



# INDEX OF TEXAS ARCHAEOLOGY

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Volume 2018

Article 36

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2018

## Intensive Cultural Resources Survey for the Proposed Buena Vista Road Improvements

Ben Fullerton

Kristin Morgan

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### Cite this Record

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Available at: <https://scholarworks.sfasu.edu/ita/vol2018/iss1/36>

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## Intensive Cultural Resources Survey for the Proposed Buena Vista Road Improvements

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# Intensive Cultural Resources Survey for the Proposed Buena Vista Road Improvements

**Cameron County, Texas**

**April 2018**

By: Ben Fullerton and Kristin Morgan  
Principal Investigator: Ben Fullerton

Texas Antiquities Permit Number: 8089





**Intensive Cultural Resources Survey for the Proposed  
Buena Vista Road Improvements Project  
Cameron County, Texas**

**By  
Ben Fullerton  
and  
Kristin Morgan**

**Texas Antiquities Permit Number: 8089**

**Principal Investigator  
Ben Fullerton**

**Prepared For:**



**Federal Highway Administration  
Central Federal Lands Highway Division**

**Prepared By:**



**17111 Preston Road, Suite 300  
Dallas, TX 75248**

**April 2018**



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## Management Summary

The Federal Highway Administration (FHWA) Central Federal Lands Highway Division (CFLHD) is proposing to improve Buena Vista Road, a two-lane, paved roadway accessing the Laguna Atascosa National Wildlife Refuge (NWR) in Cameron County, Texas. While the project is located within the Laguna Atascosa NWR, the roadway falls under the jurisdiction of Cameron County. The proposed project includes pavement reconstruction and widening by pulverizing and overlaying Buena Vista Road along a 2.7-mile (4.35 kilometer [km]) segment from the intersection of General Brant Road to the north entrance of the Laguna Atascosa NWR (Figure 1-1). The improvements will also include the installation of roadside ditches, signage, and speed humps. The survey corridor will comprise the approximately 65-foot (ft) wide (32.5 ft on either side of the centerline) existing road Right-of-Way (ROW), and areas adjacent to the Laguna Atascosa NWR will extend an additional two ft beyond the existing ROW fence line. The survey will extend 100 ft past road/driveway intersections, where the survey corridor will also be limited to the existing ROW (65 ft in width). The maximum depth of impacts for the proposed project is 3.5 ft (1.1 meters [m]) below surface in order to replace the existing culverts. As a county road, the proposed project is required to be in compliance with Chapter 191 of the Texas Natural Resources Code, also known as the Antiquities Code of Texas (13 *Texas Administrative Code* [TAC] 26.12).

The purpose of the cultural resources investigation is to conduct an inventory to determine the presence/absence of cultural resources (36 *Code of Federal Regulations* [CFR] 800.4) and to evaluate identified resources for their eligibility for inclusion in the National Register of Historic Places (NRHP), as per Section 106 (36 CFR 800) of the National Historic Preservation Act of 1966, as amended, or as a designated State Antiquities Landmark (SAL) under the Antiquities Code of Texas (13 TAC 26.12). Archaeology fieldwork was completed by Principal Investigator Ben Fullerton and Archaeology Field Technicians Katie Alexander and Corinne Harvey on July 2–7, 2017. This survey was conducted under Texas Antiquities Permit Number 8089. The fieldwork for historic resources was conducted by HDR architectural historian Kristin Morgan on July 5–6, 2017.

During the course of the archaeological field survey, the APE was subjected to pedestrian survey, shovel testing, and photo-documentation. The survey resulted in a 100 percent pedestrian walkover and a staggered 100-m shovel test transect for the entire length of the APE. A total of 44 shovel tests were excavated, none of which yielded cultural materials. All shovel tests were terminated prior to reaching 80 cmbs (32 inbs) due to encounter with subsoil or disturbance. A scatter of seven oyster shell fragments was identified on the ground surface within the eastern ROW at the intersection of Buena Vista Road and Ocelot Road. The location of the scatter is approximately 150 m (492 feet) east of Site 41CF115, which consists of a campsite yielding bone, as well as shell. Pedestrian survey and shovel testing near the scatter encountered disturbed soils and no cultural material. Due to the lack of associated cultural material and distance of the scatter from 41CF115, it is unclear if the shell fragments are archaeological or modern deposits. Overall, no definitive cultural materials were identified during the intensive survey.

During the course of the field survey for historic resources, six resources built prior to 1972 were identified within the APE: Buena Vista Road, two vehicular access gates onto unpaved refuge roads, and three culverts. Two of the culverts span Buena Vista Road, and the other spans an unpaved access road for the refuge. None of the culverts have any visible marks to designate construction date or under whose authority it was installed. None of the six historic resources are recommended eligible for NRHP listing due to lack of significance.

In accordance with and 13 TAC 26.12, no further cultural resources investigations are recommended for the presently-defined APE, and the proposed Buena Vista Road improvements project may proceed. However, in the event that any archaeological deposits are encountered during construction, work should cease and the Texas Historical Commission (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.



## Contents

Management Summary.....	i
1 Introduction.....	1
2 Background.....	3
2.1 Environmental Background.....	3
2.2 Cultural History.....	3
2.2.1 Paleoindian (11,500–8,000 BP).....	4
2.2.2 Archaic Period (8,000–1,300 BP).....	5
2.2.3 Early Archaic (8,000–4,500 BP).....	5
2.2.4 Middle Archaic (4,500–2,300 BP).....	6
2.2.5 Late Archaic (2,300–1,300 BP).....	7
2.2.6 Late Prehistoric (1,300–500 BP).....	8
2.3 Historic Period.....	9
3 Methods.....	12
3.1 Previous Investigations near the APE.....	12
3.2 Survey Methods.....	17
3.2.1 Archaeological Survey Methods.....	17
3.2.2 Architectural Survey Methods.....	17
4 Results.....	18
4.1 Archaeological Results.....	18
4.2 Architectural Results.....	36
4.2.1 HR-01, Buena Vista Road.....	39
4.2.2 HR-02 and HR-03, Access Gates.....	41
4.2.3 HR-04 – HR-06, Culverts.....	43
5 Summary and Recommendations.....	47
5.1 National Register Eligibility.....	47
5.1.1 Criteria for Evaluation of Eligibility.....	47
5.1.2 State Antiquities Landmark.....	49
5.2 Conclusion and Recommendation Summary.....	50
6 References.....	51

## Figures

Figure 1-1. Topographic map of the area of potential effects .....	2
Figure 3-1. Aerial photographic map showing cultural resources and previous surveys within one mile of the APE .....	15
Figure 4-1. Aerial photographic map of the APE showing survey results (Page 1 of 4).....	21
Figure 4-2. Aerial photographic map of the APE showing survey results (Page 2 of 4).....	23
Figure 4-3. Aerial photographic map of the APE showing survey results (Page 3 of 4).....	25
Figure 4-4. Aerial photographic map of the APE showing survey results (Page 4 of 4).....	27
Figure 4-5. Overview of the northern APE, facing south (note the minimal road crown and absence of drainage ditch).....	29
Figure 4-6. Overview of the northern APE, facing south .....	29
Figure 4-7. Overview of the southern APE showing recent disturbance, facing south (note the pronounced road crown and drainage ditch) .....	30
Figure 4-8. Overview of the southern APE showing recent disturbance, facing south (note the pronounced road crown) .....	30
Figure 4-9. Overview of the central APE, facing south (note the road crown, drainage ditch, and push pile along the outer edge of the ROW).....	31
Figure 4-10. Photograph showing the push pile along the outer edge of the ROW, facing north .....	31
Figure 4-11. Photograph showing the push pile along the outer edge of the ROW, facing northwest (note the loose soil and lack of vegetation suggesting recent disturbance) .....	32
Figure 4-12. Buried utility that runs along the eastern edge of the ROW for entire length of the APE, facing south.....	32
Figure 4-13. Photograph showing the typical soil profile encountered within the APE .....	33
Figure 4-14. Disturbed shovel test profile showing abundant calcium carbonate just below the ground surface, facing down .....	33
Figure 4-15. Representative shovel test profile showing the compact clay intermixed with road gravels.....	34
Figure 4-16. Overview of the oyster shell surface find and the shovel test excavated immediately adjacent to the shell fragments, facing north .....	34
Figure 4-17. Photograph showing the oyster shell fragments found on the ground surface, facing down.....	35
Figure 4-18. Soil profile of the shovel test excavated near the oyster shell, facing northeast (note the soil cracking indicating disturbance due to the shrinking and swelling of the clay matrix) .....	35
Figure 4-19. Architectural survey results .....	37
Figure 4-20. HR-01, Buena Vista Road, facing south from Lakeside Drive .....	39
Figure 4-21. HR-01, Buena Vista Road, facing south to intersection with General Brant Road (FM 106) .....	40
Figure 4-22. HR-01, Buena Vista Road, facing north from South Boundary Road .....	40
Figure 4-23. HR-01, Buena Vista Road, facing south from South Boundary Road.....	41
Figure 4-24. HR-02, gate on South Boundary Road, facing west.....	42
Figure 4-25. HR-03, gate on unpaved refuge access road to bayside section, facing northeast.....	42
Figure 4-26. HR-04, culvert, south side of culvert, facing north.....	43
Figure 4-27. HR-04, culvert, north side of culvert, facing south.....	44
Figure 4-28. HR-05, culvert, east side of culvert, facing southwest.....	44
Figure 4-29. HR-05, culvert, west side of culvert, facing southeast.....	45



Figure 4-30. HR-06, culvert, east side of culvert, facing west ..... 45  
Figure 4-31. HR-06, culvert, west side of culvert, facing east ..... 46

## Tables

Table 2-1. Prehistoric cultural chronology for south Texas\* ..... 3  
Table 3-1. Previously recorded archaeological sites within one mile of the APE ..... 12

## Acronyms and Abbreviations

APE	area of potential effects
Atlas	Archeological Sites Atlas
BP	before present
Bs	below surface
CFLHD	Central Federal Lands Highway Division
CFR	Code of Federal Regulations
FCR	fire-cracked rock
Ft	feet
FHWA	Federal Highway Administration
FM 510	Farm-to-Market Road 510
FWS	Fish and Wildlife Service
GPS	Global Positioning System
km	kilometer
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
ROW	Right-of-Way
SAL	State Antiquities Landmark
TAC	Texas Administrative Code
THC	Texas Historical Commission

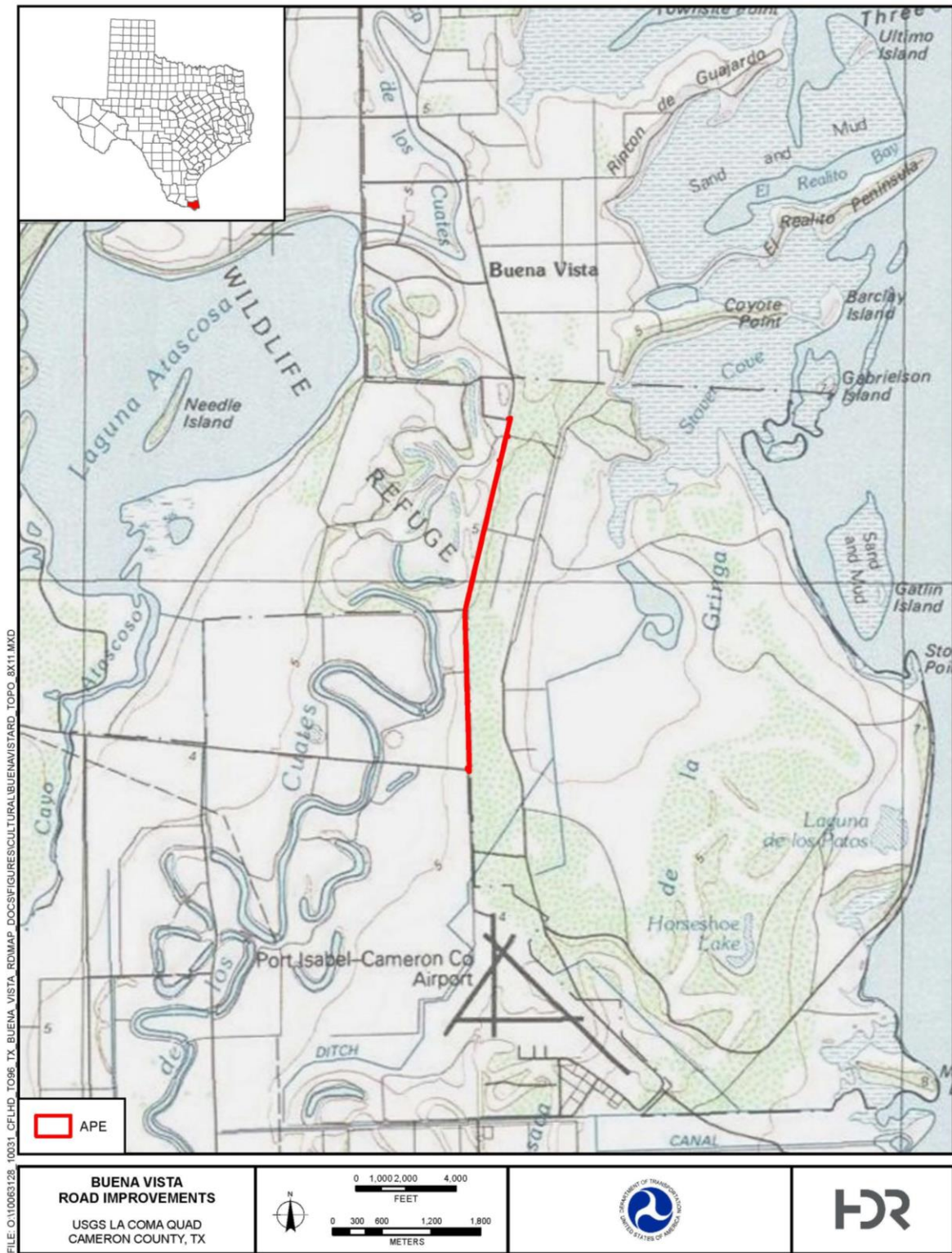
# 1 Introduction

The FHWA CFLHD is proposing to improve Buena Vista Road, a two-lane, paved roadway accessing the Laguna Atascosa NWR in Cameron County, Texas (Figure 1-1). While the project is located within the Laguna Atascosa NWR, the roadway falls under the jurisdiction of Cameron County. The proposed project includes pavement reconstruction and widening by pulverizing and overlaying Buena Vista Road along a 2.7-mile segment from the intersection of General Brant Road to the north entrance of the Laguna Atascosa NWR. The improvements will also include the installation of roadside ditches, signage, and speed humps. The survey corridor will comprise the approximately 65-ft-wide (32.5 ft on either side of the centerline) existing road ROW, and areas adjacent to the Laguna Atascosa NWR will extend an additional two ft beyond the existing ROW fence line. The survey will extend 100 ft past road/driveway intersections, where the survey corridor will also be limited to the existing ROW (65 ft in width). The maximum depth of impacts for the proposed project is 3.5 ft (1.1 m) below surface in order to replace the existing culverts. As a county road, the proposed project is required to be in compliance with Chapter 191 of the Texas Natural Resources Code, also known as the Antiquities Code of Texas (13 TAC 26.12).

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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 area of potential effects





## 2 Background

### 2.1 Environmental Background

The area of potential effects (APE) is located on the southern reaches of the Gulf Coastal Plain, more specifically within the Rio Grande Embayment (Jordan et al. 1984). This region is largely devoid of topographic relief, and what slight relief exists occurs primarily as small lake and playa basins, lomas, and small oxbow lakes called resacas. Resacas mark ancient meanders of the Rio Grande and other streams and rivers. The Resaca de los Cuates runs immediately west of the Buena Vista Road APE.

A review of the local geology indicates that the APE is underlain by Alluvium of Holocene Age (USGS 2007). According to data from the Soil Survey Staff (2017) four soil map units comprise the APE: Harlingen clay; Olmito silty clay; Harlingen clay, saline; and Laredo silty clay loam, 0 to 1 percent slopes, rarely flooded.

### 2.2 Cultural History

The APE lies within the broadly defined South Texas archaeological region (Pertulla 2004), but more specifically within the Coastal Prairies and Marshlands region, a narrow 1,000-km-long (600-mile long) strip of ecotonal landforms extending from Port Arthur to Brownsville (Kenmotsu and Dial 2009). According to area specialists, this region is further subdivided into the Upper, Middle, and Lower Texas coastal groups. The Buena Vista APE and Cameron County fall within the lower coast, which is also known as the Rio Grande Delta (Kenmotsu and Dial 2009; Ricklis 2004, 2009). Relative to the upper and middle coast groups, the native groups of the lower coast are poorly understood. Researchers note that the waters of Baffin Bay and Lower Laguna Madre are too saline for oysters and other mollusks to survive. The resulting scarcity of shell middens has likely played a role in the scarcity of detailed knowledge of the lower coast groups.

The general prehistoric framework for South Texas, including the southern part of the coastal zone where the APE lies, is comparable to other areas of Texas and North America in general, with the first human occupations occurring approximately 11,500 years before present (BP) (Table 2-1).

Table 2-1. Prehistoric cultural chronology for south Texas*	
Period	Years Before Present (BP)
Paleoindian	11,500–8,000
Early Archaic	8,000–4,500
Middle Archaic	4,500–2,300
Late Archaic	2,300–1,300
Late Prehistoric	1,300–500

\* After Pertulla 2004: Page 9, Table 1.1



## 2.2.1 Paleoindian (11,500–8,000 BP)

The south Texas hunter-gatherer tradition began approximately 11,500 years before present with the Paleoindian Period. The Paleoindian era marks the first well-documented human occupation in the Western Hemisphere. These Paleoindian inhabitants migrated from Asia at the end of the Pleistocene period and spread quickly across North, Central, and South America. Traditionally, Paleoindian populations were thought to have been highly mobile specialist hunters of big game, including mammoth (Haynes 1980; Kelly and Todd 1988). More recent research suggests that Paleoindian mobility practices and degree of big-game specialization were highly variable (Byers and Ugan 2005; Cannon and Meltzer 2004). For example, some Paleoindian sites indicate relatively long occupations, and in some regions Paleoindian populations may have eaten small to medium-size game and a wide range of plant foods. This new view of Paleoindian behavioral variability is not unexpected given the climate conditions that prevailed in the late Pleistocene. In general, North America was cooler, wetter, and less seasonal than it is today, supporting more forest vegetation and richer grasslands than now exist in a patchwork mosaic pattern that is also long gone (Cliff et al. 2003; Guthrie 1984). Although the period's biomass-rich grasslands supported larger herbivores, or denser populations of big-game herbivores, these same conditions supported gatherable small game and plants.

Evidence of the earliest Paleoindian complexes, Clovis and Folsom, has been found throughout south Texas. Most of this evidence comes from surface collections of distinctive fluted projectile points, a trait unique to this artifact complex. Clovis points have been found at sites in Bee, Wilson, and Dimmit Counties (Sellards 1940; Kelly 1988), as well as in Atascosa County and Southern Island (Hester et al. 1993; Hester 2004). Folsom projectile points have been recovered in Webb County and near Falcon Reservoir (Bettis 1997; Hester 2004).

Toward the end of the Paleoindian period, climate conditions became warmer and drier—in short, more like present-day conditions (Cliff et al. 2003). The fluted early Paleoindian projectile points are replaced in the archaeological record by unfluted Plainview, Golondrina, Scottsbluff, and Angostura points. The late Paleoindian peoples appear to have exploited a broader range of foods than earlier groups, as suggested by the broad range of species recovered from deposits dating to about 7000 B.C. at Baker Cave in Val Verde County (some 350 km northwest of the project area) (Hester et al. 1989).

Two stratified Paleoindian sites have been excavated in the south Texas region, although in locations more than 240 km to the north of the project area: Berger Bluff (41GD30) in Goliad County and Buckner Ranch (41BE2) in Bee County (Sellards 1940). Berger Bluff was a deeply stratified site along Coleta Creek. Excavation uncovered a hearth and a lithic reduction area more than 8 m below the present surface. Although no chronologically diagnostic artifacts were recovered, eight radiocarbon samples indicated occupations dating to approximately 9500 B.P. (7500 B.C.). The site also yielded a large number of bones from small mammals, indicating the sort of broad-spectrum foraging that is common among hunter-gatherers, but less common among Paleoindian populations. In general, fauna from the site were fully Holocene, although not all species identified at the site are still present in the area due to the continued shift to warmer and drier conditions over the past several thousand years. The Buckner Ranch site yielded a



wide range of projectile points—including Scottsbluff, Angostura, side-notched “Berclair” types, Midland, and Clovis points—from stratified contexts. These types indicate that the open-air camp site was repeatedly occupied over the entire Paleoindian period (Bousman et al. 2004).

Due to the dynamic nature of the Texas coast during the early Holocene, evidence of Paleoindian archaeology is sparse on the Texas coast and primarily consists of isolated, scattered finds.

## 2.2.2 Archaic Period (8,000–1,300 BP)

Regardless of the degree to which Paleoindian populations were specialist hunters or broad-spectrum hunter-gatherers, their behaviors were adapted to specific climate and vegetation conditions that had disappeared by the Archaic period (6000 B.C.–A.D. 800). The period began with a warm, dry climate episode that lasted until roughly 2000 B.C. Faced with a vegetation community and climate regime roughly as warm, dry, and seasonal as they are today, Archaic populations further broadened the range of plant and animal resources they relied upon and the breadth of the landscape they occupied relative to their Paleoindian forebears. The Archaic of the Lower Texas Coast remains poorly understood.

## 2.2.3 Early Archaic (8,000–4,500 BP)

The Early Archaic (6000 B.C.–2500 B.C.) is distinguished by a transition from the lanceolate projectile points of the Paleoindian period to stemmed corner- or side-notched projectile points. Hester (2004) separates the Early Archaic into two broad horizons based on projectile point typology, the early corner-notched horizon and the subsequent early basal-notched horizon. The corner-notched horizon is defined by dart points with recurved or notched bases, including the following types: Martindale, Uvalde, Bandy, and some Gower points. This early horizon appears to last from about 6000 to 3500 B.C. The subsequent early basal-notched horizon is defined by Bell and Andice dart points, as well as by triangular bifaces that may be preforms or knives (Hester 2004). This later horizon lasts from about 3500 to 2500 B.C.

For the first two millennia of the Early Archaic, sea levels continued to slowly rise, and the active channels of the Nueces, San Antonio, and Guadalupe rivers were still below their current depths (Pearson et al. 1986). Phytolith data indicate that throughout the Early Archaic period the environment underwent a gradual transition to drier conditions (Robinson 1979). Given the amount of general geomorphological and climatic change occurring throughout the Early Archaic, it has been difficult for archaeologists to locate occupations dating to this period. However, shoreline occupation during the early portion of this period is well established, specifically in the Nueces Bay area on the basis of radiocarbon dates on discrete stratigraphic components at several sites including 41SP136, 41SP153, 41NU266, and 41NU281 (Ricklis 2012). Very little is known during this interval of the Early Archaic other than the fact that estuarine shellfish were exploited. The few lithics that have been documented during excavations have included a scant amount of chert debitage and a chert core from 41SP153 and a few utilized flakes recovered from 41NU266 (Ricklis 2012). Faunal remains are almost entirely absent for this period and likely due to the complete decay of bone (Ricklis 2012).

Coastal sites are considerably more numerous during the latter half of the Early Archaic period. All components of this period are more or less thin (5 to 25 cm thick) shell deposits; however, some sites have produced occasional lithic artifacts as well as fish otoliths (Ricklis 2012). There is some variability in the thickness of deposits and the density of artifacts present at occupation sites along the central coast (Ricklis 2012). Gower, Andice, and Bell points, as well as a variety of other dart points, have been recovered from several sites including 41NU184, 41SP156, 41NU267, 41NU266, and 41AS16 (Ricklis 1993; Prewitt and Paine 1988; Prewitt et al. 1987). There is limited data pertaining to subsistence practices, but the presence of dart points suggests that hunting was carried out even though there is a lack of faunal remains. Fish otoliths have been recovered from several site components, and although estuarine fish were not abundant at any site in the area, it is likely that procuring them was a part of the subsistence activities during this period (Ricklis 2012).

## 2.2.4 Middle Archaic (4,500–2,300 BP)

The Middle Archaic (2500 B.C.–500 B.C.) is distinguished by the move from stemmed points to unstemmed Tortugas and Abasolo points, some of which appear to have served as knives (Hester 2004). The change from stemmed to unstemmed points indicates a change in hafting technology (Elston 2001) and possibly a change to a hunting strategy that required points to be easily removed from prey (Nelson 1996). Other distinctive Middle Archaic sites include small bifaces and small unifacial distally beveled Dimmit tools, which often show considerable reworking and resharpening. In the northern part of south Texas, points also include stemmed points similar to the Pedernales and Lange points from central Texas, the Morhiss points from the coastal plain, and the Langtry points from the Lower Pecos.

This change in stone tool morphology is only one of the hallmarks of the Middle Archaic. The period is also distinguished by the appearance of deposits of fire-cracked rock (FCR) in earth ovens and hearths (Hester et al. 1989). These features are interpreted as being associated with large-scale processing of plant foods and suggest a dramatic intensification of plant-food exploitation relative to the Early Archaic period, indicative of expanded plant food use. Meanwhile, Middle Archaic sites appear in a much broader range of geographic settings including upland, alluvial, and tributary settings as well as estuary bays (Hester et al. 1989). This diversity of site location reinforces the interpretation from the period's FCR features that Middle Archaic peoples made more intensive use of the landscape for food procurement. This evidence of intensification in turn supports inferences that populations increased during the period (Hester et al. 1989).

Increasing population density would likely have led to increased group territoriality. Both demographic trends resulted in the adoption of cemeteries, which appear for the first time toward the end of the Middle Archaic (around 800–600 B.C.). A cemetery at the Loma Sandia site (41LK28) in Live Oak County (north of the project area) contained 205 burials, many with grave goods such as projectile points, and more than 400 features. Cemeteries have also been recorded at the Falcon Reservoir site west of the project area and at the Southern Island site on the Mexican side of Falcon Reservoir. These cemetery sites suggest that groups used specific portions of the region and that they expected to return repeatedly to these spots on the landscape, behaviors that both derive from and reinforce increased territoriality (Milner et al. 2009).

These cemeteries indicate that the subsistence regimes and mortuary practices associated with the Late Prehistoric Brownsville and Rockport complexes closer to the Gulf Coast may have developed, considerably earlier, a unique regional adaptation not seen elsewhere in Texas (Terneny 2005). These interior Middle Archaic sites also contain another marker of increasing socio-economic complexity, indications of trade activity between the Rio Grande plain and the coastal delta in the form of Oliva and conch shells (Hester 2004). Middle Archaic sites also include tubular sandstone pipes not observed in earlier periods, possibly suggesting new types of ritual activity (Hester 2004).

### 2.2.5 Late Archaic (2,300–1,300 BP)

The broad trends of the Middle Archaic gained ground in the Late Archaic (500 B.C.–A.D. 800), of which the latter period is identified by the appearance of side-notched dart points, including types such as Ensor, Frio, Marcos, Fairland, and Ellis. It is also identified by distinctive corner-tanged bifaces (Hester et al. 1989) and by bi-pointed Desmuke and Lerma points. This change in point morphology accompanies the appearance during the Late Archaic of the dry scrubland vegetation, which characterizes the region today (Hester 2004). The change from grassland to scrubland vegetation may explain the increase at Late Archaic sites in the frequency of ground stone *manos* and *metates*, which have been interpreted as being associated with exploitation of mesquite, acacia, and other plant foods (Hester et al. 1989). Late Archaic sites are also associated with an increase in the occurrence of freshwater mussel shell, FCR features, and the remains of rabbits and other small game, all of which indicate increasing intensification of food collection (Hester et al. 1989). Hester also saw evidence of more repeated visits to individual sites, including cemeteries, suggesting a more sedentary or more scheduled subsistence regime (Hester et al. 1989). Stone tool assemblages appear to have become more specialized with an increasing correlation between formal tool production with hunting sites and expedient tool production with residential sites (Vierra 2005). These trends suggest that Late Archaic peoples were more territorial, more constrained to those territories, and more reliant on intensive exploitation of the landscape than their Middle Archaic predecessors. Socio-cultural complexity also continued to increase, based on evidence of greater amounts of small-stemmed bifaces made of Edwards chert imported from central Texas and of trade in marine shell pendants and other items imported from the Texas coast (Hester 2004).

The archaeology of the Late Archaic also reveals a diverse shell tool industry and evidence of basketry (Campbell 1947, 1952; Ricklis 1990, 2004). Although perforated oyster shell and edge-flaked clamshell scrapers are known from the Early Archaic and continue to be found in later periods, the use of conch shell for tools appears to begin only in the Late Archaic (Campbell 1952; Ricklis 1990, 2004). Additionally, the number of bone artifacts (e.g., awls, socketed points) increased dramatically in the archaeological record of the Late Archaic. Clear evidence for the use of basketry was recovered from the Tucker site (41NU46) near Corpus Christi from a stratum that contained hearth charcoal dated to ca. 3000 B.P. (Ricklis 2012).

Cemeteries were present for the first time in the region during the Late Archaic. The emergence of cemeteries was likely due to the increase in population density and, as a systemic response to growing population, the development of well-defined territories

(Ricklis 2012). The cemeteries in the coastal region ranged in size from a cluster of a few individuals to large cemeteries containing hundreds of interments.

Late Archaic sites within the Rio Grande Delta have been documented, but few have received detailed investigation, likely due to the lack of shell middens within the region. However, research has shown that cemetery sites in the Rio Grande Delta area, once thought to be associated strictly with the Late Prehistoric Brownsville Complex, had also been used during the Late Archaic (Terneny 2005).

## 2.2.6 Late Prehistoric (1,300–500 BP)

The trend toward an increased sedentary lifestyle culminated in south Texas during the Late Prehistoric period (A.D. 800 to Spanish Contact). The period is defined by the presence of the bow and arrow and, after A.D. 1000, by the appearance of bone-tempered pottery with incised designs. Some Late Prehistoric formal lithic tools were made on blades, an important technological distinction driven by a need to conserve raw materials (Hester 2004). Agriculture and permanent villages did not appear in southeastern Texas before the arrival of Spanish colonists (Stephenson 1950). However, Late Prehistoric projectile point typologies have not been completely formalized, and even the adoption of the bow and arrow may not correlate with the beginning of the period, given the persistence of Late Archaic dart points in the record (Hester et al. 1989; Hester 2004).

In much of southeastern Texas, the Late Prehistoric period has two distinct horizons: Austin (A.D. 800–A.D.1350) and Toyah (A.D. 1350–A.D. 1600). The Toyah horizon is associated with an increase in population (Black 1986) and is distinguished by several chronologically diagnostic artifacts, including 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.

These Late Prehistoric populations benefited from a short-lived shift to wetter climate conditions, a change that allowed them to increase their exploitation of large animals, especially deer, along with bison and pronghorn antelope (Hester et al. 1989). The focus on hunting large game constitutes a considerable change from the Late Archaic exploitation of all and any edible animals.

Closer to the coast, the Late Prehistoric is considered to have had a later start date, around A.D. 1200, and is separated into the interior Rockport Complex and the coastal Brownsville Complex. The Brownsville Complex is generally considered to have extended upriver at least to Los Ebanos, where site 41HG218 is located, but not farther upstream beyond 41SR392. Both complexes are similar to the Austin and Toyah horizons, with the Brownsville Complex distinguished mostly by its shell-working industry that includes carved mollusk and conch shell pendants, Oliva shell beads, and even conch shell projectile points (MacNeish 1947). Brownsville Complex populations were also considerably more sedentary than other Late Prehistoric groups, thanks to their exploitation of marine resources (Griffen 1966). Brownsville sites are generally located on small rises along waterways, which avoided constant flooding (Hester et al. 1989; MacNeish 1947).

The trade that began during the Archaic period increased considerably in scope and complexity during the Late prehistoric period. Obsidian was traded to south Texas from

as far away as Idaho, and obsidian, jade, and Huastec pottery reached the area from sources in central and northern Mexico (Hester et al. 1989; Hester 2004; MacNeish 1947). The period also saw increasing cultural ties with other parts of Texas, as evidenced by non-local projectile points, but it is not clear whether these points indicate trade or population movement or both (MacNeish 1947).

The distinction between coastal and interior behaviors appears to have persisted until the arrival of the first Spanish explorers in the 1500s. These explorers, discussed in detail below, described six or seven linguistic groups, including speakers of Coahuiltecan, which were linked by close trade and other ties (Hester et al. 1989; Hester 2004).

Settlement patterns appear to have changed by the Late Prehistoric, whereby the larger sites upstream along the river margin such as Buckeye Knoll and Morhiss Mound were largely abandoned as large aggregation sites along the coastal edge (such as Guadalupe Bay) became prevalent. At the same time that upland sites such as Morhiss Mound were falling out of use, many more were being created upstream along the river margin as short-term hunting/fishing camps. In some cases, sites that were active in earlier periods such as Linn Lake appear to be the focus of hunting and possible trade activities well into the historic period (Hester 1985; Weinstein 1992).

## 2.3 Historic Period

Spanish exploration of the Gulf Coast in the area of Cameron County began in 1519 with the expedition under Alonso Álvarez de Pineda. This expedition sailed along the Gulf from Pensacola Bay to Cabo Rojo, near the current boundary of the Mexican states of Tamaulipas and Veracruz. Pineda's expedition did not result in any settlements in or near Cameron County (Weddle 2010). Despite the early explorations of the coastal portion of Cameron County, it was not settled by the Spanish for more than two hundred years. Until settlement, the area served as little more than a brush-lined trail for small Spanish parties traveling to East Texas or San Antonio (Hildebrand 1950:8).

The first land grants in the area of Cameron County began in the second half of the eighteenth century. In 1781, Spanish authorities granted 59 leagues of land north of the Rio Grande to José Salvador de la Garza, who established a ranch, and the grant became known as the Potrero del Espíritu Santo, the name still seen on a 1913 map of Cameron County (Garza and Long 2010; McDonald 1913). Smaller grants and more settlers soon followed, but the area remained sparsely populated. Following Mexican independence from Spain in 1821, the area of Cameron County was organized into the state of Tamaulipas. In 1829, the Potrero de Buena Vista was granted by the government of Tamaulipas to Manuel de la Garza y Sosa (Luttes v. State 1956 Abstract 3, File 465). It encompassed more than 170 million square varas, about 30,200 square acres along the northeastern boundary of the Potrero del Espíritu Santo (General Land Office, Cameron County. The Project APE is entirely within the bounds of the Potrero de Buena Vista grant.

This region—north of the Rio Grande and south of the Nueces River—was disputed territory and the site of a number of battles and skirmishes during the Mexican-American War. In 1848, after Texan independence, the state legislature created Cameron County, and in December of that year, Brownsville was made the county seat (Garza and Long 2010). Like many parts of Texas, Cameron County underwent a period of ongoing



disputes over land titles in the wake of Texan independence. The de la Garza grant for the Portrero de Buena Vista was recognized and confirmed by the Legislature of Texas in 1852 (*Luttes v State* 1956).

The economy of the county was based primarily upon ranching at the time of its incorporation in 1848 and continued to be so through the nineteenth century. Almost all of the land in the county was allocated for ranching, and most of it was owned by a few wealthy landowners. A lack of ready access to outside markets limited the profitability of farming. What little farming there was had corn as the primary crop, with vegetables and other foods accounting for most of the rest. (Garza and Long 2010). Until the early twentieth century, there were only three towns in Cameron County: Port Isabel, Santa Maria, and Brownsville (Hildebrand, 1950: 38). Most of the land in Cameron County remained ranch land dedicated to grazing for cattle. Prior to World War I, there were only two paved roads in Cameron County. An old military road, first constructed in the 1870s, stretched west from Brownsville to Laredo, connecting Fort Brown in Brownsville to Fort McIntosh in Laredo. The only other paved road was a stretch of highway connecting Brownsville to the Hidalgo County line via Harlingen (Hildebrand 1950:78). Limited available transportation for people and goods in and out of the area kept the region largely rural and isolated.

In 1904, the St. Louis, Brownsville, and Mexico Railway -built the first railroad to reach Cameron County. It linked Brownsville to the Southern Pacific's line through Alice, Texas in Jim Wells County (Hildebrand 1950:77). With the arrival of the rail, the county experienced great economic growth and increased land values over the next two decades. New towns developed along the rail corridor: San Benito was established in 1904, Harlingen in 1905, La Feria in 1908, Rio Hondo in 1910, and Los Fresnos in 1915 (Hildebrand 1950:43). Increased settlement in the area necessitated extensive irrigation systems, roads, and brush clearing. The county's first commercial citrus orchard was planted in this timeframe, forming the foundation of one of the region's leading industries (Garza and Long 2010). Sugar cane briefly became a popular crop, though it gave way to vegetables and cotton by the late 1930s (Hildebrand 1950:56). As more land was put to farming use, Cameron County became a leading agricultural production center, with cotton, sorghum, sugarcane, and citrus fruits crops (Garza and Long 2010).

U.S. Highway 77 was constructed in the late 1930s, connecting Brownsville to Harlingen, north to Kingsville, and on to Waco and Dallas. Based on historic topographic maps, most of the roads in the county were dirt roads with only minor improvements until after World War II. Buena Vista Road, which connected the ranches on the Buena Vista land grant to Farm-to-Market Road 510 (FM 510), was constructed in the early twentieth century but remained unpaved through the 1930s. Once it was reasonably accessible by both rail and roadway, coastal Cameron County became a favored tourist destination. Its climate attracted visitors particularly in the winter months, and early efforts at developing Padre Island in the interwar years bolstered tourist interest (Garza and Long 2010).

With the outbreak of World War II in Europe, the federal government began to increase American military readiness. In 1941, Harlingen Army Airfield was established and in August of that year, the Harlingen Aerial Gunnery School was opened. An auxiliary airfield at Port Isabel was constructed to support training and flight operations. Air-based and ground-based training were completed at the gunnery school, and facilities included firing ranges east of Buena Vista Road and north of FM 510. Air-based training involved shooting at targets tethered to another airplane as well as strafing target 'ships'—either

stationary or being tugged through waters off Padre Island. Practice bombing runs were also conducted over targets on the ground-based ranges. Ground-based gunnery practice involved targets that were pulled around sunken tracks, with large embankments protecting the vehicles towing the targets from fire. Gunners shot from bunkers around the track, practicing strikes on moving targets. At other times, student gunners fired from moving trucks on the loop road, which included portions of what is now Bayside Drive in Laguna Atascosa National Wildlife Refuge (Brownsville Herald 2008). According to Boyd Blihovde, the Refuge Manager, shells from the machine guns are still regularly found on the refuge. When World War II ended, Harlingen's gunnery school and airfields were deemed surplus to military requirements and decommissioned. The primary airfield in Harlingen became Valley International Airport and the auxiliary airfield near Port Isabel became the Cameron County Airport.

After the war, Cameron County's tourist industry was revived. Resorts and motels were established on or near the county's numerous beaches. Today, the beaches of Padre Island attract thousands of visitors each year. The county's mild climate and low cost of living attract a significant number of winter residents. It is also one of the major tourist gateways between the United States and Mexico. (Garza and Long 2010).

#### *Laguna Atascosa NWR*

The Laguna Atascosa NWR was established in 1946 to provide a habitat for wintering waterfowl and other migratory birds. The U.S. Fish and Wildlife Service (FWS) had initiated purchasing actions to establish the refuge in the area in 1941, but after American entry into World War II, the Army asked the FWS to cease acquisition efforts, and the gunnery school was established there instead.

In late 1945, the FWS acquired the Continental Oil Tract of approximately 11,275 acres west of the Laguna Atascosa, predominantly north of General Brant Road to the south bank of the Arroyo Colorado. This body of water adjacent to the acquired property gave the refuge its name. The western line of the tract makes up the present western boundary of the refuge. In early 1949, the FWS acquired the former gunnery ranges from the Army, adding another 8,486 acres to its holdings. Before the war, this acreage had been acquired by the Army via condemnation proceedings. The southern portion of 6,717.5 acres had been the Comos Ranch owned by Lawrence Jones, and the northern portion of 1,768.5 acres had been part of the Chapin Ranch, owned by Ethel Chapin. Later in 1949, the FWS acquired two properties from J.W. Luttes, which added nearly 19,000 acres to the refuge. In 1955, FWS acquired the Cramer tract, consisting of 2,277.96 acres covering the west side of Buena Vista Road west to Laguna Atascosa, north to where Lakeside Drive currently exists, and south to South Boundary Road. The Cramer tract included a ranch house and several outbuildings, visible on historic aerial photographs and topographic maps, which the FWS anticipated using for its refuge headquarters, although records were not clear if it was ever used for this purpose. Prior to this time, the refuge office was in the Post Office Building in San Benito. The ranch buildings were demolished in the 1970s. This is now the location of the NWR visitor center and two small parking lots on the east side of Buena Vista Road.

Subsequent additions followed, the largest being a 1962 acquisition of 2,800 acres from J.W. Luttes. Most of the acquisitions between the late 1950s and the late twentieth century were relatively small properties. Several were enclaves within the 1962 Luttes tract and served to unify refuge holdings (Radabagh, 1997).

Laguna Atascosa NWR today encompasses more than 97,000 acres, a portion of which are open to the public (U.S. Fish and Wildlife Service 2017). Approximately half of the current acreage was acquired, with the help of the Nature Conservancy in the early twenty-first century. These recent additions are on Padre Island and to the south in the Bahia Grande area between Laguna Vista and Brownsville. Lands open to the public are all within the boundaries of the mid-century acquisitions. The original emphasis on waterfowl and migratory birds has expanded to include the conservation of endangered species and management for shorebirds. Today, the refuge is a premiere bird-watching destination with more recorded species of birds than any other refuge in the National Wildlife Refuge System. It is also home to the largest American population of the endangered ocelots (U.S. Fish and Wildlife Service 2017).

## 3 Methods

### 3.1 Previous Investigations near the APE

A review of the THC's Archeological Sites Atlas (Atlas) indicates that there has been one cultural resources survey conducted and six archaeological sites recorded within a one-mile buffer of the APE (Figure 3-1). None of the archaeological sites overlap with the APE; however, one site (41CF115) is located in close proximity of the APE. Additionally, one cemetery (El Granjeno Cemetery) is located within the one-mile buffer, but well outside the proposed impacts for the current project. No Recorded Texas Historical Landmarks, Official Texas Historical Markers, NRHP properties or districts, or other cultural resources were identified within the search radius during the Atlas search.

The previous survey (Atlas ID 8500000593), conducted in 1974, is located within approximately 0.9 mile of the APE. No additional information was available on the survey via the Atlas. The six previously recorded archaeological sites are summarized in Table 3-1 below.

**Table 3-1. Previously recorded archaeological sites within one mile of the APE**

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The most relevant site for the current undertaking is site 41CF115 due to its close proximity to the APE. This site was recorded in 1979 and consisted of a campsite/midden of unknown prehistoric age located along the Resaca de los Cuates, near the Lagunas Atascosa NWR Visitor Center (see Figure 3-1). The site's contents included an extensive area of shell, bone, and lithics eroding out of a low ridgeline. The site recorders noted that the site had been surface collected and possibly potted. Site 41CF115 was recommended as not eligible for inclusion in the NRHP or as a SAL in 1979, and no further work was recommended.

A second site of note is 41CF114, a prehistoric campsite with a possible burial component located west of the APE. The 1979 site form states that the site is a scatter of shell (including many worked specimens) and bone eroding out of a low ridge from a remnant Resaca de los Cuates meander. Human skeletal remains are noted, but no details are provided on the Atlas site form. In 1979, site 41CF114 was recommended not eligible for inclusion in the NRHP or as a SAL. No further investigations were recommended.

The final notable site identified during the background investigation is site 41CF111, also known as the Unland Site. The site consisted of six isolated prehistoric burials located approximately west of the APE. The burials were uncovered during grading of a road for the Laguna Atascosa Wildlife Refuge in 1976. The burials were crushed and disturbed by the grader. According to the informant, the human remains were found in association with lithics (projectile points and scrapers), shell, animal bone, clay balls, and potsherds. The burials were fully excavated and documented in 1976. The NRHP eligibility status and SAL status of 41CF111 is unknown.

As noted above, one cemetery, the El Granjeno Cemetery (CF-C064), is located within one mile of the APE. The cemetery is situated approximately north-northwest of the APE within the Laguna Atascosa NWR. The cemetery is the Vasquez Family Cemetery and is accessible via a walking trail north of the Laguna Atascosa NWR visitor center. The cemetery is well outside of the current APE and will not be impacted by the proposed project.

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Figure 3-1. Aerial photographic map showing cultural resources and previous surveys within one mile of the APE

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## 3.2 Survey Methods

### 3.2.1 Archaeological Survey Methods

HDR conducted an intensive survey with shovel testing and pedestrian survey of the entire 2.7-mile APE along Buena Vista Road within the 65-foot wide existing road ROW plus an additional two feet outside of the existing ROW where the APE was adjacent to the Laguna Atascosa NWR. Systematic shovel testing was conducted within the APE according to the survey standards set forth by the THC for linear projects with survey corridors measuring 100 feet or less, requiring a minimum of 16 shovel tests per mile. Therefore, a minimum of 44 shovel tests were needed. The shovel tests were excavated along a single 100-m transect (staggered on either side of the existing roadway) for the entire length of the 2.7-mile APE.

Each shovel test was approximately 30 centimeters (cm; 12 inches [in]) in diameter and was excavated in 20-cm (8-in) arbitrary levels to a depth of 80 cm (32 in) below surface (bs) or until sterile subsoil was encountered. While project-related impacts near the culverts are anticipated to extend below this depth (approximately 3.5 ft [1.1 m] below surface), all shovel tests were terminated prior to reaching 80 cmbs (32 inbs) due to encounter with subsoil or disturbance. The soil removed was screened through 0.635-cm (0.25-in) mesh screen, and soil descriptions followed the guidelines and terminology established by the National Soil Survey Center (Schoeneberger et al. 2002). Soil colors were recorded using a Munsell Soil Color Chart. All excavated shovel tests were recorded on shovel test forms which note depth, soil matrix descriptions, and cultural materials recovered. 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. All shovel test locations were recorded using a sub-meter Global Positioning System (GPS) unit.

### 3.2.2 Architectural Survey Methods

HDR architectural historian Kristin Morgan conducted fieldwork July 5-6, 2017, taking photographs of historic resources located within the APE. She also compiled survey results, conducted research, and co-authored this report. Dr. Morgan meets the Secretary of the Interior's Professional Qualification Standards for History and Architectural History.

The survey of architectural resources included notation of general exterior architectural attributes and materials, plan, character-defining features, additions and other modifications, and general condition. When possible, at least two exterior photographs were taken of each resource. Survey of the linear resource of Buena Vista Road assessed character-defining features such as material, alignment, and improvements such as shoulders and culverts. Photographs were taken at both ends of the APE along Buena Vista Road, and at regular points along its length, and photographs were taken of the related improvements. Photographs were also taken of the resources in their larger context to help understand their relationship to the overall setting. All photography was completed with cameras using at least 12-megapixel resolution.

HDR conducted local repository research at Laguna Atascosa National Wildlife Refuge on July 5, 2017, and at the Brownsville Public Library (Main Branch) and the Harlingen Public Library on July 6, 2017. Materials consulted include local and state histories, historic maps and photographs, and the records of the wildlife refuge, which included

records of land acquisitions and annual narratives submitted to the U.S. Department of the Interior. Additional research was conducted online after fieldwork was complete, including aerial photography dating back to 1953, newspaper archives, and historic maps.

## 4 Results

### 4.1 Archaeological Results

The existing Buena Vista Road ROW in which the APE falls (Figure 4-1 through Figure 4-4) contains the existing 20-foot-wide roadway (Figure 4-5 and Figure 4-6), a road crown that becomes more pronounced from north to south (see Figure 4-7 and Figure 4-8), shallow drainage ditches on either side of the roadway (except at the northern end of the APE) (Figure 4-9), and low-lying push piles on the outer edge of both sides of the existing ROW (Figure 4-10 and Figure 4-11; see Figure 4-9). In most locations, the push piles extend outside of the existing ROW. Additionally, a buried AT&T cable line runs along the outer edge of the eastern ROW for the entire length of the APE (Figure 4-12). Overall, the APE was found in a highly disturbed setting due to the construction and maintenance of the roadway since at least 1929 when the road first appears on maps. Recent construction within the southernmost 0.15 mile of the APE has likely destroyed the integrity of any deposits in this area (Figure 4-7 and Figure 4-8; see Figure 4-1 through Figure 4-4).

The pedestrian survey and staggered 100-m shovel test transect was initiated at the northern end of the APE near the intersection of Buena Vista Road and Lake Side Drive and progressed to the south, concluding near the intersection of Buena Vista Road and General Brant Road (see Figure 4-1). Initially, shovel tests were placed just outside of the drainage ditches toward the outside edge of the ROW to maintain as much spacing as possible from existing disturbances such as the road crown, push piles, and the buried AT&T cable. Soils near the drainages were found to exhibit significant cracking from shrinking and swelling of clay during the continuous wetting and drying of the drainages. Given the loss of integrity associated with this process, shovel tests were eventually placed several feet closer to the outer edge of the ROW away from the ditches.

The soils encountered during shovel testing exhibited low to moderate integrity, and soil profiles varied widely throughout the APE. The majority of the shovel tests exhibited soil profiles similar to the Laredo and Olmito series soils with termination of excavation units typically occurring due to encounter with clay subsoil with calcium carbonate (Bk Horizons). Termination depths typically ranged between 30 and 50 cmbs (12 and 20 inbs). A typical profile consisted of very dark gray (10YR 3/1) compact clay intermixed with road gravels between 0 and 35 cmbs (0 and 14 inbs)) underlain by brown (10YR 3/2) compact silty clay with calcium carbonate threads (Figure 4-13). Calcium carbonate was also encountered just below the surface in several shovel tests indicating that the upper portion of the soil matrix has likely been truncated in some areas (Figure 4-14). Road gravels were also commonly found in the upper 30–40 cm (12–16 in) and provide additional evidence of previous subsurface disturbance (Figure 4-15). All shovel tests

were terminated prior to reaching 80 cmbs (32 inbs) due to encounter with subsoil or disturbance.

Several shovel tests were also excavated within the 2-foot portion of the APE falling outside of the existing ROW adjacent to the Laguna Atascosa NWR. It was determined that this additional 2 feet consistently fell within the low-lying push pile described above. Loose, unvegetated soil and shallowly buried modern trash was observed along the push pile, and disturbed soil profiles were consistently encountered. It was concluded that this small portion of the APE falling outside of the existing ROW has a very low potential of containing intact cultural materials.

At the conclusion of the survey, a total of 44 shovel tests had been excavated, and no cultural materials had been recovered within shovel tests; however, a scatter of seven oyster shell fragments was found on the ground surface within the eastern ROW at the intersection of Buena Vista Road and Ocelot Road (Figure 4-16 and Figure 4-17). The location is approximately east of Site 41CF115 which was recorded as a campsite yielding bone as well as shell (see Section 3.1). A shovel test was excavated immediately adjacent to the location of the surface find (Figure 4-18) and an additional shovel test was placed immediately across the roadway within the western ROW. Both shovel tests were negative for cultural materials, and the inconsistent soil profiles exhibited within the two shovel tests suggests that the area retains little integrity and that the oyster shell is likely out of context. Due to the lack of associated cultural material and distance of the scatter from 41CF115, it is unclear if the shell fragments are archaeological or modern deposits. Overall, no definitive cultural materials were identified during the intensive survey.

The survey concluded at the intersection of Buena Vista Road and General Brant Road where recent construction was evident within the entire existing ROW. Subsurface disturbance was confirmed at this location via a single shovel test, but the area was ultimately photo-documented but not intensively surveyed. It is clear that potentially intact deposits were destroyed within the depths to be impacted by the current project.

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Figure 4-1. Aerial photographic map of the APE showing survey results (Page 1 of 4)

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Figure 4-2. Aerial photographic map of the APE showing survey results (Page 2 of 4)

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Figure 4-3. Aerial photographic map of the APE showing survey results (Page 3 of 4)

CONFIDENTIAL INFORMATION

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Figure 4-4. Aerial photographic map of the APE showing survey results (Page 4 of 4)

CONFIDENTIAL INFORMATION

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**Figure 4-5. Overview of the northern APE, facing south (note the minimal road crown and absence of drainage ditch)**



**Figure 4-6. Overview of the northern APE, facing south**





**Figure 4-7. Overview of the southern APE showing recent disturbance, facing south (note the pronounced road crown and drainage ditch)**



**Figure 4-8. Overview of the southern APE showing recent disturbance, facing south (note the pronounced road crown)**





**Figure 4-9. Overview of the central APE, facing south (note the road crown, drainage ditch, and push pile along the outer edge of the ROW)**



**Figure 4-10. Photograph showing the push pile along the outer edge of the ROW, facing north**





**Figure 4-11. Photograph showing the push pile along the outer edge of the ROW, facing northwest (note the loose soil and lack of vegetation suggesting recent disturbance)**



**Figure 4-12. Buried utility that runs along the eastern edge of the ROW for entire length of the APE, facing south**





**Figure 4-13. Photograph showing the typical soil profile encountered within the APE**



**Figure 4-14. Disturbed shovel test profile showing abundant calcium carbonate just below the ground surface, facing down**





**Figure 4-15. Representative shovel test profile showing the compact clay intermixed with road gravels**



**Figure 4-16. Overview of the oyster shell surface find and the shovel test excavated immediately adjacent to the shell fragments, facing north**





**Figure 4-17. Photograph showing the oyster shell fragments found on the ground surface, facing down**



**Figure 4-18. Soil profile of the shovel test excavated near the oyster shell, facing northeast (note the soil cracking indicating disturbance due to the shrinking and swelling of the clay matrix)**



## 4.2 Architectural Results

There are six historic resources built prior to 1972 within the APE: Buena Vista Road, two vehicular access gates to unpaved refuge roads, and three culverts. Two of the culverts span Buena Vista Road and one spans an unpaved, gated access road to the refuge.



Figure 4-19. Architectural survey results

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#### 4.2.1 HR-01, Buena Vista Road

HR-01, Buena Vista Road is indicated on maps as early as 1929, though at that time it was not yet paved (USGS 1929). By 1955, Buena Vista Road had been paved and is shown on maps as a medium-duty road. A medium-duty road indicated that it was paved, and at least twenty-two feet in width to permit passage of vehicles in both directions. Currently, the road is paved with asphalt approximately 23 feet in width without lane markings (Figure 4-20 through Figure 4-23). The ROW is approximately 23 feet from the edge of the roadway. At the time of the field survey, Buena Vista Road was being realigned at the south end of the project area, as the intersection with General Brant Road (FM 106) is being redesigned (see Figure 4-21).

**Figure 4-20. HR-01, Buena Vista Road, facing south from Lakeside Drive**



**Figure 4-21. HR-01, Buena Vista Road, facing south to intersection with General Brant Road (FM 106)**



**Figure 4-22. HR-01, Buena Vista Road, facing north from South Boundary Road**





**Figure 4-23. HR-01, Buena Vista Road, facing south from South Boundary Road**



Although HR-01 is located adjacent to several firing ranges that were part of the World War II-era Harlingen Aerial Gunnery School, no documentation was found to support an association between improvements to Buena Vista Road and the establishment of the firing ranges. Research also did not indicate any association between HR-01 and the themes or events identified in historic contexts relevant to road and highway resources in Texas (Texas Historical Commission 2013; Jensen 2015). It is therefore not significant under Criterion A. Research did not indicate that Buena Vista Road is associated with any individual important in local, state, or national history (Criterion B). It is not distinguished by any design or construction materials, nor is it likely to contribute to further knowledge and historical study (Criteria C and D). HR-01, Buena Vista Road, is therefore recommended not eligible for listing in the NRHP as a historic road resource due to lack of significance.

#### 4.2.2 HR-02 and HR-03, Access Gates

There are two historic-age vehicular access gates to unpaved refuge roads within the project area. One gate controls access to South Boundary Road (HR-02) and the second gate controls access to an unpaved and unnamed road into the Bayside section of the refuge (HR-03). Both consist of round timber posts and timber slat fencing on either side of a swinging 6-part steel-tube gate. The steel sections of the gates are not original. According to records at the Laguna Atascosa NWR office, the South Boundary Road was completed between September and December 1955, and a cedar post fence with steel gate was installed. Similar fencing and gate projects were carried out at other locations throughout the 1950s. Research did not indicate if the current structures are original, but HR-02 (Figure 4-24) and HR-03 (Figure 4-25) both exhibit form, some materials, and wear to match mid-nineteenth century construction.



**Figure 4-24. HR-02, gate on South Boundary Road, facing west**



**Figure 4-25. HR-03, gate on unpaved refuge access road to bayside section, facing northeast**





HR-02 and HR-03 are not known to be associated with any individuals, events, or themes important in local, state, or national history (Criteria A and B). They are standard, ubiquitous structures, not distinguished by design or construction materials (Criterion C). They are unlikely to yield any new information important to the past, and therefore are not significant under Criterion D. Therefore, HR-02 and HR-03 are recommended not eligible for NRHP listing due to lack of significance.

#### 4.2.3 HR-04 – HR-06, Culverts

There are three culverts located in the APE which appear to be of approximately the same age, c. early 1950s. HR-04 is located about 10 feet west of HR-03, approximately 0.84 miles south of the intersection with Lakeside Drive that marks the northern end of the APE. HR-05 is located approximately 0.8 mile south of the intersection with Lakeside Drive. HR-06 is located approximately 0.7 mile north of the intersection with General Brant Road. None of the culverts have stamping or other markings to indicate when the road improvements were undertaken. HR-04 (Figure 4-26 and Figure 4-27) was likely built when the access road off Buena Vista Road was constructed in the early 1950s. Based on similar design, form, and wear, HR-05 (Figure 4-28 and Figure 4-29) and HR-06 (Figure 4-30 and Figure 4-31) were likely installed at the same time as HR-04. All three resources are concrete pipe culverts with a chamfered headwall and wingwalls.

**Figure 4-26. HR-04, culvert, south side of culvert, facing north**





**Figure 4-27. HR-04, culvert, north side of culvert, facing south**



**Figure 4-28. HR-05, culvert, east side of culvert, facing southwest**





**Figure 4-29. HR-05, culvert, west side of culvert, facing southeast**



**Figure 4-30. HR-06, culvert, east side of culvert, facing west**





**Figure 4-31. HR-06, culvert, west side of culvert, facing east**



Research did not indicate the culverts have been associated with any individuals, groups, or themes significant in local, state, or national history (Criteria A and B). The structures are not significant under Criterion C as they are not distinguished by any design or construction specific to a period, or unique to the region or type of resource as outlined in the Texas Historical Commission guidelines. They are unlikely to yield new information important to historical study, and are not significant under Criterion D. Therefore, HR-04, HR-05, and HR-06 are recommended not eligible for listing in the NRHP due to lack of significance.

HR-01, Buena Vista Road, was originally constructed in the early twentieth century with minimal improvements. It was not paved and improved until the mid-twentieth century. At that time, the roadway was widened and Buena Vista Road was paved. HR-04, HR-05, and HR-06 were likely constructed at the same time as these improvements on Buena Vista Road were completed. Research did not indicate that this section of Buena Vista Road is associated with any individuals, groups, or themes significant in local, state, or national history (Criteria A and B). Neither the roadway nor its related resources are associated with the work of a master, nor does the alignment, slope, design, shape, width, or paving date to the origins of the road or a significant period or event (Criterion C). The roadway is unlikely to yield important information about the past (Criterion D). Therefore, HR-01, HR-04, HR-05, and HR-06 are recommended not eligible for listing in the NRHP as contributing resources to any historic district due to lack of significance.

## 5 Summary and Recommendations

### 5.1 National Register 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).

#### 5.1.1 Criteria for Evaluation of Eligibility

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.

### 5.1.2 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 criteria (Rule 26.10) is met:

- (1) the site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
- (2) the site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;
- (3) the site possesses unique or rare attributes concerning Texas prehistory and/or history;
- (4) the study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; and
- (5) there is a high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively, further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected.

Buildings, structures, cultural landscapes, and non-archaeological sites, objects, and districts may be designated as an SAL, provided that the following criteria (Rule 26.19) 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 National Register of Historic Places, either individually, or as a contributing property within a historic district. Contributing status may be determined by the Keeper of the National Register or the executive director of the commission.

## 5.2 Conclusion and Recommendation Summary

During the course of the archaeological field survey, the APE was subjected to pedestrian survey, shovel testing, and photo-documentation. The survey resulted in a 100 percent pedestrian walkover and a staggered 100-m shovel test transect for the entire length of the APE. A total of 44 shovel tests were excavated, none of which yielded cultural materials. All shovel tests were terminated prior to reaching 80 cmbs (32 inbs) due to encounter with subsoil or disturbance. A scatter of seven oyster shell fragments was identified on the ground surface within the eastern ROW at the intersection of Road and Road. The location of the scatter is approximately east of Site 41CF115, which consists of a campsite yielding bone, as well as shell. Pedestrian survey and shovel testing near the scatter encountered disturbed soils and no cultural material. Due to the lack of associated cultural material and distance of the scatter from 41CF115, it is unclear if the shell fragments are archaeological or modern deposits. Overall, no definitive cultural materials were identified during the intensive survey.

During the course of the field survey for historic resources, six resources built prior to 1972 were identified within the APE: Buena Vista Road (HR-01), two vehicular access gates onto unpaved refuge roads (HR-02 and HR-03), and three culverts (HR-04 – HR-06). Buena Vista Road was constructed in the 1920s and paved during the mid-twentieth century at approximately the same time as the other resources were built, c. 1950s. The section of Buena Vista Road within the APE and the culverts associated with it, are recommended not eligible individually and not eligible as part of a potential historic road. The gates are also recommended not eligible.

In accordance with and 13 TAC 26.12, no further cultural resources investigations are recommended for the presently-defined APE, and the proposed Buena Vista Road improvements project may proceed. However, 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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