Cultural Resources Survey of the Cotulla Water Supply and Wastewater System Improvement Project La Salle County, Texas

David L. Sherman

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CULTURAL RESOURCES SURVEY OF THE COTULLA WATER SUPPLY AND WASTEWATER SYSTEM IMPROVEMENT PROJECT
LA SALLE COUNTY, TEXAS

by
David L. Sherman

Texas Antiquities Permit No. 8461
Principal Investigator:
David L. Sherman

January 2020
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Prepared for

Tetra Tech and The City of Cotulla, Texas

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ABSTRACT

During June 25, 26 and August 29, of 2018 Blanton & Associates, Inc. conducted a cultural resources survey of proposed wastewater and drinking water pipelines and associated facilities within the City of Cotulla, La Salle County, Texas. The area of potential effects (APE) for archeological resources for this project is approximately 23.9 acres and extends to a maximum depth of 25 feet below ground surface.

The APE for non-archaeological historic resources is variable and consists of: the footprint of the proposed pipelines/pipeline easements; the existing boundary of the Cotulla Wastewater Treatment plant; the existing boundary of the La Salle Pump Station; and the proposed boundary of the new elevated storage tank. Due to the height of the new elevated storage tank (approximately 135 feet), an indirect visual APE was also established as a 0.25-mile buffer around the proposed boundary of the new elevated storage tank. Since a desktop review of potential non-archaeological historic resources determined that there would be no direct and no adverse indirect effects to historic-age resources within the APE, a non-archaeological historic resources survey was not conducted for this project.

Survey of the APE was conducted prior to planned improvements in compliance with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR 800), as well as the Antiquities Code of Texas (Texas Natural Resources Code, Title 9, Chapter 191) and associated state regulations (Texas Administrative Code, Title 13, Chapter 26). The 100 percent pedestrian survey of the archeological APE, augmented by 30 shovel tests, demonstrated that the majority of the APE had been negatively impacted by previous roadway construction and development. The archeological APE bisects previously recorded archeological site 41LS282, which was revisited during the present investigation. This work showed the portion of 41LS282 within the archeological APE has been negatively impacted by construction of the Cotulla Bypass roadway. The revisited portion of 41LS282 appears to lack preserved significant data resources that could contribute to the site’s overall potential National Register of Historic Places eligibility status. One isolated find, a single Desmuke dart point, was observed on the ground surface approximately two meters north of (outside of) the archeological APE, and roughly 225 meters northeast of 41LS282. No new archeological sites or non-arheological historic resources were recorded as a result of this investigation. It is the opinion of the Principal Investigator that the proposed undertaking will have no impact to any historic properties or potential historic properties.
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INTRODUCTION

On behalf of the City of Cotulla (the City) and at the request of Tetra Tech, Blanton & Associates Inc. (B&A) conducted a cultural resources survey of proposed wastewater and drinking water pipelines, and associated facilities, to be built by the City. These improvements will be built on properties owned by or easements maintained by the City in La Salle County, Texas (Map 1 in Appendix A). Cultural resources for the purposes of this investigation are defined as archeological resources and non-archeological historic resources.

Including this introduction, this report contains seven sections and two appendices. Section 2 provides a project description. Section 3 describes the environmental and cultural context for the project. Section 4 is the project research design. The investigation results are presented in Section 5. Project conclusions and recommendations are presented in Section 6. The references cited are included in Section 7. Appendix A provides detailed maps of the APE and proposed improvements. Appendix B is a shovel test log.
PROJECT DESCRIPTION

The City is proposing construction of wastewater and drinking water pipelines and associated facilities within properties owned by or easements maintained by the City in La Salle County (Map 1). The project would receive federal funding through the Drinking Water State Revolving Fund and Clean Water State Revolving Fund, as administered by the US Environmental Protection Agency and distributed through the Texas Water Development Board and, as such, is subject to compliance with the National Environmental Policy Act and Section 106 of the National Historic Preservation Act and associated federal regulations (36 CFR 800). Also, since the project would take place on lands owned or controlled by a subdivision of the state of Texas, i.e., the City, it is also subject to compliance with provisions of the Antiquities Code of Texas (9 TNRC 191) and associated state regulations (13 TAC 26).

WATER SUPPLY IMPROVEMENTS

Improvements to the City drinking water distribution system would include upgrading the existing water supply pipeline to the Cotulla-La Salle County Airport, a new elevated water storage tank, and improved water supply distribution by replacing and augmenting high service pumps at an existing facility. The proposed water supply improvements are depicted on topographic map base and aerial photographic map base in Maps 2.1 and 3.1 in Appendix A, respectively. A description of the proposed water system improvements is provided below.

Cotulla-La Salle County Airport Water Supply Improvements

This proposed water supply improvement project component would replace and upsize water service to the area around the Cotulla-La Salle County Airport (Map 3.2, Appendix A). Increased capacity is needed for the new airport terminal and development that is currently underway in that area.

An existing 2-inch diameter water supply pipeline located in the existing westside ROW of Airport Road would be replaced by a new approximately 3,120 LF 8-inch diameter water main located in the existing eastside ROW of Airport Road (Alternative A) that would connect to a new approximately 3,250 linear foot (LF) 12-inch diameter water main installed in SH 97 ROW from Airport Road to Engineering Lane (Alternative B) that would tie into an existing 12-inch water main at that intersection. The new 8-inch diameter water main along Airport Road would parallel the proposed new wastewater collection line within the eastside ROW of Airport Road. As an additive option under Alternative 1, a new approximately 6,940 LF 8-inch diameter water main would be constructed to form a looped water supply system. A 3,460 LF section of the Option A water main would be installed within a 20-foot wide permanent easement in the eastern ROW of the new Cotulla Bypass route (presently under construction) from Highway 97 to a future street intersection. The alignment then turns eastward within a 1,650 linear-foot section of 20-foot wide permanent easement on private property to the La Salle County Airport property line, with an additional 30-foot wide temporary construction easement. Within the public airport property, a 1,830 LF water main section within a 20-foot wide construction zone will be installed to connect to the northern terminus of the proposed 8-inch diameter water main on airport property (Alternative 1 – Option A), forming a looped water supply system. Adding this loop will help to maintain distribution system pressure in an area where immediate commercial development is expected. It will also provide redundancy for water supply to the
airport. Alternative 1 and Alternative 1 – Option A water lines would be installed in trenches at depths of 6 – 12-feet.

**New Elevated Storage Tank**

Another project component is construction of a new elevated storage tank (EST) to create redundancy and provide for peak demands during periods of drought and when power outages occur. The new 200,000-gallon storage capacity EST would be located on a 2.75-acre tract on La Salle County Airport property just east of Airport Road and north of Highway 97 as shown in Map 3.2 in Appendix A. The primary purpose of this new EST is to address fluctuations in distribution system pressures that occur on the east side of the City. In addition, it will create redundancy within the distribution system to provide for peak demands during power outages and short duration well pump outages.

**High Service Pump Station**

A new high service pump station (HSPS) is proposed at the existing La Salle Pump Station (Map 3.3 in Appendix A). The proposed pump station is intended to replace/augment the existing HSPS located at this site. The existing HSPS is undersized relative to the current 1,200 GPM capacity of new Well 9, which was recently constructed at this site. As part of Alternative 1, it is proposed that the two recently installed HSPs be relocated from the existing HSPS Building to an exterior slab on grade. A third HSP will be added to this pump station with space allotted for a future fourth pump.

**WASTEWATER SYSTEM IMPROVEMENTS**

Improvements to the City wastewater system include expanding wastewater collection service to the Cotulla-La Salle County Airport and updating wastewater treatment components. The proposed wastewater collection and treatment improvements are depicted on topographic map base and aerial photography map base in Maps 2.2 and 4.1 in Appendix A, respectively. A description of the proposed wastewater system improvements is provided below.

**Wastewater Collection Service Improvements**

The proposed wastewater collection service improvements entail installing a sanitary sewer line that would connect the airport sanitary sewer system to the existing City wastewater transfer station northeast of Martinez Street (Maps 4.2 in Appendix A). This preferred alternative is referred to as Sewer Alternative 2 in the Engineering Feasibility Report in support of funding acquisition from the Texas Water Development Board’s Clean Water State Revolving Fund. The approximately 8,804 LF 8-inch diameter gravity sewer line would be constructed on proposed easements within existing public road ROW and La Salle County property, as well as existing City easement. Construction of the sewer line would require crossing State Highway (SH) 97 and Ranch Road 624 by jack and bore and pipe encasement. Included with Alternative 2, is approximately 500 LF of 6-inch diameter gravity sewer line to serve an existing Animal Control Facility and the Fairgrounds on the north side of SH 97. The 6-inch sewer connects on Engineer Lane across SH 97 to an existing 6-inch sewer line on Pecos Street. This additional section would require a highway crossing by Jack and Bore and pipe encasement. Depths of trenching necessary for construction of the two sanitary sewer line sections ranges from 8 to 25 feet.
Grinder and Screen

The proposed wastewater treatment system improvements entail installing a new grinder and screen within the northwest portion of the existing City wastewater treatment plant (WWTP) (Map 4.3 in Appendix A). This will address the issues at the WWTP influent lift station and remove large amount of non-organic material that enter the WWTP from the sanitary sewer system and protect equipment at the WWTP. All components of the proposed new grinder and screen system would be constructed within the existing WWTP facility.

Expansion of Sludge Drying Beds

The existing WWTP currently has six conventional sand sludge drying beds that provide 15,180 square feet of sludge storage. Sludge drying beds are a common method of sludge dewatering in small WWTPs, provide a low capital cost, high solids content, low energy consumption, and require minimum operator attention. The current sand sludge drying beds do not meet Texas Commission on Environmental Quality sludge storage requirements to accommodate projected demand. To meet future demand requirements, the City proposes to expand the sludge drying beds by approximately 100 percent (see Map 4.3 in Appendix A). The sludge drying bed expansion would require an additional 2.0 acres of land southeast of the existing WWTP boundary to construct and accommodate the additional sludge drying beds.

ARCHEOLOGICAL APE DEFINED

The project’s horizontal APE for archeological resources corresponds with the area to be impacted to construct new water/wastewater pipelines, a new elevated storage tank, the existing La Salle pump station, expansion of existing sludge drying beds, and installation of a new grinder and screen. The proposed new water pipelines extend for a total of 13,310 LF and include 3,120 LF of new 8-inch pipeline, 3,250 LF of new 12-inch watermain, and 6,940 LF of new 8-inch watermain. The proposed new wastewater lines extend for a total of 9,304 LF and consist of 8,804 LF of 8-inch sewer and 500 LF of 6-inch sewer. Construction of the new elevated storage tank will impact a 2.75-acre tract. Improvements to the La Salle pump station will be built within a 1.2-acre tract that houses the current La Salle pump station. Expansion of the existing sludge drying beds will impact 2.0 acres located to the east and south of the existing wastewater treatment plant (Map 5). The new grinder and screen will be constructed within a 4.31-acre tract that houses the existing WWTP.

A section of proposed new water line parallels a section of proposed new wastewater line for a length of 3,120 LF, within existing eastside Airport Road ROW, with an estimated width of 25 feet. A portion of proposed wastewater line extending 1,648 LF in length will be constructed within a new 60-foot-wide easement. The remaining 7,656 LF of wastewater line will be constructed within existing roadway ROW with an approximate width of 25 feet. The maximum depth of impacts associated with the wastewater line will be 25 feet.

A 1,650 LF section of proposed waterline will be constructed within a new 50-foot-wide easement (which includes a 20-foot-wide permanent easement and a 30-foot-wide temporary easement). A 3,460 LF section of proposed waterline will be constructed within a 20-foot-wide permanent easement for the now under
construction Cotulla Bypass. A 1,830 LF section of proposed waterline will be constructed in a 20-foot-wide construction zone located on airport property. The remaining 6,370 LF proposed waterline will be built within the ROW of existing roadways (and includes the 3,120 LF of ROW shared with a section of the wastewater line) with an approximate width of 25 feet. The maximum depth of impacts for the water line will be 12 feet.

The archeological APE for this project is comprised of the 2.75 acre tract that will house the EST, the 2.0 acre area where the expanded sludge drying bed will be built, the 1.2 acre tract housing the current La Salle Pump Station, the 4.31 tract housing the WWTP, where the new grinder and screen will be installed and the and the combined 13.65 acres of public roadway ROW, easements, and construction zones where the water and wastewater lines will be built. Combined, these areas represent an approximate area of 23.9 acres with a maximum depth of impact of approximately 25 feet.

NON-ARCHEOLOGICAL HISTORIC RESOURCES APE DEFINED

The recommended APE for above-ground historic resources is variable. Where there is proposed new sewer pipelines and associated permanent easements, the APE is recommended as the footprint of the pipeline or easement, whichever is greater. The APE for the existing Cotulla Wastewater Treatment Plant is the existing boundary of the Cotulla Wastewater Treatment plant and the boundary of the proposed sludge drying bed construction impact area. The APE for the La Salle Pump Station is the existing boundary. The recommended APE for potential direct effects from the new elevated storage tank is the proposed boundary of the new elevated storage tank. Due to the height of the new elevated storage tank (approximately 135 feet), an indirect visual APE is recommended as a 0.25-mile buffer around the proposed boundary of the new elevated storage tank.
ENVIRONMENTAL AND CULTURAL CONTEXT

Prior to the initiation of the field survey, a background review of topographic, soils, and geology maps of the archeological APE was conducted by B&A. Previous archeological surveys and locations of recorded archeological sites within 1 kilometer (0.6 mile) of the archeological APE were examined by consulting the restricted-access online Texas Archeological Sites Atlas (Atlas). In addition to identifying recorded archeological sites, the Atlas was also reviewed for NRHP-listed properties, State Antiquities Landmarks (SALs), Official Texas Historical Markers (OTHMs), Recorded Texas Historic Landmarks (RTHLs), and cemeteries. Additionally, 7.5-minute topographic maps from 1940 that depict the archeological APE were reviewed in an effort to identify the locations of potential structures. The results of the comprehensive review are presented below.

TOPOGRAPHY

The archeological APE is located within the South Texas Plains physiographic region, a portion of the Interior Coastal Plains (Bureau of Economic Geology [BEG] 1996). This region is characterized by relatively flat topography that generally ranges in elevation from 70 to 300 feet (21 to 91 meters [m]) above mean sea level (BEG 1996). The area surrounding the archeological APE is a dissected upland that includes both urban and rural settings with a mix of residential and industrial development, and undeveloped brushland. The urban portion of the archeological APE is within the City. Much of the archeological APE is within the ROW of existing roadways. The elevation across the archeological APE ranges roughly between 470 feet above mean sea level (msl), at New Waterline Option A, and 380 feet msl, at the proposed Sludge Drying bed.

Natural sources of water in proximity to the archeological APE are limited, almost entirely, to small unnamed seasonal streams. With the exception of Mustang Creek, which is located approximately 150 m to the east, northeast of the proposed Sludge Drying bed, no second order or higher order drainages are present within the archeological APE or located in close proximity to the archeological APE.

GEOLOGY

Most of the archeological APE is underlain by the Middle Eocene-aged Laredo formation (BEG 1976). The Laredo formation consists of sandstone and clay in the upper part and ferruginous, red and brown clay in the middle. Holocene terrace deposits are present in a small portion of the archeological APE, located on the eastern third of the proposed Sludge Drying bed, in an area that has been profoundly altered through previous construction of a sewage disposal pond and associated buildings. These terrace deposits consist of sand, silt, clay and gravel in varying proportions with gravel more common within the older and topographically higher terraces. Chert from the Edwards Plateau occurs within this deposit and presumably served as a ready source of lithic raw material by local prehistoric populations.

SOILS

Four soil types are present within the archeological APE: Bookout clay loam, 0 to 3 percent slopes; Brystal very fine sandy loam, 1 to 3 percent slopes; Dilley fine sandy loam, gently undulating; and Poteet very fine sandy loam, occasionally flooded. Bookout clay loam is very deep and forms on gently sloping stream
terraces (Web Soil Survey 2018). Brystal very fine sandy loam is very deep and very gently sloping and develops on smooth plains and footslopes. It has a fine sandy surface layer underlain by clay loam. Dilley fine sandy loam is a shallow loamy soil that forms in loamy residuum over sandstone bedrock, which typically is found at depths between 10 and 20 inches above sandstone bedrock. Poteet very fine sandy loam is a very deep nearly level soil that occurs in narrow upland drainages. This soil typically includes a fine sandy loam surface layer to a depth of 22 inches that is underlain by sandy clay.

FLORA

La Salle County occupies portions of Blair’s (1950) Tamaulipan Biotic Province. The province extends from eastern Mexico to the Balcones Fault line at its northernmost extent. The semiarid, magathermal Tamaulipan Biotic Province has distinctive vegetation marked by brushy species that disappear or decrease notably north of the province boundary. The fauna include a number of grassland species that range northward into the Texan and Kansan Biotic Provinces as well as species that are found in common with the adjacent Austroriparian and Chihuahan Biotic Provinces. The Tamaulipan Province is distinguished among the Texas provinces by its neotropical element.

CULTURAL CHRONOLOGY

The archeological APE is located within the South Texas archeological region. The earliest synthesis of the archeology of south Texas was developed by E. B. Sayles (1935), who defined several cultural complexes along the Texas coast that indicated the presence of extensive campsites inland. Later, J. Charles Kelley (1947) defined the Monte aspect in this region, and Richard MacNeish (1947, 1958) included some parts of Texas along the lower Rio Grande in his archeological survey of Tamaulipas, creating the Brownsville, Abasolo, and Repelo cultural complexes.

Suhm et al. (1954) summarized the archeology of this region, incorporating data from the Falcon Reservoir survey and excavations (Jelks 1952, 1953; Krieger and Hughes 1950). Two new foci were defined consisting of the Falcon focus and Mier focus. The Falcon focus represented the Archaic of the region, while the Mier focus, with smaller dart points and arrow points, was considered later in time. The prehistoric cultures of South Texas and its sub-areas have more recently been synthesized by Hester (1989, 1995) and Black (1989); the following brief summary draws most heavily from those sources. The cultural periods are Paleoindian (11,200 to 8,000 Before Present [BP]); Early Archaic (8,000 to 4,500 BP); Middle Archaic (4,500 to 2,400 BP); Late Archaic (2,400 to 1,200 BP); and Late Prehistoric (1,200 to 400 BP) (Black 1989:48-51).

Paleoindian Period

The earliest evidence of humans in South Texas dates to the Paleoindian period. This period originally included the earliest inhabitants of the New World who spread across the American continent in the waning years of the Pleistocene era. Recent possible pre-Clovis finds in both North and South America such as the
site of Monte Verde in southern Chile (Dillehay 1989, 1997) may significantly refine the chronology of New World occupation, but the finds are still sporadic and not universally accepted.

Paleoindian cultures are typically identified by their distinctive lithic technology, including well-made projectile points such as Clovis, Folsom, and Plainview as well as a wide range of related lanceolate forms. Other diagnostic technologies include large polyhedral blade cores and prismatic blades associated with the Clovis techno-cultural complex and large bifacial cores and ultra-thin bifaces associated with the Folsom techno-cultural complex. Paleoindian materials, though rarely preserved in context, have been identified along the Lower Texas Coast. One location in particular, the La Paloma Mammoth site (41KN78), was identified in 1975 along Palo Blanco Creek in Kenedy County. The site consisted of several dart points in possible association with the remains of mammoth and *Bison antiquus* (Suhm 1980). Throughout the South Texas Plains area, most of these artifacts represent scattered surface finds rather than buried stratigraphically isolable components. Data from the broader area comprising southern, southwest, and central Texas indicate that primary site types from this period include open sites and rockshelters with evidence of general occupation along with specialized activities such as stone-tool making, hunting, and game processing. Stone artifact caches and human burials dating to the Paleoindian period have also been identified. In the past, the Paleoindian peoples were typically characterized as a nomadic, big-game hunting culture, but considerable evidence from nearby regions, such as Baker Cave, suggests a broader range of subsistence activities within a rich and complex cultural tradition (Hester 1983).

The Paleoindian period is one that is marked by a gradual warming trend at the close of the final Pleistocene Wisconsinan glaciation. This warming trend is associated with a dramatically shifting faunal and floral environment, to which the various cultural traditions quickly adapted.

**Archaic Period**

The transition from Paleoindian to the Early Archaic is difficult to define precisely, but the Archaic projectile points begin to shift from lanceolate forms to stemmed points, though some later lanceolate forms such as Golondrina and Angostura may persist longer. Unfortunately, beyond a very few excavated sites (Scott and Fox 1982), subsistence data are scarce for sites of this period. Early Archaic sites are known throughout the area, though few have been excavated, and there is very little data on such sites in south Texas (Black 1989). Sites are found on high terraces and in the uplands; buried alluvial sites have also been identified. As with the Paleoindian period, the widespread distribution of artifact types and low site density suggest a low population density, small band sizes, and large territorial ranges, though as Story (1985) and Black (1989) have argued, these generalizations probably apply to a wide area of the West Gulf Coastal Plain. Regional themes in the Archaic include the emergence of a triangular tool-type tradition including the widespread use of distally-beveled tools and the development of subregionalized, but poorly understood, mortuary complexes.

The Middle Archaic of the South Texas Plains is little better known than its Early Archaic and Paleoindian antecedents. Hampered by the paucity of excavated sites and the near absence of radiocarbon dates, much must be inferred by comparison with adjacent regions (Black 1989:49-51). By the Middle Archaic, ground stone artifacts, including manos and metates, occur at a number of sites, suggesting an increased reliance on floral resources compared to previous periods. Unifacial, distally-beveled lithic tools continue in use,
while triangular dart points characterize the projectile points of this period. Stemmed points are also present (Hester 1995:438). The persistent Clear Fork tool type continues in both bifacial and unifacial forms, though much smaller than its earlier variants (Turner and Hester 1999:246). Sites have been identified in the uplands as well as in alluvial settings and along estuary bays in the Coastal Bend. Chronologically diagnostic artifact scatters appear for the first time in the Rio Grande delta (Black 1989:49). Middle and Late Archaic sites occur on terraces, arroyo banks, and in hilly areas overlooking arroyos and their tributaries. Hall et al. (1986) suggest a greater reliance on plant materials based on the presence of burned-rock concentrations. Population densities appear to have increased during this period as more-defined cultural territories arose.

Late Archaic sites in South Texas are numerous, and this period is better known than its predecessors. During this time, utilization of plant and marine resources appears to have increased while a reliance on hunting large mammals decreased. In fact, resource specialization may have reached a peak during the Late Archaic, followed by somewhat more generalized subsistence patterns in the subsequent Late Prehistoric period (Black 1989:51). An increase in site density during this period is thought to represent an increase in population density. Regional distinctions in artifact assemblages and other cultural traits also become prominent at this time.

**Late Prehistoric Period**

The final prehistoric period, the Late Prehistoric, is well represented in South Texas. This period is marked by the introduction of new technologies, including the bow and arrow and ceramics, as well as potentially new adaptive strategies. Site types are varied and include open campsites, lithic scatters, and cemeteries. Site types indicate local lithic styles and intrusions from adjacent areas. Local ceramic styles are infrequent if non-existent unless associated with assemblages also occurring in other regions. Two subperiods that have been defined for this period in Central Texas also have relevance to the Late Prehistoric of the South Texas Plains. The earliest part of this period, the Austin subperiod (beginning about 1,300 to 1,200 BP) reflects a certain degree of cultural and economic continuity underlying the adoption of new technologies, while the later Toyah subperiod (extending roughly to the beginning of the historic era) may indicate the introduction of immigrants following a southward extension of the range of the bison. Throughout most of the state, there is an intensification of animal exploitation as evidenced by the faunal remains that occur on sites dating to the Late Prehistoric period, particularly during what has been termed the Toyah Phase.

The transition to the Protohistoric/Historic period reflects catastrophic replacement of indigenous groups. Little is known of the fate of the prehistoric inhabitants of South Texas during this period. Though a number of small groups have been documented in the early historic era of south, south-central, and coastal Texas, most disappeared very quickly from the written records. In South Texas, Campbell (1988) documented the available evidence of the numerous Native American bands that roamed this region in the early historic era.

**Cotulla Texas**

The town of Cotulla was named after Polish immigrant Joseph Cotulla, who worked to establish a town after learning that the International-Great Northern Railroad planned to extend into La Salle County (Lefler 2018). In 1883 Cotulla was designated the county seat of La Salle County when it boasted a railroad depot, a general store, a hotel and a jail. By 1890 the town had a population of 1,000 and “three general stores,
two weekly newspapers, two churches, a saloon, a bank, a corn mill, and a cotton gin (Lefler 2018).” The economy of Cotulla was based primarily on sheep and cattle ranching. A public library was built in 1937 and the population grew to 3,633 by 1941 (Lefler 2018).

PREVIOUS INVESTIGATIONS

According the Texas Historical Commission’s restricted-access Online Archeological Sites Atlas (Atlas), only a small portion of the archeological APE (Map 5) was previously surveyed for archeological resources (Atlas 2018). This work was conducted pursuant to construction of the bypass around the City of Cotulla (Rush and Dayton 2016) and resulted in the identification of the only site (41LS282) within 1 kilometer of the archeological APE. Site 41LS282 is a sparse prehistoric lithic scatter that was initially identified based on surface expression. Shovel testing during that investigation recovered artifacts from 30 to 40 cm below ground surface (Rush and Dayton 2016). The archeological APE crosses the site within the 20-foot wide permanent easement for the Cotulla Bypass (see Map 5).

Two OTHMs are located within 1 kilometer of the archeological APE (see Map 5). A marker for Cotulla Ranch is located 330 m northwest of the proposed La Salle Pump Station. A marker for Cotulla Cemetery, along with the cemetery itself, are located about 550 m east of the proposed La Salle Pump Station. In addition to the Cotulla Cemetery, one other cemetery is located within 1 kilometer of the archeological APE. The Sacred Heart Cemetery is located about 630 m to the north of the proposed La Salle Pump Station (see Map 5). The Cotulla Downtown historic district is listed on the NRHP and is located 700 m to the west of the proposed Alternative 2 Additional Sewerline Alignment (see Map 5). The La Salle County Courthouse is part of a NRHP-listed district and is contained within the downtown historic district. No other properties listed on or eligible for listing on the NRHP are present within the archeological APE or within 1 kilometer of the archeological APE. Several structures depicted on a 1940 United States Geological Survey (USGS) 7.5-minute topographical quadrangle map (see Map 5) are in close proximity to the archeological APE (NETR 2018). These structures are no longer extant and have been destroyed by subsequent development.

The El Camino Real de Los Tejas National Historic Trail, designated by the US Congress in 2004, parallels SH 97 east of Cotulla, approximately 130 m to the south of the roadway (see Map 5). The trail crosses the archeological APE, along Alternative 2 Sewerline, roughly east to west. As noted in the National Park Service’s Management Plan for the trail (National Park Service 2011), significant portions of the trail have not been groundtruthed and many locations of trail remnants may have been obliterated by modern development. Nonetheless, the trail itself is often used as an indicator of high probability areas (HPA) for the presence of associated prehistoric and historic archeological sites.

DESCRIPTION OF EXISTING DISTURBANCES

Most of the archeological APE has been previously impacted by previous development and roadway construction. The proposed wastewater pipelines total approximately 9,304 LF, of which approximately 7,656 LF are in existing public roadway ROW within a context previously disturbed by roadway construction. A total of approximately 1,648 LF of the proposed wastewater line will be constructed within a new easement that has not been disturbed by roadway construction.
The proposed waterlines total approximately 13,310 LF. This total includes 1,650 LF within new construction easement, approximately 3,460 LF within a permanent easement for the Cotulla Bypass Loop, and 1,830 LF within a construction zone on airport property. The remaining 6,370 LF are within the ROW of existing public roadways, of which 3,120 LF are shared with a section of proposed wastewater line. Only the approximately 1,650 LF that will be constructed within a new construction easement have not been previously impacted by roadway construction. Prior to the initiation of fieldwork, an examination of 7.5-minute USGS topographic quadrangles suggested that over half (1.1 acres) of the 2 acres that will house the sludge drying bed was previously disturbed by the construction of an abandoned sewage pond. The remaining 0.9 acres of this area were thought, prior to the initiation of fieldwork, to have escaped negative impact from sewage pond construction, and represent an HPA. The present survey, however, demonstrated that the entirety of the area to be impacted by the proposed sludge drying bed had been previously disturbed by construction of the abandoned sewage pond. The site of the proposed upgraded La Salle Pump Station has been entirely disturbed by construction of the existing La Salle Pump station. The proposed grinder and screen will be built within the existing WWTP in an area that has been previously disturbed by plant construction. The survey also demonstrated that previous excavation and earth movement has disturbed the proposed location of the EST.

The only portions of the archeological APE that were not profoundly impacted by modern construction include the following: the 1,650 LF section of the proposed new waterline (Option A) that is within new construction easement and the 1,648 LF section of the proposed wastewater line within a new construction easement.
SURVEY METHODS

The background review conducted prior to the field investigation highlighted the potential of the archeological APE to harbor prehistoric deposits, such as surficial or near surficial lithic scatters, and historic deposits associated with no longer extant residences and, potentially, prehistoric and/or historic deposits associated with the El Camino Real de Los Tejas National Historic Trail.

The desktop review of non-archaeological resources revealed the presence of one historic-age water tank at the La Salle Pump Station and one historic-age waste-water treatment structure at the Cotulla Wastewater Treatment Plant. The remainder of the resources at each location are not historic-age. Both the historic-age resources are non-descript utilitarian structures that are not associated with historically significant properties. Since neither of these resources are slated for demolition, and their current functions and the function of the surrounding properties will remain the same, there are no potential effects to these resources. Furthermore, no historic-age resources were identified within the APEs, including the 0.25-mile indirect visual APE, of the proposed sewer pipelines/easements or of the proposed new storage tank. As a result, a non-archaeological historic resources survey was not conducted for this project.

The archeological APE in the vicinity of the historic structures identified on the 1940 USGS topographic map is limited to existing ROW for roadways that have been disturbed by roadway construction. Consequently, the former locations of these structures are not considered historic high probability areas (HHPAs). However, all undisturbed areas within 300 m of the El Camino Real de Los Tejas National Historic Trail were considered to be HPAs/HHPAs (see Map 5).

Due to the paucity of reliable sources of water within proximity to the archeological APE, prehistoric HPAs were extremely limited. Mustang Creek, which is less than 200 m away from the proposed Sludge Drying Bed, is the only second order or higher order stream in proximity to the archeological APE. For this reason, prior to the initiation of fieldwork, a portion of the proposed Sludge Drying bed which was thought to have remained undisturbed following previous construction was thought to represent an HPA. However, as noted above, the present survey demonstrated that the entirety of the proposed Sludge Drying Bed had been previously disturbed by construction associated with the non-extant sewage disposal pond.

B&A conducted an intensive pedestrian survey of the entire archeological APE consisting of a surface survey augmented with strategic shovel testing in localities that did not exhibit depositional disturbance from previous development. All survey methods complied with applicable standards outlined and defined in 13 TAC 26.15 and policies of the THC, as well as guidelines of the Council of Texas Archeologists (CTA), following a research design outlined in Texas Antiquities Permit 8461.

This investigation consisted of systematic inspection of the ground surface by archeologists walking a single transect down the center of the archeological APE to search for surficial evidence of archeological sites. The pedestrian survey utilized systematic shovel testing in prehistoric HPAs and HHPAs, which were limited to the vicinity (within 300 m) of the El Camino Real de Los Tejas National Historic Trail. Judgmentally placed shovel tests were excavated in areas outside of HPAs and HHPAs that had poor surface visibility and did not appear to have been previously disturbed.
Areas previously disturbed by construction and industrial development were visually inspected but were not shovel tested. All shovel tests were excavated in arbitrary 20-cm levels to 100 cm in depth or to culturally sterile pre-Holocene sediments, whichever occurred first. All removed soil was screened through 0.25-inch (0.63 cm) hardware cloth. Field observations were recorded on appropriate B&A field forms and the locations of each shovel test was acquired with a hand-held global positioning system receiver accurated to within one meter (m) with post-processing. Salient features of the archeological APE were photographed.

None of the artifacts encountered during the course of the survey were collected. These materials were however described. The single temporally diagnostic artifact observed during the survey was photographed. All survey records including photographs will be processed for curation at the Center for Archaeological Research (CAR) at The University of Texas at San Antonio according to CAR’s Standards and Procedures for the Preparation of Archaeological Collections, Records, and Photographs (n.d.).
SURVEY RESULTS

During June 25, 26 and August 29, 2018, B&A archeologists conducted an intensive survey of the 23.9-acre archeological APE (see Map 5). The background investigation conducted prior to the initiation of the survey suggested that most of the archeological APE had been previously impacted by roadway construction and industrial development. The survey demonstrated that this indeed was the case and the majority of the archeological APE had been profoundly impacted by roadway construction and modern development. Since a desktop review of non-archaeological historic resources indicated there were no potential effects to historic-age resources within the APE, a non-archaeological historic resources survey was not conducted.

As noted above, the proposed Alt-2 new wastewater lines extend for a total of 9,304 LF (comprised of 8,804 LF of 8-inch sewer and 500 LF of 6-inch sewer (Map 5) of additional wastewater line). The archeological APE associated with Alt-2 wastewater line crosses six distinct contexts. A 3,120 LF section, which it shares with a section of the proposed Option-A waterline, is located within the eastside ROW of Airport Road. A roughly 1,358 LF section of the proposed Alt-2 wastewater line is located within the southside ROW of SH 97. A roughly 1,648 LF section of the proposed Alt-2 wastewater line will be built in a new 60-foot wide easement. A roughly 1,484 LF section of this line is within the FM 624 westside ROW. A roughly 1,193 LF section of this line is within the southside ROW of the driveway for the Cotulla Unit D prison. The remaining 500 LF of this line is within the eastside ROW of Engineer Lane.

The 3,120 LF section of Alt-2 wastewater line, within the eastside ROW of Airport Road, has been altered by road construction. Figure 1 depicts the drainage ditch along the east side of the road and the reddish-brown clay dominated subsoil common to the archeological APE exposed at the ground surface. This portion of the archeological APE will be shared by the Alt-2 wastewater line and the Option A waterline.
Three shovel tests (see Map 5) were excavated adjacent to the fence defining the eastern limits of the APE. Reddish-brown clay dominated sub-soil was encountered in two shovel tests at the ground surface. The third shovel test exposed 10 cm of a pale brown sand dominated surface layer underlain by a dark reddish-brown clay dominated subsoil. All three shovel tests were culturally sterile.

A roughly 1,358.3 LF section of the proposed Alt-2 wastewater line will be built within SH 97 southside ROW. This section of proposed line has been substantially altered by construction of SH 97. No shovel tests were excavated within this context.

The 1,648 LF section of the proposed Alt-2 wastewater line that will be built in a new 60-foot wide easement was not previously impacted by industrial development or construction of a paved highway. However, the northern portion of this section was partially centered over a graded two-track road (Figure 2). Prior to the current survey, almost the entirety of this portion of the archeological APE was considered to be an HPA/HHPA due to its proximity to the El Camino Real de Los Tejas National Historic Trail. Consequently, this section of the archeological APE was shovel tested at approximate 30 m intervals. A total of 14 shovel tests were excavated within this section of the archeological APE. The shovel tests excavated along this section of the archeological APE typically exposed a shallow zone of sand pale brown dominated sediments overlying a zone of dark reddish-brown clay dominated sediments. Clay dominated sediments were encountered at the ground surface in four shovel tests and encountered no deeper than 20 cm below ground surface in the remaining 10 shovel tests. All 14 shovel tests excavated within this section of the archeological APE were culturally sterile.
A roughly 1,484.3 LF section of the Alt-2 wastewater line is within the westside ROW of FM 624. The surface of the ROW adjacent to FM 624 has been graded and the has been thoroughly altered by roadway construction (Figure 3).
A roughly 1,193.4 LF section of the Alt-2 wastewater line is within the ROW of the driveway for the Cotulla Unit D Prison (Figure 4). The ground surface of this section of the archeological APE has been disturbed by road construction. A single culturally sterile shovel tests was excavated at the western limits of this section of the archeological APE and exposed pale brown sand dominated sediments extending to 20 cm below ground surface underlain by dark reddish-brown clay dominated sediments that extended minimally to 45 cm below ground surface.

The remaining 500 LF of Alt-2A will be built in the ROW of Engineer Lane, along the east side of the road (Figure 5). Engineer Lane is within the city of Cotulla and its surface has been thoroughly altered by road construction.

Figure 4. APE along Cotulla Unit D Prison Driveway, Facing Northeast
As mentioned above, the proposed Option A waterline extends approximately 13,310 LF. It crosses five distinct contexts, including a 1,650 LF section within a new 50-foot wide construction easement, a 3,460 LF section within the now under construction Cotulla Bypass, the aforementioned 3,120 section shared with the Alt-2 wastewater line, a 3,250-foot section within the northside of the SH 97 ROW, and finally, a 1,830 section to be built within a 20-foot wide construction easement.

The 1,650 LF section of the proposed new waterline (Option A) that is within new construction easement was not previously impacted by highway construction or industrial development. This section of the archeological APE was visually inspected and sampled with a total of seven shovel tests (see Map 5 in Appendix A). This work revealed that although some portions of this section were relatively undisturbed, several senderos and push piles were observed, suggesting some impact from heavy machinery. Ground surface visibility was excellent (above 45 percent) within this section (Figure 6). A single Desmuke dart point was observed on the ground surface, approximately two meters to the north of the archeological APE (Figure 7). No additional cultural materials were identified within the archeological APE adjacent to the surface find. Two culturally sterile shovel tests, of the seven shovel total shovel tests excavated along this section of the archeological APE, were excavated adjacent to the surface find. The absence of any additional cultural materials in the vicinity of the dart point indicates it does not represent an archeological site with intact Late Archaic deposits. The artifact is considered and isolated find (IF) and referred to as IF 1 (see Map 5 in Appendix A). The sediment encountered in the seven shovel tests excavated within this section of the archeological APE consisted of a reddish-brown sand dominated surface zone extending from the ground surface to an average of 10 cm below ground surface underlain by a dark reddish-brown clay dominated subsurface zone. All seven of the shovel tests excavated in this section of the archeological APE were culturally sterile.
Figure 6. New Construction Easement, Facing South

Figure 7. Desmuke Dart Point
The entirety of the 3,460 LF section of proposed new waterline that would be built within a permanent easement within the eastside ROW for the now under construction Cotulla Bypass has been thoroughly altered by ongoing roadway construction. **Figures 8 and 9** are representative of the impact highway construction has wrought on the construction easement. The ground surface was completely visible within this section of the proposed waterline and no shovel tests were excavated.

![Figure 8. Cotulla Bypass Permanent Construction Easement, Facing North.](image-url)
As mentioned above, a 3,120 LF section of the proposed new waterline Option-A will be constructed within the eastside ROW for Airport Road, adjacent to and paralleling a section of the proposed Alternative-2 wastewater line. The survey results for this context are described above.

A 3,250 LF section of the proposed new waterline Option-A will be built within the northside ROW of SH 97. Like with the south-side, the north side has been thoroughly altered by highway construction (Figure 10).
Figure 10 shows reddish-brown clay dominated subsoil on the surface within this section of the archeological APE. The red sign on a metal post in the right side of Figure 10 indicates the presence of a buried fiber optic line, suggesting that this section of the archeological APE has also been disturbed by installation of buried utilities.

The remaining section of the proposed Option-A waterline will be built within a 20-foot wide construction easement within airport property. Ground surface visibility within this portion of the archeological APE was excellent, ranging from 45 to 100 percent, and no shovel tests were excavated. The construction easement has been previously graded for vehicle traffic, but not paved. Reddish brown clay dominated subsoil was exposed at the ground surface (Figure 11) in some portions of the construction easement, while portions in proximity to airport buildings were graded with gravel (Figure 12).
Figure 11. Airport Construction Easement, Facing East

Figure 12. Airport Construction Easement, Facing Northwest
Survey of the proposed Sludge Drying Bed revealed that it had been profoundly altered by previous construction of a no longer extant sewage drying bed (Figure 13). The proposed Sludge Drying Bed was very densely vegetated and ground surface visibility was non-existent.

Figure 13. Proposed Sludge Drying Bed, Facing South East

The 2.0-acre area where the proposed expanded Sludge Drying Bed will be constructed was previously excavated to a depth of approximately three meters, presumably for use as a non-extant sewage drying bed. For this reason, this area is thought to be completely lacking in depositional integrity. No shovel tests were excavated within this tract.

The new grinder and screen will be constructed within a 4.31-acre tract the houses the existing WWTP (Figures 14 and 15). This tract has been thoroughly altered as a result of construction of the WWTP. Portions of the tract that do not house extant structures have been graded and paved. Previous construction within this tract has compromised its depositional integrity. No shovel tests were excavated within this tract.
Figure 14. Cotulla Water Treatment Facility Entrance, Facing Northeast

Figure 15. Cotulla Water Treatment Facility, Facing North East
The proposed HSPS will be constructed on a 1.2-acre tract that presently houses the extant La Salle Pump Station. The depositional integrity of this tract has been compromised by previous construction of the extant pump station, and elevated storage tank (Figure 16) and buried waterlines.

![Location of Proposed HSPS, Facing West.](image)

The new EST will be constructed on a 2.75-acre tract northeast of the intersection of Airport Road and SH 97 (Figure 17). Previous excavation within this tract has undermined its depositional integrity. Ground surface visibility was approximately 25 percent. Portions of the tract have been excavated to an approximate depth of 1.5 m and a large push pile is present at its northern extent. A single shovel test was excavated near the center of this tract which revealed reddish-brown clay dominated subsoil at the ground surface. Clay dominated subsoil was exposed at the ground surface across the tract.
Site 41LS282

Site 41LS282 is a previously recorded prehistoric site situated on a ridge summit at an approximate elevation of 475 feet above mean sea level (Map 6). The soil on site is Dilley fine sandy loam, gently undulating (Web Soil Survey 2018). Mustang Creek is located approximately 600 m to the west of the site. Vegetation on site consisted of a sparse brush community with mesquite and various cacti and grasses. Road construction prior to the current site revisit removed all vegetation within the limits of the archeological APE and exposed pre-Holocene deposits. Ground surface visibility was excellent when the site was recorded and 100 percent when the site was revisited during the present investigation.

The site was initially recorded during survey of the now under construction Cotulla Bypass loop (Rush and Dayton 2016). At that time a sparse surface scatter of lithic debitage, tested cobbles, and some thermally altered rock were observed within an area extending 50-by-80 m, with the long axis oriented north to south. Six shovel tests were excavated when the site was first recorded, of which three were culturally positive and yielded a total of three lithic debitage specimens and one mussel shell fragment. The entirety of the portion of 41LS282 that is crossed by the archeological APE was disturbed by roadway construction for the Cotulla Bypass prior to the revisit.

A surface inspection of the portion of 41LS282 within the limits of the archeological APE was conducted during the present investigation. The revisited portion of the site had been completely altered by road construction (Figure 18). The easement for the proposed waterline is defined by the pavement (on the left) and the fence line on the right and has been graded and sloped with heavy machinery.
The surface inspection identified 2 mussel shell fragments, 3 lithic debitage specimens, and one thermally altered rock (see Map 6). The presence of these materials, along with the small assemblage of cultural materials identified on site when it was initially recorded (See Rush and Dayton 2016) suggest it resulted from one or more occupations during the prehistoric period, focused in part on subsistence processing and lithic reduction.

The portion of site 41LS282 located within the archeological APE has been completely altered by heavy machinery during road construction. For this reason, the revisited portion of the site lacks depositional integrity and does not appear to harbor any significant data resources that could warrant NRHP inclusion under any eligibility criteria and consequently does not appear to contribute to the site’s overall NRHP eligibility status. For these reasons, additional research is neither warranted nor recommended.
CONCLUSIONS AND RECOMMENDATIONS

Intensive survey of the archeological APE for the project resulted in the revisit of one previously recorded archeological site (41LS282). The portion of site 41LS282 crossed by the archeological APE has been previously disturbed by construction of the Cotulla Bypass loop. This portion of the site does not appear to contribute to the overall potential NRHP eligibility status of site. For this reason, it is the opinion of the Principal Investigator that the proposed work will not impact significant data resources associated with 41LS282. No new archeological sites were recorded by this survey. No undisturbed portions of the archeological APE appear to have aggraded since the Holocene, when human populations first inhabited south Texas. The survey demonstrated that most of the archeological APE has been impacted by modern development and roadway construction. Shovel tests excavated within portions of the archeological APE that were not previously impacted by modern development did not identify any new archeological sites. No evidence suggesting the presence of significant archeological deposits that have maintained depositional integrity was identified as a result of this work. Desktop review of the non-archeological historic resources APEs for the Cotulla Water Supply and Wastewater Improvement Project determined that no survey was needed. For these reasons, it is the opinion of the Principal Investigator that the proposed improvements to the Cotulla Water Supply and Wastewater System will have no impact to historic properties or potential historic properties. Additional investigation is neither warranted nor recommended.

Project field documentation, photos, etc. and final report will be curated at the Center for Archaeological Research at the University of Texas at San Antonio as required under terms and conduction of Texas Antiquities Permit 8461.
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Web Soil Survey
APPENDIX A

Maps
CULTURAL RESOURCES SURVEY OF COTULLA WATER SUPPLY AND WASTEWATER SYSTEM
IMPROVEMENTS PROJECT, LA SALLE COUNTY, TEXAS

APPENDICES

Map 2.1
Water Resources
City of Cotulla
Water Supply
Improvement Project
La Salle County, Texas

- Truck Bypass ROW
- National Hydrography
- Database Stream
- Wetland
- Airport Road Construction Area
- New Waterline A
- Proposed Water Pipeline Alternative A
- 20-foot Permanent Easement
- 20-foot Construction Zone
- Easement within TxDOT ROW
- La Salle Pump Station

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Base Map: ESRI-USA Base Map

1:15,000 Scale
0 500 1,000 2,000 Feet
CULTURAL RESOURCES SURVEY OF COTULLA WATER SUPPLY AND WASTEWATER SYSTEM

IMPROVEMENTS PROJECT, LA SALLE COUNTY, TEXAS

APPENDICES

Not for public view—contains sensitive site information
APPENDIX B

Shovel Test Log
## Shovel Test Log

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<td>6/26/2018</td>
</tr>
<tr>
<td>JD1</td>
<td>None</td>
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<td>Clay-dominated</td>
<td>10-43</td>
<td>Dark Reddish Brown</td>
<td>8/29/2018</td>
</tr>
<tr>
<td>JD2</td>
<td>None</td>
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</tr>
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<td>JD3</td>
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<td>9-40</td>
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</tr>
<tr>
<td>JD4</td>
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</tr>
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<td>JD5</td>
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</tr>
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<td>JD7</td>
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<td>7-35</td>
<td>Dark Reddish Brown</td>
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