

**TxDOT Roadside Chat** | Archeology Report 2019

Presented at the  
90th Annual Meeting  
of the Texas  
Archeological Society (TAS)





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Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties. The Federal Highway Administration delegated most of their responsibility for Section 106 compliance to TxDOT.

TxDOT's Cultural Resources Management (CRM) Section conducts these reviews on behalf of 25 TxDOT Districts around the state. The CRM section is comprised of the Archeological Studies and Historical Studies Branches.

TxDOT works under a programmatic agreement with the Advisory Council on Historic Preservation, the Federal Highway Administration and the Texas State Historic Preservation Office (SHPO) regarding the implementation of transportation undertakings. This agreement allows TxDOT to efficiently meet the Sec. 106 requirements for many simple projects that have a low risk for impacts to cultural resources.

## What We Do

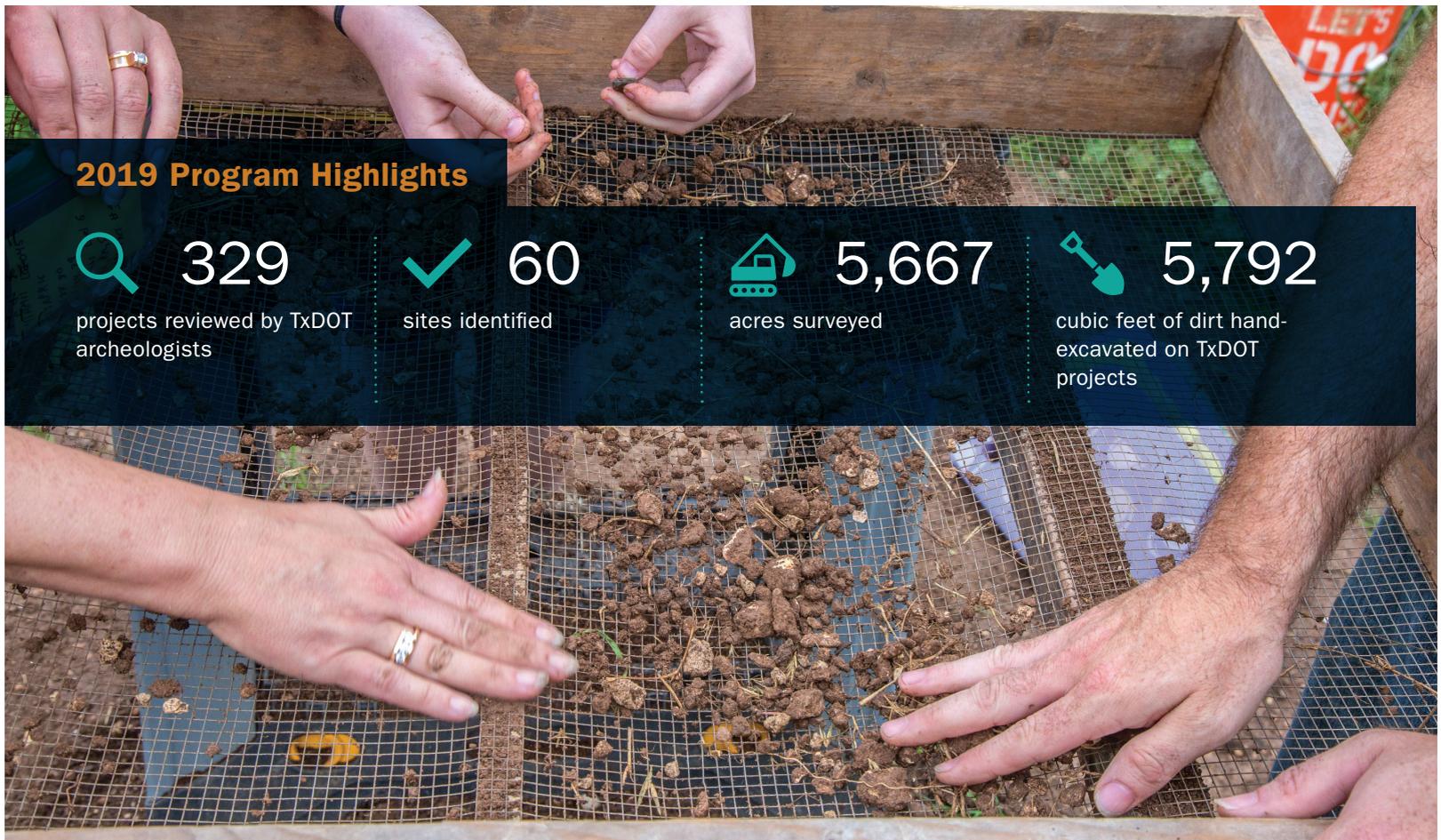
### TxDOT excavated 31 major archeological sites in the past 18 years.

The Texas Department of Transportation (TxDOT) is the single-largest permittee of archeology in Texas. From surveys to data recovery, TxDOT has discovered and uncovered some of the most significant archeological sites in Texas as it plans around 80,000 miles of roadway.

TxDOT Archeologists follow Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas (ACT) to identify, evaluate and find preservation outcomes for sites. TxDOT's program comprises 11 archeologists who review hundreds of projects every year in conjunction with

consultants. The program works collaboratively with the Texas Historical Commission, Federally-Recognized Native American Tribes and other consulting parties during this process to determine how to avoid, minimize or mitigate the impact of road construction on archeological sites.

TxDOT Archeology uses statistical analysis and modeling, geomorphology, remote sensing and geographic information systems to lead archeological studies in the state.



# Visit TxDOT's Sessions at the 90<sup>th</sup> Annual Meeting of the TAS

## FRIDAY

### **Dig Deeper into TxDOT Archeology: A Workshop on How to Engage with TxDOT on Archeology Projects**

1 – 3 p.m., Yellow Rose B

TxDOT is responsible for the majority of permitted archeology across the state. Through the historic preservation process, you can get involved. TxDOT's transportation process is dependent on public participation, which includes the process of finding and managing archeological sites in Texas. TxDOT's work with the community on archeological investigations is guided by the National Historic Preservation Act. In this workshop, TxDOT will provide an update about upcoming TxDOT projects, educate attendees about their role in the historic preservation process, and solicit feedback on what issues/topics are most important when it comes to TxDOT's archeological projects and programs. Opening up discussions about TxDOT's archeological projects helps incorporate the community's input into our project in the spirit of historic preservation.

### **Road to Collaboration: Native American Perspectives on Texas Archeology**

3 – 5 p.m., Yellow Rose B

Texas has a long and rich cultural history rooted in the first inhabitants of the area: Native Americans. Today, Native American tribes continue to have an interest in the state's natural and cultural resources. Per federal historic preservation laws TxDOT conducts a majority of permitted archeology in the state, consults with tribes on transportation planning and projects to listen to and address their concerns. In this special Listening Session, representatives from Federally-Recognized Native American Tribes that consult with TxDOT will discuss their perspectives on archeology in Texas. While Texas has three resident tribes, there are many more tribes who have indigenous, ancestral and/or historic ties to this state. While archeological resources provide a glimpse into Native culture, there are more ways that tribes relate to the land. This session may cover topics such as tribal history in Texas, how archeological sites are interpreted, perspectives on the study of Native American Graves Protection and Repatriation Act (NAGPRA)-related objects, tribal preservation projects and more.

## SATURDAY

### **The 2019 TAS Field School at Palo Duro Canyon State Park: Introduction, Background, and Objectives**

Hanselka, J. Kevin and Anthony S. Lyle.

9 – 9:15 a.m., Yellow Rose C (Red Stone and Bison Bone: The 2019 TAS Field School at Palo Duro Canyon State Park)

### **Update on the Analysis of the A.S. Mann Site (41AN201), a Late Caddo Village in the Upper Neches River Valley, Anderson County.**

Waldo Troell, David Kelley, Erin Phillips, August G. Costa, Leslie L. Bush, Melanie Nichols, Timothy K. Perttula.

4 – 4:15 p.m., Yellow Rose A (Gulf Coast to High Plains)

## POSTER SESSION

### **TxDOT Excavations at the Hardeman Midden Site (41DN612)**

Jen Anderson, Tina Nielsen, and Kevin Hanselka.  
Saturday 10 a.m. – Noon

# Digging Deeper with TxDOT Archeology



## Mason, TX | 41MS78

In 2019, TxDOT worked with SWCA, Inc. to excavate more than 120 cubic meters of site deposits within six weeks in Mason County. 41MS78 posed multiple challenges because of its location on a busy, narrow corridor with deeply buried deposits on steep slopes.

This site was occupied numerous times from the Paleolithic period through the Late Prehistoric era. Archeologists excavated Marcos, Marshall, Montell, Early Triangular, Andice, and Martindale points. The ongoing analysis of samples from the site will provide an insight into the climate and environment of the Texas Hill Country and how people interacted with each other along the Llano River.

## The Mercado Site | 41TR203

The Mercado Site is within the path of the North Tarrant Expressway (IH 35W) in Fort Worth. Located along the north bank of the West Fork of the Trinity River, this site contains archeological deposits from the Late Archaic through the Late Prehistoric period.

TxDOT and ACI Consulting, Inc. excavated 37 cubic meters of these deposits and recorded 44 features. The features reflected different cooking techniques and foods. People at this site once hunted large and small game, collected and roasted mussels and constructed rock-lined hearths and ovens.

Archeologists also uncovered Gary points, estimated to have appeared approximately 2,500 years ago. People at this site might have been early adopters of this point style. Archeologists recovered them in buried, isolatable and dated contexts. The high level of preservation and many radiocarbon dates make the Mercado Site an excellent standard for comparison with other regional sites.



## Archeology Spotlight



### Chris Ringstaff's Experimental Archeology

It takes TxDOT Archeologist Chris Ringstaff an average of 50 minutes to replicate a stone tool, like a dart point or knife. Each replication produces approximately 400 flakes, the debris resulting from stone tool making. After making hundreds of stone tool replicas, why record the time and count the flakes? Experimental archeology reconstructs ancient activities to better understand how past people conducted the activities in question.

Ringstaff did his experiments to better understand the piles of flakes that he observed at some archeological sites in South Texas. From the number of flakes found in these piles, he could infer the amount of time that prehistoric flint knappers spent on their craft at that spot. The amount of

time may relate to the intention of the tool making activity. Were those tool makers spending a little time on routine maintenance of their tool kit or spending a lot of time to gear up for important activities?

Flintknapping takes time, practice, precision and grit. Ringstaff not only recreates tools to apply his findings to archeological research, but he also shares his practice to communicate archeological concepts to diverse audiences. The process of breaking rocks with one's bare hands is both physical and visual, which holds the attention of children and adults alike. Younger audiences can see how stone artifacts are used, and adult audiences gain a better understanding of how archeologists use artifacts to interpret human behavior.



## Fast Fact

**Before deciding to excavate a site, TxDOT must determine whether the site is eligible for preservation: this process is called testing.**

Federal regulations define the criteria that archeologists use to decide whether a site is eligible for preservation and listing on the National Register of Historic Places. The archeologists' evaluations are done in consultation with the Texas Historical Commission, Federally-Recognized Tribes and other stakeholders who might have pertinent knowledge or expertise.



## Ongoing Analysis

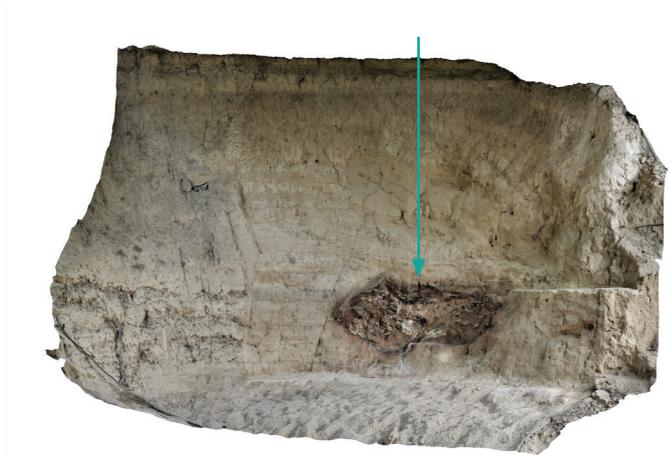
### Casa Frio Site 41FR116 | South Texas

The Casa Frio Site in Frio County comprised a burial in what appears to be a burned prehistoric pit house. A TxDOT bridge inspector performing a routine inspection discovered the burial eroding from the banks of the Frio River in the summer of 2018 (*Figure 1*).

TxDOT worked with tribes, the Forensic Anthropology Center at Texas State University (FACTS), AmaTerra Environmental and the Texas Historical Commission to address the discovery. Consulting geoarcheologist Dr. Charles Frederick and several professional archeologists documented the pit house's construction and context.

Pit houses are virtually unknown from the region. This pit house appears to have been set along a slope by the river. The pit house burned, causing it to collapse. The fire fused large volumes of the structure's roof into masses of a ceramic-like material called burned daub (*Figure 2*). These fragments represent a thick mud plaster applied to a network of branches that formed the roof's support framework. Although the wood was almost completely consumed in the fire, the daub preserved impressions of these sticks that can be used to gauge their size and arrangement (*Figure 3*).

Dr. Frederick is currently conducting a detailed description and analysis of the recovered daub, which represents only a small volume of the material that the structure originally contained. In addition, TxDOT's team worked with The High-Resolution X-ray Computed Tomography Facility at The University of Texas at Austin to obtain highly detailed micro-CT images of selected daub fragments. Collectively, these investigations should allow us to better understand the construction of the roof of this structure and the nature of the catastrophic event that destroyed it.



(Figure 1)



(Figure 2)



(Figure 3)



### 41NU114 | Driscoll, Texas

TxDOT archeologists uncovered a buried surface of burned clay, shell, and non-human bone during investigations prior to the construction of US 77 in Driscoll, Texas. The deposits were associated with a previously recorded site, 41NU114. TxDOT and AmaTerra excavated 14 cubic meters and screened deposits from November 2018 to March 2019.

After expanding the initial trenching, archeologists exposed two buried features that consisted of fired, fist-size clay balls. Internal features of charcoal, bone and fired clay suggest the features could be similar to burned rock middens which were created by repeated cooking episodes. Abundant bone found at the site suggests that deer and possibly bison were cooked in the features.

Lithic material was scarce and diagnostic points indicate Middle Archaic to Late Prehistoric occupations. Initial radiocarbon dates are consistent with this interpretation, ranging from approximately 5,200 years ago to 1,000 years ago. Archeologists also discovered a prehistoric burial so TxDOT worked with Federally-Recognized Tribes to address and treat the sensitive areas of the site. Tribal monitors participated in the investigation. TxDOT used two unique approaches using non-invasive techniques:

- Remote sensing by Dr. Chet Walker — this included ground penetrating radar used to investigate the remainder of the site prior to continued excavation; and,
- Cadaver-sniffing dog investigations with Dr. Ben Alexander with the FACTS investigated the unexcavated areas. The dog signaled an area that was found to have a second burial. At the request of the consulting tribes, the individuals were left in place, and no analysis was conducted. The burials will be protected during and after construction.

In ongoing analyses, TxDOT will examine the use of clay balls as a substitute for rocks in earth oven cooking, examine the diversity of diet through faunal analyses, and examine site formation processes and the creation of the midden through geomorphic analyses.



## Discoveries Beneath the Bridge in Denton County



### 41DN612 | Denton County, Texas

The remnants of a centuries-old site came as a surprise to the TxDOT project team during a routine bridge construction project on FM 407 in Denton County.

Bridge projects like the Dallas District's FM 407 job don't usually present unexpected finds. But, during this project, a massive sheet midden was unearthed. In the midst of one of the wettest springs on record in North Texas, the project team and the Denton Area Office rose to the occasion by working together to keep the project on track.

From April through June 2019, archeologists investigated the site. On the last day of the survey in January 2019, Raba Kistner archeologists found remnants of burned rock, animal bones and mussel shells about three feet below the surface. Then, from April through June 2019, archeologists from TxDOT and SWCA, Inc. further investigated the site. To keep the project on track while also respecting the site's integrity, TxDOT sought counsel from the Texas Historical Commission (THC) and Federally-Recognized Tribes to determine next steps. Because sites such as this one are rare, TxDOT decided to investigate it further.

To further explore the features identified during the initial survey, the team excavated a large block followed by

several backhoe trenches surrounding the feature. Once the excavation got underway, the TxDOT team discovered that the feature was actually a massive burned-rock midden. TxDOT's archeological team estimated the midden may be up to several thousand years old. The team also searched the area for signs of burials, structures and tools but did not find any other features.

With the constant adaptability, cooperation and coordination between team members, TxDOT maneuvered through the various project obstacles with grace. FM 407 construction has since proceeded according to schedule with no delays as a result of the archeological finds and is projected to be completed in 2020.

TxDOT will supplement the excavations with additional mitigation by developing and implementing law enforcement training in NAGPRA and culturally competent procedures when burials are encountered during TxDOT projects. The training is intended to educate law enforcement officers on the policies and procedures for working with culturally sensitive burials and keeping burial discoveries out of the public eye.

# The Road to Preserving Texas History

## TxDOT's Role in Historic Preservation

Before TxDOT starts construction of roads and bridges, TxDOT historians and archeologists look at how those projects affect important historic places along the roadside.

State and federal laws like the National Historic Preservation Act (NHPA) and Antiquities Code of Texas can protect:

- Historic Buildings and Bridges
- Archeological Sites and Cemeteries
- Sacred/Religious Landmarks
- Historic Objects and Landscapes

### Step 1: NOTIFY

TxDOT can notify you when it starts a project that might impact historic resources. *Do you have interest in the project location?*



### Step 2: IDENTIFY

Archeologists will evaluate whether sites have been in the project area or similar settings, and they consider the potential for site preservation. *Do you know of sites near the project area? What history, landscapes or features are important to this region?*



### Step 3: EVALUATE

TxDOT works with Federally-Recognized Tribes and THC to determine if the site will add the the archeological record in a significant way. *Do you have expertise you want to share or historical facts that can contribute to its evaluation?*



### Step 4: DECIDE

TxDOT determines the best way to balance preservation and progress. *Through data recovery and other activities, how can we preserve its stories for future generations?*



## Get Involved with TxDOT Archeology



**TxDOT holds public outreach events to get feedback on projects. We also want to hear about the resources that may be impacted by our projects. Help us identify what is important in your community.**

**1.** You can comment on a project during the historic preservation process (also known as Section 106 of the NHPA). Email [beyondtheroad@txdot.gov](mailto:beyondtheroad@txdot.gov).

**2.** Consulting Parties – “**special stakeholders**” – have vested interests in historic properties and have a special role.

**3. Attend a meeting!** Learn about a project and provide your comments on design, cultural, economic, historical and environmental impacts.

**4.** Check out our project tracker – on this online interactive map, you can check the status of current projects in your area, including how much projects cost and when you can expect them to be completed. Visit [www.txdot.gov](http://www.txdot.gov), Keyword: “**Project Tracker.**”

**5.** Scan this QR code to access our **Public Involvement** page, which lists projects that need your feedback!



**6.** Follow TxDOT on social media!



@TXDOT

## Partnerships and Outreach



### We Dig You!

Section 106 of the National Historic Preservation Act mandates consultation and public involvement on projects. TxDOT works with the Texas Historical Commission, communities and Federally-Recognized Tribes to determine how to manage historic sites that could be impacted by transportation projects.

There is an inherent public interest in archeology, history and the stories of people and the past. We want to uncover those stories that happen Beyond the Road. TxDOT is proud to partner with these agencies and organizations to spread the word about Texas archeology:

### Partners

**Bob Bullock State History Museum**  
**Center for Archeological Research**  
**Center for Archeological Studies**  
**Federally-Recognized Tribes**  
**Houston Archeological Society**  
**Houston Museum of Natural Science**  
**Index of Texas Archeology**  
**Institute of Texan Cultures**  
**Mayborn Museum**  
**Stephen F. Austin University**  
**Texas State University**  
**Texas Archeological Society (TAS) and TAS Field School**  
**Texas Archeological Research Laboratory**  
**Texas Beyond History**  
**Texas Historical Commission**  
**Texas Memorial Museum**  
**Texas Military Department**  
**Texas Parks and Wildlife Department**  
**Witte Museum**



