Volume 2015 Article 240

2015

Intensive Cultural Resources Survey of the Pflugerville Independent School District's Proposed Timmeran Elementary School and Regional Stadium Tracts, Pflugerville, Travis County, Texas

Jeffrey D. Owens

Intensive Cultural Resources Survey of the Pflugerville Independent School District's Proposed Timmeran Elementary School and Regional Stadium Tracts, Pflugerville, Travis County, Texas

Intensive Cultural Resources Survey of the Pflugerville Independent School District's Proposed Timmeran Elementary School and Regional Stadium Tracts, Pflugerville, Travis County, Texas

By:

Jeffrey D. Owens

Texas Antiquities Permit No. 7205
HJN 150050 AR

Prepared for:

Pflugerville ISD
Pflugerville, Texas

Prepared by:

Horizon Environmental Services, Inc.
Austin, Texas

July 2015

Intensive Cultural Resources Survey of the Pflugerville Independent School District's Proposed Timmeran Elementary School and Regional Stadium Tracts, Pflugerville, Travis County, Texas

By:

Jeffrey D. Owens

Prepared for:

Pflugerville Independent School District
1401 West Pecan Street
Pflugerville, Texas 78660

Prepared by:

Horizon Environmental Services, Inc.
1507 South IH 35
Austin, Texas 78741

Jeffrey D. Owens, Principal Investigator
HJN 150050 AR

Texas Antiquities Permit No. 7205

July 2015

MANAGEMENT SUMMARY

Horizon Environmental Services, Inc. (Horizon) was selected by Pflugerville Independent School District (ISD) to conduct an intensive cultural resources inventory and assessment of the proposed locations of Pflugerville ISD's Timmeran Elementary School and Regional Stadium. The proposed Timmeran Elementary School tract consists of an approximately 6.6-hectare (16.3-acre) tract located northeast of and adjacent to the proposed Regional Stadium tract, which covers an area of approximately 15.0 hectares (37.1 acres). These adjacent tracts are located northwest of the intersection of Swenson Farms Boulevard and Farm-to-Market Road (FM) 1825, also known as West Pecan Street, in Pflugerville, Williamson County, Texas. For purposes of the cultural resources survey, the project area is assumed to consist of the combined 6.6-hectare (16.3-acre) Timmeran Elementary School tract and the 15.0-hectare (37.1-acre) Regional Stadium tract, which together cover an area of 21.6 hectares (53.4 acres).

The proposed undertaking is being sponsored by Pflugerville ISD, which represents a political subdivision of the state of Texas, on land owned by Pflugerville ISD; as such, the project falls under the jurisdiction of the Antiquities Code of Texas (Texas Natural Resources Code of 1977, Title 9, Chapter 191). In addition, the proposed project may require permitting under Section 404 of the Clean Water Act (CWA); as such, the project would additionally fall under the jurisdiction of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (P.L. 89-665; 80 Stat. 915; 16 USC §470 et seq.). As the project represents a publicly sponsored undertaking with the potential to impact significant cultural resources, Pflugerville ISD is required to provide for a cultural resources inventory of the project area.

On March 4, 2015, Horizon archeological technicians Briana Nicole Smith and Jared Wiersema, under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area to locate any cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologists traversed the combined 21.6-hectare (53.4-acre) project area in parallel, linear transects spaced no more than 30.5 meters (100.0 feet) apart and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The project area consists of an open, upland field that appears to have been used as farmland or pasturage in the past. Vegetation consists of sporadic clump grasses with scattered cedar, live oak, and hackberry trees. An unnamed tributary of Gilleland Creek flows northeastwards near the southeastern boundary of the project area. This tributary is shallowly incised into local bedrock and does not have any adjacent alluvial structures.

A gravel driveway enters the tract in the southwestern corner from FM 1825 and traverses the project area from southwest to northeast, paralleling its northwestern boundary. Formerly, this driveway provided access to a mid-20th-century farmstead formerly located on the tract to the northeast of the project area, but this farmstead is no longer extant. Remnant soils were relatively thin across the project area, typically consisting of shallow gravelly clay and clay loam, and limestone gravels and exposed bedrock were observed on the modern ground surface in many areas. The cultural resources survey was conducted under Texas Antiquities Permit No. 7205.

In addition to pedestrian walkover, the Texas State Minimum Archeological Survey Standards (TSMASS) require the excavation of 1 shovel test per 2 acres for project areas measuring between 11 and 100 acres in size; thus, a minimum of 27 shovel tests were required within the 21.6-hectare (53.4-acre) project area to meet the TSMASS. Horizon excavated a total of 27 shovel tests during the survey, thereby meeting the TSMASS for a project area of this size.

No cultural resources, historic or prehistoric, were identified within the project area as a result of the survey, including any cultural materials that potentially would have been associated with a mid-20th-century farmstead formerly located on the tract to the northeast of the current project area. This farmstead once consisted of as many as 5 standing structures, including 1 outbuilding that would have fallen within the northwestern corner of the current project area, though all of the buildings had been demolished or moved by 2006. No evidence of this former farmstead was observed within the current project area during the survey.

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. In accordance with 36 CFR 800.4, Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified within the project area that meet the criteria for listing on the National Register of Historic Places (NRHP) according to 36 CFR 60.4 or for designation as State Antiquities Landmarks (SAL) according to 13 TAC 26, and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the Texas Historical Commission (THC) should be notified immediately.

TABLE OF CONTENTS

LIST OF FIGURES

Page

LIST OF TABLES

Page

1.0 INTRODUCTION

Horizon Environmental Services, Inc. (Horizon) was selected by Pflugerville Independent School District (ISD) to conduct an intensive cultural resources inventory and assessment of the proposed locations of Pflugerville ISD's Timmeran Elementary School and Regional Stadium. The proposed Timmeran Elementary School tract consists of an approximately 6.6-hectare (16.3-acre) tract located northeast of and adjacent to the proposed Regional Stadium tract, which covers an area of approximately 15.0 hectares (37.1 acres). These adjacent tracts are located northwest of the intersection of Swenson Farms Boulevard and Farm-to-Market Road (FM) 1825, also known as West Pecan Street, in Pflugerville, Williamson County, Texas. For purposes of the cultural resources survey, the project area is assumed to consist of the combined 6.6-hectare (16.3-acre) Timmeran Elementary School tract and the 15.0-hectare (37.1-acre) Regional Stadium tract, which together cover an area of 21.6 hectares (53.4 acres) (Figures 1 and 2).

The proposed undertaking is being sponsored by Pflugerville ISD, which represents a political subdivision of the state of Texas, on land owned by Pflugerville ISD; as such, the project falls under the jurisdiction of the Antiquities Code of Texas (Texas Natural Resources Code of 1977, Title 9, Chapter 191). In addition, the proposed project may require permitting under Section 404 of the Clean Water Act (CWA); as such, the project would additionally fall under the jurisdiction of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (P.L. 89-665; 80 Stat. 915; 16 USC §470 et seq.). As the project represents a publicly sponsored undertaking with the potential to impact significant cultural resources, Pflugerville ISD is required to provide for a cultural resources inventory of the project area.

On March 4, 2015, Horizon archeological technicians Briana Nicole Smith and Jared Wiersema, under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area to locate any cultural resources that potentially would be impacted by the proposed undertaking. The cultural resources investigation consisted of an archival review, an intensive pedestrian survey of the project area, and the production of a report suitable for review by the State Historic Preservation Office (SHPO) in accordance with the Texas Historical Commission's (THC) Rules of Practice and Procedure, Chapter 26, Section 27, and the Council of Texas Archeologists' (CTA) Guidelines for Cultural Resources Management Reports. The cultural resources survey was conducted under Texas Antiquities Permit No. 7205.

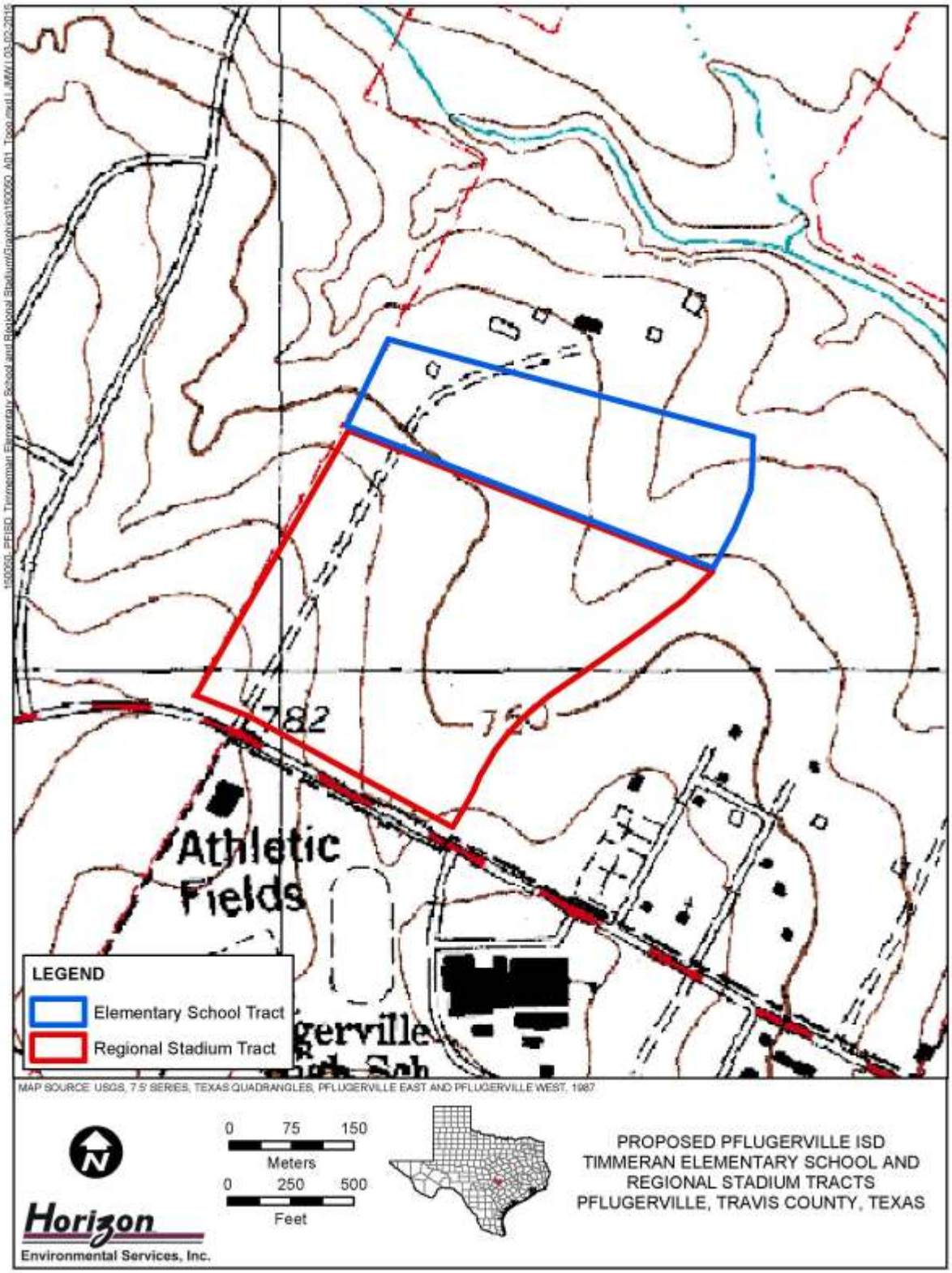

Figure 1. Location of Project Area on USGS Topographic Map

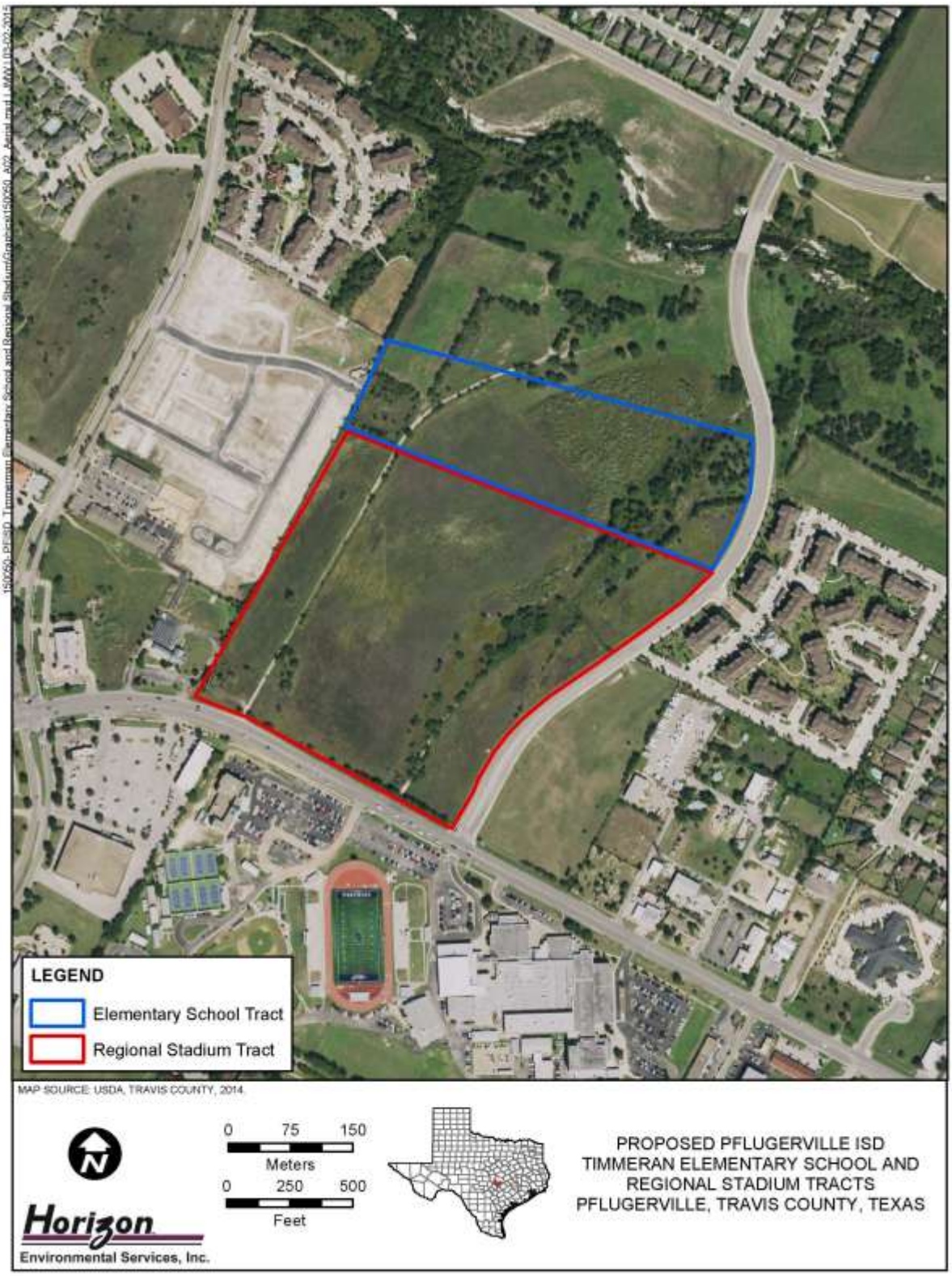

Figure 2. Location of Project Area on Aerial Photograph

Following this introductory chapter, Chapters 2.0 and 3.0 present the environmental and cultural backgrounds, respectively, of the project area. Chapter 4.0 describes the results of background archival research, and Chapter 5.0 discusses archeological survey methods. Chapter 6.0 presents the results of the archeological survey, and Chapter 7.0 presents archeological management recommendations for the project. Chapter 8.0 lists the references cited in the report, and Appendix A summarizes shovel test data.

2.0 ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND HYDROLOGY

The project area is located in northeastern Travis County, Texas, near the boundary of 3 significant physiographic provinces—the Blackland Prairie, the Edwards Plateau, and the Gulf Coastal Plain. The Blackland Prairie, within which the project area is situated, is a narrow physiographic zone between the Edwards Plateau to the west and the Gulf Coastal Plain to the east. It is a low, rolling land that extends in a narrow band along the eastern edge of the Balcones fault zone from the Red River Valley in northeastern Texas to the southern edge of the Edwards Plateau. This is an area of low topographic relief and poor drainage in which water often ponds after rainstorms and streams flow at very gentle gradients. The Edwards Plateau and Balcones Escarpment are associated with a great fault system that arcs across Texas to form a distinct boundary between uplands composed primarily of limestone bedrock and lower plains composed mostly of softer rocks. In places, this boundary is marked by an abrupt scarp (the Balcones Escarpment) and in others by a more gradational ramp, but the entire length of this transition zone is a major ecotone in terms of topography, bedrock, hydrology, soil, vegetation, and animal life. The project area is situated on an upland formation that overlooks Gilleland Creek to the north. Elevations within the project area slope down gently to the northeast, following a drainage feature that drains the project area into Gilleland Creek, with elevations ranging from approximately 224.1 to 239.3 meters (735.0 to 785.0 feet) above mean sea level (amsl).

Hydrologically, the project area is situated within the Colorado River basin. Gilleland Creek flows generally southeastwards to the north of the project area, eventually discharging into the Colorado River near Webberville in southeastern Travis County. The Colorado River in turn flows southeastwards across the Blackland Prairie and the Gulf Coastal Plain, ultimately discharging into the Gulf of Mexico a short distance northeast of Matagorda Bay.

2.2 GEOLOGY AND GEOMORPHOLOGY

The project area is underlain by a thick sequence of Cretaceous-age, sedimentary rock strata. In Travis County, soils formed primarily over sedimentary deposits of Upper Cretaceous age, and soil parent material consists of chalk, marl, limestone, and marly limestone. In the northern part of Travis County, soils formed over the Upper Cretaceous Austin Chalk (Kau), Navarro Group and Marlbrook Marl ("Upper Taylor Marl"), and Pecan Gep Chalk and Ozan

("Lower Taylor Marl") geological formations. Late Pleistocene- and Holocene-age alluvial deposits are common adjacent to some of the more prominent streams, creeks, and rivers in Travis County (Fisher 1974).

Geomorphologically, 5 specific soil units are mapped within the project area (Table 1; Figure 3) (NRCS 2015). These soils are typical of upland Blackland Prairie soils and consist of residuum weathered from the underlying Austin Chalk Formation on ridges. Typical soil profiles consist of a shallow, surficial veneer of silty clay, gravelly loam, and silty clay loam overlying bedrock. No Holocene-age soils or alluvial sediments are mapped within the project area.

While aboriginal cultural resources are commonly encountered in deep alluvial sediments adjacent to major streams in Central Texas, the relative antiquity of the pre-Holocene-age uplands in the project area suggests that any cultural resources would be constrained to the modern ground surface and/or in shallowly buried contexts in erosional settings lacking integrity and depth. Historic-era resources may occur in virtually any physiographic setting. Intact, buried archeological deposits may occur within alluvial sediments near major streams, though no Holocene-age alluvial sediments are mapped within the current project area. The soils within the project area consist of clayey sediments that developed in situ from underlying bedrock. Erosion has been relatively extensive within the project area, and no Holocene-age alluvial sediments are mapped within the project area that have the potential to contain buried, intact archeological deposits. Other things being equal, any cultural resources associated with the soils mapped in the project area would be expected to occur on the modern ground surface or in shallowly buried sediments in deflated, eroded contexts that would lack stratigraphic integrity.

Table 1. Mapped Soils Located within Project Area

Soil Name	Soil Description	Typical Profile/Horizon (inches)
Austin silty clay, 1 to 3% slopes (AsB)	Residuum weathered from chalk from ridges	0-14: Silty clay 14-34: Silty clay 34-52: Bedrock
Austin silty clay, 3 to 6% slopes, moderately eroded (AsC2)	Residuum weathered from chalk on ridges	0-14: Silty clay 14-34: Silty clay 34-52: Bedrock
Eddy gravelly loam, 3 to 6% slopes (EdC)	Residuum weathered from Austin Chalk Formation on ridges	0-4: Gravelly loam 4-14: Gravelly clay loam 14-20: Bedrock
Houston Black clay, 1 to 3% slopes (HnB)	Clayey residuum weathered from calcareous mudstone of Upper Cretaceous age on ridges	0-6: Clay (Ap) 6-70: Clay (Bkss) 70-80: Clay (BCkss)
Castephen silty clay loam, 1 to 3% slopes (StB)	Residuum weathered from Austin Chalk Formation on ridges	0-17: Silty clay loam 17-22: Bedrock

Source: NRCS 2015

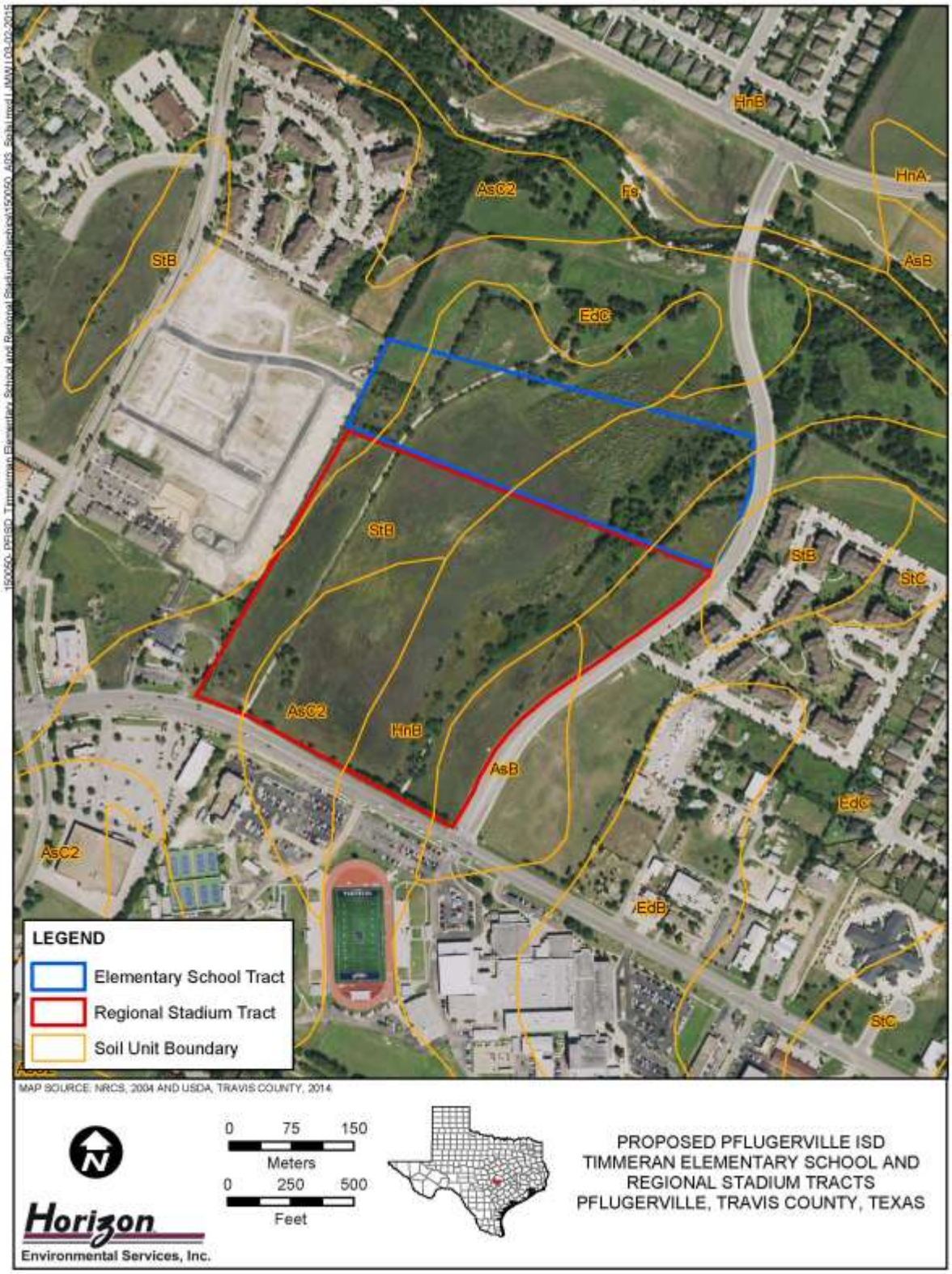

Figure 3. Distribution of Soils Mapped within Project Area

2.3 CLIMATE

Evidence for climatic change from the Pleistocene to the present is most often obtained through studies of pollen and faunal sequences (Bryant and Holloway 1985; Collins 1995). Bryant and Holloway (1985) present a sequence of climatic change for nearby east-central Texas from the Wisconsin Full Glacial period (22,500 to 14,000 B.P.) through the Late Glacial period (14,000 to 10,000 B.P.) to the Post-Glacial period (10,000 B.P. to present). Evidence from the Wisconsin Full Glacial period suggests that the climate in east-central Texas was considerably cooler and more humid than at present. Pollen data indicate that the region was more heavily forested in deciduous woodlands than during later periods (Bryant and Holloway 1985). The Late Glacial period was characterized by slow climatic deterioration and a slow warming and/or drying trend (Collins 1995). In east-central Texas, the deciduous woodlands were gradually replaced by grasslands and post oak savannas (Bryant and Holloway 1985). During the Post-Glacial period, the east-central Texas environment appears to have been more stable. The deciduous forests had long since been replaced by prairies and post oak savannas. The drying and/or warming trend that began in the Late Glacial period continued into the mid-Holocene, at which point there appears to have been a brief amelioration to more mesic conditions lasting from roughly 6000 to 5000 B.P. Recent studies by Bryant and Holloway (1985) indicate that modern environmental conditions in east-central Texas were probably achieved by 1,500 years ago.

Travis County is located within the south-central climatic division. The modern climate is typically dry to subhumid with long, hot summers and short, mild winters. The climate is influenced primarily by tropical maritime air masses from the Gulf of Mexico, but it is modified by polar air masses. Tropical maritime air masses predominate throughout spring, summer, and fall. Modified polar air masses are dominant in winter and provide a continental climate characterized by considerable variations in temperature.

On average throughout the past century, precipitation and temperature in Texas manifest regional clines with mean annual precipitation totals declining fairly regularly from east to west and mean annual temperature declining equally evenly from northwest to southeast (Larkin and Bomar 1983). In Central Texas, climate has fluctuated from subtropical humid to subtropical subhumid. Average annual precipitation totals 81.3 centimeters (32.0 inches) and temperature averages 19°C (67°F) annually, ranging from 36°C (96°F) in August (the warmest month) to 15°C (59°F) in January (the coldest month). During this time, however, drier periods lasting from 3 to 7 years, when total annual rainfall ranged from 30.5 to 63.5 centimeters (12.0 to 25.0 inches), were followed by abnormally wet years with 114.3 to 127.0 centimeters (45.0 to 50.0 inches) of rainfall.

Two annual precipitation peaks, which typically occur in May and September, are associated with frontal storms that form when southward-moving cool air masses collide with warm, moist air masses moving inland from the Gulf of Mexico (Bomar 1983; Carr 1967). The topographic discontinuity along the Balcones Escarpment lies directly in the path of the Gulf storm trace and increases the lift in convective storms to produce extreme amounts of rainfall. Two extreme examples are the excess of 91.4 centimeters (36.0 inches) of rain that fell within an 18-hour period in the vicinity of Thrall, Texas, in September 1921, and the 55.9-centimeter (22.0-

inch) deluge that fell in less than 3 hours near O'Harris, Texas, in May 1935. Lower rainfall amounts are characteristic of winter and late summer. In winter, frontal storms pass so frequently that there is little time for moisture to increase, and prevailing upper-level winds from west to east often dominate over meridional flow, meaning that much of the available moisture is derived from the Pacific rather than from the Gulf of Mexico. In summer, cool fronts rarely penetrate into the region, and rainfall occurs primarily as localized, thermal convective storms.

2.4 BIOTA

The project area is situated in the southwestern portion of the Texan biotic province (Blair 1950), an intermediate zone between the forests of the Austroriparian and Carolinian provinces and the grasslands of the Kansan, Balconian, and Tamaulipan provinces (Dice 1943). Some species reach the limits of their ecological range within the Texan province. The boundary, characterized as "approximate," between Blair's (1950) Texan and Balconian provinces passes through western Williamson County, northwest of the project area. Rainfall in the Texan province is barely in excess of water need, and the region is classified by Thornwaite (1948) as a C_2 (moist subhumid) climate with a moisture surplus index of from 0 to 20%.

Edaphic controls on vegetation types are important in the Texan biotic province, which is located near the border between moisture surplus and moisture deficiency. Sandy soils support oak-hickory forests dominated by post oak (*Quercus stellata*), blackjack oak (*Quercus marilandica*), and hickory (*Carya buckleyi*). Clay soils originally supported a tall-grass prairie, but much of this soil type has been placed under cultivation. Dominant tall-grass prairie species include western wheatgrass (*Agropyron smithii*), silver beardgrass (*Andropogon saccharoides*), little bluestem (*Andropogon scoparius*), and Texas wintergrass (*Stipa leucotricha*). Major areas of oak-hickory forest include the Eastern and Western Cross Timbers, and major tall-grass prairie areas include the Blackland, Grand, and Coastal prairies. Some characteristic associations of the Austroriparian province occur locally in the Texan province, such as a mixed stand of loblolly pine (*Pinus taeda*), blackjack oak, and post oak in Bastrop County, and a series of peat and bog marshes distributed in a line extending from Leon to Gonzales counties.

The fauna associated with this region are represented by a mixture of species from the Austroriparian, Tamaulipan, Chihuahuan, Kansan, Balconian, and Texan biotic provinces. At least 49 species of mammals occur in the Texan province, including Virginia opossum (*Didelphis virginiana*), eastern mole (*Scalopus aquaticus*), fox squirrel (*Sciurus niger*), desert pocket gopher (*Geomys breviceps*), fulvous harvest mouse (*Reithrodontomys fulvescens*), white-footed mouse (*Peromyscus leucopus*), hispid cotton rat (*Sigmodon hispidus*), eastern cottontail rabbit (*Sylvilagus floridanus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), white-footed mouse (*Peromyscus leucopus*), black-tailed jackrabbit (*Sylvilagus californicus*), ground squirrel (*Citellus tridecemlineatus*), white-tailed deer (*Odocoileus virginiana*), hispid pocket mouse (*Perognathus hispidus*), deer mouse (*Peromyscus maniculatus*), pygmy mouse (*Baiomys taylori*), 9-banded armadillo (*Dasypus novemcinctus*), and jaguar (*Felis onca*).

Both species of *Terrapene* known from the Austroriparian province—eastern box turtle (*T. Carolina*) and desert box turtle (*T. ornata*)—occur in the Texan province. Sixteen species of lizards, including 7 grassland and 9 forest species, are also found, including green anole (*Anolis*

carolinensis), eastern fence lizard (*Sceloporus undulates*), common ground skink (*Leiolopisma laterale*), glass snake (*Ophisaurus ventralis* [grassland species]), collared lizard (*Crotaphytus collaris*), Texas spiny lizard (*Sceloporus olivaceus*), Texas horned lizard (*Phrynosoma cornutum*), and Great Plains skink (*Eumeces obsoletus* [forest species]). Only 5 species of urodele fauna are known from this area, including small-mouthed salamander (*Ambystoma texanum*), tiger salamander (*Ambystoma tigrinum*), and eastern lesser siren (*Siren intermedia*), and the Texan province acts as a barrier to urodele distribution between the endemic Balconian province fauna to the west and the Austroriparian fauna to the east.

Anuran fauna is composed primarily of Austroriparian or otherwise widely distributed species, including eastern spadefoot toad (*Scaphiopus holbrookii*), Gulf Coast toad (*Bufo valliceps*), Woodhouse's toad (*Bufo woodhousii*), southern cricket frog (*Acris gryllus*), southern chorus frog (*Pseudacris nigrita*), gray tree frog (*Hyla versicolor*), green tree frog (*Hyla cinerea*), North American bullfrog (*Rana catesbeiana*), northern leopard frog (*Rana pipiens*), and narrow-mouthed toad (*Microhyla carolinensis*). Additional anuran species that fail to cross from the Texan into the Austroriparian province include pacific tree frog (*Pseudacris clarkia*), Strecker's chorus frog (*Pseudacris streckeri*), and striped whipsnake (*Microhyla olivacea*).

Other reptile and amphibian species common to this biotic zone include 6-lined racerunner (*Aspidoscelis sexlineata*), rat snake (*Ptyas mucosus*), eastern hognose snake (*Heterodon platirhinos*), rough green snake (*Opheodrys aestivus*), copperhead (*Agkistrodon contortrix*), western diamondback rattlesnake (*Crotalus atrox*), Blanchard's cricket frog (*Acris crepitans*), diamondback water snake (*Nerodia rhombifer rhombifer*), and Houston toad (*Bufo houstonensis*). Common bird species include northern bobwhite (*Colinus virginianus*), eastern meadowlark (*Sturnella magna*), mourning dove (*Zenaida macroura*), killdeer (*Charadrius vociferus*), field sparrow (*Spizella pusilla*), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aura*), belted kingfisher (*Ceryle alcyon*), and mockingbird (*Mimus polyglottos*). Small herds of bison and antelope were common during the late prehistoric and early historic periods, but these species are no longer native to this region (Jurney et al. 1989:13-14).

3.0 CULTURAL BACKGROUND

The project area is located within Prewitt's (1981, 1985) Central Texas Archeological Region. Prewitt demarcated the southeastern boundary of the Central Texas Archeological Region at the town of Bastrop in Bastrop County, which borders Travis County on the southeast. The indigenous human inhabitants of Central Texas practiced a generally nomadic hunting and gathering lifestyle throughout all of prehistory, and, in contrast to much of the rest of North America, mobility and settlement patterns do not appear to have changed markedly through time in this region.

3.1 PALEOINDIAN PERIOD (CA. 12,000 TO 8500 B.P.)

The initial human occupations in the New World can now be confidently extended back before 12,000 B.P. (Dincauze 1984; Haynes et al. 1984; Kelly and Todd 1988; Lynch 1990; Meltzer 1989). Evidence from Meadowcroft Rockshelter in Pennsylvania suggests that humans were present in Eastern North America as early as 14,000 to 16,000 years ago (Adovasio et al. 1990), while more recent discoveries at Monte Verde in Chile provide unequivocal evidence for human occupation in South America by at least 12,500 years ago (Dillehay 1989, 1997; Meltzer et al. 1997). Most archeologists presently discount claims of much earlier human occupation during the Pleistocene glacial period.

The earliest generalized evidence for human activities in Central Texas is represented by the PaleoIndian period (12,000 to 8500 B.P.) (Collins 1995). This stage coincided with ameliorating climatic conditions following the close of the Pleistocene epoch that witnessed the extinction of herds of mammoth, horse, camel, and bison. Cultures representing various periods within this stage are characterized by series of distinctive, relatively large, often fluted, lanceolate projectile points. These points are frequently associated with spurred end scrapers, gravers, and bone foreshafts. PaleoIndian groups are often inferred to have been organized into egalitarian bands consisting of a few dozen individuals that practiced a fully nomadic subsistence and settlement pattern. Due to poor preservation of floral materials, subsistence patterns in Central Texas are known primarily through the study of faunal remains. Subsistence focused on the exploitation of plants, small animals, fish, and shellfish, even during the PaleoIndian period. There is little evidence in this region for hunting of extinct megafauna, as has been documented elsewhere in North America. Rather, a broad-based subsistence pattern appears to have been practiced throughout all prehistoric time periods. In Central Texas, the PaleoIndian stage is divided into 2 periods based on recognizable differences in projectile point styles. These include

the Early PaleoIndian period, which is recognized based on large, fluted projectile points (i.e., Clovis, Folsom, Dalton, San Patrice, and Big Sandy), and the Late PaleoIndian period, which is characterized by unfluted lanceolate points (i.e., Plainview, Scottsbluff, Meserve, and Angostura).

3.2 ARCHAIC PERIOD (CA. 8500 TO 1200 B.P.)

The onset of the Hypsithermal drying trend marks the beginning of the Archaic period (8500 to 1200 B.P.) (Collins 1995). This climatic trend marked the beginning of a significant reorientation of lifestyle throughout most of North America, but this change was far less pronounced in Central Texas. Elsewhere, the changing climatic conditions and corresponding decrease in the big game populations forced people to rely more heavily upon a diversified resource base composed of smaller game and wild plants. In Central Texas, however, this hunting and gathering pattern is characteristic of most of prehistory. The appearance of a more diversified tool kit, the development of an expanded groundstone assemblage, and a general decrease in the size of projectile points are hallmarks of this cultural stage. Material culture shows greater diversity during this broad cultural period, especially in the application of groundstone technology.

Traditionally, the Archaic period is subdivided into Early, Middle, and Late subperiods. Changes in projectile point morphology are often used as markers differentiating these 3 subperiods, though other changes in material culture occurred as well. Perhaps most markedly, burned rock middens appear during the Middle Archaic subperiod, continuing into the Late Archaic subperiod, and large cemeteries appear during the Late Archaic subperiod. In addition, the increasing density of prehistoric sites through time is often considered to constitute evidence of population growth, though differential preservation probably at least partially accounts for the lower numbers of older sites.

3.3 LATE PREHISTORIC PERIOD (CA. 1200 TO 350 B.P.)

The onset of the Late Prehistoric period (1200 to 350 B.P.) (Collins 1995) is defined by the appearance of the bow and arrow. In Central Texas, pottery also appears during the Late Prehistoric period (though ceramics appear earlier in Southeast Texas). Use of the atlatl (i.e., spearthrower) and spear was generally discontinued during the Late Prehistoric period, though they continued to be used in the inland subregion of Southeast Texas along with the bow and arrow through the Late Prehistoric period (Patterson 1980, 1995; Wheat 1953). In Texas, unifacial arrow points appear to be associated with a small prismatic blade technology. The Late Prehistoric period is generally divided into 2 phases, the Austin and Toyah phases. Austin phase sites occur earliest to the north, which has led some researchers (e.g., Prewitt 1985) to suggest that the Austin-phase populations of Central Texas were migrants from the north, and lack the ceramic industry of the later Toyah phase.

3.4 HISTORIC PERIOD (CA. 350 B.P. TO PRESENT)

The first European incursion into what is now known as Texas was in 1519, when Alonso Álvarez de Pineda explored the northern shores of the Gulf of Mexico. In 1528, Álvar Núñez Cabeza de Vaca crossed South Texas after being shipwrecked along the Texas Coast near

Galveston Bay. However, European settlement did not seriously disrupt native ways of life until after 1700. The first half of the 18th century was the period in which the fur trade and mission system, as well as the first effects of epidemic diseases, began to seriously disrupt the native culture and social systems. This process is clearly discernable at the Mitchell Ridge site, where burial data suggest population declines and group mergers (Ricklis 1994) as well as increased participation on the part of the Native American population in the fur trade. By the time that heavy settlement of Texas began in the early 1800s by Anglo-Americans, the indigenous Indian population was greatly diminished.

The Tonkawa and the Lipan Apache Indians were well established in Central Texas by the 14th century, and Comanche and Kiowa tribes arrived in the area by the 18th century[1]. The first European known to have crossed the region was Domingo Terán de los Ríos, who made an inspection tour to East Texas in 1691. When the Spanish moved their missions out of East Texas in 1730, they relocated the missions of San Francisco de los Neches, Nuestra Señora de la Purísima Concepción de los Hasinai, and San José de los Nazonis to locations near Barton Springs. In 1827, the Mexican government granted Stephen F. Austin his third colony, Little Colony, which was located east of the Colorado River and north and west of the Old San Antonio Road. Mina (later Bastrop) became the headquarters of the colony, and Travis County developed as an offshoot of Mina. Settlers moving into the area in the early 1830s included Josiah and Mathias Wilbarger, Reuben Hornsby, Jacob M. Harrell, and John F. Webber. The onset of the Texas Revolution delayed further settlement activity, and the news of the fall of the Alamo prompted those settlers already in residence to flee.

Settlement resumed after the revolution, but it proceeded slowly because of the constant threat of raids by the Comanche Indians. During the 1830s, a chain of small forts extended from Bastrop northwest along Wilbarger's Bend, Coleman Branch, Webber's Prairie, and Gilleland Creek, to Fort Colorado or Fort Prairie, 8.0 kilometers (5.0 miles) east of the site of present-day Austin. In June 1835, Thomas Jefferson Chambers surveyed part of an 8-league grant covering the present-day site of Austin and the capitol. Sometime before 1837, William Barton settled near the springs that were to bear his name. In 1837 or 1838, President Mirabeau B. Lamar was on a buffalo hunt in the area and commented on its possibilities as a permanent site for the capital. In 1838, the community of Waterloo (later Austin) consisted of 4 families, and about 20 families established homes at nearby Montopolis in 1839. When the Congress of the Republic of Texas chose Waterloo as the site of the new capital, opponents were quick to point out the disadvantages—the site's proximity to the frontier, the lack of timber, the poor soil, and the threat of Indian raids. In spite of this opposition, however, the new capital—renamed Austin in honor of Stephen F. Austin—was approved on January 19, 1840. A few days later, the Congress established Travis County, naming it in honor of William Barret Travis and making Austin its county seat. An election for county officials was held in February 1840, at which time the population was reported to be 856. The initial boundaries of Travis County included roughly 40,000 square miles. Counties that were later carved from Travis County include Callahan (1858), Coleman (1858), Comal (1846), Gillespie (1848), Hays (1848), Burnet (1852), Brown

[1] Much of the following historical summary is adapted from TSHA (2015).

(1856), Lampasas (1856), Eastland (1858), Runnels (1858), and Taylor (1858). Sam Houston moved the government of the Republic of Texas from Austin to Houston when Mexican troops invaded San Antonio in March 1842. When he tried to have the government archives removed as well, Austin citizens resisted with the Archives War. The Texas Congress held sessions at Washington-on-the-Brazos from 1842 to 1845, but the convention that drafted the Constitution of 1845 met in Austin in July 1845, and by October the rest of the government had returned to the capital city. The first legislature of the new state convened in Austin in February 1846.

The late 1840s and early 1850s were building years for Austin and Travis County, with much of the growth fed by the presence of the state government—the Governor's Mansion, office buildings, hotels, new homes, and newspapers. In 1850, Travis County had a population of 3138, of whom 2336 were white, 791 were slaves, and 11 were free blacks; by 1860, the number of residents had more than doubled to 8080, with 4931 of them white, 3136 slaves, and 13 free blacks. Although the city of Austin grew faster than the county as a whole—its population rose from 629 in 1850 to 3494 in 1860—most county residents lived in small communities. Pflugerville and Del Valle were the most prominent of these communities, but rural post offices were also established at Bluff Springs, Webberville, Merrilltown, Gilleland, Cage's Mill, and Hornsby Bend. During the 1850s, the amount of land in farms in what was then Travis County increased from 73,300 acres to 1,363,500 acres. Corn was the primary field crop, while cattle and sheep were the principal livestock. In 1860, farmers produced 137,700 bushels of corn and 27,900 bushels of wheat and had 58,000 cattle and 11,800 sheep.

The earliest schools in Travis County were private institutions that usually met in private homes or in space donated by a church or Masonic lodge. More elaborate private facilities began to appear by the late 1840s, including Colorado Female College in 1848, Austin Male and Female Academy in 1849, Austin Female Academy in 1850, and Austin Collegiate Female Institute in 1852. By 1850, Travis County also had 6 public schools serving a scholastic population of 183. The county was divided into 19 common school districts in 1852. The state established the Texas State Asylum for the Blind in Austin in 1856 and the Deaf and Dumb School in 1857. Travis County became a center for higher education in the 1880s with the establishment of the University of Texas in 1881, Tillotson Collegiate and Normal Institute in 1881, and Saint Edward's University in 1885. Samuel Huston College began holding classes in the 1890s. The Austin Presbyterian Theological Seminary opened in 1902, Texas Wesleyan College Academy in 1912, Concordia Lutheran College in 1926, and the Episcopal Theological Seminary of the Southwest in 1952. Austin Community College began operations in 1972. The availability of schools resulted in a high level of education for a large portion of the county's population. In the 1940s, while more rural areas of the state reported that less than 10% of their population over the age of 25 had high school diplomas, nearly 20% of Travis County residents had graduated. By 1980, that number had jumped to 75%.

The earliest churches in Travis County were the Catholic missions relocated to the area by the Spanish in 1730, but these were moved to San Antonio in 1731, and it was more than a century before any organized religious practices were firmly established. In the 1830s, a variety of religious groups began to appear—Methodist circuit riders held services along Gilleland Creek in 1837 or 1838; Presbyterians organized a church in Austin in October 1839; Mormons settled

near Fort Coleman, Webberville, and Hornsby Bend in the late 1830s; and Catholic priests, among them Jean Marie Odin, returned to the area in 1840. A Baptist church and a Church of Christ were organized in Austin in 1847, a Lutheran church was established in New Sweden and a Jewish synagogue in Austin began in 1876, and a Christian Science church formed in Austin in 1889. In the early 1980s, Travis County's 266 churches had an estimated combined membership of 194,194; Catholic, Southern Baptist, and United Methodist were the largest denominations.

In spite of the rapid growth that Travis County experienced during the 1850s, the area was at that time still very much at the edge of the frontier. The absence of railroads meant that goods had to be shipped by wagon to and from Houston and Port Lavaca, and poor roads meant that goods sometimes could not be shipped at all. In 1852, the Austin Railroad Association was established to encourage railroad construction to the area, and considerable progress had been made by the late 1850s; however, the Civil War intervened, and work on railroad acquisition was postponed. The Secession Convention convened in Austin on 28 January 1861. Although a group of Austin citizens staged a demonstration in favor of secession, Unionist sentiment was high, and Travis County residents voted against secession, 704 to 450. Nevertheless, when the Civil War began, Travis County provided several hundred volunteers, among them the Travis Rifles, the Tom Green Rifles, the Capitol Guard, and the Austin City Light Infantry. In the 2 months between the end of the war and the arrival of federal troops in the county, looting of farms and businesses was common. Although the inevitable clashes between the Unionist forces and the former rebels resulted in the arrest of as many as 30 people per day, the presence of federal troops served to curb much of the lawlessness. By early 1866, most of the federal soldiers had been mustered out of service, leaving only about 200 men to police the Austin area until the end of the military occupation in 1870. Austin was the site of the constitutional conventions of 1866 and 1868-69 and witnessed the Coke-Davis Controversy in 1874 and the removal of Governor James W. Throckmorton in 1867. In the gubernatorial election of 1869, Travis County residents favored Andrew J. Hamilton to Edmund J. Davis by a margin of 798 to 593.

Like most areas in the south, Travis County suffered considerable economic hardship immediately after the Civil War and throughout the Reconstruction period. Between 1864 and 1866, the county as a whole experienced a 49% loss in property tax receipts. Roughly 2/3 of this property loss was in slaves, with the rest coming from declines in farm and livestock values, each of which fell 25 to 40%. The county began to show signs of recovery by 1880. The overall population rose from 13,153 in 1870 to 27,028 in 1880, and the 1880 census reported 1,912 farms, an increase of 656 over the 1870 totals. The amount of improved land rose from 83,200 acres in 1870 to 139,800 in 1880. Field crops such as corn, cotton, wheat, and oats took up nearly half of the improved farmland, while livestock dominated the rest.

Economic recovery was facilitated by the arrival of the Houston and Texas Central Railway, which completed its track to Austin in 1871, and the International and Great Northern Railroad, which was built between Rockdale and Austin in 1876 and completed from Austin to Laredo in 1881. The Austin and Northwestern Railroad laid track between Austin and Burnet in 1882, and the Missouri, Kansas and Texas line arrived in 1904. Communities besides Austin that benefited directly from easy railroad access included Pflugerville, Manor, Oak Hill, and Manchaca.

After the war, many former slaves remained in the area. In the year after the war, the black population increased by 60%, while the white population rose by only 12%. By 1870, black residents numbered 4647, comprising 35% of the county's total population. Clarksville, Kincheonville, Masontown, and Wheatville were among the communities established by former slaves. The number of black residents in Travis County continued to increase steadily, reaching 13,299 in 1900. It fluctuated between 13,000 and 15,000 from 1900 to 1930, but increased rapidly thereafter, rising to 22,493 in 1950; 32,270 in 1970; and 63,173 in 1990. Because other segments of the population grew at an even faster rate, the percentage of black residents, with respect to the total population, declined significantly, falling to 20% by 1930 and 11% by 1990. Contributing to the shift in the ethnic makeup of the county was a variety of immigrant groups, the most prominent of which were German, Swedish, and Mexican. By the turn of the century, 8% of the population was composed of natives of 1 of these countries. Although the early Swedish and German settlers contributed to the diversity of Travis County through their religious and educational institutions, the Mexican influence was also reinforced by the continued arrival of large numbers of new immigrants fleeing the unrest of the Mexican Revolution in the early 20th century. The 1930 census reported that 10,225 residents, or 13% of the county's total population, were of Hispanic descent; by 1990, the number of Hispanic residents had risen to 121,689, or 21%.

In 1890, Travis County had 36,322 residents. Of these, 14,575 lived in Austin, which was fast outgrowing its efforts to become a modern city. Innovations and improvements in progress at that time included a trolley system and water-generated electricity, but most of its streets remained unpaved. By the turn of the century several hundred assorted businesses filled the needs of the 22,000 Austin residents. Yet, in spite of this rapid increase in Austin's population, the majority of the county's residents lived on farms or in smaller towns, and agriculture dominated the area economy. Cotton became the principal field crop in the late 1880s and remained so for more than 60 years. The 1890 census reported 65,000 acres—nearly 30% of the county's improved farmland—planted in cotton; by the turn of the century, the amount of land devoted to cotton had increased to 113,300 acres, or 56% of the improved farmland. However, as more marginal land was used and the soil became depleted, production levels fell; in 1930, 143,000 acres produced only 19,000 bales. By the late 1950s, cotton accounted for only 26% of the total cropland harvested, and by 1980 it had fallen to only 8%. Farm tenancy had increased steadily since the 1890s and peaked in 1930, with tenants operating two-thirds of the 3642 farms. The number of farms fell by more than 1000 in the 1930s, as many tenant farmers either moved away or turned to other occupations. Farmers who remained in the area began to devote more of their resources to crops other than cotton and to livestock. The number of cattle increased from 32,000 in 1920 and to 51,000 in 1950; the number of sheep and goats increased as well, boosting wool and mohair production from 23,600 and 4292 pounds, respectively, in 1920, to 127,800 and 183,600 pounds in 1959. By the late 1960s, hay and sorghum combined to account for 60% of the cropland harvested.

The Great Depression was slow to hit Travis County, but, by the mid-1930s, many people were unemployed and very glad of the New Deal programs that resulted in work paving streets; building bridges, sewers, and parks; and constructing the tower of the University of Texas campus. In part because of the job opportunities made available through relief projects, state

government, and the university community, the population increased by 43% in the 1930s, rising from 77,777 in 1930 to 111,053 in 1940. One major job-producing project in the 1930s was the construction of a series of dams on the Colorado River. Austin and Travis County had begun efforts to tame the Colorado as early as 1869, when the army built a pontoon bridge across the river. In 1893, the City of Austin completed a dam designed to provide power for its water and electrical systems. By 1899, the city was already experiencing power shortfalls, and a major flood in 1900 destroyed the dam. Another flood in 1915 washed out the repairs that were underway, and the project was abandoned. The flood of 1935 put much of downtown Austin under water, and the area's interest in a lasting flood-control system was renewed. The Lower Colorado River Authority was established and a series of dams was built, forming Lake Austin, Lake Travis, Lake Buchanan, Lake Lyndon B. Johnson, Inks Lake, and Lake Marble Falls.

Travis County also profited from the establishment of several military bases. Camp Mabry in northwest Austin, established as the main Texas National Guard facility in 1890, served as an army training center during World War I. After the US became involved in World War II, the Del Valle Army Air Base, soon renamed Bergstrom Army Air Field, was established in southeast Travis County. After the war was over, the presence of military personnel continued to bring changes to the county. Thousands of returning veterans enrolled in the local colleges and universities, greatly increasing the student population as well as intensifying the demand for housing and the growth of service industries.

In the 1950s and 1960s, Travis County underwent 2 significant developments. The first of these was desegregation. The *Sweatt v. Painter* decision in 1950 pushed the University of Texas to the forefront in the fight for civil rights, leading it to become the first southern university to admit blacks as undergraduates, although it was not until 1962 that all of the university's facilities were fully integrated. Public schools in Travis County began to follow suit in 1955. Local Mexican-American organizations also achieved a measure of success against discriminatory practices. Some local businesses resisted these changes, prompting strikes and protests in the 1960s, but in the end desegregation was accomplished without the violence prevalent in other urban areas of the country. The change became even more visible as blacks and Hispanics were elected to public office—Wilhelmina Delco to the school board in 1968 and to the Texas House of Representatives in 1976; Berl Handcox to the Austin city council in 1971; Richard Moya to the Travis County commissioner's court in 1970; and Gonzalo Barrientos to the Texas House of Representatives in 1974. The second major development was the establishment of several high-tech industries. In 1951, a small, local company became Texas Instruments, and in 1955 Tracor, Incorporated, made Austin its base of operations. International Business Machines opened an Austin branch in 1967, followed by Motorola in 1974. These companies, along with Microelectronics and Computer Technology Corporation (1983), Dell Computers (1984), and Sematech (1988), became the county's largest employers.

From the end of Reconstruction to the present, most Travis County residents chose to support Democratic presidential candidates, with exceptions in 1896, 1928, 1952, 1956, 1972, and 1984. Occasionally, a third-party candidate drew a sizable portion of the vote, but only 3 of them—the Greenback-Labor candidate in 1880, George Wallace in 1968, and John Anderson in 1984—garnered sufficient support to affect the county's overall election results. In state elections,

Travis County residents were staunchly Democratic. In the early 1980s, 63% of the land in Travis County was devoted to farms and ranches. About 23% of the farmland was under cultivation, with sorghum, hay, wheat, and cotton accounting for nearly 70% of the 94,000 acres harvested; other crops included potatoes, sweet potatoes, peaches, and pecans. Sixty-six percent of the county's $32 million in agricultural receipts came from livestock and livestock products, the most important ones being cattle, milk, sheep, wool, and hogs. Although agriculture remained an important aspect of the local economy, farm receipts were greatly surpassed by the income generated by non-agricultural industries. Professional and related services, manufacturing, wholesale and retail trade, and government administration involved 70% of the work force in the 1980s; of the rest, 7% were self-employed, and 3% were employed outside the county.

Since shortly after the turn of the century, the majority of Travis County residents had resided in the City of Austin. The jobs made available by the growth of the high-tech industries reinforced that trend, and, by 1970, 85% of the 295,516 residents lived in the capital city. In the 1970s and 1980s, however, residential development near Lake Travis encouraged many people to move away from the city, and although Austin continued to grow at a rapid pace, the number of residents choosing to live near the lake and in northern and southern suburbs increased at an even faster rate. By 1990, Lago Vista (2199), Jonestown (1250), Briarcliff (335), Lakeway (4044), and Pflugerville (4444) in Travis County, as well as Round Rock and even Georgetown in Williamson County, had become popular alternatives to living in Austin. Like the rest of Texas, Travis County weathered a serious economic downturn in the mid-1980s; newly-built office space sat empty, and many people lost their jobs. Added to this was news that Bergstrom Air Force Base was scheduled to close. In the early 1990s, however, plans were underway to convert the Bergstrom site into a new municipal airport, and the county was looking forward to a period of growth. The population of Travis County was reported at 576,407 in 1990, an increase of 37% from 1980. Among the area's most prevalent concerns was that future growth should not destroy the ecological balance of environmentally sensitive areas in the western hills.

4.0 ARCHIVAL RESEARCH

Prior to initiating fieldwork, Horizon personnel reviewed existing information on file on the THC's online *Texas Archeological Sites Atlas* (Atlas), the National Park Service's (NPS) online *National Register Information System* (NRIS), and the Texas State Historical Association's (TSHA) *Handbook of Texas Online* for information on previously recorded archeological sites and previous archeological investigations conducted within a 1.6-kilometer (1.0-mile) radius of the project area (NPS 2015; THC 2015; TSHA 2015). Based on this archival research, 26 known archeological sites and 2 cemeteries are located within a 1.6-kilometer (1.0-mile) radius of the proposed project area (Table 2; Figure 4). Cultural components represented on the 26 previously recorded archeological sites include undated aboriginal lithic artifact scatters (1 of which may date to the Middle Archaic period), a Middle to Late Archaic aboriginal burned rock midden with a human burial, and scatters of late 19th- to mid-20th-century historic-era domestic debris and farmsteads. No historic properties listed on the National Register of Historic Places (NRHP) or designated as State Antiquities Landmarks (SAL) were identified within the archival review area. No known cultural resources are located within or immediately adjacent to the project area.

According to the THC's Atlas, no prior cultural resources surveys have been conducted within the project area, though 1 prior survey has been conducted within the tract located adjacent to the project area to the northwest.

According to historical US Geological Survey (USGS) topographic maps and aerial photographs, a historic-age farmstead was once present on the tract located to the northeast of the current project area that would have extended into the northwestern portion of the current project area (NETR 2015). Examination of historical aerial photographs and USGS topographic quadrangle maps dating to 1954 and 1964 indicate that this farmstead was constructed between 1954 and 1964 and is therefore of historic age (i.e., 50 years of age or older). Historical aerials dating to 1964 depict the primary residence and at least 2 outbuildings, while the house and 3 outbuildings are evident on the 1971 USGS topographic quadrangle. The 1987 USGS topographic quadrangle shows 5 structures, including 1 primary residence and 4 outbuildings. Most of these structures are located to the north of the current project area, though 1 of the outbuildings fell within the northwestern corner of the proposed Timmeran Elementary School tract (see Figure 1). Google Earth aerial photographs dating from 1995 to 2005 show the active farmstead. However, Google Earth aerial images show that all of the structures had been demolished or removed from the site by 2006 and are no longer extant.

Table 2. Summary of Previously Recorded Cultural Sites within 1 Mile of Project Area

Site No./Name	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from Project Area	Potential to be Impacted by Project?
Archeological Sites				
41TV1001	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.2 miles west	No
41TV1002	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.2 miles west	No
41TV1003	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.3 miles northwest	No
41TV1004	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.4 miles northwest	No
41TV1005	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.3 miles northwest	No
41TV1006	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.1 miles northwest	No
41TV1007	Aboriginal lithic scatter (possibly Middle Archaic)	Recommended ineligible	0.3 miles northwest	No
41TV1008	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.4 miles northwest	No
41TV1009	Aboriginal lithic scatter (undated prehistoric)/ Historic-age artifact scatter (20th century)	Recommended ineligible	339.0 feet northwest	No
41TV1010	Aboriginal lithic scatter (undated prehistoric)	Ineligible	0.3 miles north	No
41TV1011	Historic-age artifact scatter (20th century)	Ineligible (investigated portion only)	0.3 miles north	No
41TV1012	Aboriginal lithic scatter (undated prehistoric)	Ineligible	0.4 miles northwest	No
41TV1013	Aboriginal lithic scatter (undated prehistoric)	Ineligible	0.4 miles northwest	No
41TV1014	Aboriginal lithic scatter (undated prehistoric)/ Historic-age artifact scatter (20th century)	Ineligible	0.5 miles northwest	No
41TV1015	Aboriginal lithic scatter (undated prehistoric)	Recommended ineligible	0.4 miles north	No
41TV1016	Historic-age farmstead (early to mid-20th century)	Recommended ineligible	0.6 miles north	No
41TV1143	Historic-age artifact scatter (late 19th to early 20th centuries)	Recommended ineligible	1.0 miles southeast	No

Table 2. Summary of Previously Recorded Cultural Sites within 1 Mile of Project Area

Site No./Name	Site Type	NRHP/SAL Eligibility Status	Distance/Direction from Project Area	Potential to be Impacted by Project?
Archeological Sites (cont.)				
41TV1144	Historic-age farmstead (early 20th century)	Recommended ineligible	0.9 miles southeast	No
41TV1145	Historic-age artifact scatter (late 19th to early 20th centuries)	Recommended ineligible	0.8 miles southeast	No
41TV1146	Historic-age well (late 19th to early 20th centuries)	Recommended ineligible	0.4 miles south	No
41TV1147	Historic-age farmstead (late 19th to mid-20th centuries)	Ineligible	0.7 miles southwest	No
41TV1148	Historic-age farmstead (early to mid-20th century)	Recommended ineligible	0.5 miles southwest	No
41TV1149	Historic-age farmstead (early to mid-20th century)	Recommended ineligible	0.6 miles southwest	No
41TV1150	Historic-age farmstead (early 20th century)	Recommended ineligible	0.7 miles southwest	No
41TV1151	Historic-age artifact scatter (early 20th century)	Recommended ineligible	1.0 miles southwest	No
41TV1198	Aboriginal burned rock midden with human burial (Middle to Late Archaic)/ Historic-age trash scatter (late 19th to early 20th centuries)	Recommended ineligible	0.6 miles east	No
Cemeteries				
Santa Maria Cemetery (TV-C153)	Historic Texas Cemetery	N/A	0.1 miles southeast	No
St. Mary's Baptist Cemetery	Cemetery	N/A	0.1 miles southeast	No

APE Area of Potential Effect
NRHP National Register of Historic Places
SAL State Archeological Landmark

SENSITIVE SITE LOCATION DATA OMITTED

Figure 4. Known Cultural Resources and Previous Surveys within 1 Mile of Project Area

5.0 SURVEY METHODOLOGY

On March 4, 2015, Horizon archeological technicians Briana Nicole Smith and Jared Wiersema, under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area to locate any cultural resources that potentially would be impacted by the proposed undertaking. The survey consisted of pedestrian walkover of the project area with surface inspection and systematic shovel testing.

Horizon's archeologists traversed the 65.3-hectare (161.4-acre) tract in parallel, linear transects spaced no more than 30.5 meters (100.0 feet) apart and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The project area consists of an open, upland field that appears to have been used as farmland or pasturage in the past (Figure 5). Vegetation consists of sporadic clump grasses with scattered cedar, live oak, and hackberry trees. A gravel driveway enters the tract in the southwestern corner from FM 1825 and traverses the project area from southwest to northeast, paralleling its northwestern boundary (Figure 6). Formerly, this driveway provided access to a mid-20th-century farmstead formerly located on the tract to the northeast of the project area, but this farmstead is no longer extant. An unnamed tributary of Gilleland Creek flows northeastwards near the southeastern boundary of the project area (Figures 7 and 8). This tributary is shallowly incised into local bedrock and does not have any adjacent alluvial structures. Remnant soils were relatively thin across the project area, typically consisting of shallow gravelly clay and clay loam, and limestone gravels and exposed bedrock were observed on the modern ground surface in many areas.

In addition to pedestrian walkover, the Texas State Minimum Archeological Survey Standards (TSMASS) require the excavation of 1 shovel test per 2 acres for project areas measuring between 11 and 100 acres in size unless field conditions warrant excavation of more probes (e.g., due to the presence of culturally sensitive areas) or less probes (e.g., due to extensive prior disturbances or cultural low-probability areas). In the event that a probe yields evidence of subsurface cultural deposits, additional probes may be necessary to determine the horizontal and vertical extent of the subsurface deposits associated with the cultural resource. Thus, a minimum of 27 shovel tests were required within the 21.6-hectare (53.4-acre) project area to meet the TSMASS. Horizon excavated a total of 27 shovel tests during the survey, thereby meeting the TSMASS for a project area of this size (Figure 9). In general, shovel tests measured approximately 30.0 centimeters (11.8 inches) in diameter and were excavated to a target depth of 1.0 meters (3.3 feet) below ground surface, to the top of pre-Holocene deposits, or to the maximum depth practicable, and all sediments were screened through 6.35-millimeter (0.25-inch)

Figure 5. Representative View of Project Area (Facing East)

Figure 6. View of Gravel Driveway in Western Portion of Project Area (Facing East)

Figure 7. Unnamed Drainage Emerging from Culvert under FM 1825 (Facing South)

Figure 8. Representative View of Unnamed Drainage in Project Area (Facing Northeast)

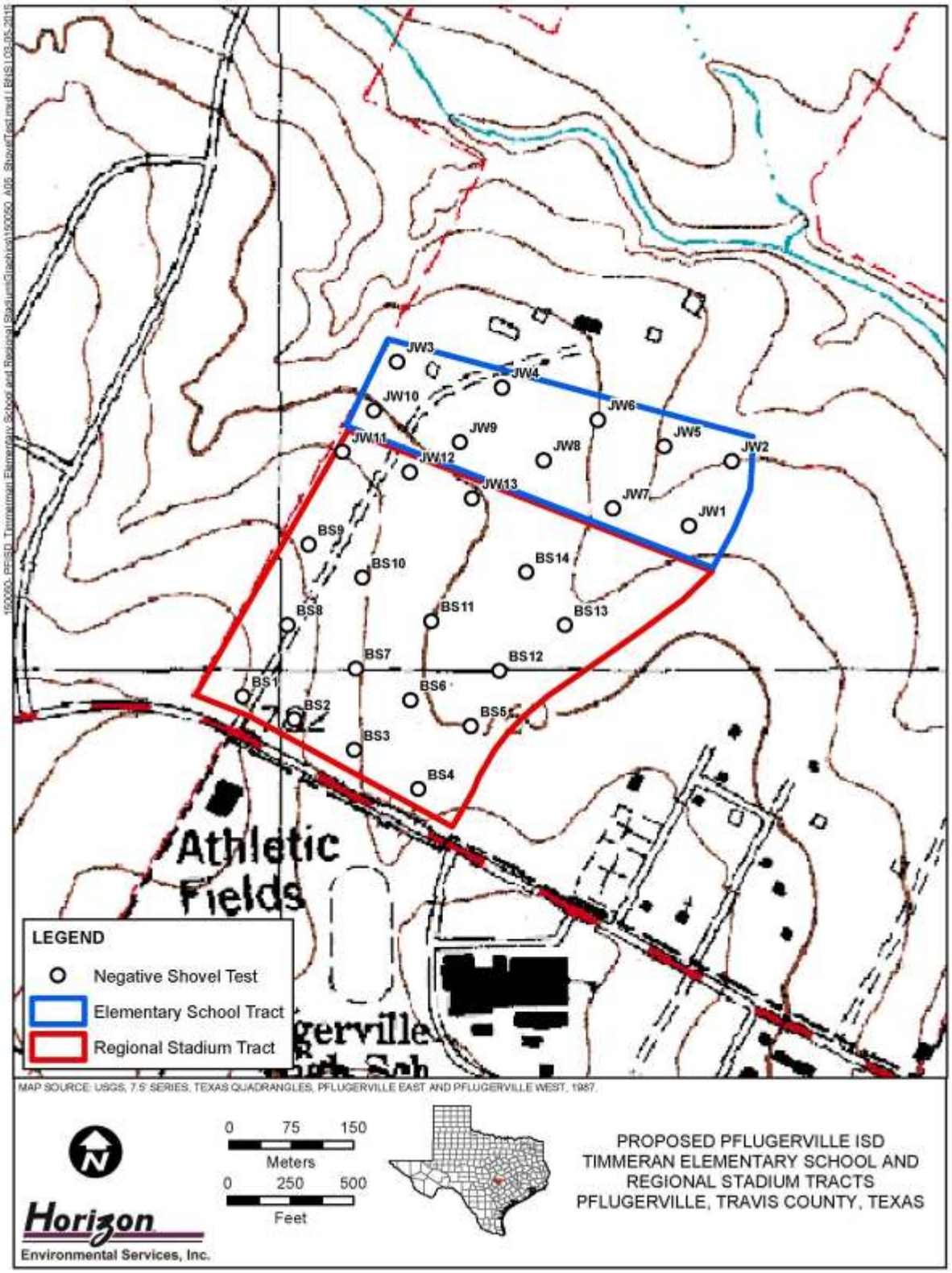

Figure 9. Locations of Shovel Tests Excavated within Project Area

hardware cloth. In practice, shovel tests were terminated at depths of 5.0 to 40.0 centimeters (2.0 to 15.7 inches) below surface (cmbs) due to the presence of shallowly buried limestone bedrock or beds of naturally occurring gravels derived from decomposing bedrock or dense clay sediments. No Holocene-age alluvial sediments were observed within the project area, and the unnamed tributary stream appears to be an intermittent, low-energy stream that is actively downcutting through local in situ soils and bedrock. Shovel testing was capable of fully penetrating sediments with the potential to contain subsurface archeological deposits, and it is Horizon's opinion that the pedestrian walkover with surface inspection and systematic shovel testing was adequate to evaluate the cultural resources potential of the project area. Summary data for all 27 shovel tests excavated during the survey are presented in Appendix A.

During the survey, field notes were maintained on terrain, vegetation, soils, landforms, survey methods, and shovel test results. Digital photographs were taken, and a photographic log was maintained. Horizon employed a non-collection policy for cultural resources. Diagnostic artifacts (e.g., projectile points, ceramics, historic materials with maker's marks) and non-diagnostic artifacts (e.g., lithic debitage, burned rock, historic glass, and metal scrap) were to be described, sketched, and/or photo-documented in the field and replaced in the same location in which they were found. As no cultural materials were observed during the survey, the collection policy was not brought into play.

The survey methods employed during the survey represented a "reasonable and good-faith effort" to locate significant archeological sites within the project areas as defined in 36 Code of Federal Regulations (CFR) 800.3.

6.0 RESULTS OF INVESTIGATIONS

Horizon was selected by Pflugerville ISD to conduct an intensive cultural resources inventory and assessment of the proposed locations of Pflugerville ISD's Timmeran Elementary School and Regional Stadium. The proposed Timmeran Elementary School tract consists of an approximately 6.6-hectare (16.3-acre) tract located northeast of and adjacent to the proposed Regional Stadium tract, which covers an area of approximately 15.0 hectares (37.1 acres). These adjacent tracts are located northwest of the intersection of Swenson Farms Boulevard and FM 1825, also known as West Pecan Street, in Pflugerville, Williamson County, Texas. For purposes of the cultural resources survey, the project area is assumed to consist of the combined 6.6-hectare (16.3-acre) Timmeran Elementary School tract and the 15.0-hectare (37.1-acre) Regional Stadium tract, which together cover an area of 21.6 hectares (53.4 acres).

On March 4, 2015, Horizon archeological technicians Briana Nicole Smith and Jared Wiersema, under the overall direction of Jeffrey D. Owens, Principal Investigator, performed an intensive cultural resources survey of the project area to locate any cultural resources that potentially would be impacted by the proposed undertaking. Horizon's archeologists traversed the combined 21.6-hectare (53.4-acre) project area in parallel, linear transects spaced no more than 30.5 meters (100.0 feet) apart and thoroughly inspected the modern ground surface for aboriginal and historic-age cultural resources. The project area consists of an open, upland field that appears to have been used as farmland or pasturage in the past. Vegetation consists of sporadic clump grasses with scattered cedar, live oak, and hackberry trees. An unnamed tributary of Gilleland Creek flows northeastwards near the southeastern boundary of the project area. This tributary is shallowly incised into local bedrock and does not have any adjacent alluvial structures. A gravel driveway enters the tract in the southwestern corner from FM 1825 and traverses the project area from southwest to northeast, paralleling its northwestern boundary. Formerly, this driveway provided access to a mid-20th-century farmstead formerly located on the tract to the northeast of the project area, but this farmstead is no longer extant. Remnant soils were relatively thin across the project area, typically consisting of shallow gravelly clay and clay loam, and limestone gravels and exposed bedrock were observed on the modern ground surface in many areas. The cultural resources survey was conducted under Texas Antiquities Permit No. 7205.

In addition to pedestrian walkover, the TSMASS require the excavation of 1 shovel test per 2 acres for project areas measuring between 11 and 100 acres in size; thus, a minimum of 27 shovel tests were required within the 21.6-hectare (53.4-acre) project area to meet the

TSMASS. Horizon excavated a total of 27 shovel tests during the survey, thereby meeting the TSMASS for a project area of this size.

No cultural resources, historic or prehistoric, were identified within the project area as a result of the survey, including any cultural materials that potentially would have been associated with a mid-20th-century farmstead formerly located on the tract to the northeast of the current project area. This farmstead once consisted of as many as 5 standing structures, including 1 outbuilding that would have fallen within the northwestern corner of the current project area, though all of the buildings had been demolished or moved by 2006. No evidence of this former farmstead was observed within the current project area during the survey.

7.0 SUMMARY AND RECOMMENDATIONS

7.1 CONCEPTUAL FRAMEWORK

The archeological investigations documented in this report were undertaken with 3 primary management goals in mind:

- Locate all historic and prehistoric archeological resources that occur within the designated survey area.
- Evaluate the significance of these resources regarding their potential for inclusion in the NRHP and for designation as SALs.
- Formulate recommendations for the treatment of these resources based on their NRHP and SAL evaluations.

At the survey level of investigation, the principal research objective is to inventory the cultural resources within the project area and to make preliminary determinations of whether or not the resources meet one or more of the pre-defined eligibility criteria set forth in the state and/or federal codes, as appropriate. Usually, management decisions regarding archeological properties are a function of the potential importance of the sites in addressing defined research needs, though historic-age sites may also be evaluated in terms of their association with important historic events and/or personages. Under the NHPA and the Antiquities Code of Texas, archeological resources are evaluated according to criteria established to determine the significance of archeological resources for inclusion in the NRHP and for designation as SALs, respectively.

Analyses of the limited data obtained at the survey level are rarely sufficient to contribute in a meaningful manner to defined research issues. The objective is rather to determine which archeological sites could be most profitably investigated further in pursuance of regional, methodological, or theoretical research questions. Therefore, adequate information on site function, context, and chronological placement from archeological and, if appropriate, historical perspectives is essential for archeological evaluations. Because research questions vary as a function of geography and temporal period, determination of the site context and chronological placement of cultural properties is a particularly important objective during the inventory process.

7.2 ELIGIBILITY CRITERIA FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

Determinations of eligibility for inclusion in the NRHP are based on the criteria presented in the Code of Federal Regulations (CFR) in 36 CFR §60.4(a-d). The 4 criteria of eligibility are applied following the identification of relevant historical themes and related research questions:

> The quality of significance in American history, architecture, archeology, 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. [T]hat are associated with events that have made a significant contribution to the broad patterns of our history; or,
>
> b. [T]hat are associated with the lives of persons significant in our past; or,
>
> c. [T]hat embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> d. [T]hat have yielded, or may be likely to yield, information important in prehistory or history.

The first step in the evaluation process is to define the significance of the property by identifying the particular aspect of history or prehistory to be addressed and the reasons why information on that topic is important. The second step is to define the kinds of evidence or the data requirements that the property must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the site must possess to be significant. This concept of integrity relates both to the contextual integrity of such entities as structures, districts, or archeological deposits and to the applicability of the potential database to pertinent research questions. Without such integrity, the significance of a resource is very limited.

For an archeological resource to be eligible for inclusion in the NRHP, it must meet legal standards of eligibility that are determined by 3 requirements: (1) properties must possess significance, (2) the significance must satisfy at least 1 of the 4 criteria for eligibility listed above, and (3) significance should be derived from an understanding of historic context. As discussed here, historic context refers to the organization of information concerning prehistory and history according to various periods of development in various times and at various places. Thus, the significance of a property can best be understood through knowledge of historic development and the relationship of the resource to other, similar properties within a particular period of development. Most prehistoric sites are usually only eligible for inclusion in the NRHP under Criterion D, which considers their potential to contribute data important to an understanding of prehistory. All 4 criteria employed for determining NRHP eligibility potentially can be brought to bear for historic sites.

7.3 ELIGIBILITY CRITERIA FOR LISTING AS A STATE ANTIQUITIES LANDMARK

The criteria for determining the eligibility of a prehistoric or historic cultural property for designation as an SAL are presented in Chapter 191, Subchapter D, Section 191.092 of the Antiquities Code of Texas, which states that SALs include:

> Sites, objects, buildings, artifacts, implements, and locations of historical, archeological, scientific, or educational interest including those pertaining to prehistoric and historical American Indians or aboriginal campsites, dwellings, and habitation sites, their artifacts and implements of culture, as well as archeological sites of every character that are located in, on, or under the surface of any land belonging to the State of Texas or to any county, city, or political subdivision of the state are state antiquities landmarks and are eligible for designation.

For the purposes of assessing the eligibility of a historic property for designation as an SAL, a historic site, structure, or building has historical interest if the site, structure, or building:

1. [W]as the site of an event that has significance in the history of the United States or the State of Texas;
2. [W]as significantly associated with the life of a famous person;
3. [W]as significantly associated with an event that symbolizes an important principle or ideal;
4. [R]epresents a distinctive architectural type and has value as an example of a period, style, or construction technique; or,
5. [I]s important as part of the heritage of a religious organization, ethic group, or local society.

The Antiquities Code of Texas establishes the THC as the legal custodian of all cultural resources, historic and prehistoric, within the public domain of the State of Texas. Under Part II of Title 13 of the Texas Administrative Code (13 TAC 26), the THC may designate a historic structure as an SAL if it (1) is publicly or privately owned and listed on the NRHP and (2) meets one of the following 6 eligibility criteria:

A. Is associated with events that have made a significant contribution to the broad patterns of our history;
B. Is associated with the lives of persons significant in our past;
C. Is important to a particular cultural or ethnic group;
D. Is the work of a significant architect, master builder, or craftsman;
E. Embodies the distinctive characteristics of a type, period, or method of construction, possesses high aesthetic value, or represents a significant and distinguishable entity whose components may lack individual distinctions; or
F. Has yielded or may be likely to yield information important to the understanding of Texas culture or history.

7.4 SUMMARY OF INVENTORY RESULTS

Horizon archeologists performed an intensive cultural resources survey of the project area to locate any cultural resources properties that potentially would be impacted by the proposed undertaking. The project area was traversed by Horizon's archeologists, the modern ground surface was thoroughly inspected for cultural resources, and a total of 27 shovel tests were excavated within the project area, thereby meeting the state survey standards for a project area of this size. No cultural resources, historic or prehistoric, were identified within the project area as a result of the survey.

7.5 MANAGEMENT RECOMMENDATIONS

Based on the results of the survey-level investigations documented in this report, no potentially significant cultural resources would be affected by the proposed undertaking. In accordance with 36 CFR 800.4, Horizon has made a reasonable and good-faith effort to identify historic properties within the project area. No cultural resources were identified within the project area that meet the criteria for listing on the NRHP according to 36 CFR 60.4 or for designation as an SAL according to 13 TAC 26, and no further archeological work is recommended in connection with the proposed undertaking. However, human burials, both prehistoric and historic, are protected under the Texas Health and Safety Code. In the event that any human remains or burial objects are inadvertently discovered at any point during construction, use, or ongoing maintenance in the project area, even in previously surveyed areas, all work should cease immediately in the vicinity of the inadvertent discovery, and the THC should be notified immediately.

8.0 REFERENCES CITED

Adovasio, J.M., J. Donahue, and R. Stuckenrath
1990 The Meadowcroft Rockshelter Chronology 1975-1990. *American Antiquity* 55:348-354.

Blair, W. F.
1950 The Biotic Provinces of Texas. *Texas Journal of Science* 2:93-117.

Bomar, G.W.
1983 *Texas Weather*. University of Texas Press, Austin.

Bryant, V. M., Jr., and R.G. Holloway
1985 A Late-Quaternary Paleoenvironmental Record of Texas: An Overview of the Pollen Evidence. In *Pollen Records of Late-Quaternary North American Sediments*, edited by V.M. Bryant, Jr., and R.G. Holloway, pp. 39-70. American Association of Stratigraphic Palynologists Foundation, Dallas, Texas.

Carr, J.T.
1967 *Climate and Physiography of Texas*. Texas Water Development Board, Report No. 53, Austin.

Collins, M.B.
1995 Forty Years of Archeology in Central Texas. *Bulletin of the Texas Archeological Society* 66:361-400.

Dice, L.R.
1943 *The Biotic Provinces of North America*. University of Michigan Press, Ann Arbor.

Dillehay, T.D.
1989 *Monte Verde: A Late Pleistocene Settlement in Chile—Paleoenvironment and Site Context*, Vol. 1. Smithsonian Institution Press: Washington, D.C.

1997 *Monte Verde: A Late Pleistocene Settlement in Chile—The Archaeological Context*, Vol. 2. Smithsonian Institution Press: Washington, D.C.

Dincauze, D.F.
1984 An Archaeo-Logical Evaluation of the Case for Pre-Clovis Occupations. *Advances in World Archaeology* 3:275-323. Academic Press, New York.

Fisher, W.L.

1974 *Geologic Atlas of Texas—Austin Sheet*. Bureau of Economic Geology, The University of Texas at Austin.

Haynes, C.V., Jr., D.J. Donahue, A.J. T. Hull, and T.H. Zabel

1984 Application of Accelerator Dating to Fluted Point Paleoindian Sites. *Archaeology of Eastern North America* 12:184-191.

Jurney, D.H., F. Winchell, and R.W. Moir

1989 *Cultural Resources Overview of the National Grasslands in North Texas: Studies in Predictive Archaeological Modeling for the Caddo and LBJ Grasslands*. Archaeology Research Program, Institute for the Study of Earth and Man, Southern Methodist University, Dallas. Submitted to the US Forest Service, Lufkin, Texas.

Kelly, R.L., and L.C. Todd

1988 Coming into the Country: Early Paleo-Indian Hunting and Mobility. *American Antiquity* 53:231-244.

Larkin, T.J., and G.W. Bomar

1983 *Climatic Atlas of Texas*. Publication LP-192. Texas Department of Water Resources, Austin.

Lynch, T.F.

1990 Glacial-Age Man in South America?: A Critical Review. *American Antiquity* 55(1):12-36.

Meltzer, D.J.

1989 Why Don't We Know When the First People Came to America? *American Antiquity* 54(3):471-490.

Meltzer, D.J., D.K. Grayson, G. Ardila, A.W. Barker, D.F. Dincauze, C.V. Haynes, F. Mena, L. Nuñez, and D.J. Stanford

1997 On the Pleistocene Antiquity of Monte Verde, Southern Chile. *American Antiquity* 62(4):659-663.

National Park Service (NPS)

2015 National Register of Historic Places online database. <http://nrhp.focus.nps.gov>. Accessed March 3, 2015.

Natural Resources Conservation Service (NRCS)

2004 SSURGO Database for Travis County, Texas. Natural Resources Conservation Service, US Department of Agriculture.

2015 Web Soil Survey, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed March 3, 2015. US Department of Agriculture.

NETR Online (NETR)

2015 Historic Aerials. <http://www.historicaerials.com>. Accessed March 5, 2015.

Patterson, L.W.

1980 *The Owen Site, 41HR315: A Long Occupation Sequence in Harris County, Texas*. Houston Archeological Society, Report No. 3.

1995 The Archeology of Southeast Texas. *Bulletin of the Texas Archeological Society* 66:239-264

Prewitt, E.

1981 Cultural Chronology in Central Texas. In *Bulletin of the Texas Archeological Society* 52:65-90.

1985 From Circleville to Toyah: Comments on Central Texas Chronology. *Bulletin of the Texas Archeological Society* 53:201-238.

Ricklis, R.A.

1994 Toyah Components: Evidence for Occupation in the Project Area During the Latter Part of the Late Prehistoric Period. In *Archaic and Late Prehistoric Human Ecology in the Middle Onion Creek Valley, Hays County, Texas*, by R.A. Ricklis and M.B. Collins, pp. 207-316. Studies in Archeology, No. 19. Texas Archeological Research Laboratory, The University of Texas at Austin.

Texas Historical Commission (THC)

2015 *Texas Archeological Sites Atlas Restricted Database*. <http://www.nueces.thc.state.tx.us/>. Accessed March 3, 2015.

Texas State Historical Association (TSHA)

2015 Travis County. *The Handbook of Texas Online: A Digital Gateway to Texas History*. <http://www.tsha.utexas.edu/handbook/online/articles/hct08.html>. Accessed March 3, 2015.

Thornwaite, C.W.

1948 An Approach Toward a Rational Classification of Climate. *Geographical Review* 38:55-94.

US Department of Agriculture (USDA)

2014 Digital orthophoto, Travis County, Texas. National Agriculture Imagery Program, Farm Service Agency, Aerial Photography Field Office.

US Geological Survey (USGS)

1987 7.5-minute series topographic maps, Pflugerville East, Texas, quadrangle.

1987 7.5-minute series topographic maps, Pflugerville West, Texas, quadrangle.

Wheat, J.B.

1953 *The Addicks Dam Site*. Bulletin 154:143-252. Bureau of American Ethnology, US Government Printing Office, Washington, D.C.

APPENDIX A:

Shovel Test Data

Table A-1. Shovel Test Summary Data

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
BS1	630931	3369172	0-15	Dark grayish-brown gravelly clay loam	None
			15+	Limestone gravels	None
BS2	630994	3369144	0-40	Dark grayish-brown clay loam	None
			40+	Limestone gravels	None
BS3	631066	3369107	0-35	Dark grayish-brown clay loam	None
			35-40+	Very dark grayish-brown clay with small limestone gravels	None
BS4	631144	3369059	0-25	Dark grayish-brown gravelly clay	None
			25+	Limestone gravels	None
BS5	631207	3369136	0-30	Dark olive-gray clay loam	None
			30-40+	Dark olive-gray clay	None
BS6	631134	3369167	0-40+	Dark grayish-brown clay	None
BS7	631068	3369205	0-25	Dark grayish-brown clay loam	None
			25-30+	Very dark grayish-brown clay	None
BS8	630985	3369258	0-30	Dark grayish-brown clay loam	None
			30+	Very dark grayish-brown clay	None
BS9	631011	3369355	0-40	Dark grayish-brown gravelly clay loam	None
			40+	Limestone gravels	None
BS10	631076	3369315	0-25	Dark grayish-brown gravelly clay loam	None
			25+	Limestone gravels	None
BS11	631160	3369263	0-35	Very dark grayish-brown clay loam	None
			35+	Limestone gravels	None
BS12	631242	3369202	0-30+	Dark olive-gray clay	None
BS13	631321	3369258	0-30+	Dark olive-gray clay	None
BS14	631274	3369322	0-20+	Very dark grayish-brown clay	None
JW1	631471	3369378	0-30	Grayish-brown loamy clay	None
			30+	Grayish-brown gravelly loamy clay	None
JW2	631523	3369456	0-30	Grayish-brown loamy clay	None
			30+	Grayish-brown gravelly loamy clay	None
JW3	631118	3369576	0-30+	Grayish-brown loamy clay	None
JW4	631245	3369545	0-10	Grayish-brown loamy clay	None
			10+	Limestone rocks	None
JW5	631441	3369474	0-15+	Limestone gravel fill	None

Table A-1. Shovel Test Summary Data (cont.)

ST No.	UTM Coordinates[1]		Depth (cmbs)	Soils	Artifacts
	Easting	Northing			
JW6	631361	3369506	0-15+	Limestone gravel fill	None
JW7	631379	3369399	0-10+	Limestone rocks	None
JW8	631295	3369457	0-25+	Very dark brown clay	None
JW9	631194	3369479	0-10	Grayish-brown clay	None
			10+	Grayish-brown gravelly clay	None
JW10	631090	3369517	0-10	Very dark gray clay	None
			10+	Limestone rocks	None
JW11	631052	3369467	0-5+	Very dark brown gravelly clay	None
JW12	631133	3369443	0-30	Very dark brown clay loam	None
			30+	Very dark brown gravelly clay	None
JW13	631209	3369411	0-30	Very dark brown clay loam	None
			30+	Very dark brown gravelly clay	None

[1] All UTM coordinates are located in Zone 14 and utilize the North American Datum of 1983 (NAD 83)

cmbs = Centimeters below surface

ST = Shovel test

UTM = Universal Transverse Mercator