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An Intensive Cultural Resources Survey For Goforth Road Between IH-35 And Kyle Parkway, Kyle, Hays County, Texas

Mark P. Luzmoor

Kristi Miller Nichols

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AN INTENSIVE CULTURAL RESOURCES SURVEY

FOR GOFORTH ROAD BETWEEN IH-35 AND KYLE PARKWAY, KYLE,

HAYS COUNTY, TEXAS

By:
Mark P. Luzmoor and

Kristi Miller Nichols

Prepared for:
LOCKWOOD, ANDREWS & NEWMAN, INC.
10101 Reunion Pl, Suite 200
San Antonio, TX 78216

and

City of Kyle

RESTRICTED

Prepared by:

RABA-KISTNER ENVIRONMENTAL, INC.

San Antonio, Texas

Texas Antiquities Committee Permit Number: 7117

ASF13-127-00

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Management Summary:

In December 2014, Lockwood, Andrews & Newman, Inc. (Client) contracted with **Raba Kistner Environmental, Inc. (RKEI)** to perform an intensive cultural resources survey along Goforth Road between Interstate Highway (IH)-35 and Kyle Parkway for the expansion of the Right-Of-Way (ROW) and the installation of storm sewer inlets, manholes and one bridge in Kyle, Hays County, Texas. The purpose of this survey was to determine whether cultural resources were located within the Area of Potential Effect (APE), and if feasible, assess their significance and eligibility for designation as State Antiquities Landmarks (SALs) and for listing on the National Register of Historic Places (NRHP). The project was sponsored by the City of Kyle and the owner of the project is the City of Kyle owns the road and its ROW. Since the ROW is owned by a political subdivision of the state, the project falls under the Antiquities Code of Texas as administered by the Texas Historical Commission (THC). The field work was carried out between December 29-30, 2014 under Texas Antiquities Committee Permit No. 7117 issued to Dr. Steve A. Tomka, who served as Principal Investigator. Mark Luzmoor was the Project Archaeologist and Kristi Nichols and Chris Murray assisted during the field work.

Background research revealed that no previously recorded archaeological sites are located within the boundary of the APE. However, there are two archaeology sites, seven historical markers and four National Register Properties, within a one mile radius but outside of the APE.

A total of 16 shovel tests (STs) were excavated within the APE. Surface visibility was around 10% throughout the APE. Due to extensive disturbances of the banks of Plum Creek, no backhoe trenches were excavated during the project. No artifacts were encountered in any shovel test or on surface during the pedestrian survey. Since no cultural deposits were encountered, **RKEI** recommends no further archaeological work within the project boundaries. All project related documents are permanently housed at the Texas Archeological Research Laboratory.

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Chapter 1: Introduction and Area of Potential Effect

Raba Kistner Environmental (**RKEI**) was contracted by Lockwood, Andrews & Newman, Inc. (LAN) (CLIENT) to perform an intensive cultural resources survey along Goforth Road for a proposed Right-of-Way (ROW) expansion and the installation of water control features in the form of storm sewer inlets, manholes and one bridge across Plum Creek in Kyle, Hays County, Texas. Goforth Road begins on the east side of IH-35 and extends to Kyle Parkway in east-central Kyle (**Figure 1-1**). The project called for the widening of the existing ROW to 120 feet to allow for the addition of lanes and a shared-use path. This work was done under Texas Antiquities Committee Permit No. 7117. The project is sponsored by the City of Kyle and the ROW is owned by the City of Kyle. Since the ROW is owned by a political subdivision of the State, the project falls under the Antiquities Code of Texas as administered by the Texas Historical Commission (THC). The purpose of the survey was to locate any surface-exposed or buried cultural deposits and assess their significance and eligibility for listing on the National Register of Places and for formal designation as State Antiquities Landmarks (SAL).

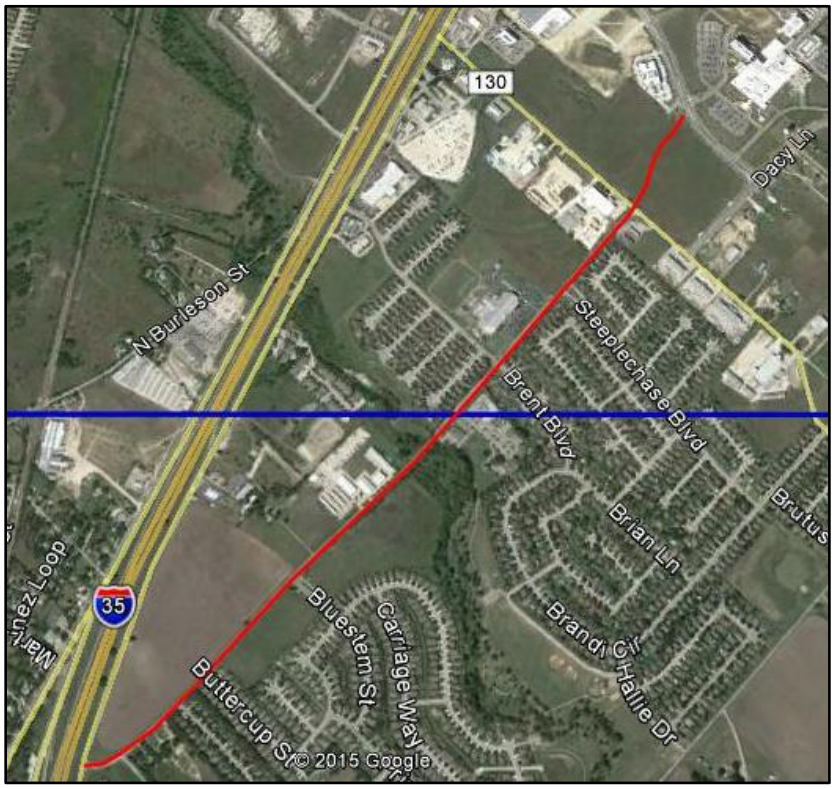

Figure 1-1. The project APE shown in red on a recent aerial photo.

Area of Potential Effect

The Area of Potential Effect (APE) is located in Kyle, Hays County, Texas. The APE is situated along Goforth Road beginning at its intersection with IH-35 and continuing northward to Kyle Parkway. **Figure 1-2** depicts the proposed APE on the *Uhland* (2997-334) and *Buda, Texas* (3097-221) 7.5 minute United States Geological Society (USGS) topographic quadrangle maps. The length of the project is approximately 1.4 miles (+/- 7,400 feet), while the width of the proposed ROW is 120 feet. The ROW crosses Plum Creek 0.2 miles southwest of Brent Blvd.

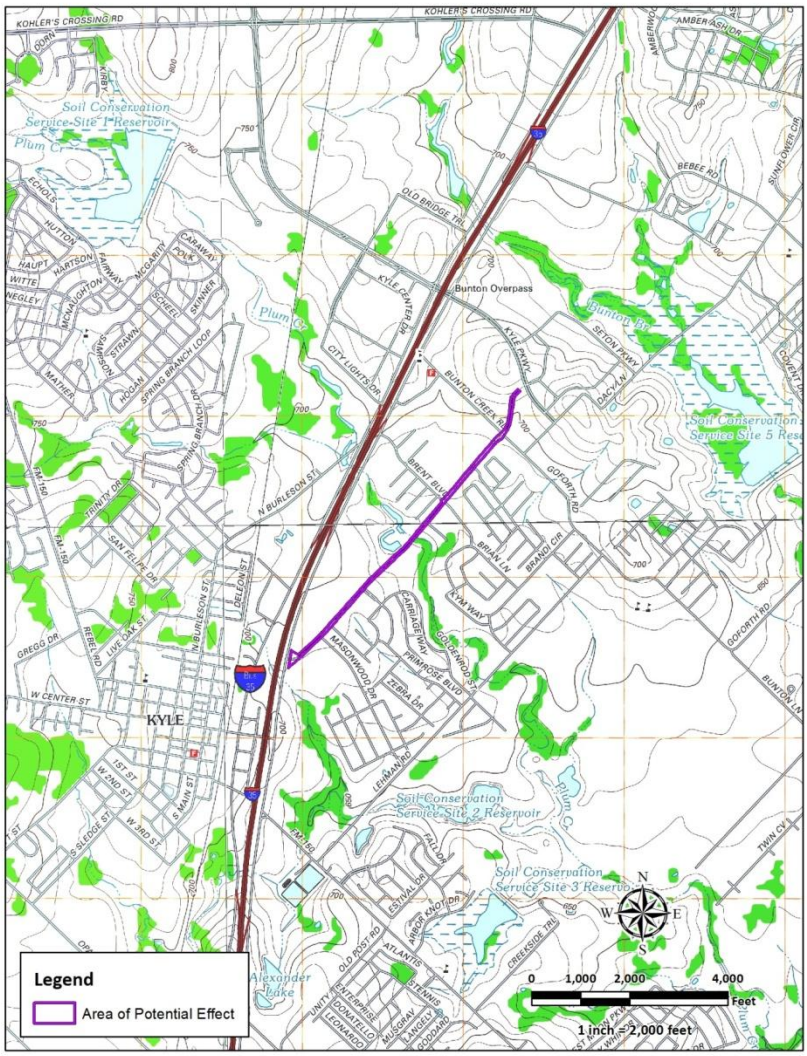

Figure 1-2. Project area on the *Uhland* (2997-334)*, and Buda, Texas* (3097-221) 7.5 minute U.S.G.S. topographic quadrangle maps in Kyle, Hayes County, Texas.

The portion of the APE lying between IH-35 and Plum Creek is relatively undeveloped with the exception of a residential subdivision near the southeastern corner of the project area and a large storage complex along the western easement of the road near Plum Creek (**Figure 1-1**). Between Plum Creek and FM130, both sides of the easement are extensively developed with residential and commercial facilities lining much of the area. The extreme northern end of the APE, between FM130 and Kyle Parkway is an open recently-cultivated field.

Disturbances along the ROW range from installation of utility, telecommunications, water and wastewater lines, driveways and cement culverts (**Figure 1-3; 1-4**). In addition, residential subdivisions and businesses that line the ROW often reduced the ROW to a narrow strip that barely measured 15-feet in width (**Figure 1-5**).

Figure 1-3. West side of the ROW facing northeast. Note utility pole and flags which indicate buried telecommunications lines.

Figure 1-4. West side of the ROW facing southwest. Note drainage ditch, culverts and driveways.

Figure 1-5. East side of the ROW facing southwest. Note the close proximity of residential property to the ROW. Also note flag marking route of buried utility-line.

Finally, adjacent to the northwest corner of the bridge at Plum Creek, the original terrace of the creek has been covered by a massive layer of fill that was introduced between 2002 and 2005 during the construction of the levy system that serves to protect the nearby neighborhoods from flooding of Plum Creek (**Figure 1-6**).

Figure 1-6. View of northwest side of Plum Creek in 2009. Note fill that forms the levy berm.

This report summarizes the results of the field investigations, and provides recommendations regarding the proposed project. Following this introductory presentation, Chapters 2 and 3 provide background on the setting of the project area and the culture history and previous archaeological investigations that have taken place in the vicinity of the planned improvements. Chapter 4 outlines the field and laboratory methods employed during the project and the next chapter summarizes the results of the field investigations. Chapter 6 provides a brief summary of the findings and provides recommendations regarding the planned project. Briefly, it is recommended that given the lack of cultural deposits and features within the project area, the planned improvements should proceed without the need for additional archaeological investigations.

Chapter 2: Environmental Setting

Project Area Setting

The project area is located in the South-Central Texas geographic region. The region is bordered by the Edwards Plateau to the north, the Rio Grande River to the south, the Gulf of Mexico coastline to the east, and the Lower Pecos region to the west (Norwine 1995:138). A gently rolling landscape with seasonal drainages dominates the landscape. Elevations across the project area range from approximately 720 ft above mean sea level (amsl) near the northern end of the proposed project area, to approximately 690 ft amsl at the APE's southern end. Plum Creek is the only drainage that flows directly through the APE.

Soils

The APE crosses both the Austin-Castephen-Houston Black Series and the Heiden-Houston Black Series. The Austin-Castephen-Houston Black Series exhibits shallow to deep, gently sloping to sloping soils over chalk or marly clay; on uplands of Blackland Prairie. The Heiden-Houston Black Series exhibits deep, gently sloping to sloping soils over clay and shale; on uplands of Blackland Prairie (USDA 1982). This area is dominated by three distinct soils: Houston Black clay, Branyon clay and Lewisville silty clay. The Houston Black clay has 1 to 3 percent slopes and is composed of clay from 0-80 inches. Branyon clay has 0 to 1 percent slopes and is composed of clay from 0-80 inches. Lewisville silty clay has 1 to 3 percent slopes and is composed of silty clay from 0-61 inches (USDA 1982).

Flora and Fauna

The project area is located near the intersection of the Balconian and Taumaulipan biotic provinces (Blair 1950). Due to this location, there is a large number of both flora and fauna resources that exemplifies the Austroiparian, Taumaulipan, Chihuahuan, Kansan, Balconian and Texan biotic provinces.

There are three major geographic regions nearby the project area: the Edwards Plateau, the Blackland Prairie, and the South Texas Plains. Trees, plants and grasses in this region include cedar (*Juniperus ashei*), live oak (*Quercus fusiformis*), Texas mountain laurel (*Sophora secundiflora*), mesquite (*Prosopis glandulosa*), prickly pear (*Optunia* sp.), agarita (*Berberis trifoliolata*), cat claw (*Smilax bona-nox*), mustang grape (*Vitis mustangensis*), sotol (*Dasylirion texanum*), and Spanish dagger (*Yucca* sp.).

The fauna that inhabit the South Central Texas region includes at least 95 bird and 29 mammal species.

The area also contains a wide array of reptiles, fish and amphibians. Mammal species that were noted along the ROW include white-tailed deer (*Odocoileus virginianus*), nine-banded armadillo (*Dasypus novemcinctus*), Virginia opossum (*Didelphis virgininana*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), cottontail rabbit (*Sylvilagus audubonii*), feral hog, domestic and feral cat, and squirrel.

South Texas Climate

The climate in South Central Texas is humid subtropical with hot and humid summers. From May through September, hot weather dominates the environment with the cool season beginning by around the first of November and extending through March. Winters are typically short and mild with little precipitation. San Antonio averages only 33 inches of rain per year (SRCC 2015; based on monthly averages from 1980 to 2010). Monthly temperature averages range between 52°F in January to 85°F in August.

Chapter 3: Culture Chronology and Previous Archaeology

Culture Chronology

The cultural history of South Central Texas spans approximately 11,500 years. Archaeologists have divided the occupation of the region into four principal periods and several sub-periods: Paleoindian, Archaic, Late Prehistoric, and Historic. The periods are characterized by changes climatic conditions, distinct vegetation types and structure, and concomitant adaptive changes by human populations in hunting and gathering technologies and strategies, general material culture, and at the tail end of the cultural sequence, the arrival of non-indigenous populations. The standard summaries of the culture chronologies of Central Texas accepted by many of the regional archaeologists were produced by Collins (1995) and Prewitt (1981). Below is a brief summary of the cultural sequence that has been reconstructed by archaeologists for the south-central part of the State.

Paleoindian

The oldest cultural materials found in the region date to the Paleoindian Period. The period spans roughly from 11,500-8800 BP (Collins 1995, 2004). The Aubrey site in Denton County has one of the earliest occupations, with radiocarbon assays dating to between 11,542 ± 11 BP and 11,590 ± 93 BP (Bousman et al. 2004:48). Paleoclimatic proxy measures suggest that a cooler climate with increased precipitation was predominant during the Late Pleistocene (Mauldin and Nickels 2001; Toomey et al 1993), the later portion of the period.

Initial reconstructions of Paleoindian adaptations typically viewed these hunter-gatherers as traversing extreme distances in pursuit of now extinct mega-fauna such as mammoth and mastodon. While these Paleoindians populations did exploit the Late Pleistocene mega-fauna when it was accessible, a number of faunal assemblages from an increasingly larger number of sites indicate that the Paleoindian diet was more varied and consisted of a wide range of resources, including small game and plants. The Lewisville (Winkler 1982) and the Aubrey sites (Ferring 2001) produced faunal assemblages that represented a wide range of taxa, including large, medium, and small species. Information on the consumption of plant resources during the Paleoindian period is lacking. Bousman et al. (2004) reported that the late Paleoindian component at the Wilson-Leonard site reflected the exploitation of riparian, forest and grassland species. Analysis of Paleoindian skeletal remains indicates that the diets of the Paleoindian and later Archaic hunter-gatherers may have been similar (Bousman et al. 2004; Powell and Steele 1994).

The early portion of the Paleoindian Period was characterized by the appearance of Clovis and Folsom fluted projectile points that were used for hunting mega-fauna. Typical projectile points produced at sites with occupations dating to the later portion of the Paleoindian period included the Plainview, Dalton, Angostura, Golandrina, Meserve, and Scottsbluff types. Meltzer and Bever (1995) have identified 406 Clovis sites in Texas. One of the earliest, 41RB1, yielded radiocarbon assays that put the maximum age for the Paleoindian component at 11,415 ± 125 BP (Bousman et al. 2004:47).

Sites in Bexar County that contain Paleoindian components include St. Mary's Hall (Hester 1978, 1990), Pavo Real (Collins et al. 2003), the Richard Beene site (Thoms et al. 1996; Thoms and Mandel 2006) and 41BX1396 (Tomka 2012). St. Mary's Hall, 41BX229, was first encountered in 1972 during the construction of a house just outside the school's property. The Pavo Real site, 41BX52, is located along Leon Creek in northwest Bexar County. The site was first documented in 1970 and has been investigated several times over the past 40 years (Collins et al. 2003). The Richard Beene site, 41BX831, is located along the Medina River in southern Bexar County (Thoms et al. 1996). Site 41BX1396 is located in Brackenridge Park in San Antonio, Texas, and was encountered during installations for lighting in 2010. Dating of organic samples indicated that occupation at the site occurred as early as 10,490-10,230 BP.

Archaic Period

The Archaic Period dates between ca. 8800 to 1200 BP. It is divided into three subperiods: Early, Middle, and Late. During the Archaic, mobility strategies may have shifted to more frequent short distance movements that allowed the exploitation of seasonal resource patches. The intermittent presence of bison in parts of Texas, combined with changes is climatic conditions and the primary productivity of the plant resources may have contributed to shifts in subsistence strategies and associated technological repertoire. When bison was not present in the region, hunting strategies focused on medium to small game along with continued foraging for plant resources. When bison was available, hunter-gatherers targeted the larger-bodied prey on a regular basis.

Early Archaic

Collins (1995) suggests that the Early Archaic spans from 8800 to 6000 BP. Projectile point styles characteristic of the Early Archaic include Angostura, Early Split Stem, Martindale, and Uvalde (Collins 1995). The Early Archaic climate was drier than the Paleoindian period and witnessed a return to grasslands (Bousman 1998). Mega-fauna of the Paleoindian period could not survive the new climate

and ecosystems, therefore eventually dying out. Early Archaic exploitation of medium to small fauna intensified.

The Wilson-Leonard excavation produced a wealth of cultural materials representative of a lengthy period in regional prehistory. The projectile point assemblages from the site indicate that the lanceolate Paleoindian point forms continue from the Paleoindian into the Early Archaic (Angostura). However, relatively quickly during the Early Archaic, they are replaced by corner- and basally-notched and shouldered forms (Early Triangular, Andice, Bell) that quickly become the dominant points tipping the atlatl-thrown darts. In addition, the uses of small to medium hearths similar to the previous period were noted too. The appearance of earth ovens suggests another shift in subsistence strategies. The earth ovens encountered at the Wilson-Leonard site were used to cook wild hyacinth along with aquatic and terrestrial resources (Collins et al. 1998). Analyses of Early Archaic human remains encountered in Kerr County (Bement 1991) reveal diets low in carbohydrates in comparison to the Early Archaic populations found in the Lower Pecos region.

Within Bexar County, the excavations at 41BX1396 revealed an Early Archaic component, radiocarbon dated to Cal BP 8390 to 8180, (Tomka 2012).

Middle Archaic

The Middle Archaic subperiod spans from 6000 to 4000 BP (Collins 1995; Weir 1976). Archaeological data indicates that there appeared to be a population increase during this time. Climate was gradually drying leading to the onset of a long drought period. Changes to the demographics and cultural characteristics were likely in response to the warmer and more arid conditions. Projectile point styles characteristic of this subperiod include Bell, Andice, Calf Creek, Taylor, Nolan, and Travis.

Subsistence during the Middle Archaic saw an increased reliance on nuts and other products of riverine environments (Black 1989). The increase of burned rock middens during the Middle Archaic represented the increased focus on the use of plant resources (Black 1989; Johnson and Goode 1994). Little is known about burial practices during the Middle Archaic. An excavation in an Uvalde County sinkhole (41UV4) contained 25-50 individuals (Johnson and Goode 1994:28).

Late Archaic

The Late Archaic spans from 4000 to 1200 BP (Collins 2004). It is represented by the Bulverde, Pedernales, Kinney, Lange, Marshall, Williams, Marcos, Montell, Castroville, Ensor, Frio, Fairland and

Darl projectile points. The early part of the Late Archaic exhibited fluctuations in the temperature and rainfall. There appears to have been an increase in population at this time (Nickels et al. 1998).

Some researchers believe that the use of burned rock middens decreased during the Late Archaic. Some research has challenged this notion (Black and Creel 1997; Mauldin et al. 2003). Johnson and Goode (1994) discuss the role of burned rock middens in relation to acorn processing.

Human remains from burials related to the Late Archaic in Central and South Texas suggest the region saw an increase in population. This increase may have prompted the establishment of territorial boundaries which resulted in boundary disputes (Story 1985). Human remains dating to this sub-period have been encountered near the Edward's Plateau.

Late Prehistoric

The Late Prehistoric Period begins ca. 1200 BP (Collins 1995; Collins 2004), and appears to continue until the beginning of the Protohistoric Period (ca. A.D. 1700). The term Late Prehistoric is used in Central and South Texas to designate the time following the end of the Archaic period. A series of traits characterizes the shift from the Archaic to the Late Prehistoric Period. The main technological changes were the shift to the bow and arrow and the introduction of pottery. The Late Prehistoric Period is divided into two phases: The Austin Phase and the Toyah Phase.

At the beginning of this period, environmental conditions were deemed to be warm and dry. Moister conditions appear after 1000 BP (Mauldin and Nickels 2001). Subsistence practices appeared similar to the Late Archaic. Projectile points associated with the Austin Phase include the Scallorn and Edwards types. The Toyah Phase is characterized by the prominence of the Perdiz point (Collins 1995).

Most researchers concur that the early portion of the Late Prehistoric period saw a decrease in population density (Black 1989:32). Radiocarbon dates from some sites have indicated that the middens were utilized during the Late Prehistoric. Some archaeologists feel the peak of midden use was after A.D. 1 and into the Late Prehistoric (Black and Creel 1997:273). Radiocarbon dates from Camp Bowie middens provide evidence that supports Black and Creel's arguments that burned rock middens were a primarily Late Prehistoric occurrence (Mauldin et al. 2003).

Beginning rather abruptly at about 650 BP, a shift in technology occurred. This shift is characterized by the introduction of blade technology, the first ceramics in Central Texas (bone-tempered plainwares),

the appearance of Perdiz arrow points, and alternately beveled bifaces (Black 1989:32; Huebner 1991:346). Prewitt (1981) suggests this technology originated in north-central Texas. Patterson (1988), however, notes that the Perdiz point was first seen in southeast Texas by about 1350 BP, and was introduced to west Texas some 600 to 700 years later.

Early ceramics in Central Texas (ca. A.D. 1250 to 1300) are associated with the Toyah Phase of the Late Prehistoric and are referred to as Leon Plain ware. The Leon Plain ceramic types are undecorated, bone-tempered bowls, jars, and ollas with oxidized, burnished and floated exterior surfaces (Ricklis 1995). There is notable variation within the type (Black 1986; Johnson 1994; Kalter et al. 2005). This variation can be attributed to differences in manufacturing techniques and cultural affiliation. Analysis of residues on ceramic sherds suggests that vessels were used to process bison bone grease/fat, mesquite bean/bison bone grease and deer/bison bone grease (Quigg et al. 1993).

The return of bison to South and Central Texas during the Late Prehistoric resulted from a drier climate in the plains located to the north of Texas and increased grasses in the Cross-Timbers and Post Oak Savannah in north-central Texas (Huebner 1991). The increased grasses in the two biotas formed the "bison corridor" along the eastern edge of the Edwards Plateau and into the South Texas Plain (Huebner 1991:354-355). Rock shelter sites, such as Scorpion Cave in Medina County (Highley et al. 1978) and Classen Rock Shelter in northern Bexar County (Fox and Fox 1967), have indicated a shift in settlement strategies (Skinner 1981). Burials encountered that dated to this period often reveal evidence on conflict (Black 1989:32).

Historic

In 1844, Lucy and Claiborne Kyle moved to Texas with their children. Claiborne Kyle's parents had been early settlers in Tennessee and had a large holding of land. Once Claiborne married, he and his wife moved to Alabama and later Mississippi. They had nine children between 1837 and 1841. Claiborne suffered financially when a friend he posted bail for left the region. The move to Texas in 1844 was precipitated by this event. The family first arrived in Gonzales, moved to Austin, and then permanently settled in Hays County by 1850. Once the family arrived in Hays County, they built what is described as an unusual log cabin consisting of four rooms. The cabin was constructed near present-day Kyle Texas (Althaus 2014a).

One of Claiborne Kyle's sons was Fergus Kyle. Fergus was born in Mississippi in 1834. He was ten years

old when his parents arrived in Gonzales, Texas. Fergus married in 1860 and served in the Confederate Army during the Civil War. At the end of the war, Fergus returned to his home in Hays County to farm and raise stock (Althaus 2014b). He and his wife, and his wife's family, deeded 200 acres for a townsite to the International-Great Northern Railroad (Strom 2014). The town was named in their honor. The town lots were auction off under the historic Kyle Auction Tree (Althaus 2014b). Residents were drawn from Mountain City and Blanco due to the arrival of the International-Great Northern Railroad (Hemphill 2006). Kyle was the first major town south of Austin that the I-GN serviced. Within two years, the population of Kyle jumped to 500 people (Hemphill 2006). Although there seemed to be a burst of people, the population declined after 1882 (Hemphill 2006; Strom 2014). Kyle was incorporated in 1928. By 1937, Mary Kyle Hartson, one of Fergus Kyle's daughters, was elected mayor. This was an anomaly during the times (Strom 2014). By the early 1940s, Kyle was the only town in Texas that had an all-woman run government. Kyle attempted to increase its population during the 1980s with five residential subdivisions, though three went bankrupt during the late 1980s economic slump (Strom 2014). Today, the town has seen increased population as people move out of the densely populated Austin in search of lower cost of living and more space.

Previous Archaeology

No sites, including any listed on the National Register of Historic Places (NRHP) or designated as State Antiquities Landmarks (SALs), occur within the boundaries of the APE (THC 2015). Although there are no archaeological sites recorded within the APE, there are two sites that have been recorded within a one mile radius of the project area (41HY476 and 41HY451) (THC 2015) (**Figure 3-1**). In addition, there are seven historical markers and four National Register properties within a one mile radius of the APE.

One of the seven historical markers commemorates the first permanent store in Kyle, built in 1881. The second marker represents a general store which was owned by Wallace Alexander Word, built in 1926, and destroyed by a fire in 2002. The third historical marker identifies the first public school build in Kyle in 1935. The fourth marker commemorates the First Baptist Church of Kyle founded in 1881, while the fifth marker commemorates two historical figures and an event. The historical figures are John Wheeler Bunton, who was one of the signees of the Texas Declaration of Independence, and Katherine Anne Porter, who was one of America's most distinguished writers of fiction. The historical event is the founding of the town of Kyle in 1880. The sixth marker represents the Cora Jackman Donalson House which was built in 1913 and features Queen Anne and classical revival detailing. The seventh marker represents a live oak tree where a public auction of town lots was held in 1880 (THC 2015).

The four National Register Properties include the Kyle City Hall erected in 1912, the Katherine Anne Porter House, the Cora Jackman Donalson House, and the Bunton Branch Bridge (THC 2015).

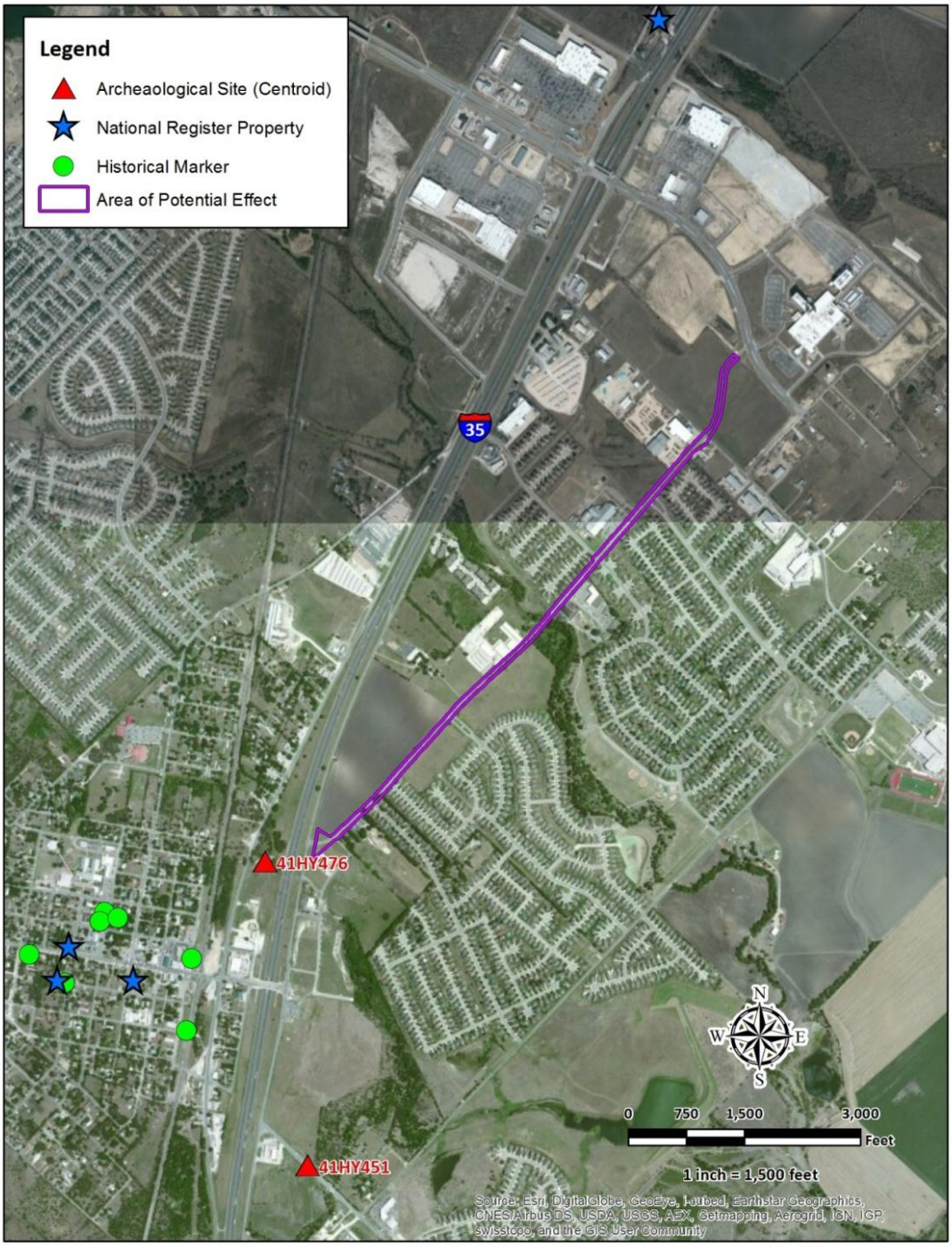

Figure 3-1. Archaeological sites, Historical Markers and National Register Properties within a one mile radius of the APE.

Seven pedestrian surveys have taken place in the vicinity of the current project area. The earliest of these was carried out in 2003 by the staff of Prewitt and Associates Inc. The survey encompassed a 55-acre tract in Kyle, Hays County, Texas. The tract was targeted for the construction of a new H.E.B. store. The project was sponsored by the Corps of Engineers-Fort Worth District. No archaeological deposits were encountered during the survey.

In 2004, Eric Schroeder of Paul Price Associates conducted a survey along Farm-to-Market 1626 west of IH-35 (Schroeder and Weaver 2004). The survey was sponsored by TxDOT and FHWA and its goal was the extension of the roadway between FM 2770 and IH-35. A single site, **41HY382**, a historic homestead, was recorded during the project. The 20th century materials cover an area measuring 29025 square feet (2700 sq. meters). They consist of construction materials, domestic artifacts, and a series of features attesting to the multi-use aspect of the site. Artifacts are primarily surface-exposed with only the upper 10 cm of the matrix containing buried debris.

During the winter of 2009, the staff of the Center for Archaeological Studies of Texas State University conducted a survey of two tracts of land located east of the IH-35 corridor (Kimbell et al. 2010). The project was sponsored by the Texas Parks and Wildlife Department and was a prerequisite for the establishment of the Plum Creek Preserve and Nature Trail for the City of Kyle. Two tracts of land were surveyed using shovel testing. The combined size of the two tracts measured approximately 170-acres and they were situated on the southern descending bank of Plum Creek. No archaeological sites were encountered during the pedestrian survey.

In 2010, URS Corporation carried out an intensive pedestrian survey for the proposed realignment of Farm-to-Market Road 150 (Ahr 2010). FM 150 connects IH-35 to County Road 204, also known as Lehman Road, immediately east of the Interstate Highway. One archaeological site, **41HY451**, was documented during the field work. The site located on the terrace of a small drainage that may be a tributary to Plum Creek. 41HY451 is a multi-component deposit consisting of prehistoric materials of unknown temporal affiliation coupled with a thin veneer of historic materials. The prehistoric component consists of a variety of chipped lithic tools, including cobble tools, lithic debitage and expedient cutting and scraping tools. No intact thermal features were discovered during the survey although isolated pieces of burnt rock were common in the deposits. It was recommended that the site lacked the integrity necessary to be listed on the National Register or for formal designation as a State Antiquities Landmark.

In 2010, R. Brownlow, of Horizon Environmental Services completed a pedestrian survey of 62.0 acres within a 103.0-acre US Army Corps of Engineers (USACE) jurisdictional area, on behalf of Forefront Builders Corporation of Texas (FBCT). The investigations were completed in advance of the planned construction of the Crossings at Plum Creek Development located north of Kyle and west of IH-35 in Hays County (Brownlow 2010). The survey was conducted on behalf of the U.S. Army Corps of Engineers. It did not identify cultural deposits.

One of the closest surveys also took place during the summer of 2010 and consisted of a linear survey along a 2,000-foot segment of the IH-35 easements, from Kyle Parkway to Yarrington Road. It was conducted by Ecological Communications Corporation (ECOM) and Jon Dowling served as Project Archaeologist (Dowling and Butler 2011). The project did result in the documentation of one new site. **41HY476** is a multi-component archaeological site with cultural debris ranging from Middle Archaic to Late Prehistoric (Austin Phase) in age. The site contained thermal features, and a wealth of cultural materials including chipped and ground stone tools, charcoal, burnt bone and mussel shell. The deposits was not recommended for additional investigations and the site was assessed as not eligible for listing on the National Register of Historic Places or for formal designation as a State Antiquities Landmark.

Hicks and Company carried out two pedestrian surveys within the vicinity of the current APE. The 2011 project focused on a survey of 96 acres targeted for the proposed Austin Community College Kyle tract (Champion et al. 2011). The survey encompassed 96 acres. A single site, **41HY479**, was recorded during the survey. The site consists of a light scatter of historic artifacts in vicinity to a standing barn structure. The site was recommended as not eligible to the NRHP or formal SAL designation.

The more recent survey conducted by Hicks and Company took place in 2013 for the City of Kyle's Southside Wastewater Improvement Project (Millen et al. 2013). The survey covered a total of 14.2 acres and revealed one archaeological site, **41HY490**. The site contains lithic artifacts indicative of a prehistoric occupation. The scatter of artifacts covered an area measuring roughly 30 by 20 meters. Shovel testing revealed no buried deposits within the site. No temporally diagnostic artifacts were located during the survey. While portions of the site were disturbed by two-track roads, some 50 percent of the site remains intact.

In summary, several pedestrian surveys have taken place in the vicinity of the project APE. Three of the surveys recorded no surface-exposed and/or buried cultural deposits and no archaeological sites have

been documented on the banks of Plum Creek to date. For the most part, the remaining four surveys have recorded only a small number of sites, with prehistoric components being more common than historic occupations. The prehistoric components recorded to date are found on the banks of small ephemeral drainages that are located south of Plum Creek (i.e., 41HY451 and 41HY476). The temporal affiliation of the components ranges from Middle Archaic to Late Prehistoric. Site 41HY476 contained a rich Late Prehistoric Austin Phase component with numerous Scallorn arrow points in the upper 15 cm of the deposit and Edwards arrow points and a single Darl dart point in deposits extending to 23 cmbs. Older materials were sparse at the site.

The above review of the projects and newly recorded sites indicates that the most common archaeological components found east of the Edwards Plateau within the vicinity of the APE are most likely to be Late Prehistoric assemblages. These components likely represent the remains of hunter-gatherer groups visiting the Blackland Prairie on hunting expeditions targeting either medium or large ungulates such as deer and antelope or bison. While such visits would also have occurred during preceding times, it appears that the remnants of such Early and Middle Archaic activities have been scoured from the landscape except perhaps in the vicinity of major streams that cross-cut the Blackland Prairie. It is likely that smaller streams, such as Plum Creek would not have had the sediment bed-load to deeply burry archaeological deposits that may have accumulated on their terraces during prehistoric times.

Chapter 4: Methods of Investigation

Field Methods

The archaeological survey consisted of a 100 percent pedestrian survey of 100 percent of the project APE. The pedestrian survey was accompanied by shovel testing at 100 meter intervals along the ROW. All shovel tests were approximately 30 cm in diameter and, unless prevented by obstacles or buried features, extended to a depth of 80 centimeters below surface (cmbs). Each shovel test was excavated in 10-cm increments. All soil from each level was screened through 1/4-inch hardware cloth. Any encountered artifacts recovered were to be labeled with appropriate provenience information for laboratory processing and analysis. A shovel test form was completed for each excavated shovel test. Data collected from the shovel test included the final excavation depth, a tally of all materials encountered from each 10-cm level, and a brief soil description (texture, consistency, Munsell color, inclusions). The location was recorded using a Garmin, hand-held, GPS unit. Shovel test locations were sketched onto a current aerial photograph of the APE as a backup to the GPS information. Any additional observation considered pertinent was included as comments on the standard shovel test excavation form.

Laboratory Methods

Digital photographs were printed on acid-free paper, labeled with archivally appropriate materials, and placed in archival-quality plastic sleeves. All field forms were completed with pencil. Ink-jet produced maps and illustrations were placed in archival quality plastic page protectors to prevent against accidental smearing due to moisture. Field notes, field forms, photographs, and field drawings were placed into labeled archival folders and were also converted into electronic files (i.e., pdf). A copy of the report and all digital material were burned onto a CD and permanently curated with field notes and documents. All project related documentation is housed at the Texas Archeological Research Laboratory. Since no cultural material was encountered during the course of the survey, no artifacts were prepared for curation.

Chapter 5: Results of Investigations

On December 29 and 30 of 2014, **RKEI** performed a pedestrian survey of Goforth Road between Interstate Highway (IH)-35 and Kyle Parkway, in Kyle, Hays County, Texas. The APE is 1.4-mile-long and planned improvements within its boundaries include the widening of the ROW and the installation of storm sewer inlets, manholes, and one bridge at the crossing of Plum Creek. This survey consisted of a visual inspection of the ground surface for cultural materials and the excavation of 16 shovel tests (STs) along the entire corridor at approximately 100 meter intervals.

The original Scope of Work also called for the excavation of backhoe trenches (BHTs) at the crossing of Plum Creek. However, due to extensive modern impacts to the terraces of the creek (see Chapter 1), no undisturbed terrace deposits offering sufficient clearance to allow backhoe trenching could be located. Extensive modern fill and the closely packed existing utility lines that had been previously installed prevented the safe excavation of new backhoe trenches in the areas that were considered to be the most promising for encountering buried cultural deposits. Therefore, rather than risking damage to buried and poorly marked utilities, the project archaeologist explored the area through shovel testing, since these units occupied smaller spaces and presented lesser risks in damaging buried lines and pipes.

Overall, a total of 16 shovel tests were excavated along the project APE. Of these, 12 were excavated on the east and west shoulders of Goforth Road along the APE and the remaining 4 were dug in the terraces of Plum Creek (**Figure 5-1**).

Figure 5-1. Locations of the excavated shovel tests.

Due to the amount of disturbance, only 16 of the planned 23 shovel tests were completed. Of the 16 shovel tests excavated along the APE, only three were terminated due to obstacles encountered during excavation. One of these units (ST 5) was located near the center of the APE south of the large storage unit that dominates the area near Plum Creek. The shovel test encountered decomposing fragmented bedrock at 55 cm below surface (**Table 5-1**). The other two units that encountered obstacles were located on the south bank of Plum Creek with ST 7 on the east side of the ROW and ST 8 on the west side (**Figure 5-1**). Bedrock and large cobbles found in these locations prevented their excavation below Level 6 (60 cmbs). The large cobbles found in the bottom of ST 8 may have been flood deposits or possibly the unconsolidated upper portion of the bedrock noted in ST 7. The remaining 13 shovel tests were excavated as deep as the project crew members could reach below the surface to extract the soil from the bottom of the unit. Therefore, the terminal depth of these units ranged from 74-80 cmbs.

Table 5-1. Shovel Tests Excavated within the APE.

Shovel Test Number	Terminal Depth (cm)	Reason for Termination
1	80	End of ST
2	74	End of ST
3	80	End of ST
4	74	End of ST
5	55	Bedrock
6	79	End of ST
7	60	Bedrock
8	59	Large Cobbles
9	80	End of ST
10	80	End of ST
11	74	End of ST
12	78	End of ST
13	80	End of ST
14	74	End of ST
15	80	End of ST
16	76	End of ST

ST 9 was the third shovel test dug in the terraces of Plum Creek. It was excavated on the north bank of the creek on the east side of the road. ST 9 encountered heavily disturbed soils between 0-40 cmbs and clay loam deposits between 40-80 cmbs. This lower zone appeared less disturbed and patches of very dark silty clay were visible in the bottom of the unit (**Figure 5-2**).

Figure 5-2. ST 9 with patches of dark gray patches of silty clay in bottom level.

ST 12 was excavated to the south of ST 9, to examine the soils in greater detail and determine whether any intact deposits may be present in the area (**Figure 5-1**). Chunks of asphalt were noted in the uppermost level of the unit. The remainder of the unit contained mottled soils with gravels noted at the base of Level 8 (**Figure 5-3**).

Figure 5-3. Chunk of asphalt in the uppermost level of ST 12.

Several shovel tests throughout the APE exhibited similar black/very dark grayish brown clay in each level (**Table 5-2**). These shovel tests were in areas of deep moist loamy clay soils that were previously used as farm land. The STs that were excavated towards the middle of the APE, between Bluestern St. and Elmhurst Drive, uncovered lighter brown, silty clay soils.

Table 5-2. Soil Munsell Colors by Shovel Test and Level.

Shovel Test	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
1	7.5YR3/1	7.5YR3/1	7.5YR3/1	7.5YR3/1	7.5YR3/1	7.5YR3/1	7.5YR4/2	7.5YR4/2
2	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1
3	10YR3/2	10YR3/2	10YR3/2	10YR3/2	10YR3/2	10YR6/4	10YR6/4	10YR6/4
4	10YR2/2	10YR2/2	10YR3/2	10YR3/2	10YR3/2	7.5YR2.5/2	7.5YR2.5/2	7.5YR2.5/2
5	10YR3/3	10YR3/3	10YR3/3	10YR4/1	10YR4/1	10YR4/1		
6	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR3/2
7	10YR3/2	10YR3/2	10YR4/1	10YR4/1	10YR4/1	10YR4/1		
8	10YR2/2	10YR2/2	10YR2/2	10YR2/2	10YR2/2	10YR2/2		
9	10YR3/2	10YR3/2	10YR3/2	10YR3/2	10YR2/2	10YR2/2	10YR4/2	10YR4/2
10	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1
11	10YR2/2	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1
12	10YR4/3	10YR4/3	10YR4/3	10YR4/3	10YR4/3	10YR4/3	10YR4/3	10YR4/3
13	10YR3/1	10YR3/1	10YR3/1	2.5Y3/1	2.5Y3/1	2.5Y3/1	2.5Y3/1	2.5Y3/1
14	2.5YR3/1	2.5YR3/1	2.5YR3/1	2.5YR3/1	2.5YR3/1	2.5YR3/1	2.5YR3/2	2.5YR3/1
15	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR4/2	10YR4/2	10YR4/2
16	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1	10YR2/1

Chapter 6: Summary and Recommendations

In December 2014, **Raba Kistner Environmental Inc. (RKEI)** was contracted by Lockwood, Andrews & Newman Inc. to conduct a pedestrian survey of a 1.4-mile-long stretch along Goforth Road in Kyle, TX. The plans included the expansion of the ROW and the installation of storm sewer inlets, manholes and a bridge. No known archaeological sites are found within the APE. However, there are two sites that have been recorded within a one mile radius of the project area. Additionally, there are seven historical markers and four National Register Properties within a one mile radius of the APE.

Many chert cobbles were noted on the surface of the APE, especially in the cleared agricultural fields. Therefore it was clear to the archaeologists that lithic raw material for the manufacture of stone tools would have been available to the prehistoric groups that used the area and camped on the banks for Plum Creek. These observations, in combination with the fact that archaeological sites had been documented in the broader area in the past, suggested that archaeological deposits would be identified during the survey.

The reconnaissance of the project area and close examination of artifacts sitting on surface did identify a number of chert cobbles that retained missing pieces and what appeared to be flake scars on their margins. However, closer examination of these chert cobbles indicated that the alterations on their surfaces are the result of mechanical impact likely derived from agricultural machinery. Many of the scars lacked the definitive characteristics of hard hammer percussion removals and retained linear patches of orange rust indicative of contact with metallic surfaces such as agricultural machinery.

No definitive flaked chert nodules were identified nor were definitive percussion flakes encountered on surface. Furthermore, none of the units resulted in the finding of definitive stone tools or lithic debitage. Rather all 16 shovel tests were negative for both prehistoric and historic artifacts. In addition, no surface exposed or buried features were encountered during the course of the investigation.

Much of the ROW within the APE was highly disturbed by the installation of multiple utility, gas, water, sewer and telecommunication lines. The construction of the vehicular bridge spanning Plum Creek has disturbed the portions of the Plum Creek terrace that possibly had the highest probability of retaining deep undisturbed soils. It is also possible, however, that repeated flash floods along the creek may have scoured some of the soils that had accumulated on the margins of the creek.

The lack of cultural features or any surface exposed and buried cultural materials, combined with the extensive disturbances within the APE indicates that there are no undisturbed significant cultural deposits that will be impacted by the proposed projects. Therefore, **RKEI** recommends that no further investigations are needed at this time, and the planned improvements can proceed as scheduled. Should additional changes be made to the project area, further work may be required.

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