Class I Archaeological Research for the Chispa Road in Jeff Davis and Presidio Counties, Texas

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Contents

Overview and Purpose

This document comprises a Class I cultural resource report for a selection of roadways in Presidio and Jeff Davis Counties, Texas, that is expected to be impacted by construction, modification, and maintenance associated with U.S. border barrier construction along the Rio Grande. A Class I cultural resource report is a desktop-based inventory and literature review that compiles existing data to identify known cultural resources, archaeological sites, and historic properties within a project area. It is a preliminary planning document—not a field survey—used to analyze existing records, such as State Historic Preservation Office (SHPO) databases, maps, and previous studies, to assess the potential for unrecorded resources.

This report is but one component of a larger process of considering how the proposed *undertaking* (in this case earth-disturbing activities associated with road construction, modification, and maintenance) may have on historical-period and prehistoric archaeological sites. Research was conducted April 14–25, 2026. This report begins with a brief description of the area of potential effect, then presents a discussion of the laws pertaining to archaeological sites in light of Federal and State undertakings. It then summarizes the criteria that are used to assess the value of archaeological sites and the research questions relevant to their scientific study. The report then presents a culture history to place the sites in context. A section on methods outlines how the research was conducted, and the results section describes the archaeological sites in the area of potential effect. Finally, the conclusion section summarizes the findings and their significance.

Area of Potential Effect

The area of potential effect (APE) is the Chispa Road. It is a 58-mile length of unpaved roadway (Figure 1) starting at the western bend of paved road 2017 in Jeff Davis County, continuing southwest 12 miles across Jeff Davis County to the Presidio County line. The road continues 2 miles into Presidio County to an intersection where the Chispa Road turns south to parallel the Rio Grande. It then continues 44 miles south-southeast paralleling the Rio Grande in Presidio County, terminating at paved Farm to Market Road 170 at the village of Candelaria.

Legal Drivers

Federal and Texas lawmakers established laws to protect significant cultural resources because of their value as elements of national and state cultural heritage and sources of scientific knowledge. The proposed construction of security infrastructure (i.e., surveillance technology, barriers, roads, and staging areas) along the Rio Grande corridor and the Chispa Road is an *undertaking* that has the potential to pose an *adverse effect* to historic properties along the construction zone. Legislative drivers specify that project

proponents, sponsors, and land-managing agencies must consult with the SHPO on such undertakings. The laws are as follows:

- National Historic Preservation Act (NHPA); see Section 1 of the National Historic Preservation Act, Pub. L. No. 89-665, as amended by Pub. L. No. 96-515; see specifically Section 106 of the NHPA;
- Antiquities Code of Texas (Texas Natural Resources Code, Title 9, Chapter 191. Tex. Nat. Res. Code Ann. §§ 191.001–191.171).

The NHPA identifies the National Register of Historic Places [(NRHP); see U.S. Department of the Interior 1997, 1995] as the official federal list of districts, sites, buildings, structures, and objects worthy of preservation in the U.S. The NHPA and National Parks Service [(NPS); see NPS 1997)] specify criteria under which properties may be listed in the NRHP.

Section 106 of the NHPA requires federal agencies to consider the effects of their projects—funded, permitted, or approved, or on federally-owned land—on historic properties. Agencies must consult with stakeholders (SHPO/Tribal SHPO, tribes, and the public) to identify, assess, and mitigate adverse impacts.

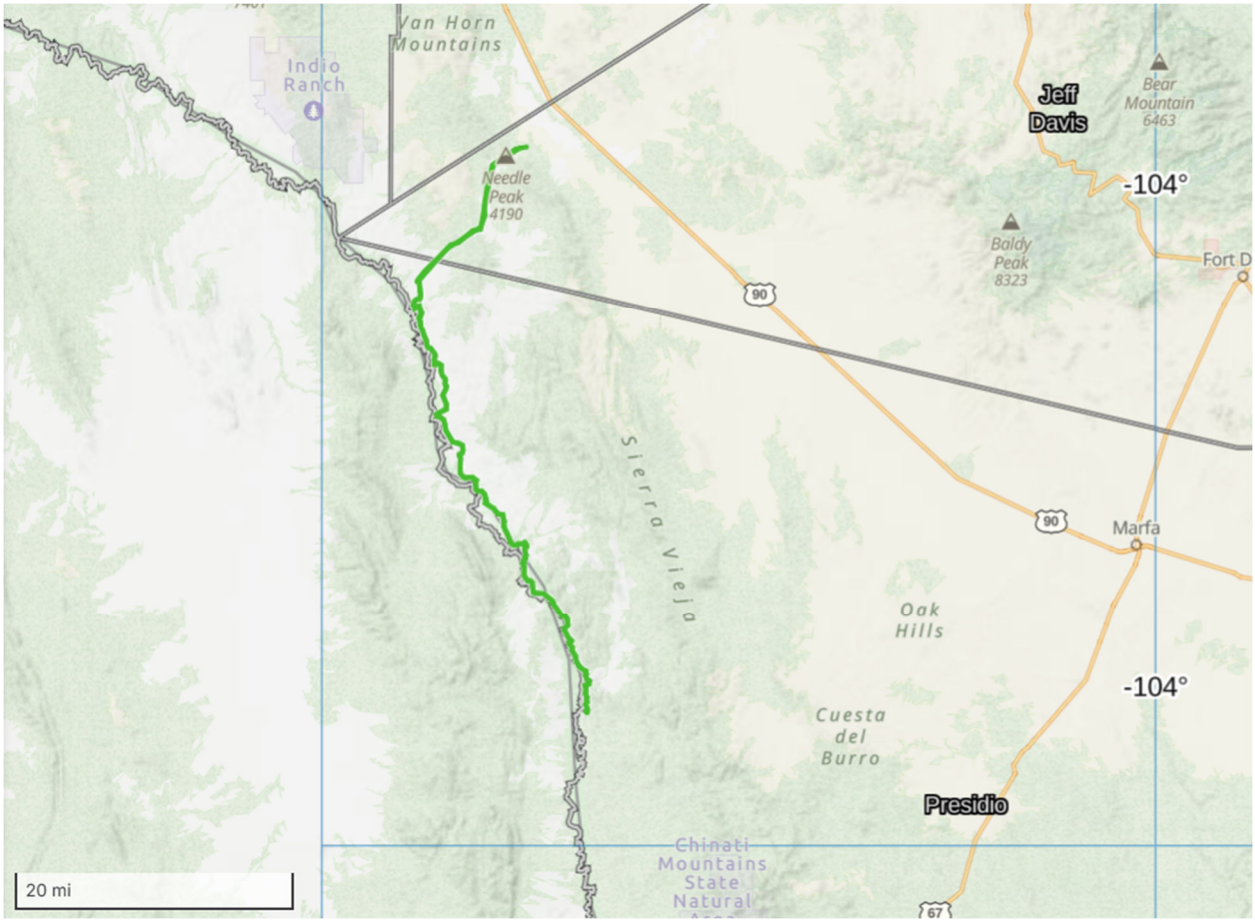

Figure 1. Map of the Chispa Road (green line) area of potential effect.

The Antiquities Code of Texas [(the Code) Texas Natural Resources Code, Title 9, Chapter 191] is a 1969 law protecting significant archeological sites and historic buildings on public land. It requires state agencies to notify the Texas Historical Commission (THC) of construction on property owned by the State or political subdivisions of the State that could affect these resources. The Code specifies that State Archeological Landmarks [(SALs); see Texas Historical Commission 2026a, 2026b] receive legal protection. Significant sites also warrant consideration under the Native American Graves and Repatriation Act (25 USC 3001 et seq., 43 CFR Part 10) and the Archaeological Resources Protection Act of 1979, as Amended (16 USC 470aa et seq.).

NRHP and SAL Criteria

In order for properties to be eligible for the NRHP, they are required to have qualities and characteristics that fall under *eligibility criteria*. These consist of:

- criterion A: be significant for their association or linkage to important events or trends;
- criterion B: be associated with persons important in the past;
- criterion C: represent design or construction value as representatives of the man-made expression of culture or technology; and
- criterion D: ability to yield important information about prehistory or history.

Properties must also demonstrate sufficient *integrity* described in seven categories. Sites need not retain integrity in each aspect, only those that are pertinent to their context. The aspects of integrity consist of:

- location: the place where the historic property was constructed or the place where the historic event occurred;
- design: combination of elements that create the form, plan, space, structure, and style of a property;
- setting: the physical environment of a historic property;
- materials: physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property;
- workmanship: physical evidence of the crafts of a particular culture or people during any given period in history or prehistory;
- feeling: a property's expression of the aesthetic or historic sense of a particular period of time; and
- association: the direct link between an important historic event or person and a historic property.

To qualify for SAL designation, an archeological site must meet at least one of the following criteria:

- have the potential to contribute to a better understanding of the prehistory or history of Texas by the addition of new and important information;

- contain archeological deposits and artifacts that are preserved and intact, thereby supporting the research potential or preservation interests of the site;
- possess unique or rare attributes related to Texas prehistory or history;
- offer archeologists a unique opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; or
- be the target of vandalism or relic collecting, or be highly likely to be targeted in the future.

A SAL designation indicates that the site is an important part of our state's historical legacy. If a site is *eligible* for SAL designation, it has the requisite qualities but has not been formally designated. Under the Code, a designated SAL is placed in a statewide inventory of significant sites, ensuring long-term protection. It cannot be removed, altered, damaged, salvaged, or excavated without a permit from the THC.

Research Value

The NHPA specifies that sites may be eligible for inclusion in the NRHP if they have potential to provide useful information concerning prehistoric or historic lifeways—often referred to as data potential (criterion D above). The capability of a site to provide useful information relies on two factors: 1) it must have characteristics (i.e., data) that address *research questions* important to our understanding of prehistoric or historic cultural development, and 2) it must retain sufficient *integrity* to convey that information.

Research questions are conventionally encompassed by conceptual themes that include cultures' relationship to the environment, settlement and subsistence patterns, social organization, ideology, expression, and how these factors of culture changed over time. Themes are inherently complex, inseparable, and interrelated; they include the following:

- Mobility and Changing Spatial Patterns of Settlement
- Foraging and Subsistence
- Technological Response
- Social Organization and Identity
- Religious Practice and Belief
- Changing Environment and Cultural Response
- Regional Interaction
- Cultural Transitions and Trajectories

Culture History

Culture history in the Big Bend region is detailed by Keller and others (2023), Miller and Kenmotsu (2004), and Texas Beyond History (2007). Intervals of Big Bend history and prehistory are summarized in Tables 1 and 2. This summary highlights broad trends in prehistory across the Trans-Pecos region, prehistoric and protohistoric patterns in the Presidio Bolson, connections to the adjacent Jornada Mogollon culture area, as well as

historical-period developments around Presidio, Texas, and the region upstream along the Rio Grande proximal to the study area.

Table 1. Major Archaeological Periods in the Big Bend Region

Texas Statehood	A.D. 1846–present
Mexican Period	A.D. 1821–1845
Spanish Colonial	A.D. 1684–1821
Protohistoric	A.D. 1535– 1700
Late Prehistoric/Formative	A.D. 500/700–1535
Late Archaic	1000 B.C–A.D. 700
Middle Archaic	2,500–1000 B.C
Early Archaic	6,500–2,500 B.C
Late Paleoindian	10,000–6,500 B.C
Early Paleoindian	11,500 –10,000 B.C

The Paleoindian period represents the earliest known occupation of the Big Bend region. It is conventionally characterized as a period where highly mobile bands of hunters and foragers traveled broadly across the region, relying heavily on hunting large game, including now-extinct megafauna like mammoth and bison. Paleoindian occupations in the Big Bend dating back to as early as the Clovis period are known from isolated projectile points, and camps dating to subsequent Paleoindian intervals have been documented along Chispa Creek, in the Green Valley, and in the Chisos Mountains. Many of these sites demonstrate that the conventional model of Paleoindians as mobile hunters requires some refinement; they may have practiced more diverse, broad-spectrum subsistence, they appear to have stayed at some encampments for longer periods of time and frequently inhabited some sites repeatedly.

The Archaic period spans roughly 7000 years of prehistory and is traditionally divided into sub periods—Early, Middle, and Late. The Early Archaic is poorly understood in the Big Bend and, based on what is known in the region and adjoining areas, represents a gradual diversification of lifeways evinced by the growing use of groundstone to process plant food materials and new settlement patterns. The Middle Archaic in the Big Bend appears to represent an increase in population density and the advent of massive earth ovens to cook plant resources. Some of the earliest evidence of ceremonial behavior in the Big Bend is represented at Middle Archaic sites. During the Late Archaic, Big Bend populations increased, and settlement spread to more diverse environmental settings. Earth-oven technology remained a staple of subsistence technology.

During the period roughly AD 500-700, archaeologists mark a change in lifeways in the Big Bend Region that is signaled by the advent of the bow and arrow and, later in specific areas, the manufacture of pottery and food production (incipient agriculture). This period in the Big Bend is known as the Late Prehistoric period, although in the adjoining culture region to the west and north (i.e., the Jornada Mogollon) it is known as the Formative period. In the Big Bend, lifeways across much of the region appear to change little from the Archaic to the Late Prehistoric period, as mobile foraging and earth-oven technology still appear to have dominated the settlement and subsistence systems of Late

Prehistoric populations. Dispersed settlement, like the preceding Archaic period, dominated the cultural landscape.

However, along the Rio Grande in the Presidio Bolson, some communities inhabited pithouse villages (and a few isolated above-ground pueblos), forming settlements that indicate increased (possibly seasonal) sedentism. They produced and traded for pottery and grew crops to supplement their foraging diets. The part-time Big Bend farmers along the Rio Grande, in what was later known as La Junta de los Rios (or, simply, La Junta), were practicing a lifestyle with parallels to that of the Jornada Mogollon which flourished in the basins near El Paso, farther upstream along the Rio Grande. There, larger pithouse and pueblo villages relied more heavily on agriculture, and they were connected to a widespread Southwestern interaction sphere. The cultural connections between La Junta and the Jornada Mogollon are the subject of archaeological research, and many questions regarding their relationship are unresolved. La Junta architecture bears some resemblance to aspects of Jornada Mogollon settlement, and Mogollon ceramics were the most common imported pottery type in La Junta; La Junta was part of overlapping regional interaction that included Casas Grandes (Paquimé) in northern Mexico.

At approximately AD 1445, cultural systems in the Southwest changed suddenly and reorganized. Trade and regional interactions subsided, and the major Puebloan settlements in the Jornada Mogollon dispersed. In La Junta, pottery exchange diminished as interaction with other regions declined. Small settlements continued in La Junta and elsewhere in the Presidio Bolson upstream along the Rio Grande towards Candelaria.

During the Protohistoric period, La Junta remained occupied, and Spaniard Cabeza de Vaca and his Moorish companion, Esteban, passed through La junta in 1535 during their cross-country journey following the ill-fated Narváez expedition. The Spanish commenced slave raiding in the mid-16th century, including in La Junta. Several expeditions or *entradas* passed through the Big Bend region in the late-16th century. The Apache are noted in the historical record of the region in the mid-1600s, possibly members of Mescalero and Lipan tribes. Other indigenous tribes in the region included the Conchos, Amotomancos, Abriaches, Patarabueyes, and Jumanos.

The first of a series of Spanish missions was established in La Junta in 1684. Apache and Comanche raids increased in frequency, and a presidio was erected in present-day Ojinaga in 1760. Subsequent presidios in the La Junta region were moved to different locations, and forts were erected to protect Spanish colonials and local indigenous patrons of the missions. In 1785, there was a tenuous period of detente between the Spanish, Comanche, and Apache.

Table 2. Aboriginal Culture History Summary of the Big Bend Region.

Before Present	Periods	Sub-periods or Phases	Technology	Patterns	B.C./A.D.	Complex
present	Historic		*Apache and Comanche Indian conflicts, Indian removal, Mexican Independence, frontier settlement and defense, Texas Independence, statehood, Civil War, railroad, ranching, Mexican Revolution*		present	
300 B.P.	Protohistoric (begins ca. A.D. 1535)	Conchos*	*local ceramics (Conchos Red-on-Brown, Capote, Chinati)*	*missions established, increased Apache presence*	A.D. 1700	
					A.D. 1684	**Cielo Complex:** *wikiup/rock architecture, Perdiz, flake drills, side scrapers, hunting and gathering economy*
465 B.P.		Concepcion*	*Perdiz? Local ceramics (Chinati plain, Capote Red-on-Brown, Paloma Red-on-Gray)*	*larger architecture, increased agriculture, Cabeza de Vaca, Spanish Entradas, Jumano, Apaches*		
550 B.P.					A.D. 1450	
		La Junta*	*Toyah, Perdiz, Fresno, Jornada and Casas Grandes trade ceramics (polychromes)*	*mixed economy (agriculture, hunting, foraging), jacal architecture, house pits*		
800 B.P.	Formative/ Late Prehistoric				A.D. 1200	
		Livermore	*Livermore, Toyah, Fresno, Means, Diablo, Alazan, beveled knives*	*hunting and gathering, distinctive ritualism*		
1200 B.P.					A.D. 800	
		Transitional	*atlatls, darts, bows, and arrows used concurrently; overlapping and shifting technologies*	*advent of ceramics, bow and arrow, increased regional interaction*		
1300 B.P.					A.D. 700	
		Late Archaic	*Ensor, Shumla, Palmillas, Paisano, Frio, Van Horn, Hueco, Ellis, Carlsbad, Conejo, Figueroa*	*increased middens, continued increase in population, diversification*		
3000 B.P.					1000 B.C.	
	Archaic	Middle Archaic	*Almagre, Arenosa, Langtry, Val Verde, Jora*	*increased population, occupation of more diverse ecological settings, evidence of ritualism*		
4500 B.P.					2500 B.C.	
		Early Archaic	*Andice, Gower, Jetta, Martindale, Uvalde, Baker, Bandy, Pandale, Early Triangular, Bell*	*diversified hunting/gathering economy, altithermal drying*		
8500 B.P.					6500 B.C.	
		Late Paleoindian	*Angostura, Early Stemmed, Eden, Golondrina, Lerma, Milnesand, Plainview*	*drying and warming climate, shift in megafauna ecology*		
12,200 B.P.	Paleoindian				10,200 B.C.	
		Early Paleoindian	*Folsom, Midland* / *Clovis*	*gradual post-glacial warming punctuated by stadials (brief cooling); hunting and gathering/foraging economy including extinct megafauna*	10,900 B.C.	
12,900 B.P.						
13,500 B.P.					11,500 B.C.	

*denotes patterns limited to the La Junta district along the Rio Grande

During the Mexican War for Independence (1810–1821), the area around modern-day Presidio, Texas, served as a frontier crossing for revolutionaries and an outpost often involved in borderland conflicts. In 1830 the name of the area around the present-day city of Presidio was changed from La Junta de los Rios to Presidio del Norte (later, simply *Presidio*). Anglo settlers came to Presidio starting in the mid-19th century after Mexican Independence and the subsequent war between the U.S. and Mexico. Starting in 1848, entrepreneur John Spencer operated a horse ranch on the United States side of the Rio Grande near Presidio and later opened the John Spencer Mine. Also starting in 1848, Ben Leaton and Milton Faver built private forts in the area.

Candelaria, Texas, is a remote Presidio-County village along the Rio Grande that grew from a small farming community (initially named Gallina) in the late 19th century into a border outpost during the Mexican Revolution (1910–1920). Entrepreneur William Russell established a farm in the area to supply grain to US Army posts like Fort Davis and Fort Stockton. In 1916, the U.S. Army built a cavalry outpost to protect the area. In August 1919, troops of the Eighth Cavalry crossed into Chihuahua from Candelaria for the last American punitive expedition into Mexico, following the infamous 1918 Neville Ranch raid, an attack by Mexican raiders on a ranch along the Rio Grande, upstream from the village of Porvenir.

During the Mexican Revolution, Presidio was a hotspot of border violence, refugee influx, and intense military activity. The area experienced cross-border raids by revolutionaries and, in 1914, Pancho Villa's forces fought Mexican Federal Army troops at Ojinaga, the Mexican sister-city of Presidio, Texas. The US maintained a series of outposts along the border during the revolution, including one called Camp Evetts, located at Soldier's Springs not far from Porvenir. In 1918, Camp Evetts was home to Troop G of the Eighth Cavalry. During that year, Texas Rangers and the U.S. Cavalry (then stationed at Camp Evetts) carried out a retaliatory raid that culminated in the Porvenir Massacre, which saw 15 Mexican-American men and boys killed by state and (recent evidence suggests) federal forces.

Methods

Research was carried out using resources provided by the THC and the Texas Archeological Research Laboratory (TARL). The THC serves as the SHPO in Texas. The THC relies on TARL (a part of the University of Texas at Austin) to manage the TexSite database, which serves as the official state database for recording and tracking archaeological sites in Texas. The THC maintains the Texas Archeological Atlas (Atlas), the geographic information system (GIS) application that documents site locations as well as previously conducted archeological projects (e.g., surveys). Atlas provides links to site information documented in TexSite-Access platforms and other formats. For the current Class I research, I examined the Chispa Road as a linear route (described as the APE above) in Atlas and collected information for sites and projects that intersect the road or fall within 100 meters of it. I made follow-up inquiries to TARL to procure more information concerning the sites and projects (e.g., copies of site forms and reports). The sites and projects are discussed in the results section. Site locations are not depicted in this report to protect sensitive resources.

Results

Three investigations are on file in the TARL records. The earliest investigation on file is from 1948, during which time regional archaeological pioneer J. Charles Kelley recorded four sites. Then, in 1977, the University of Texas at El Paso surveyed portions of the Chispa Road between Fort Quitman and Haciendita, Texas. Their survey documented 11 sites in or adjacent to the current APE. Subsequently, Geomarine, Inc. surveyed portions of the Chispa Road in 1997 for the Army corps of engineers. They recorded 21 sites along the current APE. The 1997 Geomarine survey covered all 58 miles of the Chispa road except a 2.5 mile segment that crosses the Jeff Davis and Presidio County line (Figure 2).

The Class I research produced records of 37 archaeological sites (hereafter referred to as project sites) total either overlapping or within 100 meters of the road; most intersect the road or are within 30 meters of it. Table 3 presents a summary of the sites. Twenty-six sites have only prehistoric components; four sites have both prehistoric and prehistoric components; and seven sites have only historic components. Nine prehistoric sites have artifacts that are indicative of Prehistoric-Formative period occupation (mostly in the form of ceramic sherds). Three sites have temporally diagnostic artifacts indicative of Prehistoric-Late Archaic occupation. Seven sites comprise only prehistoric artifact scatters.

Figure 2. Archaeological surveys (green lines and polygons) in the vicinity of the APE.

Table 3. Project Sites Discovered in Class I Research. NS = not specified.

Site No. (41PS)	Date	Project	Compo-nents	Sub Com-ponents	Features	Artifacts
1	1958	J.F. Epstein	Prehistoric	unspeci-fied	rock rings, rock shelter, rock art	flaked stone, groundstone, projectile points
3	1948	J. Charles Kelley	Prehistoric	Formative	house mounds and midden circles	shell, bone, ceramics, flaked stone, groundstone
4	1948	J. Charles Kelley	Prehistoric	Formative	middens and hearths	ceramics, lithics
8	1948	J. Charles Kelley	Prehistoric, Historic	Formative	middens and stone house	ceramics
13	1997	JTF-6, Marfa	Prehistoric	Formative	9 features total; ring middens, FCR concentrations, some with stains	1000 lithic artifacts, shell, groundstone, ceramics; at least 10 ceramics El Paso brownware, El Paso Bi-chrome, Chupadero Black on White, Chihuahuan wares, incised and polished, red on terracotta, and black over red paint
366	1977	Johnson 1977	Prehistoric	NS	hearths	flaked stone
368	1977	Johnson 1977	Prehistoric	NS	hearths	groundstone, flaked stone
369	1977	Johnson 1977	Historic	NS	house, adobe structures, stone tank, car	historic metal, historic ceramics
370	1977	Johnson 1977	Historic	NS	house, farm, ranch; adobe structures, graves	none
382	1977	Johnson 1977	Prehistoric	NS	midden; hearths	flaked stone
383	1977	Johnson 1977	Prehistoric	NS	none	burned rock, groundstone, flaked stone
384	1977	Johnson 1977	Prehistoric, Historic	NS	house, farm, ranch, stone structures	groundstone, flaked stone
385	1977	Johnson 1977	Prehistoric	Formative	midden, hearths	groundstone artifacts, flaked stone, ceramics
386	1977	Johnson 1977	Prehistoric	NS	hearths	flaked stone

Site No. (41PS)	Date	Project	Compo-nents	Sub Com-ponents	Features	Artifacts
388	1977	Johnson 1977	Prehistoric	NS	hearths	flaked stone
389	1977	Johnson 1977	Prehistoric, Historic	Formative	ranch, farm, fort, store, mill, homes, coral, school, church, house, wells, tower, adobe cotton gin, prehistoric quarry and lithic scatter	groundstone, flaked stone, arrow points, historic metal, glass, historic ceramics
758	1997	JTF-6, Marfa	Historic	NS	rectangular rock structure, rock outbuilding	glass, cans, ceramic, mics metal
760	1997	JTF-6, Marfa	Prehistoric	NS	1 hearth	flaked stone
761	1997	JTF-6, Marfa	Historic	NS	rock structure	glass
762	1997	JTF-6, Marfa	Historic	NS	two parallel rock walls	none
763	1997	JTF-6, Marfa	Prehistoric	NS	two hearths, rock circle	flaked stone
764	1997	JTF-6, Marfa	Prehistoric	Formative	4 hearths	65 lithics, flaked stone, groundstone, 8 El Paso Brown ceramics
765	1997	JTF-6, Marfa	Historic	NS	5 graves, most likely associ-ated with the old Daniels House	none
766	1997	JTF-6, Marfa	Prehistoric	NS	3 hearths	20 lithics, flaked stone, 3 El Paso Brown ceramics
767	1997	JTF-6, Marfa	Prehistoric	Late Ar-chaic	none	100 lithic, flaked stone, one Late Archaic-style Kent-type projectile point
768	1997	JTF-6, Marfa	Prehistoric	NS	fire-cracked rock concentra-tions/hearths; a semicircle of basalt cobbles	200 flaked stone, and 20 ceramics, El Paso brownware, 1 polychrome (possibly Chihuahuan) sherd, 1 El Paso Polychrome sherd, and several sherds with black paint
769	1997	JTF-6, Marfa	Prehistoric	NS	none	25 flaked stone
770	1997	JTF-6, Marfa	Prehistoric	NS	none	21 flaked stone

Site No. (41PS)	Date	Project	Components	Sub Components	Features	Artifacts
772	1997	JTF-6, Marfa	Prehistoric	Late Archaic	none	200 flaked stone, 2 Late Archaic-type projectile points
773	1997	JTF-6, Marfa	Prehistoric	NS	none	75 flaked stone
774	1997	JTF-6, Marfa	Prehistoric	NS	none	500 flaked stone
775	1997	JTF-6, Marfa	Historic	Historic	10 ft diameter depression	railroad ties, car parts, lumber, historic ceramics
776	1997	JTF-6, Marfa	Prehistoric, Historic	Formative	29 features, mostly FCR features (ovens and middens), some with staining; two historic features	750 artifacts; flaked stone, groundstone, Toyah-type dart point; 100 ceramic artifacts; El Paso brownware and El Paso Brown, corrugated brownware, micaceous brownware, El Paso Polychrome, and Chihuahuan Polychrome; 100 historic artifacts glass ceramics, metal hardware lumber and cans
777	1997	JTF-6, Marfa	Prehistoric	Late Archaic	bedrock mortar, two hearths,	100s of lithics; flaked stone, groundstone, 2 Late Archaic-style projectile point fragments
778	1997	JTF-6, Marfa	Prehistoric	Formative	2 burned rock middens	100 items; flaked stone, groundstone, 4 El Paso brownware ceramics and indented/corrugated
779	1997	JTF-6, Marfa	Prehistoric	NS	2 fire-cracked rock middens, one hearth,	53 lithics, flaked stone, groundstone
784	1997	JTF-6, Marfa	Prehistoric	NS	3 eroded fire-cracked rock concentrations, one with stain	none

Several notable feature types are extant among the indigenous components documented at the sites. The numerous fire-cracked rock concentrations and hearths in the sites' records are the remains of earth ovens, where rocks were burned and heated, then used to slowly bake a variety of desert food sources. Earth ovens provide valuable scientific information. The burned fuel (typically mesquite, saltbush, or other woody plants) often produces charcoal that can be used to precisely date the occupation via radiocarbon (e.g., carbon-14) techniques. The burned and unburned remains of the cooked food can be identified to help reconstruct the diets of the sites' inhabitants. The contents of the ovens can also provide information about the characteristics of the local environment, including local plant communities and climate. Moreover, the abundance and distribution of coeval earth ovens can provide clues about the number of people that occupied a camp and inform on demographics and population. Earth ovens are thus one important element of subsistence, settlement, and economics research themes discussed in the Research Value section above. Seventeen sites along the APE have features indicative of earth ovens.

Burned-rock middens are also prevalent in the sites. They can be the byproduct of numerous, overlapping earth ovens or, in other instances, large, intense cooking episodes, where abundant resources were prepared for large groups of people. Massive, high-visibility burned-rock middens may result from feasts, where members of a settlement, community, or multiple social groups join together in an important social event. As such, large burned-rock middens may at times represent critical aspects of social organization or ceremony. Nine sites along the APE have large burned-rock middens.

Indigenous artifacts inventoried in the project sites reflect different aspects of research potential. The flaked stone tools represent various components of indigenous technology. The morphology of projectile points is indicative of when they were manufactured so that they are "time-diagnostic." Several sites contain projectile points diagnostic of the Late Archaic period, and others are indicative of Formative period occupation. Indigenous pottery (ceramic artifacts) is likewise time diagnostic; they are also indicative of economic and settlement strategies because ceramics are typically associated with more sedentary lifeways, like those of the part-time farmers of La Junta or the villagers of the Jornada Mogollon. Several sites have ceramic types indicative of either trade, regional interaction, or migration between the inhabitants of la Junta, the Jornada Mogollon, and Casas Grandes in northern Mexico. Additional artifact types in the project sites, such as groundstone (e.g., manos and metates used to grind plants and other materials) are indicative of other aspects of indigenous technology, and they also inform on settlement and subsistence strategies.

Many of the historical-period structures documented in project sites are representative of regional architectural vernacular. Certain aspects of settlement strategies (e.g., household layout and construction styles) in the Presidio Bolson appear to have remained remarkably consistent over time, and some of the historical-period structures at the project sites may provide scientific information regarding cultural continuity. Moreover, some of the ranches and homesteads were extant during pivotal events in regional and national history, such as the period of the Mexican Revolution when there was notable social unrest along the border. Archaeological deposits at these sites have the potential to illustrate the ways community members interacted with one another

and how they contended with social, political, and economic stress. Four of the project sites have historical-period structures, including farm and ranch houses, and rock walls, as well as adobe and rock buildings.

Known archaeological sites are situated in a variety of geomorphological contexts along the Chispa Road, and most of them are likely to have additional cultural materials buried beneath the surface. These conditions indicate that many of the sites have additional information potential where occupations are preserved in stratified contexts (attesting to integrity of association), preserving spatial relationships between artifacts and features and enabling interpretation; research potential is greater in cases where occupations are buried.

Conclusions

The results of the Class I research indicate that there are at least 37 archaeological sites along the Chispa Road APE. Based on the documentation provided in the site forms and project reports, specific sites appear to have characteristics capable of addressing important research questions regarding historical-period and prehistoric lifeways. Select sites may be associated with important historic events or represent characteristic architectural styles. As such, select project sites appear to meet NRHP eligibility criteria, SAL criteria, and meet some of the main specifications for integrity. Many sites in the APE should be considered eligible for the NRHP and as SALs, and they warrant preservation and scientific study. They should be carefully considered for the protections afforded by the NHPA and Texas Antiquities Code.

More than 30 years have passed since the most recent documentation of sites along the Chispa Road. During that time, the disposition of archaeological deposits has undoubtedly changed. Erosion, road construction and maintenance, and other developments may have degraded archaeological deposits. In other circumstances, these same conditions may have exposed sites that were previously buried or otherwise obscured; there may be new sites evident on the landscape. Moreover, survey techniques, methodologies, and best practices have evolved over time; cultural resource management practices have changed in the past three decades since the 1997 survey, and subsurface testing is more frequently recommended to assess the potential for buried archaeological deposits.

The distribution and disposition of cultural resources along the project APE is poorly understood. The most recent records indicate that there are known sites along the road, and that they have attributes that make them eligible for the NRHP and as SALs. However, the information is out of date and additional studies are needed. The known cultural resources should be revaluated with a field study, and additional survey is needed to examine the entirety of the Chispa Road and to explore for unidentified cultural resources. Notably, there are 13 additional archaeological sites beyond the 100-meter buffer of the Chispa road; they are situated between the Rio Grande and the Chispa Road where the proposed border barrier is likely to be constructed. A thorough survey and field studies are recommended to examine the potential adverse effect to archaeological sites for this undertaking as well, but an APE has not been specified.

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Acronyms

APE – area of potential effect
NHPA – National Historic Preservation Act
NRHP – National Register of Historic Places
NPS – National Parks Service
SAL – State Archeological Landmarks
SHPO – State Historic Preservation Office
TARL – Texas Archeological Research Laboratory
THC – Texas Historical Commission

Definitions

Area of Potential Effect: The Area of Potential Effect (APE) under the National Historic Preservation Act (NHPA) Section 106 is the geographic area(s) where a federal undertaking may directly or indirectly alter the character or use of historic properties. Defined by federal agencies in consultation with the SHPO/THPO, it includes the project's construction footprint and surrounding

Adverse Effect: Under the National Historic Preservation Act (NHPA) Section 106 regulations (36 CFR Part 800.5), an adverse effect occurs when a federal undertaking alters, directly or indirectly, the characteristics qualifying a property for the National Register in a manner that diminishes its integrity (location, design, setting, materials, workmanship, feeling, or association).

Cultural Resource: A cultural resource is any aspect of a cultural system—tangible or intangible—that is valued by a community, represents its history, or contains significant information about its past. In the current study, cultural resources are represented by archaeological features and artifacts, cultural deposits, sites, isolates, structures, and buildings.

Eligibility Criteria: Eligibility criteria under the National Historic Preservation Act (NHPA) are the standards used to evaluate whether a district, site, building, structure, or object qualifies for inclusion in the National Register of Historic Places (NRHP)

Integrity: In the context of the National Historic Preservation Act (NHPA) and the National Register of Historic Places, integrity is defined as the ability of a property to convey its significance. It is the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during its historic or prehistoric period.

Undertaking: A federal undertaking under the National Historic Preservation Act (NHPA) Section 106 is any project, activity, or program funded, permitted, licensed, or approved by a federal agency that may impact historic properties.

Author Information

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