



INDEX OF TEXAS ARCHAEOLOGY

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Volume 2018

Article 156


2018

Intensive Archaeological Survey of the FM 791 Overpass Project

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Intensive Archaeological Survey of the FM 791 Overpass Project

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Intensive Archaeological Survey of the FM 791 Overpass Project

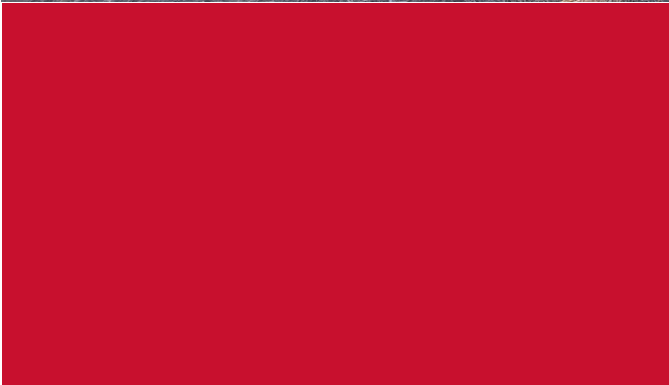
CSJ: 1739-04-010

McMullen County, Texas

July 2018

By: Megan A. Koszarek and Ann Keen
Principal Investigator: Megan A. Koszarek

Texas Antiquities Permit Number: 7729





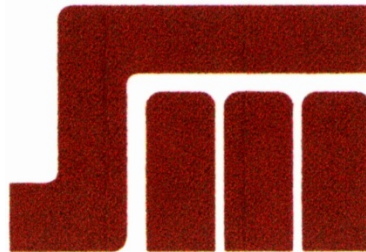
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**By
Megan A. Koszarek and Ann Keen**

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July 2018



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Management Summary

San Miguel Electric Cooperative, Inc. (SMECI) contracted HDR, Inc. (HDR) to conduct a cultural resources survey of the approximately 12.5-acre (544,496-square feet [ft²]) Area of Potential Effects (APE), which is bisected by Farm to Market Road 791 (FM 791) in McMullen County, Texas. This survey was conducted in advance of the proposed construction of an overpass on FM 791 to accommodate an access road (haul road) for the San Miguel Mine.

The APE is contained within three parcels, two of which are currently owned by SMECI—parcels 3434 and 3428. The third parcel, 3036 is owned by the heirs of James L. Rayes, pending SMECI's acquisition of the property. No portion of the APE falls within the FM 791 right-of-way (ROW). The corridors for the haul road and the overpass are outside of the jurisdiction of the Railroad Commission of Texas (RCT). Therefore, the Texas Department of Transportation (TxDOT) will act as the lead agency for the proposed project.

The archaeological investigation conducted by HDR consisted of a survey of the APE to determine the presence/absence of archaeological resources by employing shovel testing, pedestrian survey, and photo-documentation. Fieldwork was completed by Principle Investigator Megan Koszarek and project archaeologist Ben Fullerton on February 17, 2016. A total of five person-hours were invested in the field portion of the project. The work for this project was completed under Texas Antiquities Permit Number 7729.

One previously recorded archaeological site, 41MC106, was mapped within the southern portion of the APE. The recorded location of the site within the APE was revisited during the course of the survey and no cultural materials were identified. As a result, site 41MC106 is not present within the current APE.

Due to the high surface visibility throughout the project area (approximately 30 to 60 percent surface visibility) the survey resulted in a pedestrian walkover and photo-documentation of the entire project area. The survey resulted in the identification of one isolated find (SM ISO 001). A shovel test was excavated adjacent to the isolate to confirm that the find was limited to the surface. Isolated finds do not meet the definition of an archaeological site and are therefore not eligible for inclusion in the National Register of Historic Places (NRHP). No new archaeological sites were identified during the investigation. In accordance with 36 Code of Federal Regulations (CFR) 800 and 13 Texas Administrative Code [TAC] 26, no further archaeological investigations are recommended.

As a result of the present survey, it is recommended that the proposed FM 791 overpass construction within the current APE will not have any effect on cultural resources in the project APE, and construction may proceed. In the event that any archaeological deposits are encountered during construction, work should cease, and the THC should be notified.

All records and materials generated by this project will be permanently curated at the Center for Archaeological Studies at Texas State University in San Marcos, Texas.



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Abbreviations and Acronyms

APE	Area of Potential Effects
Atlas	Texas Archeological Sites Atlas
BP	Before Present
CFR	Code of Federal Regulations
cmbs	Centimeters Below Surface
FM	Farm to Market Road
ft ²	Square Feet
GPS	Global Positioning System
inbs	Inches Below Surface
m	Meter(s)
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
ROW	Right-of-Way
SAL	State Antiquities Landmark
SH	State Highway
SMECI	San Miguel Electric Cooperative, Inc.
TARL	Texas Archeological Research Laboratory
THC	Texas Historical Commission

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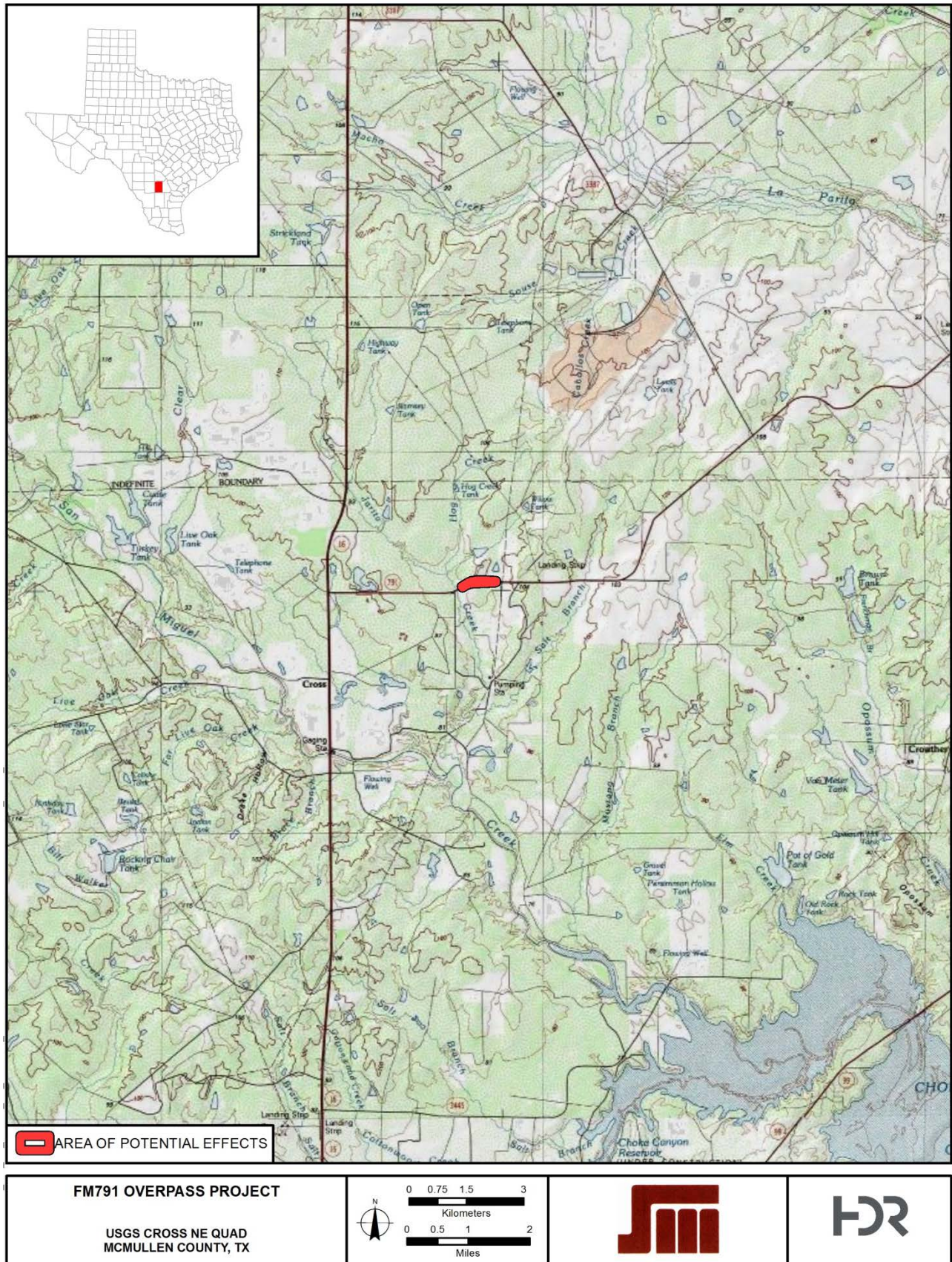
1 Introduction

HDR contracted with SMECI to conduct a cultural resources survey of approximately 12.5 acres (544,496 ft²) for the proposed construction of an overpass on FM 791 in the city of McMullen County, Texas. The APE is contained within three parcels, two of which are currently owned by SMECI—parcels 3434 and 3428. The third parcel, 3036 is owned by the heirs of James L. Rayes, pending SMECI's acquisition of the property. The corridors for the haul road and the overpass are outside of the jurisdiction of the RCT. Therefore, TxDOT will act as the lead agency for the proposed project.

The archaeological investigation conducted by HDR consisted of a survey of the APE to determine the presence/absence of archaeological resources by employing shovel testing, pedestrian survey, and photo-documentation. Fieldwork was completed by Principle Investigator Megan Koszarek and project archaeologist Ben Fullerton on February 17, 2016. A total of five person-hours were invested in the field portion of the project. The work for this project was completed under Texas Antiquities Permit Number 7729.

All records and materials generated by this project will be permanently curated at the Center for Archaeological Studies at Texas State University in San Marcos, Texas.

Figure 1-1. Topographic Map of the Project Area.



2 Background

2.1 Geology and Soils

The underlying geology within the APE is the Manning, Wellborn, and Caddell Formations, undivided of Eocene age (United States Geological Survey 2007). According to data from the Natural Resources Conservation Service (NRCS; Soil Survey Staff 2016), the project area consists of four soil map units: Dosrios clay, 1 to 3 percent slopes; Conquista clay, 1 to 3 percent slopes; Imogene fine sandy loam, 0 to 2 percent slopes, occasionally flooded; and Brundage fine sandy loam, 0 to 2 percent slopes. The primary soil map unit within the APE is the Dosrios clay. The Dosrios series consists of soils that are very deep to mudstone. They are well drained, very slowly permeable soils that formed in moderately saline clayey marine sediments overlying clayey residuum derived from mudstone of Tertiary age. Dosrios soils are on summits and shoulders of interfluves, and slopes range from 0 to 5 percent.

2.2 Cultural History

The prehistoric occupation of the south Texas plains is divided into five general cultural periods (Table 2-1). These periods are based primarily on artifact styles, especially projectile points, and reflect broad changes in subsistence and settlement patterns.

Table 2-1. Prehistoric Periods and Dates.

Period	Dates
Paleoindian	9500–6000 BC
Early Archaic	6000–2500 BC
Middle Archaic	2500–500 BC
Late Archaic	500 BC–AD 800
Late Prehistoric	AD 800–1600

2.2.1 Paleoindian Period

The Paleoindian period represents the first well-documented human occupation of the region. Evidence of the earliest Paleoindian complexes (Clovis and Folsom) has been found throughout south Texas, although most of this evidence is from surface collections of the distinctive fluted projectile points that characterize these complexes. Clovis specimens have been found on sites in Bee County (Sellards 1940), Wilson and Dimmit Counties (Kelly 1988), Atascosa County (Hester et al. 1993), and Southern Island (Perttula 2004). Folsom artifacts have been documented throughout the region; specifically, Folsom projectile points have been recovered in Webb County (Bettis 1997) and near Falcón Lake (Perttula 2004). Clovis and Folsom hunters appear to have specialized in hunting large animals, including mammoth and bison.

Toward the end of the period, climate conditions became more similar to those that prevail today. The fluted early Paleoindian projectile points are replaced in the archaeological

record by unfluted Plainview, Golondrina, Scottsbluff, and Angostura points. These late Paleoindian peoples may have expanded their diet, as suggested by the broad range of species recovered from deposits dating to about 7000 BC at Baker Cave in Val Verde County (Hester et al. 1989).

Two stratified Paleoindian sites have been excavated in the south Texas region: Berger Bluff (41GD30) in Goliad County and Buckner Ranch (41BE2) in Bee County (Sellards 1940). These sites have been critically important in understanding the region's archaeological record. Berger Bluff was a deeply stratified site along Coleta Creek. Excavations there uncovered a hearth and a lithic reduction area more than 8 meters (m) below the present surface. Although no diagnostic artifacts were found, eight radiocarbon dates, averaging 9500 Before Present (BP) (7500 BC), were obtained. The site is now inundated by Coleta Creek Reservoir. Early projectile points were also found in a stratified context at the Buckner Ranch site. Projectile points recovered from the Lower Horizon include Scottsbluff, Angostura, side-notched "Berclair" types, Midland, and Clovis. These types represent a considerable time span from at least 13,000 years ago to as recently as 9,000 years ago (Pertulla 2004).

2.2.2 Archaic Period

The long Archaic period in southern Texas is divided into Early, Middle, and Late phases. The Archaic period is marked by the continuation of hunting and gathering with the use of a greater range of plant and animal resources and geographic settings. The Archaic period is characterized by climatic changes. Specifically, the Early and Middle Archaic phases overlap with the Altithermal (ca. 6000 BC–2000 BC), a warm and dry climatic episode that followed the Pleistocene. The initial phase of surveying the Lower Rio Grande River recorded seven sites that likely date to the Archaic period.

2.2.3 Early Archaic

The Early Archaic is distinguished by a transition from lanceolate projectile point forms of the Paleoindian period to stemmed corner- or side-notched style projectile points, including Bell, Andice, Early Triangular, and Early Expanding Stem (Bandy, Martindale, and Uvalde). This temporal phase is poorly documented in the south Texas region, especially on the Rio Grande delta where deep sediment deposition has likely buried early sites (Hester et al. 1989). The available evidence suggests that population density was unchanged from the Paleoindian period, and that Early Archaic hunters continued to live in small, highly mobile groups (Hester et al. 1989).

2.2.4 Middle Archaic

The Middle Archaic phase is characterized by Pedernales, Langtry, Kinney, and Val Verde projectile points. Middle Archaic sites appear more common than Early Archaic sites, and are found in upland, alluvial, and tributary settings and estuary bays (Hester et al. 1989).

The Middle Archaic in south Texas is also distinguished by the appearance of ground stone artifacts (Hester et al. 1989) and other signs of expanded plant use, including an increase in the number of burned rock middens. Exploitation of coastal resources also appears to have increased. However, poor site preservation makes any conclusions about dietary practices tentative (Pertulla 2004).

A broader subsistence range is accompanied by an increase in site size and artifact abundance, suggesting a population increase (Hester et al. 1989). The appearance of cemeteries toward the end of the Middle Archaic also suggests population growth. A cemetery at the Loma Sandia site (41LK28) in Live Oak County contained 205 burials, many with grave goods, and more than 400 features. Cemeteries have also been recorded at the Falcón Reservoir site and at the Southern Island site on the Mexican side of Falcón Reservoir. These cemeteries indicate that the subsistence regimes and mortuary practices associated with the Late Prehistoric Brownsville and Rockport complexes may have deep roots and represent a unique regional adaptation (Terneny 2005). Sites from the later Middle Archaic also contain evidence of trade between the Rio Grande plain and the coastal delta (Pertulla 2004).

2.2.5 Late Archaic

Late Archaic sites are identified by the appearance of small corner- or side-notched dart points—including Ensor, Frio, Marcos, Fairland, and Ellis types—and distinctive corner-tanged bifaces. Some researchers have proposed dividing the Late Archaic into two parts, Late Archaic and Transitional Archaic, based on changes in projectile point forms and the occurrence of some projectile point types in both Late Archaic and Late Prehistoric sites (Pertulla 2004) (Hester et al. 1989).

Late Archaic sites are relatively common in the area, suggesting increased population density (Hester et al. 1989). The period is also marked by a continued expansion of dietary breadth. Rodents and rabbits become more common in the archaeological record as do specialized plant resource extraction features such as roasting pits. Sites also appear to have been used repeatedly, suggesting a more sedentary settlement pattern or an increasingly scheduled subsistence regime (Hester et al. 1989). Some degree of specialization in stone tool assemblages may have developed during this time, with formal tool production associated with hunting sites and expedient tool production associated with residential sites (Vierra 2005). Regional trade of items such as marine shell pendants is also evident. Cemeteries, first apparent during the Middle Archaic, continue to occur.

2.2.6 Late Prehistoric (AD 800–1600)

The Late Prehistoric period is well documented in this region due to an abundance of well-preserved sites. The use of pottery and the bow and arrow are major technological adaptations of this period. Late Prehistoric projectile point typologies, however, have not been formalized (Hester et al. 1989).

In much of southern Texas, the Late Prehistoric period has two distinct horizons: Austin (AD 800–AD 1350) and Toyah (AD 1350–AD 1600) (Black 1986). Bone-tempered pottery with incised designs appears by AD 1000. The Toyah horizon is the best documented and is associated with Perdiz projectile points, small end scrapers, flake knives, beveled knives, Leon Plain bone-tempered pottery, ceramic figurines and pipes, shell and bone ornaments, and beads. Toyah sites generally occur near streams.

Along the coast, the Late Prehistoric period begins around AD 1200 and is represented by the Rockport Complex. In the delta, the Brownsville Complex is contemporaneous. These complexes are similar to the Austin and Toyah horizons and are characterized in large part

by bone-tempered ceramics virtually identical to inland types (Hester et al. 1989). The Brownsville Complex is also associated with a well-developed shell-working industry.

Although presumably more sedentary than Archaic populations, Late Prehistoric people appear to have relied increasingly on hunting large animals, especially deer. Bison and pronghorn were also taken (Hester et al. 1989). The Late Prehistoric is also marked by the appearance of extensive long-distance trade, especially of obsidian from New Mexico, Idaho, Wyoming, and central Mexico.

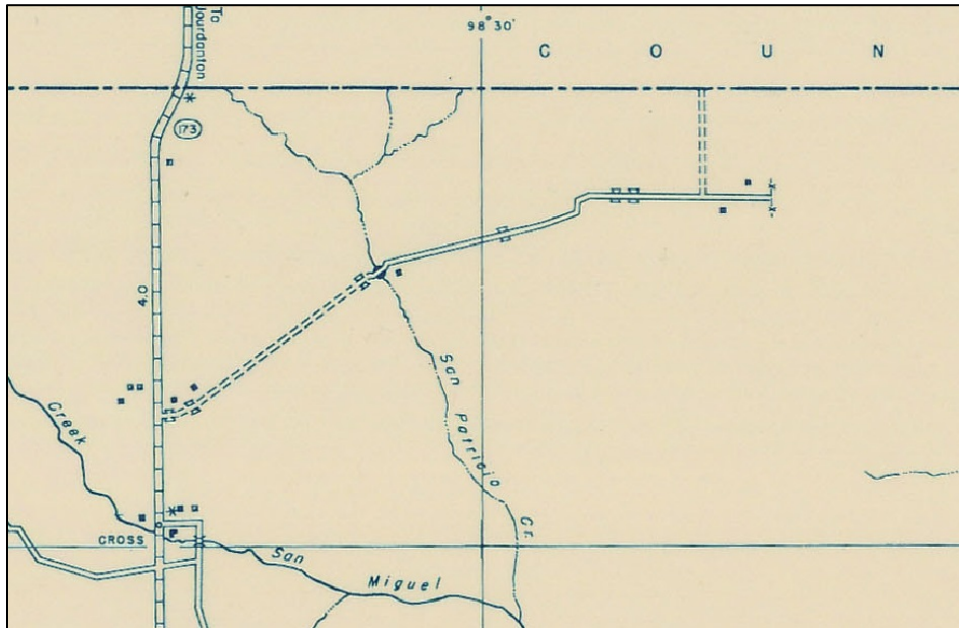
2.2.7 Historic European and Euro-American Cultural Period (1865–Present)

The project APE is located on the borders of three parcels in north central McMullen County. The county was established in 1858 and officially organized in 1877. The earliest settlers arrived in 1858, relying on subsistence farming and killing of wild game. Cattle and sheep ranching became more widespread in the 1880s and 1890s, with ranchers acquiring larger and larger tracts of land. By 1890, 42 of 75 ranches in the county covered more than 1,000 acres each (Leffler 2010). McMullen County's population grew at a very slow rate, increasing from 230 in 1870 to 1,024 in 1900; the slow growth was primarily due to the lack of significant rail lines (Historical Census Browser 2004).

Speculators discovered natural gas and oil in McMullen County in 1917 and 1922, respectively. Farming also increased in the early twentieth century, specifically cotton, corn, and sorghum. Despite this diversification of the economy, population in the county only reached 1,351 in 1930 (Historical Census Browser 2004). Both cattle ranching and farming were heavily impacted by drought, the area's lack of water sources for irrigation, and the Great Depression. Neither cattle ranching nor farming rebounded until the post-World War II era. Ranching continued as the primary economic driver and by 1986, it was responsible for nearly 90 percent of McMullen County's economy (Leffler 2010). To a much lesser extent, oil production and mining grew more prevalent in the county in the second half of the twentieth century. The population dropped below 900 in 1989 and has remained below that level to the present day (United States Census Bureau 2016).

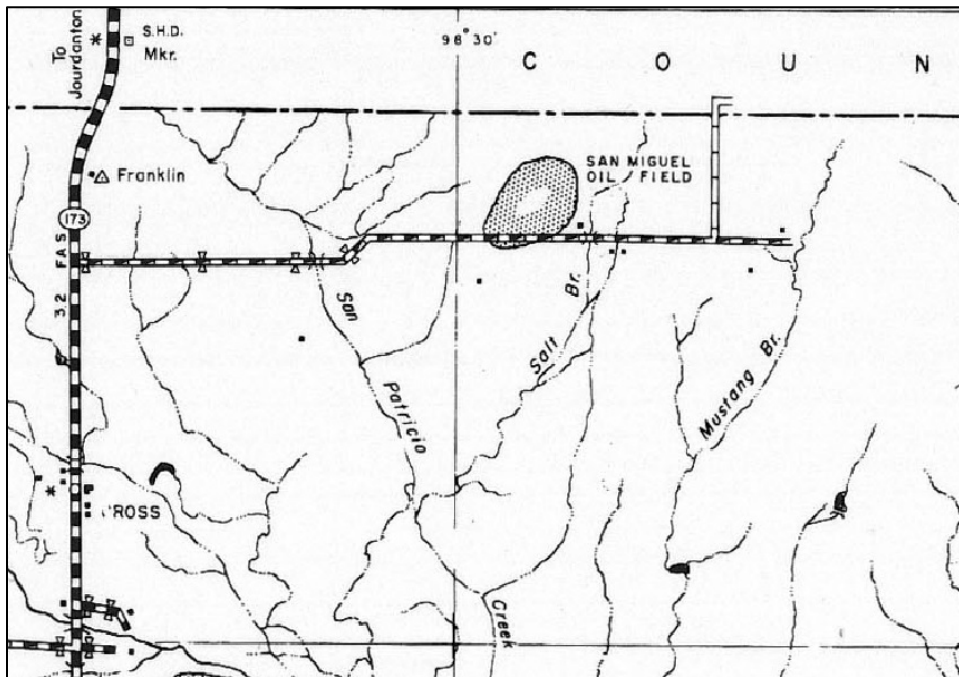
With the county's limited settlement and significant dependence on cattle ranching, establishing a comprehensive system of roads throughout the county was not a priority for county officials in the early-to-mid-1900s. A variety of companies sponsored land development projects between 1900 and 1920, with small settlements established in towns like Crowther, Zella, Wentz, and Norwell, but none besides the oil company town Calliham survived (Leffler 2010). A Texas State Highway Department map from 1936 with 1940 revisions shows the beginning of a road that eventually evolved into FM 791 (Figure 2-1). The road, indicated as a "primitive road" on the map, angles southwest towards a small community north of Cross. The 1961 county highway map shows FM 791 as a bituminous-surfaced road linked to State Highway (SH) 173, likely due to the presence of the San Miguel Oil Field just to its north (Figure 2-2). This section of SH 173 was later redesignated SH 16.

Figure 2-1. Excerpt of *General Highway Map, McMullen County, Texas, 1936/1940*.



Source: Texas State Library Map Collection, Map 4948

Figure 2-2. Excerpt of *General Highway Map, McMullen County, Texas, 1961*.



Source: Texas State Library Map Collection, Map 5236

Aerial photographs available on historicaerials.com confirm that land in the vicinity of the project APE was primarily used for ranching through the early 1970s. In 1974, the South Texas Electric Cooperative and the Brazos Electric Power Cooperative jointly developed plans for the 400-megawatt San Miguel Lignite Coal Power Plant in Christine, Texas, north of FM 791 in Atascosa County. Their joint venture, SMECI, was officially formed in 1977 and the plant opened in January 1982 (Arnst and Bedsole 2014). Since that time, lignite mining to support the power plant has been the predominant land use in the area.

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3 Methods

3.1 Previous Investigations near the Project Area

A review of the Texas Historical Commission’s (THC’s) Archeological Sites Atlas (Atlas) indicates that, within a one-mile buffer zone, there have been seven archaeological surveys conducted and 42 archaeological sites recorded (Figure 3-1). No Official Texas Historical Markers, Recorded Texas Historic Landmarks, State Antiquities Landmarks (SALs), previous structure inventories, cemeteries, or National Register of Historic Places (NRHP) eligible or listed resources or districts are located within one mile of the APE.

A majority of the area surrounding the APE was previously surveyed between 1974 and 2013. In total, seven cultural resources surveys have been conducted within one mile of the project area (Table 3-1). Five of the surveys were conducted by the RCT and one was conducted by Office of Surface Mining (OSM). Two previous surveys (ID: 1725 and 58871) intersects the current APE. The first survey (ID: 1725) was conducted by the RCT in 1974 but no further information is available via the Atlas. The second survey (ID: 58871) was conducted in 2013 by the Office of Surface Mine for SMECI. This survey resulted in the identification of 34 new archaeological sites.

Table 3-1. Cultural Resources Surveys Conducted within One Mile of the Area of Potential Effects.

ID	Agency	Report Title	Contractor	Year	Comments / Recommendations
1725	RCT	—	—	1974	Recorded to intersect project area
58871	OSM	—	SMECI	2013	Recorded to intersect project area
1464	RCT	—	—	1986	—
1724	RCT	—	—	1974	—
1463	RCT	—	—	1986	—
1387	OSM	—	—	1986	—
1388	RCT	—	—	1974	—

Furthermore, the search revealed that 42 archaeological sites are located within the one-mile search radius (Table 3-2). Of these sites, 32 are recommended not eligible for inclusion in the NRHP and 10 have unknown eligibility statuses. One of these sites, 41MC106, is recorded to intersect the current project area. Site 41MC106 was recommended not eligible for inclusion in the NRHP on July 7, 2014. The site is discussed in further detail in the Results Section below.

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Figure 3-1. Previous Surveys and Recorded Cultural Resources within One Mile of the Area of Potential Effects.

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Table 3-2. Previously Recorded Archaeological Sites within One Mile of the Area of Potential Effects.

Identifier	Affiliation	Features/Function	NRHP Eligibility	Comments / Recommendations
41MC689	Prehistoric	Occupation	Not eligible	No further work
41MC692	Prehistoric	Occupation	Not eligible	No further work
41MC691	Prehistoric	Occupation	Not eligible	No further work
41MC686	Prehistoric	Small open camp	Not eligible	No further work
41MC687	Prehistoric	Occupation	Not eligible	No further work
41MC688	Prehistoric	Occupation	Not eligible	No further work
41MC696	Late Archaic (ca. AD 200)	Occupation; quarry/procurement	Not eligible	No further work
41MC348	Prehistoric	Open campsite	Unknown	Limited testing to evaluate subsurface deposits
41MC124	Prehistoric	Lithic scatter	Not eligible	No further work
41MC346	Archaic; Late Prehistoric	Open campsite	Unknown	Further testing of intact terrace deposits
41MC102	Archaic; Late Prehistoric; Historic	Open campsite; historic house remnants	Unknown	Further testing recommended
41MC347	Late Archaic; Late Prehistoric	Open campsite	Unknown	Further testing recommended
41MC345	Archaic; Historic	Open campsite; historic house	Unknown	Further testing of intact deposits
41MC343	Prehistoric	Procurement site	Not eligible	No further work
41MC344	Archaic	Open campsite	Not eligible	No further work
41MC106	Archaic	Lithic scatter; open campsite; lithic procurement	Not eligible	No further work; recorded to intersect APE
41MC105	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC103	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC104	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC684	—	—	Unknown	No information available
41MC107	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC355	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC101	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC685	Prehistoric	Lithic scatter	Not eligible	No further work

Table 3-2. Previously Recorded Archaeological Sites within One Mile of the Area of Potential Effects.

Identifier	Affiliation	Features/Function	NRHP Eligibility	Comments / Recommendations
41MC341	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC342	Prehistoric	Burned rock and lithic scatter	Not eligible	No further work
41MC354	Prehistoric	Open campsite	Not eligible	No further work
41MC416	Archaic; Late Prehistoric	Open campsite	Not eligible	No further work
41MC417	Prehistoric	Open campsite	Not eligible	No further work
41MC415	Prehistoric	Open campsite	Not eligible	No further work
41MC414	Prehistoric	Open campsite	Not eligible	No further work
41MC356	Archaic	Open campsite	Not eligible	No further work
41MC357	Archaic; Late Prehistoric	Open campsite	Not eligible	No further work
41MC358	Archaic	Open campsite	Not eligible	No further work
41MC367	Late Archaic	Open campsite	Not eligible	No further work
41MC364	Paleo-Indian; Archaic	Open campsite	Not eligible	Further mapping and evaluation recommended
41MC363	Middle Archaic; Late Archaic	Open campsite	Unknown	Further testing recommended
41MC362	Prehistoric	Open campsite	Unknown	Further testing recommended
41MC366	Archaic; Late Prehistoric	Open campsite	Unknown	Further testing recommended
41MC365	Prehistoric	Open campsite	Not eligible	No further work
41MC375	Late Archaic; possible Middle Archaic	Open campsite	Not eligible	No further work
41MC376	Late Paleo-Indian–Archaic	Open campsite	Not eligible	No further work

3.2 Survey Methods

HDR conducted an intensive survey of a 12.5-acre (544,496 ft²) area for the project APE according to the THC survey standards (as referenced in 13 *Texas Administrative Code* 26.20). A minimum of 30 percent ground visibility was observed throughout the APE. Due to the high ground visibility, a pedestrian survey was employed throughout the APE. The entire APE was systematically traversed by two archaeologists at 15-m intervals. Digital photographs were used to document the survey conditions, disturbances, and any cultural features observed; and details of each photograph were recorded on standardized forms.

3.2.1 Site Designation

The THC differentiates between archaeological sites and isolated finds. Sites are evaluated and recommended eligible or ineligible for inclusion in the NRHP. Isolated finds are ineligible for inclusion in the NRHP as they do not meet the requirements to be designated as a site. The HDR standards for defining archaeological sites and isolated finds involves the cultural affiliation and number of artifacts present within an area of pre-determined size. A prehistoric site designation is applied when five or more prehistoric artifacts are present within a 20 m² area. A historic site designation is applied when 10 or more artifacts of two or more artifact classes are present within a 20 m² area. Isolated finds are defined as the presence of four prehistoric artifacts or less, fewer than 10 historic artifacts, or historic artifacts from only one artifact class within a 20 m² area. Site boundaries are defined by the presence of surficial materials and by shovel tests yielding cultural materials. Where possible, all radial shovel tests are excavated at 10-m intervals until two sterile units are encountered in all cardinal directions. As part of the identification and documentation of sites, sites are recorded on a State of Texas Archeological Data Site Form. This form records a variety of data including location, setting, artifactual materials recovered, and other information. All sites are sketch-mapped, recorded using a Global Positioning System (GPS) unit, and photo-documented. Once completed, the form is submitted to the Texas Archeological Research Laboratory (TARL) for official trinomial designation. All records and materials generated by this project will be permanently curated at the Center for Archaeological Studies at Texas State University in San Marcos, Texas.

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4 Results

The APE is approximately 12.5 acres (544,496 ft²) for the proposed construction of the FM 791 overpass (Figure 4-1). The ground surface visibility throughout the entire project area was between 30 to 60 percent within the APE.

The survey was initiated south of FM 791 at the western end of the project area. The archaeologists began surveying within parcel 3434 (Figure 4-2). The vegetation in this parcel consisted of desert shrubs including mesquite, prickly pear, and mixed grasses. This parcel exhibited the least amount of ground disturbance within the APE. Near the eastern extent of parcel 3434, one surficial isolated find, SM ISO 001, was identified (Figure 4-3). This isolated find consisted of a single brown chert tertiary flake. One shovel test (description below) was excavated immediately adjacent to SM ISO 001 to establish that the find was limited to the surface. Isolated finds do not meet the definition of a site and are therefore not eligible for inclusion in the NRHP.

The soils in Shovel Test 1 consisted of dark yellowish brown (10YR 3/4) friable loam from 0 to 20 centimeters below surface (cmbs; 0 to 8 inches below surface [inbs]) underlain by very dark grayish brown (10YR3/2) moist clay loam from 20 to 40 cmbs (8 to 16 inbs). The final soil level was light olive brown (2.5Y 5/3) mixed with very dark grayish brown (10YR3/2) and yellowish brown (10YR 5/8) friable clay loam with greater than 50 percent calcium carbonate coatings and 10 percent calcium carbonate filaments from 40 to 50 cmbs (16 to 20 inbs) (Figure 4-4). No cultural materials were identified within the shovel test.

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Figure 4-1. Aerial Photographic Map of the Area of Potential Effects Showing the Survey Results.

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Figure 4-2. Overview of the Area of Potential Effects within Parcel 3434, Facing West.



Figure 4-3. SM ISO 001.



Figure 4-4. Profile of Shovel Test 1.



The survey continued into parcel 3036, where the natural vegetation had been cleared and the parcel was used for cattle grazing (Figure 4-5). The APE within this parcel had previously been surveyed in 2013 by the Office of Surface Mine for SMECI (discussed above).

The recorded northern boundary of one previously recorded site, 41MC106, intersected the APE within this parcel (see Figure 4-1). This site was originally recorded in 1974 by Ed Baxter as a prehistoric lithic scatter/occupation/quarry. The site was revisited in 1985 and in 2012, and artifacts observed at the site included bifaces, dart points, gouges, unifaces, scrapers, unutilized flakes, a spokeshave, debitage, and fire-cracked rock. About 40 percent of the site is considered intact due to natural and unnatural disturbance to the area. In 2014, site 41MC106 was determined not eligible for inclusion in the NRHP. The archaeologists revisited the portion of the site that was recorded to be located within the APE during the current survey. No cultural materials were observed within the APE and it is apparent that site 41MC106 is not present within the current APE.

Figure 4-5. Overview of Parcel 3036 Showing Cleared Vegetation, Facing East-Southeast, Toward Site 41MC106.



Once the survey reached the eastern terminus of the APE, the archaeologists began surveying the APE north of FM 791 in parcel 3428. They began at the eastern terminus of the APE and surveyed westward. North of FM 791, the APE had been heavily disturbed by cattle trampling and vegetation clearing (Figure 4-6). No cultural materials were identified within the APE in parcel 3428.

Figure 4-6. Push Pile of Area of Potential Effects in Parcel 3428, Facing West.



The existing FM 791 ROW has been severely impacted as a result of the existing road construction (). No cultural materials were observed within the FM 791 ROW.

Figure 4-7. Overview of Area of Potential Effects Showing Right-of-Way Disturbance, Facing Northeast.



5 Summary and Recommendations

5.1 National Register Eligibility

5.1.1 Criteria for Evaluation of Eligibility

As part of this review process, cultural resources investigations are undertaken with the purpose of identifying resources that are listed in, or eligible for listing in, the NRHP. The assessment of significance of cultural resources is based on federal guidelines and regulations. Any cultural resource that is listed in or eligible for inclusion in the NRHP is known as a “historic property,” and the term “eligible for inclusion in the NRHP” includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet NRHP-listing criteria (36 CFR 800.2). The criteria for evaluating properties for inclusion in the NRHP (36 CFR 60.4 [a–d]) are codified under the authority of the National Historic Preservation Act of 1966, as amended, and the Advisory Council on Historic Preservation has set forth guidelines to use in determining site eligibility. Subsequent to the identification of relevant historical themes and related research questions, these four criteria for eligibility are applied:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association and

- A. that are *associated with events* that have made a significant contribution to the broad patterns of our history; or
- B. that are *associated with the lives of persons* significant in our past; or
- C. that *embody the distinctive characteristics* of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have *yielded, or may be likely to yield, information important in prehistory or history*. Note that the application of Criterion D presupposes that the information imparted by the site is significant in history or prehistory [36 CFR 60.4, emphasis added].

The physical characteristics and historic significance of the overall property are examined when conducting NRHP evaluations. Although a property in its entirety may be considered eligible based on Criteria A, B, C, and/or D, specific data are also required for individual components therein based on date, function, history, physical characteristics, and other information. Resources that do not relate in a significant way to the overall property may contribute if they independently meet the NRHP criteria.

For a historic resource, district, or landscape to be determined eligible for the NRHP, it must retain enough of its historic integrity to convey its significance. For the NRHP, there are seven aspects of integrity:

1. Location
2. Design

3. Setting
4. Materials
5. Workmanship
6. Feeling
7. Association

Occasionally, certain resources fall into categories in which they must be evaluated further using one or more of the following Criterion Considerations. If a resource identified during the reconnaissance-level survey falls into one of these categories, the following Criterion Considerations will be applied in conjunction with one or more of the four National Register criteria:

- A. A religious property deriving primary significance from architectural or artistic distinction or historical importance, or
- B. A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event, or
- C. A birthplace or grave of a historical figure of outstanding importance if there is no other appropriate site or building directly associated with his or her productive life, or
- D. A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events, or
- E. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived, or
- F. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own historical significance, or
- G. A property achieving significance within the past 50 years if it is of exceptional importance (36 CFR 60.4).

The scientific value of archaeological sites is assessed under Criterion D. With regard specifically to this criterion, the goal of prehistoric archaeological research and management is to fill gaps in the knowledge about specific research domains. Scientific importance is driven, in part, by the research paradigms of the time and in part by the amount of information available about a particular research topic in a specific geographic area. The most robust forms of scientific importance should honor diverse and occasionally competing schools of research interests and their attendant approaches. In order to fulfill Criterion D, a site must possess certain attributes (e.g., intact buried cultural strata with functionally and temporally diagnostic materials, datable cultural features), such that further intensive research at the site could be expected to add additional information to relevant research questions.

The research domains are addressed through testing and excavation programs; over time, data required for addressing specific questions are collected, analyzed, and compiled. Eventually, the potential importance, or significance, of sites that contain only the types of data already collected may diminish. This suggests the identification criteria of important

historic properties are tied to both a specific geographic area reflecting a cultural adaptation or cultural region and a state of accumulated knowledge about a research domain topic. The criteria and priorities of important sites are apt to shift as accepted research paradigms change or as data accumulations approach redundancy. Archaeological sites that retain contextual integrity and contain artifacts and features capable of contributing information toward addressing relevant research issues are significant and should therefore be considered eligible for inclusion in the NRHP.

5.2 State Antiquities Landmark

At the state level, archaeological sites may be considered significant and be recognized or designated as an SAL, provided that at least one of the following conditions is met:

1. The archaeological site is situated on lands owned or controlled by the State of Texas or one of its political subdivisions; or
2. The archaeological site is situated on private land which has been specifically designated as an SAL and fits at least one of the following criteria:
 - A. Preservation of materials must be sufficient to allow application of standard archaeological techniques to advantage;
 - B. The majority of artifacts are in place so that a significant portion of the site's original characteristics can be defined through investigation;
 - C. The site has the potential to contribute to cumulative cultural history by the addition of new information;
 - D. The site offers evidence of unique or rare attributes; and/or
 - E. The site offers a unique and rare opportunity to test techniques, theories, or methods of preservation, thereby contributing to scientific knowledge [Texas Natural Resources Code 1977; Title 9, Chapter 191, Texas Antiquities Committee, Section 191.094 and Chapter 41.7, Antiquities Code of Texas].

Buildings, structures, cultural landscapes, and non-archaeological sites, objects, and districts may be designated as an SAL, provided that the following conditions are met:

1. The property fits within at least one of the following criteria:
 - A. The property is associated with events that have made a significant contribution to the broad patterns of our history, including importance to a particular cultural or ethnic group;
 - B. The property is associated with the lives of persons significant in our past;
 - C. The property embodies the distinctive characteristics of a type, period, or method of construction, represents the work of a master, possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction;
 - D. The property has yielded, or may be likely to yield, information important in Texas culture or history;
2. The property retains integrity at the time of the nomination, as determined by the executive director of the commission; and

3. For buildings and structures only, the property must be listed in the NRHP, either individually, or as a contributing property within a historic district. Contributing status may be determined by the Keeper of the National Register of the executive director of the commission.

5.3 Conclusion and Recommendation Summary

During the course of the cultural resources survey for the proposed construction of the FM 791 overpass, the three-acre APE was subjected to an intensive archaeological survey including shovel testing, pedestrian survey, and photo-documentation. Due to the high surface visibility within the APE (approximately 30 to 60 percent), a systematic pedestrian survey was conducted. Additionally, one shovel test was excavated adjacent to one isolated find (SM ISO 001) to confirm that the isolated find was limited to the surface.

The survey of the APE resulted in the identification of one isolated find, SM ISO 001, a single chert tertiary flake. Isolated finds do not meet the definition of a site and are therefore not eligible for inclusion in the NRHP.

In addition, the recorded location of site 41MC106 was revisited during this survey and no cultural materials were observed. Site 41MC106 is not present within the current APE. Due to the lack of archaeological sites within the APE, it is unlikely that the current undertaking will affect any significant cultural resources. In accordance with 36 CFR 800 and 13 TAC 26, no further archaeological investigations are recommended for the presently defined APE, and proposed construction of the FM 791 overpass may proceed. However, in the event that any archaeological deposits are encountered during construction, work should cease, and the THC should be notified.

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