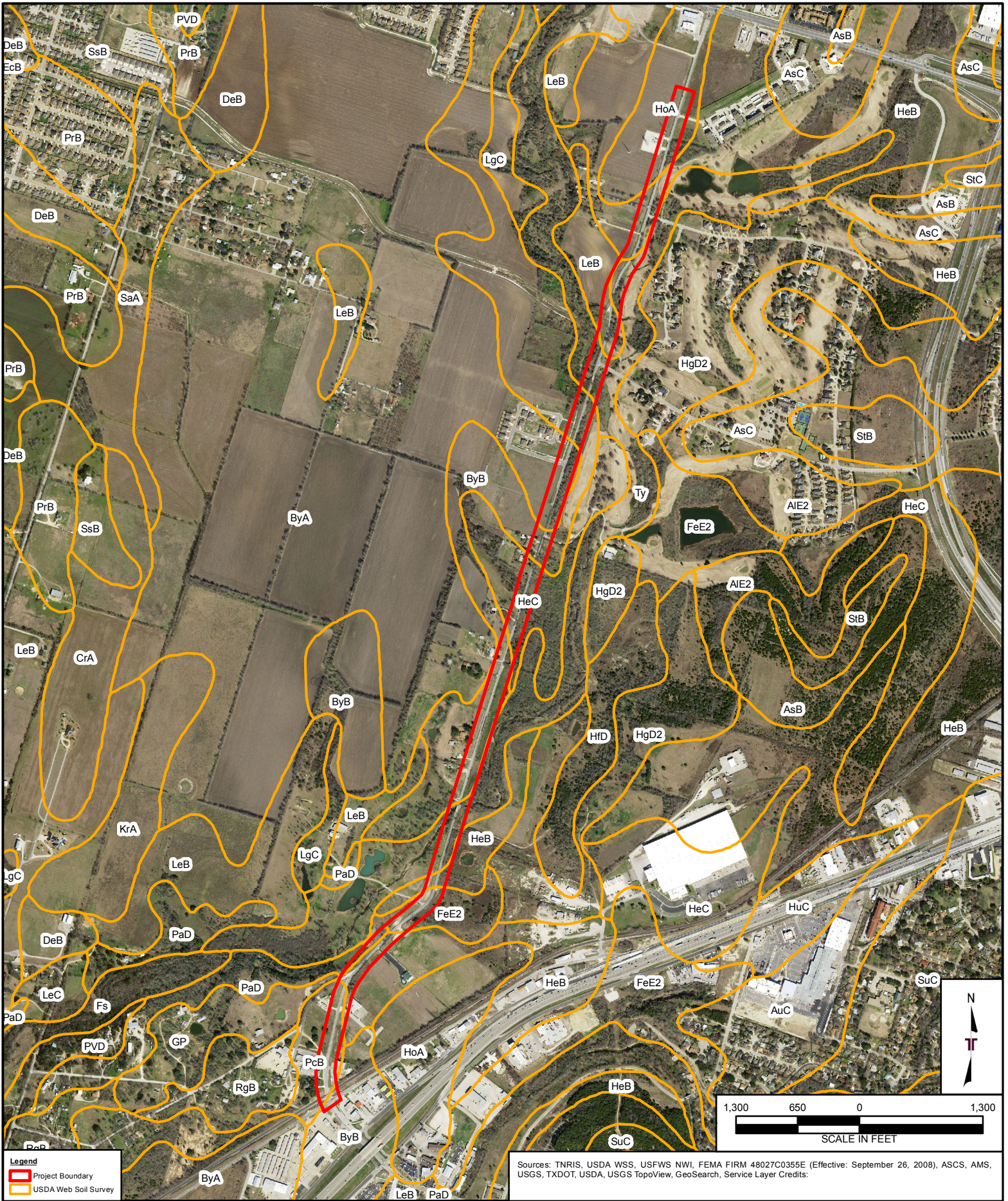
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Scale:	AS SHOWN
File No.:	96177014
Date:	Feb 28, 2017

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2015 Aerial Photograph  
 Kegley Road-Phases II, III & IV  
 Kegley Road from Charter Oak Drive to Adams Avenue  
 Temple, Bell County Texas

EXHIBIT  
 2





Project Mngr:	AS
Drawn By:	Terracon
Checked By:	JC
Approved By:	JH

Project No.:	96177014
Scale:	AS SHOWN
File No.:	96177014
Date:	Feb 28, 2017

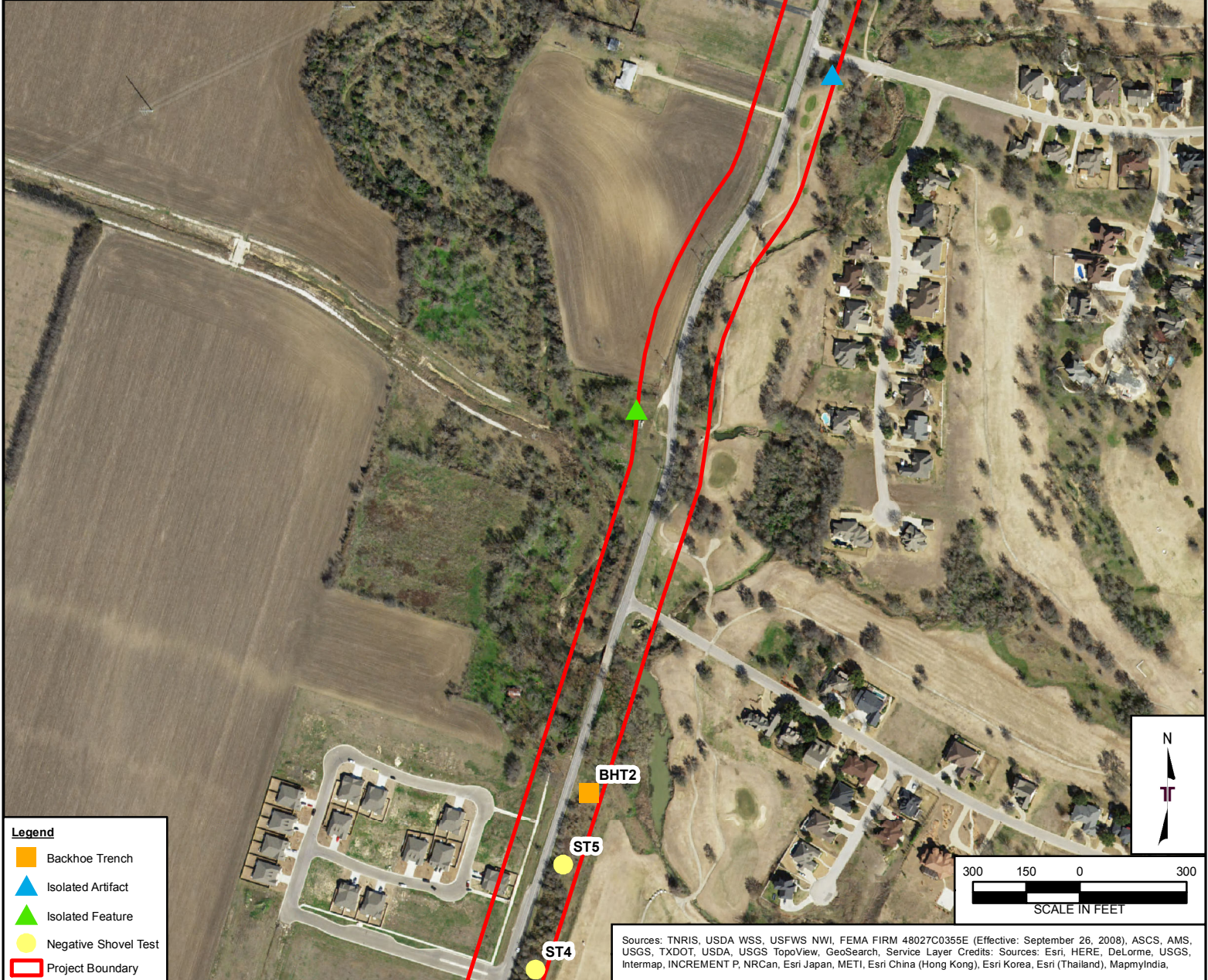
**Terracon**  
**Consulting Engineers & Scientists**  
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**USDA Soils Map**

**Kegley Road-Phases II, III & IV**  
 Kegley Road from Charter Oak Drive to Adams Avenue  
 Temple, Bell County Texas

EXHIBIT
3





- Legend**
- Backhoe Trench
  - ▲ Isolated Artifact
  - ▲ Isolated Feature
  - Negative Shovel Test
  - Project Boundary



Sources: TNRIS, USDA WSS, USFWS NWI, FEMA FIRM 48027C0355E (Effective: September 26, 2008), ASCS, AMS, USGS, TXDOT, USDA, USGS TopoView, GeoSearch, Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia,

Project Mngr:	AS
Drawn By:	Terracon
Checked By:	JC
Approved By:	JH

Project No.	96177014
Scale:	AS SHOWN
File No.:	96177014
Date:	Jun 12, 2017

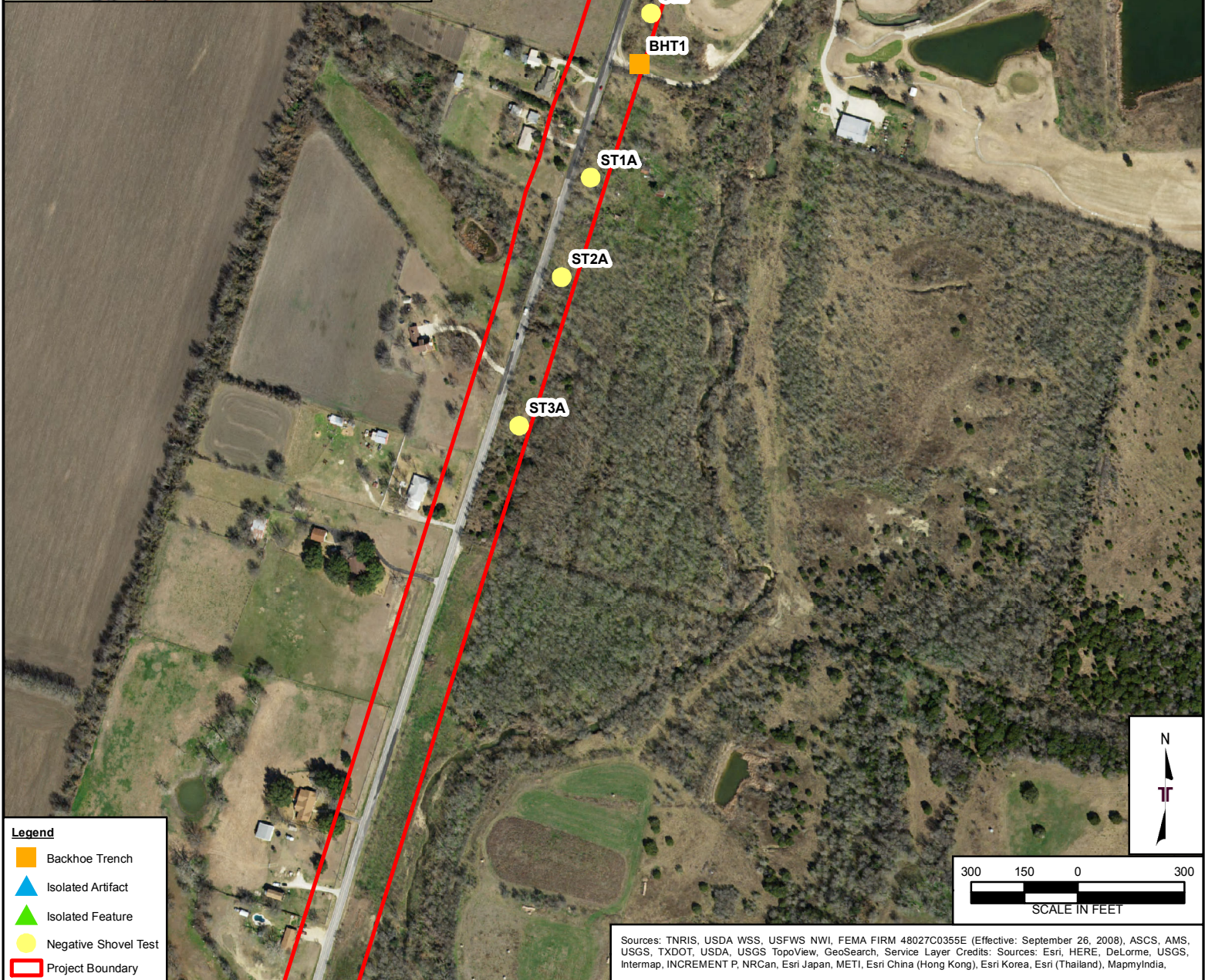
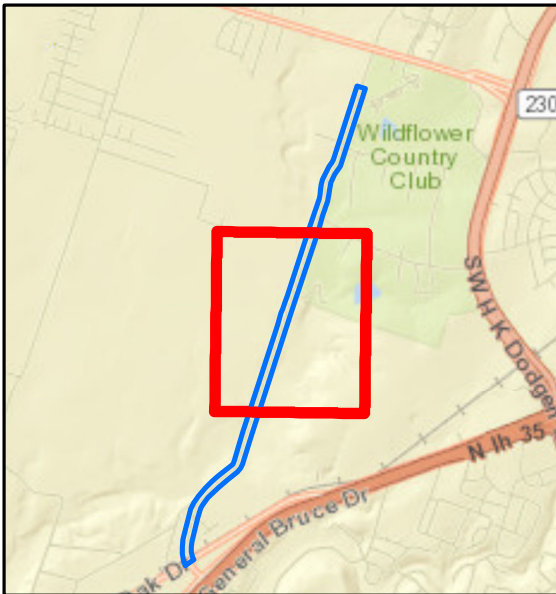
**Terracon**  
 Consulting Engineers & Scientists  
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 PH. (512) 442-1122 FAX. (512) 442-1181

**Results**

**Kegley Road-Phases II, III & IV**  
 Kegley Road from Charter Oak Drive to Adams Avenue  
 Temple, Bell County Texas

EXHIBIT  
**4a**





Legend	
	Backhoe Trench
	Isolated Artifact
	Isolated Feature
	Negative Shovel Test
	Project Boundary

Sources: TNRIS, USDA WSS, USFWS NWI, FEMA FIRM 48027C0355E (Effective: September 26, 2008), ASCS, AMS, USGS, TXDOT, USDA, USGS TopoView, GeoSearch, Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia,

Project Mngr:	AS
Drawn By:	Terracon
Checked By:	JC
Approved By:	JH

Project No.	96177014
Scale:	AS SHOWN
File No.:	96177014
Date:	Jun 12, 2017

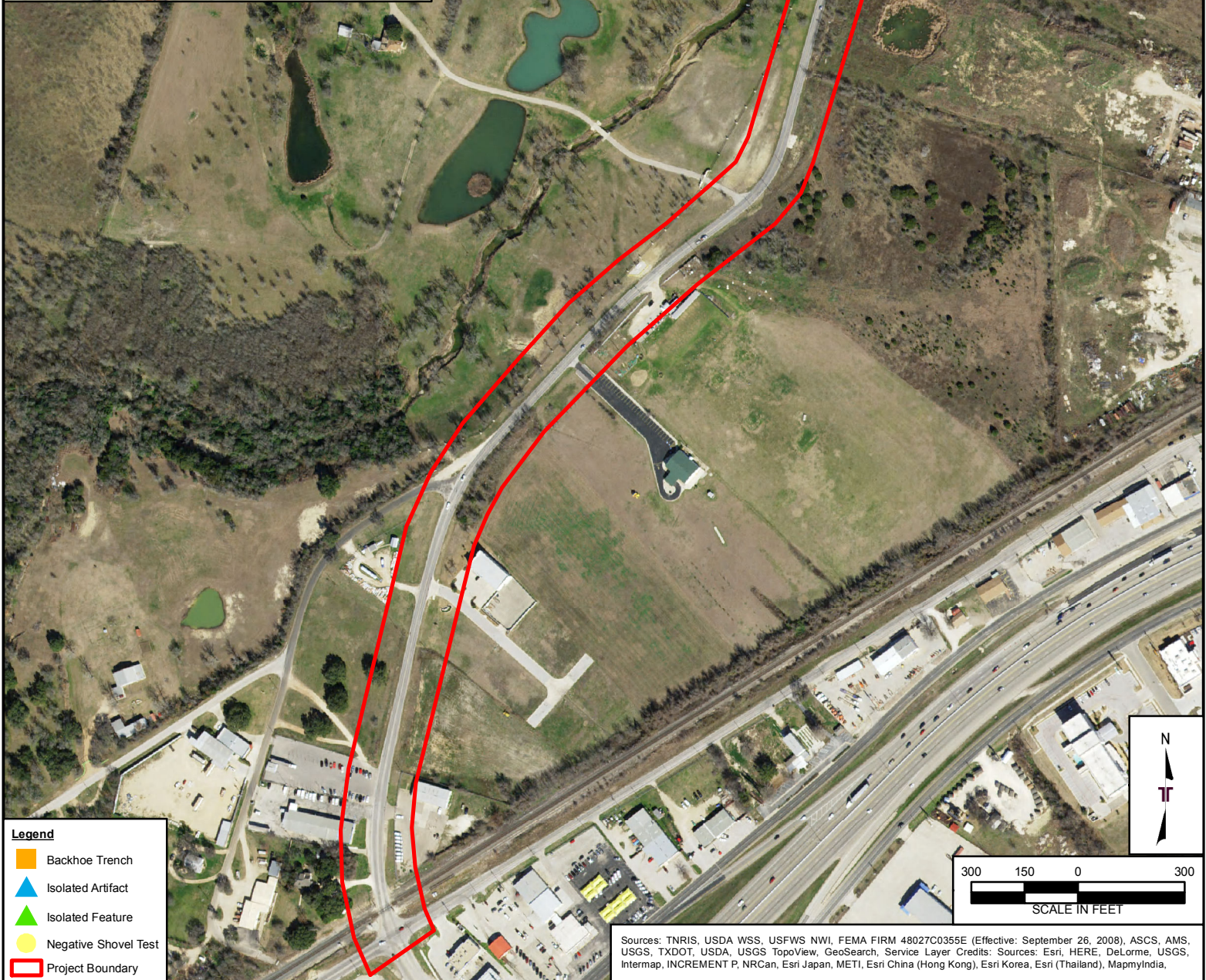
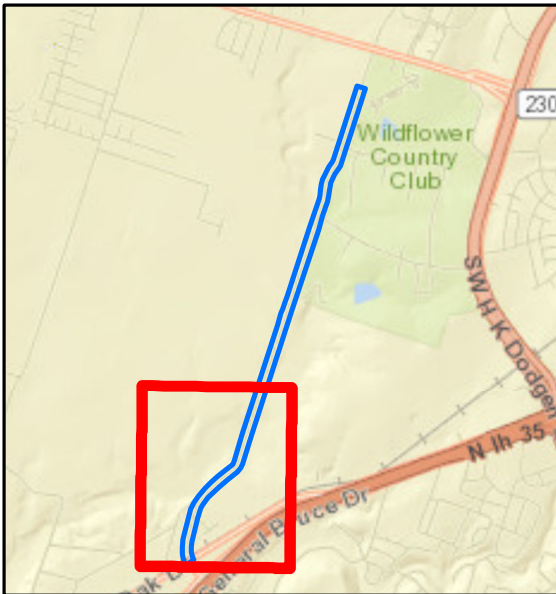
**Terracon**  
 Consulting Engineers & Scientists  
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735  
 PH. (512) 442-1122 FAX. (512) 442-1181

**Results**

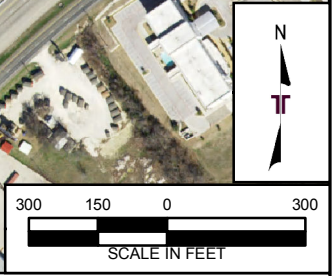
**Kegley Road-Phases II, III & IV**  
 Kegley Road from Charter Oak Drive to Adams Avenue  
 Temple, Bell County Texas

EXHIBIT  
**4b**





- Legend**
- Backhoe Trench
  - ▲ Isolated Artifact
  - ▲ Isolated Feature
  - Negative Shovel Test
  - Project Boundary



Sources: TNRIS, USDA WSS, USFWS NWI, FEMA FIRM 48027C0355E (Effective: September 26, 2008), ASCS, AMS, USGS, TXDOT, USDA, USGS TopoView, GeoSearch, Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia,

Project Mngr:	AS
Drawn By:	Terracon
Checked By:	JC
Approved By:	JH

Project No.:	96177014
Scale:	AS SHOWN
File No.:	96177014
Date:	May 31, 2017

**Terracon**  
 Consulting Engineers & Scientists  
 5307 INDUSTRIAL OAKS BLVD. - #160 AUSTIN, TX 78735  
 PH. (512) 442-1122 FAX. (512) 442-1181

**Results**

**Kegley Road-Phases II, III & IV**  
 Kegley Road from Charter Oak Drive to Adams Avenue  
 Temple, Bell County Texas

EXHIBIT  
**4c**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

January 22, 2018 ■ Terracon Project No. 96177014



## **APPENDIX B**

### **Photographs**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

Terracon Project No. 96177014 ■ Photos taken April 13-14, 20, 2017



**Photo 1. Southern end of alignment. Note sewer line. Other utilities in background. View to the south.**



**Photo 2. Northern end of alignment. Note good ground visibility and utilities in background. View to the north.**

**Responsive ■ Resourceful ■ Reliable**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

Terracon Project No. 96177014 ■ Photos taken April 13-14, 20, 2017



**Photo 3. Alignment near golf course. Note disturbances from utilities and ground modification from road and golf course. View to the north.**



**Photo 4. Alignment near Shovel Test 4. Note poor ground surface visibility. View to the north.**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

Terracon Project No. 96177014 ■ Photos taken April 13-14, 20, 2017



**Photo 5. Typical alignment with standing water near center of APE. Note wetland vegetation. View to the south.**



**Photo 6. Shovel Test 2a.**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

Terracon Project No. 96177014 ■ Photos taken April 13-14, 20, 2017



**Photo 7. Excavation of Backhoe Trench 1. View to the west.**



**Photo 8. Isolated historic artifact. Ceramic whiteware sherd with brown decoration.**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

Terracon Project No. 96177014 ■ Photos taken April 13-14, 20, 2017



**Photo 9. Isolated historic feature. Rectangular pit.**



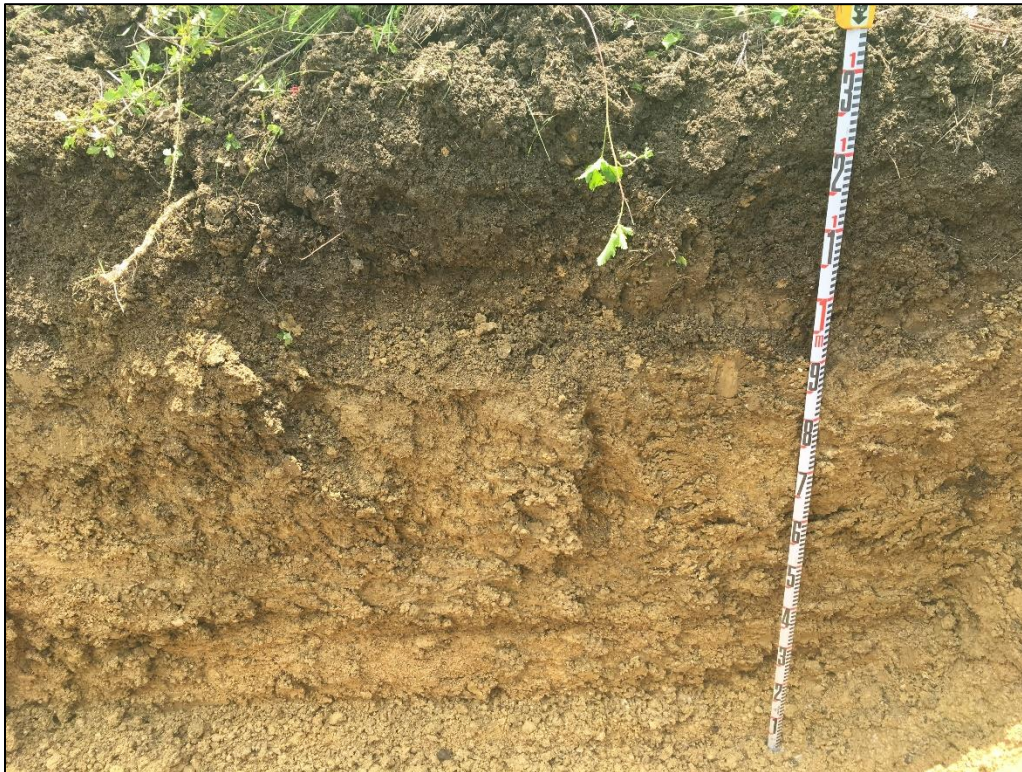
**Photo 10. Backhoe Trench 1, south wall profile.**



**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

Terracon Project No. 96177014 ■ Photos taken April 13-14, 20, 2017



**Photo 11. Backhoe Trench 2, southeast wall profile.**

**Cultural Resources Services**

Kegley Road Improvements ■ Temple, Bell County, Texas

January 22, 2018 ■ Terracon Project No. 96177014



## **APPENDIX C**

### **Shovel Test Log**



**Cultural Resources Services (Shovel Test Log)**

Kegley Road Improvements ■ Temple, Bell County, Texas

Shovel Tests from April 13-14, 20, 2017 ■ Terracon Project No. 96177014



ST ID #	Depth cmbs	+/-	Ground cover	Munsell & Color	Texture	% Gravels	Comments
01	0-20	-	100%	10YR 3/2 Very dark grayish brown	Clay	<1% medium gravel	Some small roots. Soil mottled with a lighter color. Lighter color becomes the main color from 20-40cm.
01	20-40	-	-	10YR 4/2 Dark grayish brown	Loamy clay	<1% very small gravels	Calcium carbonates increasing with depth. Larger roots near bottom of ST. Terminated due to roots and carbonates.
02	0-30	-	100%	10YR 3/2 Very dark grayish brown	Clay	<1% pea sized gravels	Some small roots, mottled with lighter soil.
02	30-50	-	-	10YR 4/2 Dark grayish brown	Loamy clay	<1% pea sized gravels	Calcium carbonates start around 30cm, increase with depth. Terminated due to carbonates.
03	0-50	-	100%	10YR 3/2 Very dark grayish brown	Clay	<1% pea sized gravels	Homogeneous. Calcium carbonates start around 25cm and increase with depth. Small rootlets in top 20 cm.
04	0-40	-	100%	10YR 2/2 Very dark brown	Clay	<1% gravels – mostly small, one large sandstone	Calcium carbonates starting to appear near bottom of ST. One fist sized non-cultural sandstone rock at 25-30cm. Terminated due to root.
05	0-35	-	100%	10YR 2/2 Very dark brown	Clay	0%	No gravels. Mottling appeared around 35cm. Lots of rootlets in this layer.
05	35-50	-	-	Same as above, with mottle color 10YR 6/6 Yellowish brown	Clay	0%	Mottled soil increases in amount with depth. Calcium carbonates appear near bottom of ST.

**Cultural Resources Services (Shovel Test Log)**

Kegley Road Improvements ■ Temple, Bell County, Texas

Shovel Tests from April 13-14, 20, 2017 ■ Terracon Project No. 96177014



ST ID #	Depth cmbs	+/-	Ground cover	Munsell & Color	Texture	% Gravels	Comments
1A	0-30	-	100%	10YR 4/2 Dark grayish brown	Clay	<.1%	Some root. Gradual transition to lower layer.
1A	30-60	-	-	2.5Y 5/3 Light olive brown	Clay	0%	Fine calcium carbonates appearing at 55cm.
2A	0-60	-	100%	10YR 4/2 Dark grayish brown	Clay	10%	Homogenous plastic clay. Gravelly.
3A	0-10	-	100%	2.5Y 5/3 Light olive brown	Clay	<2%	Few gravels.
3A	10-45	-	-	2.5Y 5/6 Light olive brown	Clay	5%	Terminated due to increasing calcium carbonates.
4A	-	-	-	-	-	-	Not excavated. No subsoil; gravels on surface. Good ground surface visibility.