A Phase I Cultural Resources Survey
for a Portion of the Proposed FRONT RANGE
Natural Gas Liquids Pipeline Project, Spread 3
Hutchinson County, Texas
Antiquities Permit No. 6371

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Document No. 120142
Job No. 100027376

A PHASE I CULTURAL RESOURCES SURVEY FOR A PORTION OF THE PROPOSED FRONT RANGE NATURAL GAS LIQUIDS PIPELINE PROJECT, SPREAD 3 HUTCHINSON COUNTY, TEXAS

TEXAS ANTIQUITIES PERMIT NO. 6371

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December 2012

Abstract

Between the May and August 2012, Atkins North America, Inc. (Atkins) conducted an intensive cultural resources survey of the Proposed Front Range Spread 3 Pipeline in the Panhandles of Oklahoma and Texas for the FRONT RANGE PIPELINE LLC. The proposed 16-inch natural gas liquids pipeline extends approximately 40 miles (64.3 kilometers) through Oklahoma and another 97 miles (156.1 kilometers) through Texas. Construction activities for the proposed project will be regulated by the U.S. Army Corps of Engineers, Tulsa District, and authorized under Nationwide Permit 12. A portion of the project also crosses property owned by the City of Stinnett Independent School District (Tract TX-HC-0016.0010) and thus is subject to compliance with the Texas Antiquities Code. One previously recorded site, site 41HC67 was located within this portion of the survey corridor during the records search; however, this site was not reevaluated during the May–August survey as access to this tract was prohibited due to landowner constraints.

In October 2012, the previously inaccessible tract TX-HC-0016.0010 located in Hutchinson County was evaluated under Texas Antiquities Permit No. 6371. Site 41HC67 was revisited during this investigation. The site area within the survey corridor was subjected to a systematic surface inspection. A total of 6.1 acres (2.5 hectares) were surveyed during this effort. However, due to the eroded nature of the soils, no shovel tests were excavated. Site 41HC67 is a dismantled historic railroad in use from 1927 to 1972. Based on observed soil erosion and disturbance to the site from dismantlement, Atkins recommends that the portion of site 41HC67 within the survey corridor is not eligible for inclusion in the National Register of Historic Places under any criteria and does not meet criteria for nomination as a State Archeological Landmark. Atkins also recommends that no additional cultural resource investigations at this location are warranted.

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I. INTRODUCTION

Atkins North America, Inc. (Atkins) was contracted by the FRONT RANGE PIPELINE LLC to conduct an intensive cultural resources survey in portions of Cimarron County, Oklahoma, and Dallam, Sherman, Moore, Hutchinson, and Carson counties, Texas, to support the Spread 3 portion of the proposed 16-inch Front Range Natural Gas Liquids Pipeline. Spread 3 of the Front Range Pipeline Project begins at the Oklahoma-Colorado state line in northern Cimarron County, Oklahoma, and extends southeasterly to the northeastern corner of Carson County, Texas (Figure 1).

The 137-mile (220.4-km)-long Spread 3 proposed pipeline consists of approximately 40 miles (64.3 km) in Oklahoma and 97 miles (156.1 km) in Texas of new 16-inch natural gas liquids pipeline. Fieldwork for the proposed project was conducted between May and August 2012 (Shortes 2012). However, tract TX-HC-0016.0010, which is owned by the City of Stinnett Independent School District and contains previously recorded site 41HC67, was not evaluated during the May–August survey pending property access (Appendix).

The proposed pipeline will require a maximum of 90 feet (ft) (27 meters [m]) of workspace to perform the necessary construction activities, including a 40-ft (12.2-m) permanent easement and 50 ft (15.2 m) of temporary workspace. However, the cultural resources survey corridor was 300 ft (91 m) wide, 150 ft (45 m) on either side of the centerline. The proposed pipeline trench will be 3 ft (0.9 m) wide and up to 8 ft (2.4 m) in depth.

Construction activities for the proposed project will be regulated by the U.S. Army Corps of Engineers (USACE), Tulsa District, and authorized under Nationwide Permit 12. Since the project requires a Section 404 Permit from the USACE, Section 106 of the National Historic Preservation Act applies. Since a portion of the project also crosses property owned by the City of Stinnett Independent School District (Tract TX-HC-0016.0010), this portion of the project is also subject to compliance with the Texas Antiquities Code. A total of 6.1 acres (2.5 hectares) were surveyed during this effort. The survey and reporting followed the *Council of Texas Archeologists Guidelines for Cultural Resource Management Reports.*

Fieldwork was conducted in November 2012 under the direction of Project Archeologist C. Russ Shortes. Field personnel consisted of Kelley Russell and Haley Rush. Dale Norton served as Principal Investigator. Historian Brandy Harris conducted historic research. Paperwork was processed and prepared for curation by Laboratory Director Candace Wallace, who also drafted the site map figures for the report. Krista McClanahan conducted the file review.

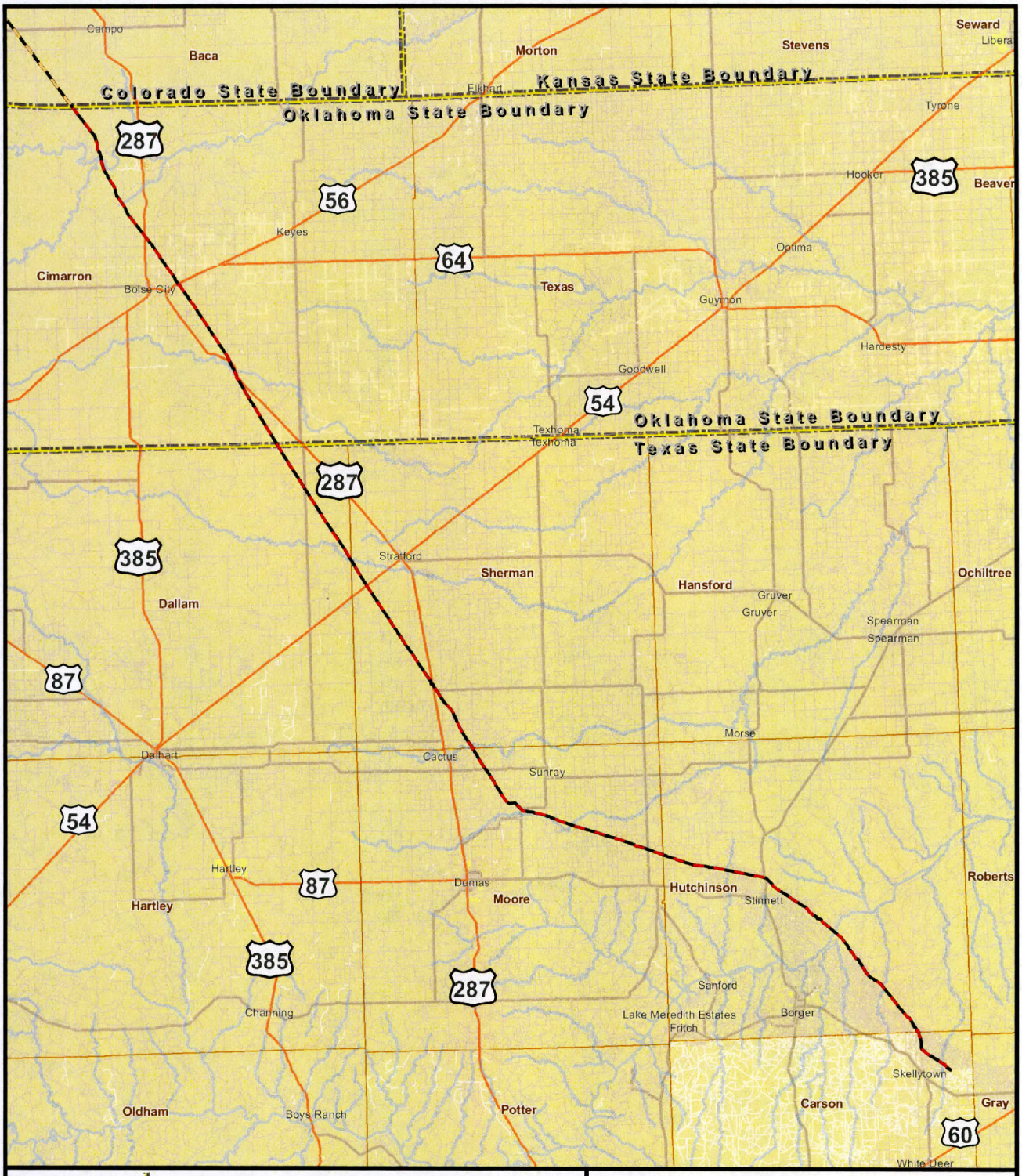

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Figure 1
FRONT RANGE PIPELINE LLC
Front Range Pipeline Project
Spread 3
Project Vicinity Map

Prepared By: ATKINS/14923	Scale: 1 " = 15 miles
Job No.: 100027376	Date: Dec 10, 2012

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This report presents the results of the cultural resources survey for tract TX-HC-0016.00100 and the revisit of site 41HC67. No additional cultural resources were recorded. The following sections document the methods and results of the investigation, the cultural setting of the Panhandle region of Texas, and the environment of the project area. The final section summarizes the results of these investigations and provides recommendations.

II. NATURAL SETTING

PHYSIOGRAPHY AND GEOLOGY

The proposed pipeline crosses the northwestern corner of the Texas Panhandle and extends into the far western portion of the Oklahoma Panhandle. In Texas, this region is within the High Plains physiographic province (Bureau of Economic Geology [BEG] 1996). The High Plains form a nearly flat plateau with average elevations of approximately 3,000 ft above mean sea level (amsl). Gravel deposits and stream-laid sands, which contain the Ogallala Aquifer, underlie the plains. Windblown sands and silts form thick, rich soils and caliches locally. Numerous playa lakes are scattered over the treeless plains. The eastern boundary is a westward-retreating escarpment capped by a hard caliche. Widespread small, intermittent streams dominate the drainage. The Canadian River cuts across the region, creating the Canadian Breaks and separating the Central High Plains from the Southern High Plains. The Pecos River drainage erodes the west-facing escarpment of the Southern High Plains, which terminates against the Edwards Plateau on the south. Quaternary rock formations include alluvial and fluviatile deposits associated with the Cimarron and Canadian Rivers and their larger tributaries. Alluvium includes recent floodplain deposits consisting of clay, silt, sand, and gravel (BEG 1969, 1983, 1984).

The Tertiary-aged Ogallala Formation outcrops in this region, which overlies Permian, Triassic, Jurassic, and Cretaceous strata, and consists primarily of heterogeneous coarse-grained sand and gravel in the lower part grading upward into fine clay, silt, and sand (BEG 1969). Triassic formations include both the Trujillo and Tecovas formations. The Trujillo Formation is a conglomerate with sand and shale. This is sandy and composed of granules and pebbles of quartz, limestone, sandstone, siltstone, chert, and fragments of petrified wood. The Tecovas Formation is composed of shale, clay, siltstone, and sand (BEG 1983).

REGIONAL VEGETATION

The proposed pipeline is primarily within the High Plains Vegetational Area of Texas as delineated by Hatch et al. (1990). The High Plains Vegetational Area in Texas is higher and drier than the Central Great Plains to the east, and contrasts with the irregular, mostly grassland or grazing land of the Northwestern Great Plains to the north. Much of the High Plains is characterized by smooth to slightly irregular plains with a high percentage of cropland. Grama-buffalograss is the natural vegetation in the Texas High Plains. Wheatgrass-needlegrass is found to the north, Trans-Pecos shrub savanna to the south, and taller grasses to the east. The northern boundary of this ecological region is also the approximate northern limit of winter wheat and sorghum and the southern limit of spring wheat (U.S. Geological Survey [USGS] 2003).

Griffith et al. (2004) divide the Texas High Plains (Hatch et al. 1990) into the Rolling Sand Plains and the Canadian-Cimarron High Plains regions. Griffith et al. (2004) refer to the Rolling Sand Plains (Hatch et al. 1990) as the Southwestern Tablelands and identify two regions: the Canadian-Cimarron Breaks and the Semiarid Canadian Breaks. The Canadian-Cimarron Breaks is limited to the Canadian River Valley and its major tributary valleys, roughly east of Amarillo, Texas. This ecoregion (Griffith et al. 2004) is an erosional incision between the Central Great Plains and the High Plains. The Semiarid Canadian Breaks are located within the Canadian River Valley to the west of the Canadian-Cimarron Breaks and is similar in relief but drier.

The Rolling Sand Plains expand northward from the lip of the Canadian River trough, and they are topographically expressed as flat sandy plains or rolling dunes. In northern Texas, the vegetative cover of the Rolling Sand Plains is transitional between the Shinnery Sands to the south and the sandsage prairies of Oklahoma and Kansas to the north. Havard shin oak (*Quercus havardii*) and sand sagebrush (*Artemisia filifolia*) perform an important function of stabilizing sandy areas subject to wind erosion.

The Canadian/Cimarron High Plains ecoregion includes that portion of the Llano Estacado that lies north of the Canadian River in the Texas Panhandle. Winters are more severe than on the Llano Estacado; the increased snow accumulation delays summer drought conditions because the snowmelt saturates the ground in the spring season. Although the topography is just as flat as the rest of the Llano Estacado, the northern portion has fewer playas, and it is more deeply dissected by stream channels. There is also more grazing land; the rougher terrain near the stream incisions tends to be grazed rather than tilled. In cultivated areas, corn, winter wheat, and grain sorghum are the principal crops.

VEGETATION COMMUNITY TYPES

Vegetation community types occurring in this region include upland brushland, riparian woodland, open savannah, grassland (including pasture and cropland), and hydric and aquatic habitats. The grassland community type represents the large majority of this region. Upland woodland and riparian woodland communities make up a relatively small component here, due to the fact that much of the region has been converted to cropland, pastureland, and rangeland with the majority of the remaining woodlands restricted to linear, riparian zones along streams.

WILDLIFE HABITAT AND SPECIES

The Panhandle of Texas is within the Kansan Biotic Province as described by Blair (1950). The Kansan Biotic Province is divided into three well-marked biotic districts: Mixed-grass Plains district, Mesquite Plains district, and Short-grass Plains district. At least 59 species of mammals are known to have occurred in the Kansan province in recent times, in addition to 31 snake species, 14 lizards, 1 turtle, 14 anurans (frogs and toads), and 1 urodele (salamanders and newts) (Blair 1950). Only one snake, the Brazos water snake (*Natrix harteri*), with a restricted range in the

Mesquite Plains district, is limited to the Kansan province. There are five species of mammals that are restricted to the Kansan province. These species include swift fox (*Vulpes velox*), pocket gopher (*Geomys lutescens*), plains pocket mouse (*Perognathus flavescens*), Texas kangaroo rat (*Dipodomys elator*), and Palo Duro mouse (*Peromyscus comanche*). Urodele fauna likely to occur in the study area include the barred tiger salamander (*Ambystoma tigrinum mavortium*), which is restricted to moist bottomland or hydric habitats (Dixon 2000; Garrett and Barker 1987).

SOILS

Based on the U.S. Department of Agriculture, Natural Resources Conservation Service Soil Survey of Hutchinson County, Texas (USDA, NRCS 2012), tract TX-HC-0016.00100 crosses the Mobeetie-Berda-Veal association. A brief description of this soil association, and the soil map units that form the association, is presented below.

The Mobeetie-Berda-Veal association consists of gently sloping to steep, calcareous loamy soils that are moderately rapidly permeable to moderately permeable. This association is characterized by deep soils along deeply cut drainageways. It makes up approximately 20 percent of the county landscape. This soil association formed from alluvial and colluvial sediments that were derived from the Ogallala Formation. Mobeetie soils have a surface layer of grayish-brown calcareous fine sandy loam approximately 8 inches thick underlain by light brownish-gray, pale brown, then light yellowish-brown calcareous fine sandy loam 72 inches thick. Berda soils have a surface layer of grayish-brown calcareous fine sandy loam approximately 8 inches thick underlain with light brownish-gray, pale brown, then very pale brown calcareous fine sandy loam 72 inches thick. Veal soils have a surface layer of brown calcareous fine sandy loam approximately 6 inches thick underlain with grayish-brown then pink calcareous sandy clay loam 60 inches thick. This association is used mainly for rangeland with a few areas used for crops.

III. CULTURAL SETTING

The generalized cultural chronology that is recognized for the Texas Panhandle Plains region is divided into four cultural stages or periods that go by various names. The cultural history of the study area, known from recovered archeological material, can be assigned to one of four developmental periods: Paleoindian, Archaic, Late Prehistoric, and Protohistoric (Boyd 1997). These divisions primarily reflect changes in subsistence as indicated by material remains and settlement patterns. The following sections present an overview of major prehistoric and historic resources that may be found within the study area.

PREHISTORIC OVERVIEW

The Paleoindian period refers to prehistoric populations that inhabited North America from the end of the Pleistocene epoch until the early Holocene epoch. The earliest well-defined period of human habitation in the New World began about 11,000 B.C. These populations are believed to have been composed of small nomadic bands of hunters and gatherers who exploited herds of megafauna, such as mammoth, as well as smaller mammals. Plants were almost certainly consumed, but data regarding this aspect of subsistence are rare.

The Paleoindian period on the Llano Estacado is subdivided into a sequence of four main cultures (Holliday 1987); from earliest to latest, these are Clovis, Folsom, Plainview, and Firstview (Turner and Hester 1985). Distinctive projectile points and economic activities differentiate one culture from the next.

The primary marker of the Clovis culture is the Clovis fluted point. Clovis hunters commonly hunted now-extinct megafauna such as mammoths. A number of Clovis sites occur in the region. These include the Clovis type site at Blackwater Draw Locality #1 near Clovis, New Mexico (Hester 1972) and the Roberts County Miami site on the northern edge of the Llano Estacado (Sellards 1938). Johnson and Holliday (1985) also report Clovis material at the Lubbock Lake site near Lubbock, Texas.

Following Clovis is the Folsom culture. The Folsom culture is characterized by the hunting of *Bison antiquus* using a more-refined fluted point than Clovis. Regional Folsom sites include the type site near Folsom, New Mexico (Figgins 1927), the Lipscomb site in Lipscomb County (Wormington 1957) the Lubbock Lake site, the Adair-Steadman site in Fisher County (Tunnell 1977), and the Lake Theo site (41BI70) in Briscoe County (Harrison and Killen 1978; Harrison and Smith 1975).

The Plainview culture was similar to the Folsom culture in its use of *Bison antiquus*. The Plainview point, however, was unfluted and parallel flaked. Plainview sites in the region include the Hale County type sites (Sellards et al. 1947), and the San Jon (Wormington 1957) and Milnesand sites in eastern New Mexico (Sellards 1955).

The terminal Paleoindian Firstview culture hunted both now extinct and modern bison with unfluted, parallel-flaked points similar to Plainview points. Sites in the region with Firstview components include Blackwater Draw Locality #1 and Lubbock Lake.

Environmental changes and adaptation by later cultural groups define the end of the Paleoindian period. By about 6500 B.C., the wet and cool conditions of the Anathermal gave way to much warmer and drier conditions. Most megafauna species, including mammoth, mastodon, and *Bison antiquus*, as well as Anathermal plants, were then extinct.

The Archaic period follows the Paleoindian and spans the period between 6500 B.C. to approximately A.D. 500. It is divided into the Early Archaic (5500 to 2000 B.C.) and Late Archaic (2000 B.C. to A.D. 500). The Early Archaic substage in the High Plains is characterized by a pattern of localized foraging for wild plant foods and small game. There is a notable absence of bison remains in area sites, and Dillehay (1974) surmises this is the first period of bison scarcity on the Southern Plains. Lithic artifacts that are common during the Early Archaic include stemmed dart points, gouges, grinding implements, hearthstones, and boiling pebbles (Hughes 1991).

By about 2000 B.C., the Late Archaic sub-stage is defined largely by climatic changes to a more modern climate (Medithermal). The Late Archaic is represented by thousands of archeological sites, in sharp contrast to the few sites identified that date to the Early Archaic substage. During the Late Archaic, the primary mode of subsistence was bison hunting, even though assemblages dating to this substage indicate exploitation of both large and small game animals as well as exploitation of wild plants. Nomadic groups of people followed the ever-increasing bison herds redeveloping bison-hunting skills reminiscent of their Paleoindian predecessors (Boyd 1997; Hughes 1991). Late Archaic site types include bison kill/butchering sites, campsites, and rockshelters. The predominant types of projectile points during this time are various kinds of barbed dart points (Hughes 1991). Other types of lithic tools in Late Archaic assemblages include knives, key-shaped drills, bifacial and unifacial choppers, various types of scrapers, gravers, and denticulates. Bison kill sites have been the most common site type investigated from this time period.

By about A.D. 500, a wetter climate in the region ushered in the Late Prehistoric period, which is subdivided into Late Prehistoric I and Late Prehistoric II. The introduction of several new ideas to the cultural inventory began the change from nomadic hunter-gatherers toward a more sedentary villager-gardener lifestyle (Hughes 1991). These new innovations included the bow and arrow, pottery, pithouses, and more than likely, some gardening or horticulture (Boyd 1997; Hughes 1991). Settlements typically are located near active or abandoned river and stream channels. Late Prehistoric occupations typically occur in the same location as those of the preceding Archaic period. Hunting and gathering was still the primary mode of subsistence for people in the area. Diagnostic artifacts from this period include contracting-stemmed Perdiz arrow points and triangular Harrell points (Collins 1969; Runkles 1964; Suhm and Jelks 1962; Turner and Hester 1985).

Hughes (1991) defines this period as starting about A.D. 200 with the appearance of barbed arrow points and Woodland cordmarked and/or Mogollon Brownware pottery. The terminal date of about A.D. 1100 splits the difference between about A.D. 1000, when a Woodland/Village transition was taking place in the northern part of the Panhandle Plains, and about A.D. 1200, when a pit-to-surface-house transition was taking place on the southwestern part of the South Plains (Cruse 1992). This transition includes, in addition to changes in house type, a shift from barbed points to side-notched triangular points.

Three Late Prehistoric cultures occur on the Llano Estacado: Lake Creek on the northern edge, Palo Duro on the eastern edge, and Eastern Jornada on the southwest margins. The latter consists of the Querecho and Maljamar phases.

The Lake Creek complex is a Plains Woodland culture that was first identified on the basis of excavations conducted at the Lake Creek site in Hutchinson County (Hughes 1962). The identifying characteristics of this complex include cordmarked ceramics, Scallorn-like arrow points, and a lithic assemblage consisting of scrapers, retouched flakes, and a high frequency of one-handed cobble manos and basin-type slab metates. Features usually found at Lake Creek sites include storage pits and rock-lined hearths. These sites tend to be located on lesser tributaries, rather than along primary waterways in areas that appear to have been frequently flooded (Couzzourt 1982; Cruse 1992).

The Palo Duro complex, dating from about A.D. 200 to 1000, was initially recognized as a separate cultural complex by Hughes and Willey (1978). The type site for the Palo Duro complex is the Deadman's Shelter site located in Tule Canyon below the juncture of Deadman's and Barber's creeks, now in McKenzie Reservoir (Hughes and Willey 1978). Other Palo Duro complex sites include the Canyon City Club Cave in Randall County (Hughes 1969), the Blue Clay site (Hughes and Willey 1978), the Chalk Hollow site (Wedel 1975), and the Kent Creek site (41HL66) (Cruse 1992).

The artifact assemblage for Palo Duro sites consists primarily of Deadman's and Scallorn arrow points and Mogollon Brownware ceramics. Also included in the assemblage are small numbers of corner-notched dart points, high concentrations of slab metates and cobble manos, ovate-shaped knives, scrapers, and some bone tools. The lithic material used is predominantly local, but a few flakes of materials such as obsidian have been recovered at these sites. Sites dating to the Palo Duro complex are small open camps, rockshelters, or pithouses located along the eastern margins of the Texas Panhandle (Cruse 1992).

Based on test excavations at sites on the southwestern Llano Estacado in New Mexico, Corley (1965) proposed an eastern extension of the Jornada branch of the Mogollon culture with a sequence of Querecho and Maljamar phases. Since 1965, Collins (1966, 1968) reported components of the Eastern Jornada phases at several other sites in southeastern New Mexico and Texas.

According to Corley (1965) and Collins (1966, 1968, 1971), the Querecho phase evolved out of the local Late Archaic Jornada-wide Hueco phase. It dates from A.D. 950 to 1100. It is characterized by a lack of houses. Locally made plain brownware, corner-notched arrow points, and small dart points are common at such sites. The Maljamar phase (A.D. 1100–1300) is characterized by pithouses, locally made plain and corrugated brownwares, several kinds of intrusive wares, and corner-notched and side-notched arrow points.

Beginning around A.D. 1100 or 1200 and coinciding with the appearance of side-notched triangular arrow points, the Late Prehistoric II marks the transition from a Woodland to a Village cultural lifestyle. This period marks the transition from pithouses to surface houses and subsistence regimes with a heavy reliance on horticulture (Hughes 1991). The Plains Village culture developed out of the Plains Woodland cultures in the region and is often referred to as the Early Plains Village period (Baugh and Wyckoff 1982; Hofman 1984). In the Texas Panhandle, the transition from a Woodland to a Plains Village cultural lifestyle occurred about A.D. 1200 with the Antelope Creek phase (A.D. 1200–1500), located principally along the Canadian River, and the Washita River phase (A.D. 1250–1450) located in western and central Oklahoma (Cruse 1992). Characteristics of the Antelope Creek phase include Borger Cordmarked ceramics, Washita and Fresno arrow points, and rectangular structures with rock slab foundations. The economy during the Antelope Creek phase was based on bison hunting and horticulture.

The Washita River phase is characterized by a ceramic assemblage that is primarily plainware and houses that are not slab lined. Some of the characteristics that it does share with the Antelope Creek phase are the use of Washita and Fresno arrow points and subsistence activities revolving around bison procurement and horticulture (Cruse 1992; Hughes 1991).

On the southern Llano Estacado the Ochoa phase dates between A.D. 1300 and 1450. It is characterized by jacal-like surface houses with rock and adobe foundations, side-notched triangular points, and locally made Ochoa Indented Brownware.

The Late Prehistoric II pattern of seasonal hunting and gathering with limited horticulture probably would have remained unchanged until well into the historic stage had it not been for Athapaskan and Shoshonean speakers, bison, and the horse. By at least A.D. 1200, Athapaskan speakers began to move south along the eastern slope of the Rocky Mountains from the Great Slave Area of Canada (Cruse et al. 1993).

The Athapaskans split into two prongs. The Western Athapaskans gradually evolved into the Navajo, San Carlos, Chiricahua, and Mescalero Apache. The Eastern Athapaskans included Jicarilla, Paloma, Carlana, and Lipan Apache. The latter assumed control of the Llano Estacado and its bison herds by about A.D. 1500. The Lipan Apaches also engaged in limited agriculture with techniques learned from the Pueblos.

Spanish explorer Francisco Vázquez de Coronado crossed the northern Llano Estacado and Panhandle Plains between A.D. 1540 and 1542. The Eastern Apaches by then had a well-defined seasonal round including communal hunts and raids and limited agriculture. Apache camps of this time are identified by the presence of Garza and Lott projectile points, Tierra Blanca plain ceramics, and Rio Grande glaze wares (Cruse et al. 1993). At the time of European contact, the area was inhabited by indigenous groups that had extensive trade networks with the Caddo in east Texas and the Trans-Pecos groups to the west (Suhm 1958). The Lipan Apache entered the area from the Plains in pursuit of food in the seventeenth century. Trade items such as glass beads, European-made ceramics, gun parts, and metal arrow points indicate contact with Europeans. The widespread adoption after A.D. 1598 of the Spanish mustang by the Plains cultures resulted in the removal of the eastern Apache from the Llano Estacado.

Historically, the project area lies in the *Comancheria*, the regions of Comanche dominance in the eighteenth and nineteenth century (Thurmond et al. 1981). From approximately A.D. 1700, the region's population grew to include Lipan Apache, various bands of Comanches, and, it is supposed, remnants of the original bands of the indigenous hunters and gatherers. The introduction of the horse and European firearms allowed the Comanche to function as the dominant cultural group until the late 1870s. Unlike previous occupants of the area, the Comanche lived in seasonal encampments and did not construct permanent dwellings. Their mobile society followed the plains herd animals on seasonal migrations. This is not to imply that the Comanche did not come together in large groups. By necessity, multiple bands would gather in the summer and fall for large-scale bison hunts (Cruse et al. 1993).

HISTORIC OVERVIEW

The Texas Panhandle was the Indians' domain until the Red River War of 1874 (Cruse 2008). During this military campaign, the United States Army was commanded to drive the Indians in the Texas Panhandle to the Indian Territory. Comanche, Kiowa, and Southern Cheyenne Indians joined forces to fight against the army, but in the end they were forcibly removed from Texas. Following the Indians' removal, buffalo hunters came and exterminated the great herds on which the Indians had depended, allowing Anglo ranchers to move into the area (Cruse 2008).

From the mid 1870s to the early 1880s, *pastores* (sheepherders) from New Mexico began moving into this portion of Texas in search of grazing land and water for their sheep. Most *pastores* herded their flock on a seasonal basis along the upper Canadian River (Anderson 2012). The *pastores* and their flocks followed old Indian trails and utilized the old Cibolero and Comanchero campsites on which they erected crude rockshelters. After the Red River War, an increasing number of *pastores* began entering the area. The *pastores*' yearly migration into the region contributed significantly to the population and economy of the Texas Panhandle in the early 1880s. However, shortly thereafter, cattlemen began moving into the region in large numbers and began forcing the *pastores* out

of the area by buying them out or restricting their grazing lands by fencing the previously free range (Rathjen 2009).

Hutchinson County

Hutchinson County was established in 1876 and named for pioneer jurist Anderson Hutchinson. The first settlers of the county were free-range cattlemen. The county's economy was dominated by ranching for the next four decades; by 1890 the county had nine ranches and 58 residents. By 1900 there were 63 ranches and farms established in Hutchinson County, and the population was 303. Hutchinson County was attached to Wheeler County for administrative purposes and then to Carson County, but a movement to organize the county began in 1901. By 1910 the population had reached 892, and the county was divided into 16 school districts.

Crop cultivation, primarily wheat, expanded slowly in Hutchinson County during the first three decades of the twentieth century. By 1910 there were 150 farms and ranches, 134 in 1920, and 161 by 1930. The number of cattle in the county rose after 1910 to reach about 25,200 in 1920 but declined over the next 10 years to about 15,300. Hutchinson County remained primarily a ranching and agricultural center until the discovery of the vast Panhandle oil field in the early 1920s. The oil boom finally attracted railroads, and in 1924 the Chicago, Rock Island and Gulf Railway was built across the western part of the county, and in 1926 the Panhandle and Santa Fe railways extended a spur line from Panhandle in Carson County to Borger and Phillips. The population increased from 721 in 1920 to 14,848 in 1930 as a result of the oil boom.

The oil boom ended as a result of the Great Depression, and farming and ranching were devastated. World War II saw resurgence in the carbon industry, and Buenavista was established west of Borger. By 1950, the county's population rose to 31,580 and to 34,419 by 1960, only to decrease almost 30 percent to 24,443 due to oil production decline. Oil production continued to decline through most of the late twentieth century. Despite declining prices in beef and oil, Hutchinson County remains largely dependent on the petroleum and cattle industries. Since the 1920s petroleum has been the chief industry in the county and Hutchinson County is considered the center of oil, gas, petrochemical, and synthetic-rubber production in the Panhandle. The county is also one of the world's largest pump stations for natural gas (Abbe 2012).

PREVIOUS INVESTIGATIONS

Atkins conducted a records and literature review utilizing the files and maps at the Texas Archeological Research Laboratory (TARL), J.J. Pickle Research Campus, at The University of Texas at Austin for the purpose of determining the location of previously recorded archeological sites (sites issued a trinomial/recorded at TARL) within the proposed project area. Using the files at TARL, previously recorded archeological sites were plotted on USGS 7.5-minute Texas quadrangle maps. The Texas Historical Commission's on-line Restricted Archeological Sites Atlas files were also used to identify listed and eligible National Register of Historic Places (NRHP) properties and sites,

NRHP districts, cemeteries (including Historic Texas Cemeteries), Official Texas Historical Markers (including Recorded Texas Historic Landmarks), and State Archeological Landmarks (SALs). One previous investigation for the Proposed Transanadarko Pipeline System was conducted in 1981. The investigation included Texas, Oklahoma, Arkansas, and Louisiana. Site 41HC67 was recorded during this effort (New World Research, Inc. 1981). No other previous investigations were encountered as a result of the records review.

A study area measuring 2,000 ft (610 m) wide (1,000 ft [305 m] on both sides of the proposed project centerline) was used to model prehistoric settlement in proximity to the survey corridor. Previously recorded cultural resource site forms, reports of previous archeological investigations, and secondary sources concerning the prehistoric and historic background of the area were also reviewed.

IV. FIELD AND LABORATORY METHODS

SURVEY STRATEGY

The cultural resources survey was conducted under a combination of rules and regulations, including areas described under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act and conditions of Texas Antiquities Permit 6371 under the Texas Antiquities Code. The entire area of potential effect within the state-owned tract TX-HC-0016.00100 was surveyed for the presence of cultural resources.

The proposed pipeline requires a maximum of 90 ft (27 m) of standard workspace to perform the necessary construction activities, including a 40-ft (12.2-m) permanent easement and 50 ft (15.2 m) of temporary workspace. However, Atkins conducted cultural resources surveys within a corridor that measures approximately 300 ft (91 m) in width to ensure adequate coverage and allow flexibility for minor adjustments in pipeline alignment. Three transects were placed at 25 m (82 ft), 50 m (164 ft), and 75 m (246 ft), with the 50-m transect positioned on the centerline of the survey corridor.

SURVEY METHODS

The original scope of work for this project proposed to shovel test the project area at approximate 98-ft (30-m) intervals in portions that are adjacent to creeks and seasonal drainages, have 30 percent or less ground surface visibility, are on terrace projections or remnant natural levees, are adjacent to playa lake beds, caves, benches, and floodplain rises, or have been relatively unaffected by natural and cultural processes. However, due to the eroded nature of the soils and the disturbances observed within tract TX-HC-0016.00100, the entire area was subjected to an intensive pedestrian survey with only visual inspections. Soils were highly eroded leaving only very rocky soils with calcareous inclusions present. No shovel testing was warranted due to the highly visible and eroded soils with limited to no potential for buried or intact cultural deposits.

Based on the available soils data, the original scope of work also proposed a program of exploratory trenching to further examine the overall stratigraphy and potential to harbor deeply buried cultural deposits beyond the reach of hand tools. However, field observations clearly indicated that the area has been highly disturbed by railroad construction, operation, and dismantling. Additionally, soils within the project area were highly eroded and rocky with calcareous inclusions and contained no recent soil depositions. For these reasons, it was determined that no trenches were warranted within tract TX-HC-0016.00100.

A revisit form for site 41HC67 was completed to update the observed condition of the previously recorded site. No artifacts were collected during the survey. The revisited portion of the site was

recorded on a USGS topographic map and a sketch map was drawn showing the location of salient features at the site.

LABORATORY METHODS

The survey had a "no collection policy," and no artifacts were collected from the project area. A sample of cultural artifacts was digitally photographed in the field for documentation purposes. An official state site revisit form and site-specific documentation will be submitted for curation.

V. RESULTS

SITE 41HC67 REVISIT

Background

Site 41HC67 is a previously recorded dismantled section of the Chicago, Rock Island & Gulf Railway (Appendix). The elevation of the site area within the survey corridor is approximately 3,215 ft amsl. The nearest water source is Cottonwood Creek at 820 ft (250 m) to the north. The soils at the site are mapped as Mobeetie fine sandy loam, 3 to 5 percent slopes (USDA, NRCS 2012). The soil observed on site was eroded and consisted of fine sandy loam that formed in calcareous, sandy alluvium and colluvium derived from the Ogallala Formation of Mio-Pliocene age. Vegetation at the site consists primarily of mesquite trees, yucca, and tall pasture grasses. Ground surface visibility was high at 70 percent and higher. The ground surface has been disturbed from vehicular traffic and the dismantling of the railroad.

Work Performed

The site area within the survey corridor was subjected to a systematic surface inspection. No shovel tests were excavated due to the eroded nature of the soils on site (Figure 2). The previous investigation identified remnants of the original rail line, including an earthen berm (Jeff Homburg 1980, Texas site record form). The surface inspection conducted during the present investigation identified the originally described berm, along with a section of an abandoned bridge crossing over Cottonwood Creek (Figure 3). Additional remnants of the rail line were observed across the site area, such as railroad ties, spikes, and brackets (Figure 4). Archival research indicates this railroad segment, consisting of eight miles of track from Oil City to Stinnett, was constructed in 1927 and was formally dismantled in 1972 (Willet 2007).

Conclusions and Recommendations

Site 41HC67 was reevaluated as part of the present investigation to assess its potential for eligibility for listing in the NRHP. Site 41HC67 is part of the Chicago, Rock Island, and Pacific Railroad. A remnant elevated grade remains.

Site 41HC67 is a dismantled historic railroad that warrants no additional work. Only a small segment of the rail line, which consists of a partial earthen berm and an abandoned bridge crossing, lies within the survey corridor. Due to the degraded nature of the site, Atkins recommends that the portion of site 41HC67 within the survey corridor lacks the data resources necessary to warrant NRHP inclusion under any criteria and does not meet criteria for nomination as a SAL.

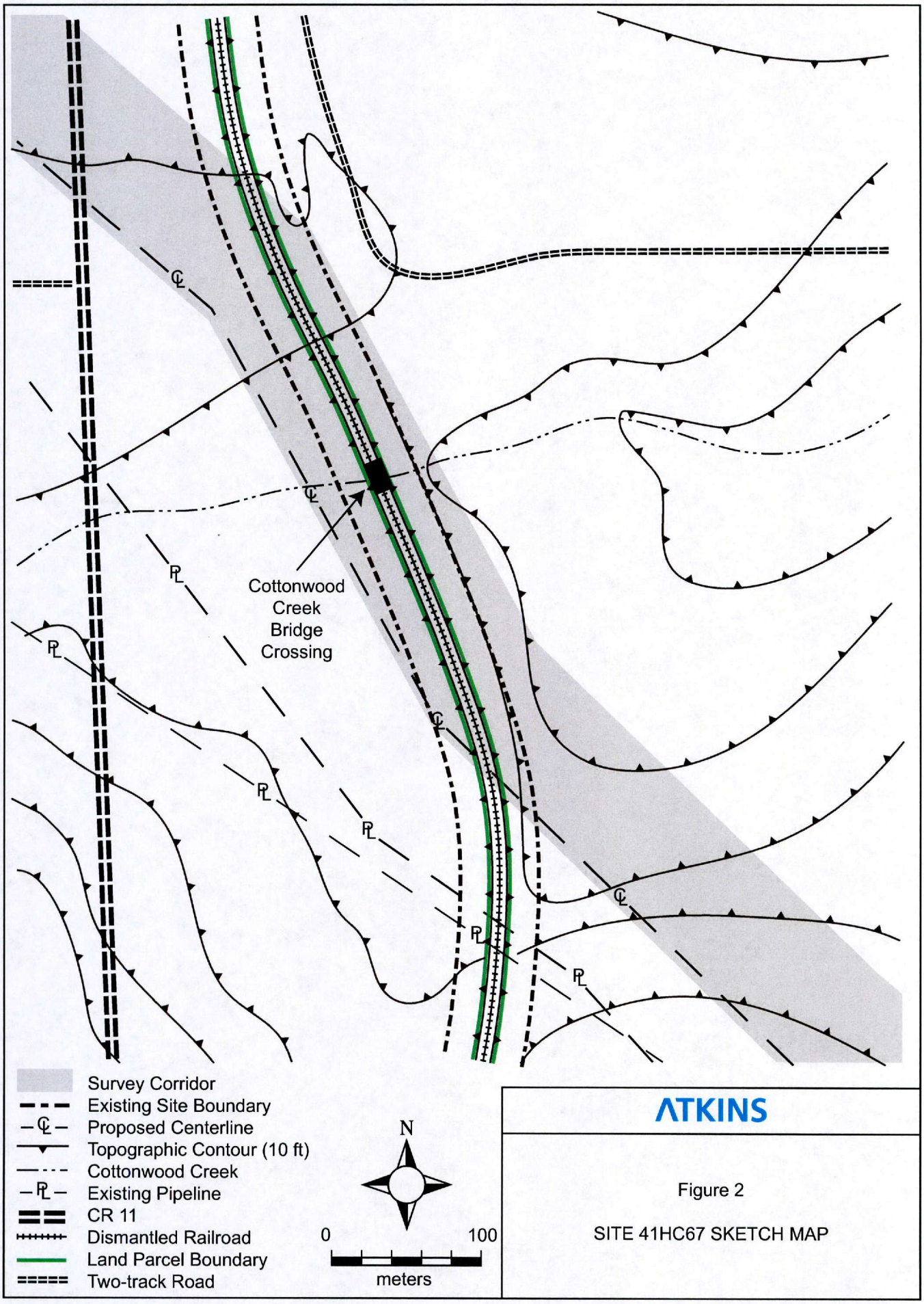

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Figure 2

SITE 41HC67 SKETCH MAP

L:\Projects\He1\CLIENTS\Front Range\Spread 3\cad\Figure 02_41HC67 Sketch Map

Drafted by: C. Wallace

a) Earthen Berm

b) Bridge Crossing Cottonwood Creek

Figure 3. Site 41HC67 Features

a) Railroad ties

b) Spike

c) Brackets

Figure 4. Site 41HC67 Artifacts

VI. SUMMARY AND RECOMMENDATIONS

Survey of the portion of the proposed Front Range Spread 3 pipeline project permitted under Antiquities Permit No. 6371 revisited site 41HC67. An evaluation of site 41HC67 indicates it is dismantled and degraded, warranting no additional work. Only a small segment of the rail line, which consists of a portion of an earthen berm and an abandoned bridge crossing, lies within the proposed survey corridor. Soils within the entire area were eroded and have been highly disturbed by the construction and usage of the railroad, limiting the potential for encountering any additional intact cultural resources.

It is the opinion of the Principal Investigator that the historic portion of site 41HC67 within the proposed project area does not warrant NRHP inclusion under any criteria or nomination as an SAL due to the degraded nature of the site and its current recordation likely exhausts any research potential for the site. No further cultural resource investigations are recommended for tract TX-HC-0016.00100 and site 41HC67.

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Appendix

Cultural Resources Survey Map

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