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Riverton SW. - Tunstill Pod & Arroyo Bluff Pod 138-kV Transmission Line Routes Reeves County, Texas

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ARCHAEOLOGICAL SURVEY OF THE PROPOSED

RIVERTON SW. – TUNSTILL POD & ARROYO BLUFF POD 138-kV TRANSMISSION LINE ROUTES

REEVES COUNTY, TEXAS

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Allen M. Rutherford, MA
Principal Investigator

and

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Submitted to:

HALFF ASSOCIATES, INC.
1201 North Bowser Road
Richardson, Texas 75081

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Cultural Resources Report 2018-35
June 18, 2018

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ABSTRACT

Oncor Electric Delivery Company, LLC is planning to construct the Riverton Sw. – Tunstill Point of Delivery (POD) and Arroyo Bluff POD 138-kV transmission line routes in Reeves County, Texas. Halff Associates, Inc., the routing consultant for Oncor, contracted with AR Consultants, Inc. to conduct an intensive pedestrian survey of the 6.57 miles of new 138-kV transmission line on private property. Survey was conducted June 4-6, 2018. Seventeen shovel tests were excavated near drainages, where buried deposits were expected, and two 15-m transects were walked within the 70-ft-wide survey corridor (approximately 54 acres).

Two archaeological sites were identified and recorded. Site 41RV61 is an abandoned segment of the Atchison, Topeka & Santa Fe railroad, dating from the early-20th century. This site is in poor condition, the rails and most of the ties having been removed. Site 41RV142 is a surficial historic trash deposit with artifacts dating from the late-19th century to the mid-20th century. The site been poorly preserved. ARC recommends both sites ineligible for listing on the National Register of Historic Properties. Therefore, no additional cultural resources investigations are recommended for this project. However, should the proposed right-of-way alignment change, additional archaeological survey may be necessary. Furthermore, should any cultural resources be discovered during the construction activities associated with the project, work in the immediate area should cease and the Texas Historical Commission should be contacted.

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INTRODUCTION

Oncor Electric Delivery Company, LLC (Oncor) is planning to construct the Riverton Sw. – Tunstill Point of Delivery (POD) and Arroyo Bluff POD 138-kV transmission line routes in Reeves County, Texas. They are proposing to construct 6.57 miles of new 138 kV electric transmission line (Figure 1). The routes are situated approximately three miles east of Orla, Texas. The Arroyo Bluff POD segment generally parallels SH652, as does a portion of the Tunstill route. The north-south portion of the Tunstill route north of SH652 will connect to the Tunstill POD and the north-south portion of the route south of SH652 will connect to the existing Riverton Sw. station. Both the Riverton Sw. – Tunstill POD and Arroyo Bluff POD routes are to be constructed on private land. AR Consultants, Inc. was contracted by Halff Associates, Inc. to conduct an intensive pedestrian survey of the routes within 70-foot-wide survey corridors (54 acres), which matches the project rights-of-way (ROWs). Throughout this report these ROWs are combined and discussed as such. The depths of monopole foundation holes generally impact depths of 10-25 ft (3-7.6 m) and have a diameter of 2-ft (0.6-m). In extreme cases, the depth may extend as deep as 60 ft (18.3 m).

As part of the permitting process for these projects, Oncor applies for a Certificate of Convenience and Necessity (CCN) from the Public Utility Commission of Texas (PUC), as required by Section 37.051 of the Texas Utilities Code (TUC). In granting the CCN, the PUC routinely requests that Oncor comply with the requirements of the THC regarding the need for cultural resources investigations within the proposed project area which generally consists of an intensive pedestrian survey of the ROW. ARC conducted this survey June 4-6, 2018. All work was performed in accordance with the Texas Historical Commission (THC)-approved *Generic Research Design for Archaeological Surveys of Oncor Electric Delivery Electric Transmission Line Projects in Texas* (PBS&J 2008). The generic research design stipulates the methods by which cultural resources within proposed Oncor transmission line ROWs will be identified and assessed for National Register of Historic Places (NRHP) and State Antiquities Landmark (SAL) eligibility, and how site-specific recommendations for additional archaeological research would be handled.

This report is written in accordance with report guidelines used by the Archeology Division of the THC (Council of Texas Archeologists 2018) and those found in the Oncor Generic Research Design (PBS&J 2008). The following report presents a brief description of the natural setting of the project area, followed by a discussion of the culture history and previous investigations within the study area. A chapter on the research design and methodology employed in the investigation is then followed by the results of the field investigation. The report concludes with recommendations followed by the references cited.

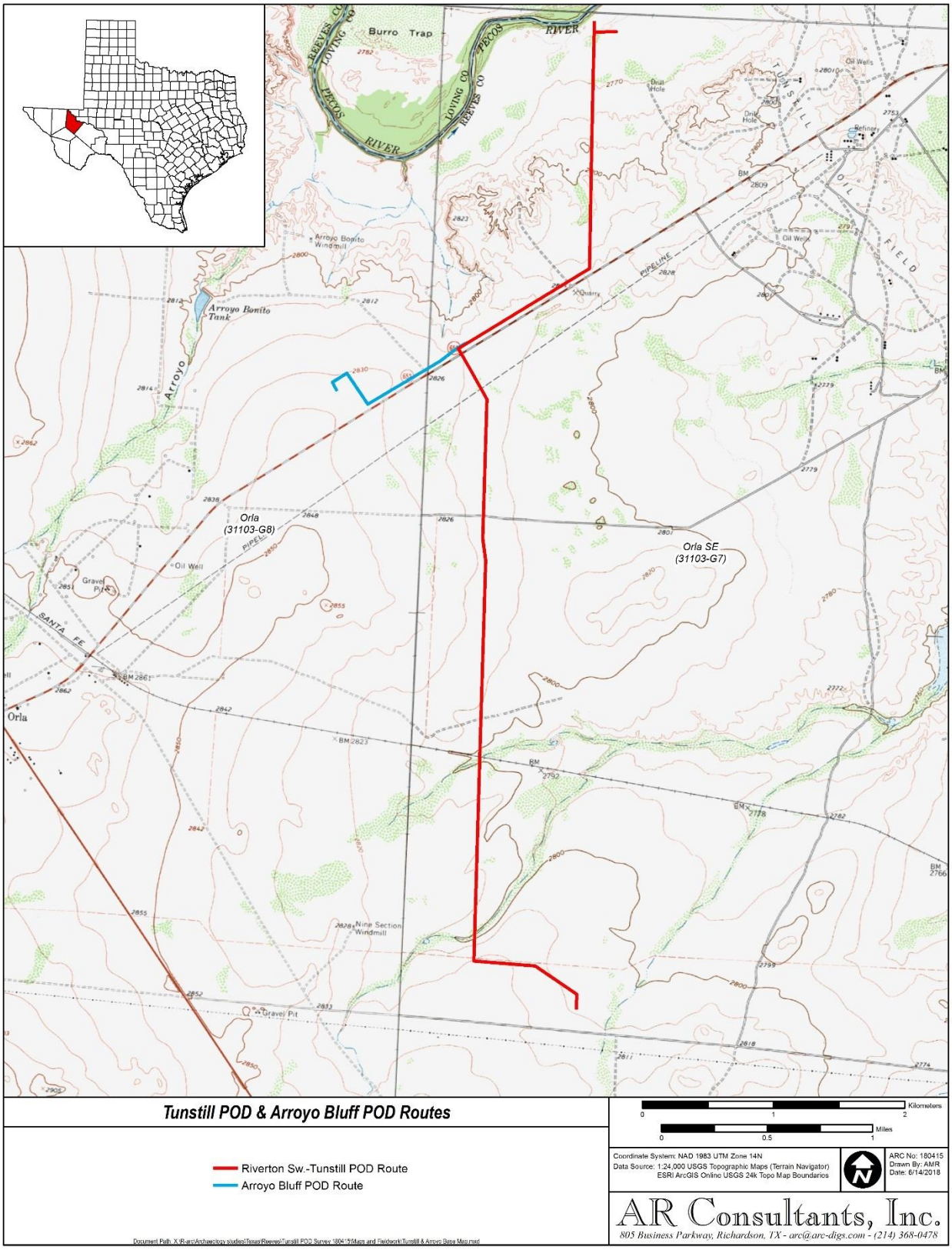

Figure 1. The proposed Riverton Sw. – Tunstill POD & Arroyo Bluff POD transmission line routes shown on the Orla SE, TX 1:100,000 USGS map.

Administrative Information:

ARC Project Number:	180415
Sponsor:	Oncor Electric Delivery Company, LLC with Halff Associates, Inc. managing permitting and design
Principal Investigator:	Allen M. Rutherford, MA
Field Dates:	June 4-6, 2018
Field Crew:	Allen Rutherford and Kathryn Crater Gershtein
Field Person Days:	5
Acres Surveyed:	approximately 54 acres
Sites Newly Recorded:	41RV142 (historic)
Sites Updated:	41RV61 (historic)

NATURAL ENVIRONMENT

The Riverton Sw. – Tunstill POD and Arroyo Bluff POD routes are located in the Chihuahuan Basins and Playas ecoregion of Texas, which consists of relatively low-lying flats, slopes, dunes, basins, hills, and ridges punctuated by isolated mountains and plateaus (Griffith et al. 2007:8). Reeves County has a distinctly xeric climate, receiving a mean of only nine inches of precipitation annually (Jaco 1980:Table 1). The high demand for irrigation and industrial water over the last century in the region has reduced the flow of the Pecos River (Griffith et al. 2007:9).

The northern end of the Riverton Sw. – Tunstill POD route is in the Pecos River valley. Near the same route's southern end, it crosses two, unnamed intermittent streams. The remaining terrain is relatively level. The northern 0.6 miles and the subsequent 2.0 miles are mapped on the Pleistocene-aged alluvial terraces and deposits, respectively, while the southern 4.4 miles are mapped on Holocene-aged alluvium (Bureau of Economic Geology 1975). These deposits are primarily composed of gravel, sand, and silt. The 2.0-mile portion that passes through the Pleistocene-aged alluvial deposits skirts the edge of the Guatuña Formation. This formation is made of layers of sand, marl, conglomerate, gypsum, silt, shale, and limestone with chert, quartzite, and chalcedony inclusions, some of which may be of knappable quality.

Four soil associations are mapped in the project area and roughly align with the underlying geology. Most of the Pleistocene-aged terraces are covered with the Monahans association (nearly level), but the northern 100 m of the project (along the Pecos River) is mapped as the Delnorte-Chilicotal association (rolling). The Delnorte-Chilicotal association (rolling) is mapped on the Pleistocene-aged deposits. The Hoban-Reeves-Holloman association (nearly level) is mapped atop the Holocene alluvium, except for the valleys of the two intermittent drainages, which are mapped as the Holloman-Reeves association (gently undulating) (NRCS 2018). All of these associations except for the Holloman association have 5- to 46-cm-thick, light brown to brown, sandy, clay, or gravelly loam A horizons resting on pinkish gray to brown gravelly or clay loam. The Holloman association has a 13-in-thick A horizon above a pale brown loam Cy horizon and very pale brown gypsum Cry1 horizon is profiled at 23 cm below the surface.

CULTURAL HISTORY

A brief overview of the cultural history for the Trans-Pecos Region of Texas is synthesized from previous investigations in the region that began in the 1930s. This region has not been intensively studied, and only a few large-scale projects have been conducted (Miller and Kenmotsu 2004). The chronological framework for human occupation in this region is as follows:

Table 1. Cultural Chronology.

Period	Dates
Historic European	AD 140 to present
Protohistoric	AD 1400 to 1450
Late Prehistoric	AD 200-900 to 1400
Archaic	6000 BC to AD 200/900.
Late Archaic	*1200 BC to AD 200*
Middle Archaic	*4000/3000 to 1200 BC*
Early Archaic	*6000 to 4000/3000 BC*
Paleoindian	ca. 10,000 BC to 6000 BC

Paleoindian Period

The Paleoindian period is associated with distinctive Clovis, and later Folsom and Midland, projectile points (Bousman et al. 2004). There are examples of Clovis, Folsom, and Midland projectile points discovered in the Trans-Pecos Region of Texas. No Clovis points have been found in Reeves County; however, four have been found in adjacent Ward County. (Bever and Meltzer 2007). Little is known about the Clovis Complex in the region outside of some isolated discoveries of distinctive fluted projectile points associated with the complex (Holliday 1997; Miller and Kenmotsu 2004). The lack of cultural materials from this earliest stage of the Paleoindian period may indicate that early inhabitants were widely spread in the eastern Trans-Pecos region (Sanchez 1999), or may reflect the minimal archaeological work conducted in the region. By contrast, much more is known about the Folsom and Midland complexes (Miller and Kenmotsu 2004). Most of what is known about eastern Trans-Pecos Folsom occupation comes from excavations at the Chispa Creek site located in southwest Culberson County (Lindsay 1969). The site contains a Folsom component along with other Paleoindian materials. Chispa Creek is considered an occupation site (Mallouf 1985) even though no definitive Paleoindian habitation structures have been discovered there or elsewhere in the Trans-Pecos region. This is likely due to the seasonal hunting and gathering lifeway of early Paleoindian people. Additional evidence for the Folsom culture in the region includes four sites located in the Van Horn area, west of Balmorhea, in Culberson County, one of which is identified as a kill site (Sommers 1974) and an isolated find in Presidio County (Walter 2015). Midland sites, which may be partially contemporary with Folsom, include Winkler-1 (Blaine et al. 2017) and the Shifting Sands site (Rose 2011).

Archaic Period

This period, which is the longest in Texas prehistory, lasting approximately 7,500 years, is divided into three stages: Early Archaic (6000 to 4000/3000 BC), Middle Archaic (4000/3000 to 1200 BC), and Late Archaic (1200 BC to AD 200). In the Early Archaic the population was relatively low and widely distributed. Despite the continued use of Paleoindian lithic technology, the emergence of a broadly-based hunting and gathering adaptation, especially an increase in evidence of gathering, marks the advent of the Archaic (Lintz et al. 1993:52). The appearance of grinding stones in period assemblages suggests that the exploitation and processing of plant resources began to play a part, and the appearance of stone-lined hearths suggests a general refinement in food processing. The appearance of burned-rock middens marks the end of this cultural stage. Burned rock middens are the dominate feature of sites from the Middle Archaic. Burned rock middens suggest the increasing importance of food processing and possibly specialized food harvesting. Yucca and sotol, which would have been continually available in the cyclically xeric climatic conditions of the period, are present at several Middle Archaic sites (Johnson and Goode 1994:26). The Late Archaic is distinguished by broad-body, expanding stem dart points such as Castroville, Marcos, and Montell. The period is marked by a general increase in populations, as evidenced by the density of Late Archaic deposits at stratified sites found in the region, which are disproportionately well-represented compared to earlier or succeeding periods (Prewitt 1985:217). An increase in the number of sites during the later portions of this period is attributed to population increases and the region experiencing a wetter, cooler climate.

Late Prehistoric Period

The introduction and spread of the bow and arrow mark the beginning of the Late Prehistoric period. During the Late Prehistoric period some plant cultivation, primarily of beans, squash, and maize, occurred in the western part of the Lower Pecos but overall hunting and gathering continued to provide major food sources. Bison appeared during mesic periods and were a prominent subsistence source. Pottery makes its appearance in this period. Pottery styles range from plainware to polychrome painted vessels and imported ceramics have been found at sites in the area (Miller and Kenmotsu 2004; Simmons et al. 1989). Site types remain the same as during the Archaic with the addition of wickiups associated with ring and crescent middens (Young 1981). At approximately AD 1400, the area may have been abandoned.

Protohistoric Period

The Protohistoric period is the transition between the prehistoric and historic periods. Historic Native American sites are virtually unknown in most parts of the region, and the primary evidence of occupation is the occasional discovery of a glass trade bead, metal arrowhead, or crevice burials (Skinner 2016).

Historic Period

Though generally sparse in West Texas, evidence of Euro-American occupation begins during the time of exploration and trade (AD 1541 to 1820) and steadily increased until the Depression period (AD 1900 to 1940) (Hays et al. 1989). The Spanish exploration era ranges from AD 1540 to 1821. Spanish explorers visited the Pecos River during this time but left little evidence of their

presence (Chipman 1992). Early exploration was then followed by early Anglo-American settlers from 1820 to 1860 in the Panhandle and Plains (Hays et al. 1989), while Mexican forces controlled the Trans-Pecos until 1846 (Miller and Kenmotsu 2004:258-265). Though the Civil War (1860-1865) was an important period of political and social upheaval, there was only limited military action in West Texas. Settlement increased after the Civil War, after changes in the southern economy, population growth, immigration, the release of large numbers of men from military conscription, and the development of railroads. Regional drought and the Great Depression impacted the region heavily, with economic and ecological disaster provoking massive migration from West Texas, Oklahoma, and Kansas to California (Hays et al. 1989). While many West Texas counties remain sparsely populated, large scale ranching and vegetable farming are viable industries in the region and the oil industry has brought various economic booms.

Reeves County was separated from Pecos County in 1883 (Smith 2016). The county's access to the Pecos River influenced growth and development. Initial settlers relied on an economy dependent on sheep and cattle ranching subsidized by corn and cotton farming. The discovery of oil and related introduction of railroads helped to boost the regional economy and populations through the first few decades of the 20th century. This was followed by a significant drought and the Great Depression, which decreased the numbers and values of crops and livestock as well as oil. Over the last 50 years, oil production has continued to increase while ranching has fluctuated but is generally on the decline.

Previous Investigations

The lack of large-scale surveys and excavated sites is the main reason that the archaeology of the project area is not well understood. However, the geomorphology of the study area also contributes to this deficit of archaeological information. The study area is in the arid Trans-Pecos region where water is limited to the major waterways like the Pecos River. Multiple surveys have been conducted near the study area in recent years in association with new pipeline construction, some of which have recorded sites. However, none of these studies extended into the study area. Though it is not mapped on TASA, the All-American Pipeline survey passes approximately 300 m south of the southern end of the project, as evidenced by a string of recorded archaeological sites (only one of which [41RV16] is within a kilometer of the study area).

The Texas Archeological Sites Atlas (TASA 2018) was reviewed prior to determining the cultural resources potential of the project area. No cemeteries, historical markers, NRHP properties or districts, or previous archaeological projects were mapped within a kilometer of the project area. One previously recorded archaeological site (41RV16) was recorded within the same radius. It was found during the All-American Pipeline survey and is approximately 0.8 miles east of the project's southern end. This site consists of cores, hammerstones, and flakes exposed on the surface of a small hill in a gravel plain. No recommendations were made regarding the 11-acre site and an official NRHP eligibility determination has not been made.

Historic Map Review

In addition to a review of previous archaeological investigations, a historic map review was conducted. The 1922 Reeves County Soil Map and 1936 and 1956 Reeves County general

highway maps (GHMs) were reviewed. The more accurately scaled 7.5' 1961 Orla SE, TX and 1968 Orla, TX USGS topographic maps were also inspected. Additionally, historic aerials from 1954 and 1967 were reviewed. No historic buildings were observed along the proposed project routes on any of these maps or aerials. The Atchison, Topeka & Santa Fe (AT&SF) Railway, which is crossed by the Riverton Sw. – Tunstill POD route 1.25 miles from the southern end, appears on all these maps. It is also observed on a 1967 aerial photograph. A mine, quarry, or gravel pit is mapped on the northwest side of SH652 on both GHMs and a quarry appears on the southeast side of the road in roughly the same location on the USGS topographic map. It is unclear if these symbols represent the same feature or different ones. The quarry on the southeast side of SH652 is observed on both the 1954 and 1967 aerial and does not appear to intrude into the project corridor.

RESEARCH DESIGN AND METHODOLOGY

Research Design

The Oncor generic research design (PBS&J 2008) calls for the study area to be classified into High Probability Areas (HPAs), Moderate Probability Areas (MPAs), and Low Probability Areas (LPAs) on the basis of perceived likelihood for the occurrence of archaeological sites in the Trans-Pecos region. For prehistoric sites, this stratification is based on previously recorded site distributions, soils, geomorphology, topography, prior disturbances, and distance from permanent and intermittent water sources (i.e., creeks, rivers, and springs). These areas were identified prior to fieldwork. For historic sites mapped locations of structures and distance to roads were the main factors.

In the Trans-Pecos, HPAs for prehistoric archaeological sites were defined as areas relatively close (<500 m) to water sources, specifically on shoulder slopes, on alluvial and colluvial fans, near upland edges adjacent to alluvial valleys, and near stream confluences. Holocene-age alluvial terraces and floodplains were also classified as HPAs. Alluvial deposits offer the greatest preservation potential for buried and stratified prehistoric sites.

Prehistoric MPAs include areas that may contain archaeological remains, but their presence is considered to be less likely due to greater distances to water, strongly sloping areas, and/or eroded soils. These areas include upland margins, Pleistocene terraces, and gently sloping hillsides and toe slopes more than 500 m from streams.

LPAs are those areas in which prehistoric archaeological sites are unlikely to be present because of steeply sloping topography, erosion, or modern development. Any prehistoric archaeological sites in these settings would not likely retain integrity. There are no LPAs in the project area.

Following these guidelines, the Riverton Sw. – Tunstill POD and Arroyo Bluff POD routes can be classified as follows:

HPAs - within 500 m of the Pecos River (prehistoric)
- the upland edge south of the Pecos River (prehistoric)
- within 500 m of the two unnamed drainages (prehistoric)
- outcrops along the Guatuña Formation (prehistoric)
- AT&SF berm (historic)

MPAs - the rest of the two routes (prehistoric and historic)

LPAs - none

No geoarchaeologically-sensitive areas were identified within the proposed ROW because the deepest subsoil or bedrock is mapped as 46 cm below the surface, which is easily reached using a shovel.

Methodology

Field personnel walked the proposed routes along two transects each 16 ft (5 m) off the proposed centerline and 16 ft (5 m) from the ROW edge, resulting in a 70-foot-wide survey corridor (21 m). Shovel tests were excavated within 100 m of drainages regardless of ground visibility. Personnel made notes about the ground exposure, soil types, drainages, and disturbed areas where subsoil was exposed. As outlined in the Oncor Generic Research Design (PBS&J 2008), shovel tests averaged 20 cm in diameter and were excavated in 10-cm (4-in) levels. Sandy soils were inspected visually and sifted through a ¼" wire mesh in order to determine if cultural materials were present. Soils with high clay content were troweled through and visually inspected. Soils were described on the basis of color and texture, and the Munsell Soil Color Chart was used to identify the specific soil colors in each test (Munsell Color 2009). Shovel tests and sites were marked with a handheld GPS receiver. Photographs were taken with a GPS-equipped, digital camera. Since no artifacts were found in subsurface contexts and no temporally significant artifacts were noted on the surface, all artifacts were analyzed in the field and none were collected.

Upon identification of the archaeological sites, the boundaries were delineated on the basis of the surface distribution of artifacts and features and by shovel tests. A minimum of six shovel tests were excavated in each site in cardinal directions from features and/or densest concentrations in order to determine depth and integrity of the sites. A sketch map for each site was drawn in the field. A temporary field designation was assigned to each site and a TexSite form was completed and submitted to TARL for assignment of a permanent trinomial designation.

RESULTS

This chapter is divided into three sections. The first describes the study area's natural setting along with results of the pedestrian survey. The second describes historic sites 41RV61 and 41RV142. Conclusions derived from the survey close the chapter. While shovel tests (STs) are described generally within the text, they are detailed at the end of the results section in Table 4.

Survey Results

The Riverton Sw. – Tunstill POD and Arroyo Bluff POD routes were surveyed in their entirety along two transects placed five m on either side of the proposed centerlines. Overall, the general environment of both routes was relatively similar in that they were typical of the types of vegetation and lack of ground cover expected in the Trans-Pecos region (Figure 2). Observed vegetation included three to four-foot-tall mesquite, sometimes in clusters of five to ten individual trees. Succulents observed included yucca and button cactus. Ground visibility generally ranged from 80 to 90 percent but was 30 to 40 percent at the drainage crossings. Both routes cross gravel roads and existing pipelines that have been constructed as a result of the ongoing oil industry in the region (Figure 8 and Figure 9).

Figure 2. General environment in the survey area, photo taken facing north in the northern segment of the Riverton Sw. – Tunstill POD route.

Riverton Sw. – Tunstill POD Route

The north end of the Riverton Sw. – Tunstill POD route is located on the terraces of the Pecos River. No gravel was visible on the surface in this portion and no distinct topographic features were noted. Three shovel tests (STs 1-3) were placed along that portion of the route every 100 m to test whether buried deposits were present near the river (Figure 3). The shovel tests generally revealed a 10-20-cm-thick layer of brown loamy sand underlain by pinkish silt sand. Shovel tests were terminated at 100 cmbs due to a lack of change in the soil color and texture for 80 to 90 cm. No artifacts or features were identified in the STs. As the route continues south, it gradually slopes up and the presence of surface gravel, including some pieces of chert but mostly rounded sandstone, was noted beginning approximately 875 m south of the north end of the route. Within this segment, the route passes an isolated, elevated landform that is drawn on topographic maps. Atop the landform, the surface is almost entirely covered in pea to gold-ball-sized gravels (Figure 10).

The portion of the route between SH652 and the northern drainage has only an occasional cluster of gravel (Figure 4 and Figure 5). The northern drainage crossing coincides with a railroad track that was recorded as part of 41RV61 (Figure 6). Vegetation near this drainage is denser than in other parts of the routes. Mesquite trees range 7 to 10 feet in height and are clustered close together with additional shrubs and cacti in between. The surface soil at the crossing was visibly moist. No terraces were noted where the survey corridor crosses the drainage and it appeared as if the drainage was modified to create a pond, likely for the cattle that were noted in the area (Figure 11). Shovel tests were excavated at the drainage as part of the delineation of the site boundary for 41RV61. Approximately 400 m south of the northern drainage a relatively high density of surface gravel was noted for about 200 m south towards the southern drainage. Historic surface scatter 41RV142 was recorded in this area and is detailed in the Site Description section below.

Vegetation and soil condition were essentially the same at the southern drainage crossing as the northern drainage. However, a portion of this drainage was channelized as part of a recent pipeline construction project which also disturbed the south bank of the drainage (Figure 7 and Figure 12). A shovel test was placed on the north bank and one was placed just off the south side of the pipeline corridor. No cultural resources were noted in either shovel test (Table 2). The terrain sloped gradually upward moving south from the southern drainage and the route turns east. Gravel similar to those noted in the north portion of the route, both in type and density, were visible on the surface in this portion of the route. The route eventually turns south again, and the remaining 200 m crossed over a new pipeline installation and into the Riverton Sw. station and were not surveyed due to this disturbance (Figure 13 and Figure 14). Other than the two sites, no artifacts or features were identified along the Riverton Sw. – Tunstill POD route.

Figure 3. Riverton Sw. – Tunstill POD route, ROW, and ST locations shown on a 2016 aerial photograph.

Figure 4. Riverton Sw. – Tunstill POD and Arroyo Bluff POD route and ROW shown on a 2016 aerial photograph.

Figure 5. Riverton Sw. – Tunstill POD route ROW shown on a 2016 aerial photograph.

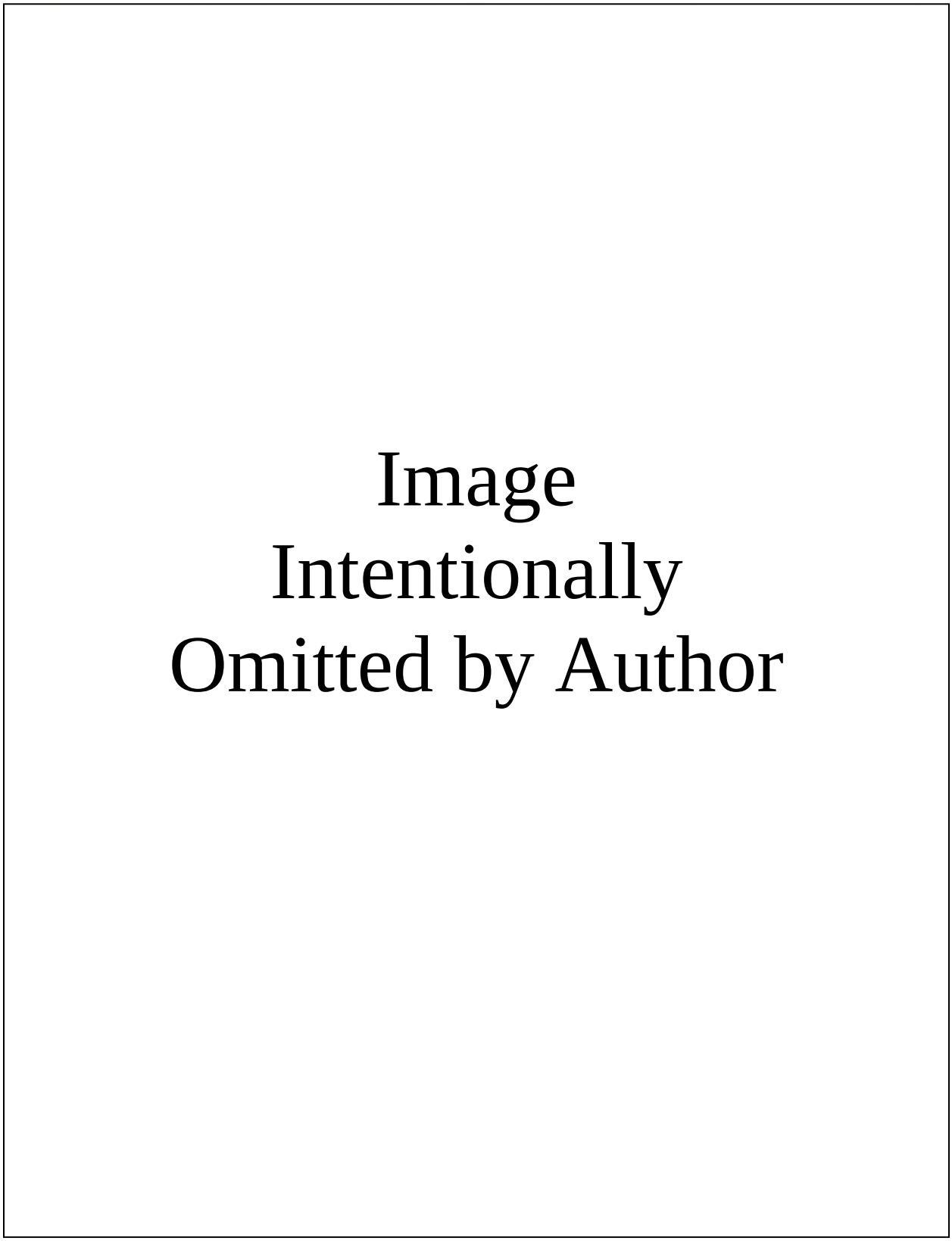

Figure 6. Riverton Sw. – Tunstill POD route, ROW, ST, and site locations shown on a 2016 aerial photograph.

Figure 7. Riverton Sw. – Tunstill POD route, ROW, and ST locations shown on a 2016 aerial photograph.

Figure 8. Pipeline installation that crosses into the Riverton Sw. – Tunstill POD ROW south of SH652, photo taken facing south.

Figure 9. Gravel road and pipeline installation that cross into the ROW, photo taken facing east.

Figure 10. Gravel on the surface atop the elevated landform in the northern portion of the Riverton Sw. – Tunstill POD route.

Figure 11. The ponded portion of the northern drainage crossing where the railroad would have crossed, photo taken facing north.

Figure 12. Channelized portion of the southern drainage along the Riverton Sw. – Tunstill POD ROW, photo taken facing west.

Figure 13. Pipeline installation at the southern end of the Riverton Sw. – Tunstill POD route, photo taken facing east.

Figure 14. Riverton SW Station located at the southern end of the Riverton Sw. – Tunstill POD route, photo taken facing south.

Table 2. General Project Shovel Test Descriptions.

ST#	Depth (cmbs)	Description	Comments/ Artifacts
1	0-22 22-100	Yellowish brown (10YR5/4) loamy sand Very pale brown (10YR8/2) silty sand	None
2	0-10 10-100	Yellowish brown (10YR5/4) loamy sand Very pale brown (10YR8/2) silty sand	None
3	0-12 12-100	Yellowish brown (10YR5/4) loamy sand Very pale brown (10YR8/2) silty sand	None
16	0-42 42-55	Brown (7.5YR5/4) sandy loam Reddish brown (5YR5/4) dry sandy clay with 10% $CaCO_3$	None
17	0-16 16+	Yellowish brown (10YR5/4) loamy sand Bedrock	None

Arroyo Bluff POD Route

The Arroyo Bluff POD route joins with the Riverton Sw. – Tunstill POD route on the north side of SH652 where the previously discussed route turns south (Figure 15). The Arroyo Bluff POD portion of the route continues southwest, paralleling the north side of SH652 for approximately 890 m before turning northwest. The route makes three more 90 degree turns; the first towards the northwest for 280 m, then to the southwest for 130 m, and finally to the southeast for 78 m before ending at an active construction site. The remaining 50 m of this portion of the route crosses into the construction site and gravel road that leads to it. Two other disturbances were observed along this portion of the route, a gravel road located approximately 100 m southwest of where the two routes meet, and a parking lot. The parking lot is located approximately 550 m

southwest of where the Arroyo Bluff POD and Riverton Sw. – Tunstill POD routes join (Figure 17). Approximately 700 m of the route is within this parking lot.

Vegetation and soil conditions were essentially the same as what was observed along the Riverton Sw. – Tunstill POD route. Ground visibility along this portion of the route ranges from 80 to 100 percent. Few surface sandstone gravels were encountered. Due to the high percent ground visibility and lack of aggrading soils, no shovel tests were excavated.

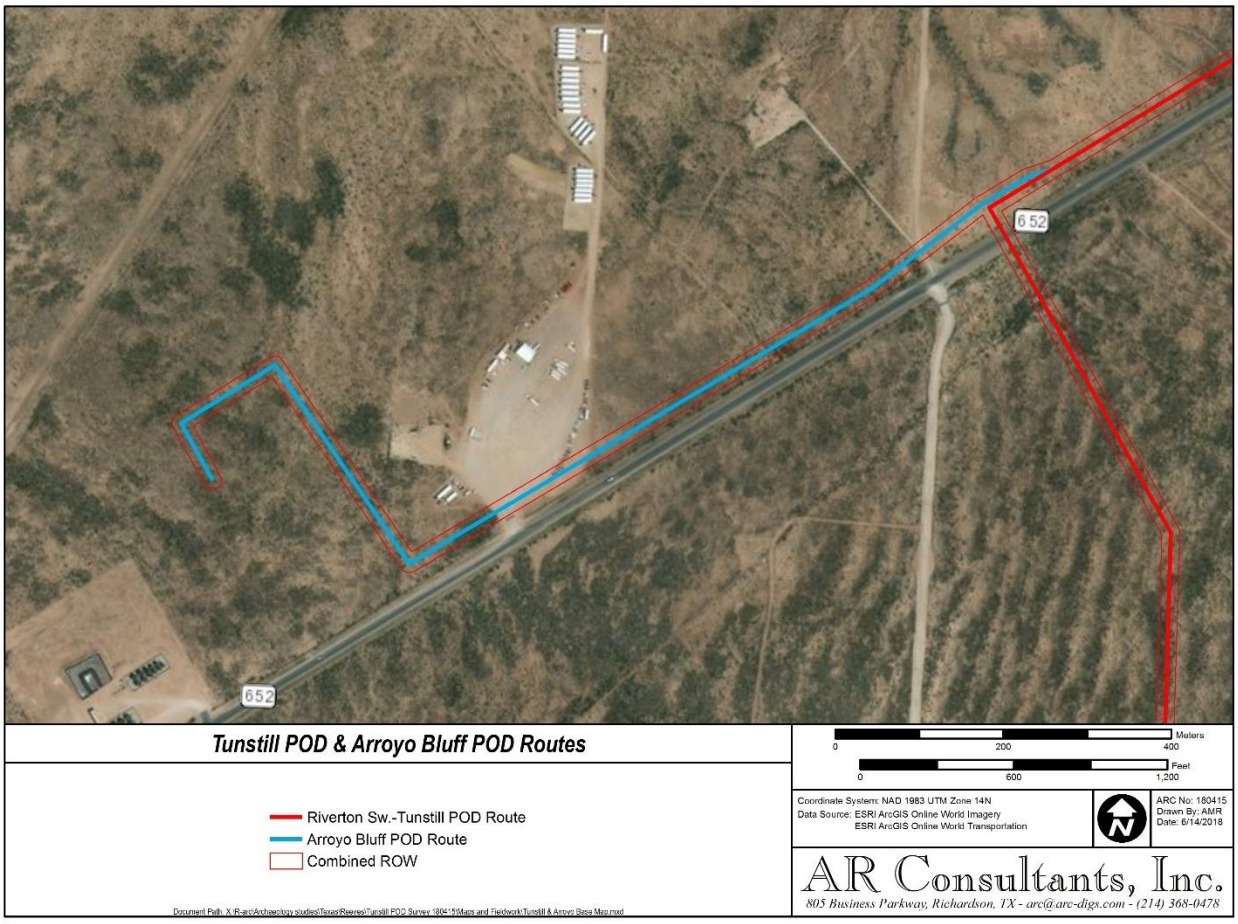

Figure 15. Arroyo Bluff POD route and ROW shown on a 2016 aerial photograph.

Figure 16. Southwestern end of the Arroyo Bluff POD route where a gravel road and construction site are located, photo taken facing south.

Figure 17. View of where the route crosses into the parking lot on the north side of SH652, photo taken facing northeast.

Site Descriptions

41RV61 Update

SWCA originally recorded site 41RV61 in 2014. The site is a portion of the AT&SF railway, approximately 8 km from the current study area along the west bank of the Pecos River (TASA 2018). This portion of the railroad consisted of a large scatter of railroad ballast, railroad ties, miscellaneous metal, nuts and bolts, wooden planks and a single shard of aqua glass. SWCA recommended the site as ineligible for listing in the NRHP due to high disturbance and destruction of the site from construction of a gravel utility road (TASA 2018).

An approximately 10-m-long segment of the abandoned AT&SF railway route was recorded within the Riverton Sw. – Tunstill POD ROW corridor (Figure 18). This segment measures approximately five m wide and contains railroad ties that are flush with the ground surface. Six in-situ railroad ties were recorded; each measures seven ft 10 in long, six in wide, and eight in tall. Additionally, track ballast stones were observed scattered across the surrounding area. There is no remaining rail and no evidence of a berm, but two tie plates were recorded attached to two of the ties. To the east and west of the intact segment, the railroad has either been dismantled or destroyed due to the damming of an intermittent drainage that the railroad originally crossed (as seen in Figure 11).

On one of the ties within the intact segment, the letter "W" has been branded in one end (Figure 20). The Southwestern Reporter (1909), a volume of Supreme and Appellate court decisions in Texas, references the "W" tie brand in a court case as belonging to the Ohio Valley Tie Company. Based on this lawsuit document, the "W" located at the end of the railroad tie was created with a heated branding iron along with a painted yellow spot, about an inch in diameter, located adjacent to the "W." A yellow spot was not observed during recording of the tie; however, this could be due to poor preservation of the paint or partial burial of the tie.

A pile of railroad ties was encountered approximately 20 m north of where the intact segment is located (Figure 21). The pile contains both the same ties as those that are intact as well as larger ones measuring 14 feet long, one foot wide, and 1 foot high. Two diagnostic elements were recorded on these ties, a date nail and a brand (Figure 22). The date nail, encountered atop one of the ties, is embossed atop the head with the number "28." Date nails were used to identify the year in which the material (in this case, the wooden railroad tie) was treated or installed (Oaks 2006). This suggests that the raised "28" atop the nail refers to 1928. An additional brand was noted on the end of one of the ties depicting "AE29." No information for this brand was found.

Together the intact railroad segment and discarded ties pile occupy an area of approximately 0.29 acres within the ROW corridor, measuring 54 m north/south. The intact segment extends outside the ROW to the west. Six shovel tests were placed within this boundary in 10-meter intervals north and south of the intact segment of the railroad. All shovel tests were negative, revealing between 10 and 70 cm of sandy loam topsoil atop very dense sand or sandy clay.

Image Intentionally Omitted by Author

Figure 18. The boundary of site 41RV61 showing the intact segment, discarded railroad ties pile, and shovel test locations on an aerial photograph.

Figure 19. Wooden railroad ties and metal tie plates of the remaining railroad segment; note track ballast stones scattered across the surface. The photo was taken facing north.

Figure 20. "W" branded into the end of a railroad tie located within the intact segment, photo taken facing north.

Figure 21. Pile of discarded railroad ties, located approximately 20 m north of the intact railroad segment, photo taken facing northwest.

Figure 22. Diagnostic features observed on discarded railroad ties. Left: date nail with number "28" on a round head. Right: "AE29" brand on end of railroad tie.

The AT&SF railway system was founded in 1859 by Cyrus K. Holliday, with the purpose of expanding across the southwestern United States (Bryant 2010). By 1887, the railway connected Kansas City to California, with northern and southern branches in construction. A southern branch from the Gulf of Mexico reached the Texas Panhandle in 1888. The railway, intended for the transport of wheat, cattle, and cotton, was primarily constructed by the Gulf, Colorado and Santa Fe Railway (GC&SF) and the Panhandle and Santa Fe Railway (P&SF) companies. These subsidiaries, both headquartered in Texas, worked to extend the track to remote parts of Texas. Lines were eventually constructed across Texas, reaching Galveston, Lampasas, Fort Worth, Dallas, Houston, and Conroe.

In 1928, the railway acquired the Kansas City, Mexico and Orient Railway, creating additional lines north to Wichita, Kansas, as well as Sweetwater, San Angelo, and Presidio in Texas (Bryant 2010). For the next decade, the railway continued to acquire and construct new railways; its final branch was constructed between Dallas and Denton in 1955. From the 1930s forward, the Santa Fe Railway expanded its business to include non-railway functions including timber production, oil and natural gas, real estate and pipeline operations. In 1965 the GC&SF and P&SF subsidiaries were merged into what is known today as the Santa Fe system. By 1980, the railway included 12,209 miles, 3,508 of which were in Texas and provided a net income of more than $80,000,000.

The site can be securely dated to the early twentieth century from diagnostic elements on the railroad ties. However, the 10-meter-long intact segment of this historic railroad is in poor condition. The ties are severely weathered and there is no evidence of remaining tracks atop them. Additionally, the rest of the line within the ROW has been dismantled or destroyed from damning of the intermittent drainage.

Table 3. 41RV61 Shovel Test Descriptions.

ST#	Depth (cmbs)	Description	Comments/ Artifacts
4	0-20 20-63 63+	Strong brown (7.5YR5/6) sandy loam Strong brown (7.5YR4/6) sandy clay Very pale brown (10YR8/2) compact fine sand	None
5	0-72 72-80	Strong brown (7.5YR5/6) sandy loam Reddish yellow (7.5YR6/6) coarse, dry sandy clay	None
6	0-30 30-45	Strong brown (7.5YR5/6) sandy loam Yellow (10YR7/6) sandy clay	None
7	0-12 12-30	Yellow (10YR7/6) sandy silt Brownish yellow (10YR6/6) compact sandy clay	None
8	0-13 13-35	Brown (7.5YR4/4) loamy clay with few baseball size track ballast stones Brown (7.5YR5/4) sandy clay	None
9	0-40 40-52	Strong brown (7.5YR5/6) sandy loam Reddish yellow (7.5YR6/6) course, compact sandy clay	None

41RV142

41RV142 is a surficial historic trash scatter located approximately 400 m south of 41RV61 within the Riverton Sw. – Tunstill POD ROW (Figure 23). The scatter extends approximately 100 m north/south along the ROW and is extends outside the 70-ft-ROW to the east and west. The highest concentration of artifacts is located along the route centerline and measures approximately 10 m north/south by 15 m east/west (Figure 24). Additionally, a southwest/northeast-trending two-track road intersects the ROW at the northern end of the trash scatter. Six shovel tests (STs 10-15) were excavated within the central artifact concentration and towards the site boundaries to determine depth of the trash deposit. All were negative and revealed silty loam atop a dry, dense sand with pea to golf-ball-sized gravels.

Artifacts recorded at the site include piles of unidentified metal scrap, metal can fragments, pieces of wood, historic ceramics, nails, and a variety of glass vessel shards. The ceramic assemblage consists of a variety utilitarian wares including earthenware with a brown glaze (2), whiteware plate sherds (20+), porcelain sherds (10+), and a ceramic insulator (Figure 25). Several of the whiteware plate rims contained simple decorative molding. However, these sherds were too deteriorated to identify the decorations to a specific type. No diagnostic bases were encountered.

The nail assemblage consists of both wire nails (500+), and square-cut nails (100+) (Figure 26). A sample of the wire nails was measured to determine penny weights in which a wide range was encountered including 4D, 5D, 7D, 8D, 9D, 10D, and 20D. This wide range of pennyweights were commonly used in building and roofing. The sample of square-cut nails, on the other hand, consisted of only 9D type nails. The wire to square-cut nail ratio is indicative of a transition period, starting around the 1890s in which square-cut nails began to slowly be replaced by the wire nail. By that point, square-cut nails only accounted for 14.9 percent of U.S. production (Adams 2002:72).

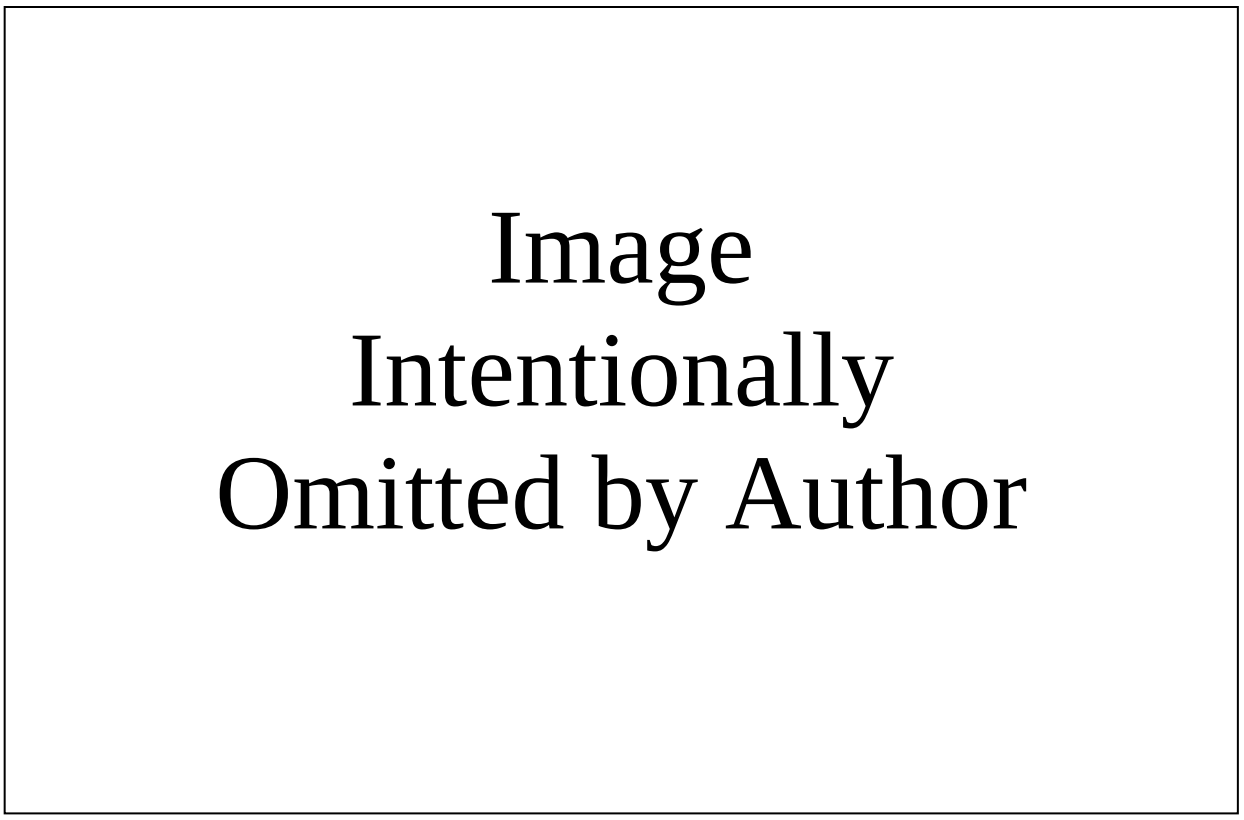

Figure 23. The boundary of site 41RV142 and shovel test locations shown on an aerial photograph.

The glass assemblage consists of melted glass and bottle fragments of varying color including sun-colored amethyst glass (100+), milk glass (50+), light green glass (10+), green glass (20+), aqua (aquamarine) glass (20+) (Figure 27and Figure 28). Additionally, one clear, hand turned bottle neck was recorded. This method of bottle manufacture has a wide date range from the 19th through the early 20th centuries. No diagnostic bases were encountered, however, the various glass colors generally date to the late -9th and early-20th century. Aqua glass can range in color from pale blue to blue-green. This glass type was used from the early 19th century until the 1920s when colorless (clear) glass became popular, along with the use of automatic bottle machines (Society for Historical Archaeology [SHA] 2018). Sun-colored amethyst glass is suggestive of a strong manganese content, which was often used to colorize or decolorize glass during the late-19th and early-20th century (Ketchum 1975: 31). Finally, milk glass was popular from the late-19th century until the mid-20th century and was often used for cosmetic and toiletry bottles.

A rifle cartridge was encountered in the central part of the site. The headstamp on the cartridge reads "W.R.A. Co. .38 Long." The cartridge was produced by the Winchester Repeating Arms Company (W.R.A. Co.) (Barnes 1980). No other information could be found regarding this cartridge. However, similar bullets that the company manufactured, including the .38-70 and .38-72 Winchester, were produced at the turn of the 19th century. Additionally, the .38 Long, Centerfire, along with other brand names, were manufactured around this same time, beginning in the 1870s and becoming obsolete by 1900. Based on these similarities, it is likely that the cartridge encountered at the site dates to this time.

Figure 24. Dense concentration of artifacts at the center of the site, photo taken facing east.

Figure 25. Earthenware rim with brown glaze (left) and whiteware body sherd (right).

Figure 26. Sample of nails encountered at the site. From left to right: one 9D square-cut nail, two 20D wire nails, one 10D wire nail, one 9D wire nail, and one 8D wire nail.

Figure 27. Sample of glass encountered at the site. From left to right: milk glass plate rim, two sun-colored amethyst colored body shards, aqua body shard, and melted glass.

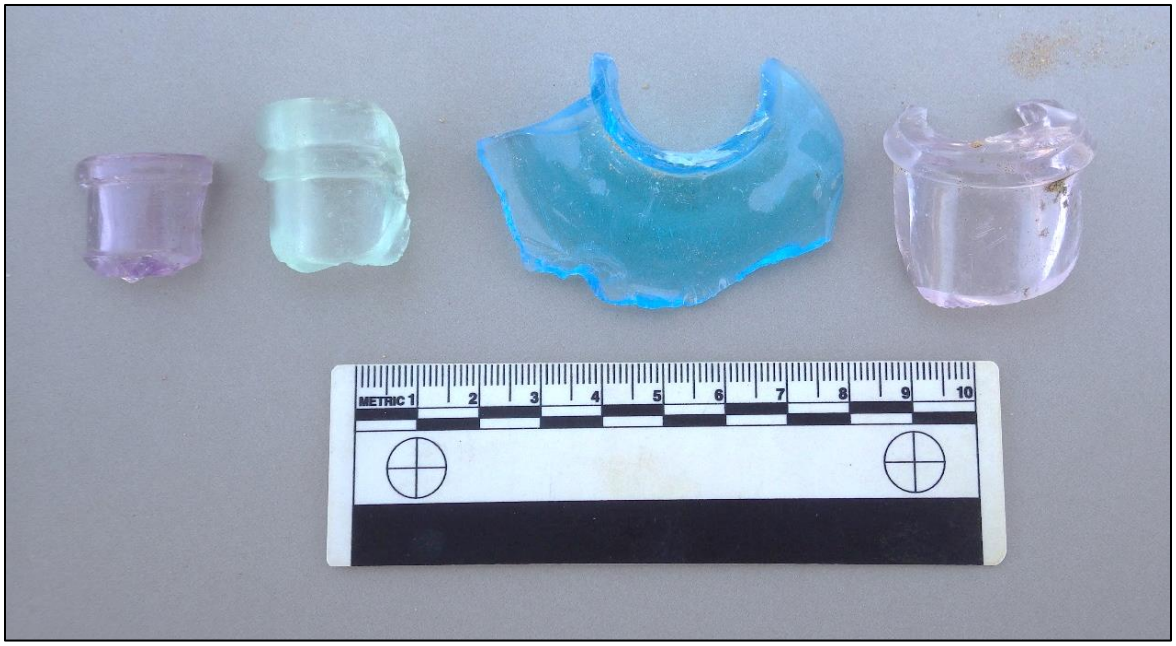

Figure 28. Sample of glass bottle necks encountered at the site. From left to right: sun-colored amethyst, aqua, sapphire blue, and sun-colored amethyst.

Table 4. 41RV142 Shovel Test Descriptions.

ST#	Depth (cmbs)	Description	Comments/ Artifacts
10	0-7 7	Yellowish brown (10YR5/4) silty loam with pea to orange sized gravels Assorted angular and rounded gravels	None
11	0-26 26-35	Strong brown (7.5YR5/6) silty loam Yellowish brown (10YR5/6) Dry, compact sand with pea to golf ball size gravels	None
12	0-8 8	Yellowish brown (10YR5/4) silty loam with pea to orange sized gravels Assorted angular and rounded gravels	None
13	0-2	Yellowish brown (10YR5/4) silty loam with pea to orange sized gravels	None
14	0-22 22-34	Strong brown (7.5YR5/6) silty loam Yellowish brown (10YR5/6) dry, dense sand with pea to orange sized gravels	None
15	0-30 30-35	Strong brown (7.5YR5/6) silty loam Assorted angular and rounded gravels	None

In addition to shovel testing, deeds research was conducted for the property on which the trash scatter was found. No deeds activity was found prior to 1946, when Mrs. D.W. Henderson sold the property to P.G. Northrup and R.M. Regan. Each portion of the property was conveyed to family after the landowners' deaths; P.G. Northrup passing in 1958 and R.M. Regan in 1983. Both portions of the property remain in family trusts to this day. All landowners, previous and current, were researched and none made significant contributions to broad patterns of history.

The artifacts at the site date from the late 19th century into the middle part of the 20th century and are typical of the types of materials expected to be found in a domestic trash dump. The historic

maps review showed no historic structures mapped along the proposed project routes within this region. Additionally, no structures or other features associated with the trash deposit within the ROW were encountered with the exception of the two-track road along the northern border. Historically, trash was dumped along roads away from residences.

Conclusions

No prehistoric cultural resources were located during survey of the proposed Riverton Sw. – Tunstill POD and Arroyo Bluff POD 138-kV Transmission Line routes. Two historic sites were recorded as expected based on the expectations set forth in the Research Design. One site (41RV61), the remains of the AT&SF railway, consisted of a 10-m-long, intact segment, though only six ties remain intact and no rails were present. The historic trash scatter (41RV142) recorded during survey was located along a two-track road and likely represents a trash dump as no structures were observed in the immediate area during the historical map review. Based on the negative shovel test results, the site lacks integrity and depth. The artifacts are typical of turn of the century household wares.

Neither site contained diagnostic artifacts or a deposit that could yield significant information about past environments and there were no diagnostic features that could associate these sites with any significant individuals, events, or styles (36 CFR 60.4a-c). It is unlikely these sites hold any further potential to provide insight into past lifeways or environments (36 CFR 60.4d).

RECOMMENDATIONS

The purpose of this investigation was to determine if significant cultural resources are present within the proposed Riverton Sw. – Tunstill POD and Arroyo Bluff POD 138-kV Transmission Line route in Reeves County, Texas. Two historic sites, one abandoned railroad track (41RV61) and one trash scatter (41RV142), were recorded. These sites are not recommended as eligible for listing on the NRHP nor to be designated as a SAL. 41RV61 is not recommended because only a small portion of track is left intact and there are no associated artifacts or features of note. 41RV142 is not recommended due to the lack of features, structures, and diagnostic artifacts; the site has low potential to yield information about past lifeways or environments. AR Consultants, Inc. recommends that construction of the proposed transmission line project be allowed to proceed and that no additional archaeological investigations are necessary. However, should the proposed ROW alignment change, additional archaeological survey may be necessary. Also, if previously unidentified archaeological artifacts, features, or deposits are encountered during construction, it is recommended that the discovery be evaluated by a professional archaeologist in consultation with THC.

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