

Journal of the North Texas Archeological Society

Volume 3 - 2024

www.ntxas.org

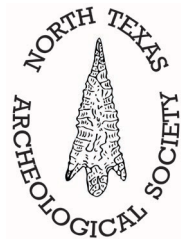


PAPERS IN HONOR OF S. ALAN SKINNER

JOURNAL OF THE NORTH TEXAS ARCHEOLOGICAL SOCIETY

Volume 3 – 2024

Papers in Honor of S. Alan Skinner



North Texas Archeological Society

The North Texas Archeological Society (NTAS) is a non-profit organization dedicated to the promotion of archeological research, the preservation of archeological materials and sites, the interpretation and publication of the data pertaining thereto, and educating the general public about archeology.

Started in 1955 the society operated as the Tarrant County Archeological Society until becoming NTAS in 2019.

Membership in the society is for the calendar year. Membership applications may be obtained on the society's website at ntxas.org/join-and-renew.

2023-2024 NTAS Executive Committee at time of printing (November 2024)

<i>President</i>	Allen Rutherford
<i>Vice President</i>	Stephen Lowe
<i>Vice President of Projects</i>	Brian Luetchford
<i>Treasurer</i>	Gwen Durrant
<i>Secretary</i>	Thomas Standefer
<i>Immediate Past President</i>	Jimmy Barrera
<i>Historian</i>	Genevieve Freix
<i>Internet Chair</i>	Hannah Rainey
<i>Publications Editor</i>	Molly Hall

The Journal of the North Texas Archeological Society

Submittal guidelines for authors can be found at ntxas.org/about-the-journal.

Contributions to the Journal can be submitted to the Publications Editor at publicationseditor@ntxas.org.

Copyright © North Texas Archeological Society 2024

All rights reserved

Opinions expressed herein are those of the authors and do not necessarily represent the views of the North Texas Archeological Society.

Cover Image: S. Alan Skinner judging a screen-building contest at the 1972 Texas Archeological Society Field School. Photo courtesy of the Archaeology Research Collections at Southern Methodist University.



This program is supported in part by Humanities Texas, the state affiliate of the National Endowment for the Humanities.

TABLE OF CONTENTS

DEDICATION

A Dedication to Curiosity: Some Notes on S. Alan Skinner <i>Allen M. Rutherford</i>	1
The Influence of S. Alan Skinner	
<i>James E. Barrera</i>	5
<i>Cody S. Davis</i>	6
<i>Molly A. Hall</i>	11
<i>William A. Martin</i>	12
<i>Dan McGregor</i>	14
<i>Dr. Jay Newman</i>	15
<i>Robert F. (Skipper) Scott, IV</i>	15
<i>Tim Sullivan</i>	17
<i>Jesse Todd</i>	19
<i>Lance K Trask</i>	20
S. Alan Skinner Publication and Reports	
<i>Robert F. (Skipper) Scott, IV and Molly A. Hall</i>	22

ARTICLES

Wylie Pits and Related Features Are Still Out There, But Maybe Not for Long <i>William A. Martin</i>	57
Ceramic Sherds, Pipes, and Figurines from the Upper Tucker Site (41MU17), Montague County, Texas <i>Timothy K. Perttula</i>	69
Coronado's Weather Report: Why the Coronado Expedition Did Not Perish in the Plains <i>C. Britt Bousman</i>	79
Notes on the Archeology and History of the Early British Sea Service Blunderbuss, and Early Piratical Utility in the "Age of Pirates" 1680-1720 <i>Jay R. Newman</i>	96
The Erwin Bridle Bit, A Mid-1700s Equestrian Artifact <i>Charlene Erwin, S. Alan Skinner, and Gerald Franklin</i>	101
Exploring the History of a Nineteenth-Century Homestead Finca de Caza (41JA70), Jack County, Texas <i>Thomas B. Standefer</i>	115
Historic Railroad Graffiti <i>James E. Barrera</i>	145
Know More Harrington Dairies: Early Twentieth Century Sites at DFW Airport <i>Becky Shelton and Cody S. Davis</i>	156

A DEDICATION TO CURIOSITY: SOME NOTES ON S. ALAN SKINNER

Allen M. Rutherford¹

¹ AR Consultants, Inc.

The papers in this volume are dedicated to S. Alan Skinner as a celebration of his career in Texas Archeology defined by service, mentorship, and an unquenchable intellectual curiosity. Born in Chatham, New Jersey in 1942, Alan wasn't a lifelong Texan, but because of archeology he came to embrace Texas as home when he moved to Dallas in 1968 for a four-month job at Southern Methodist University (SMU). That short-term job turned into a more than 50-year career encompassing private industry (Environment Consultants, Inc. and AR Consultants, Inc.), academic pursuits (SMU), and public service through regional (Dallas Archeological Society [DAS], Tarrant County Archeological Society [TCAS], and North Texas Archeological Society [NTAS]) and statewide (Texas Archeological Society [TAS] and Council of Texas Archeologists [CTA]) archeological societies and organizations. Furthermore, Alan has been involved with the Boy Scouts of America (BSA) for 50 years including the development of the Archaeology Merit Badge in the mid-1990s.

In many ways, we all have Boy Scouts to thank for Alan choosing a career in archeology. His interest was sparked by an article in *Boys' Life* magazine (now *Scout Life*) detailing a Boy Scouts archeology program. After subsequent conversations with an aunt, who recommended New Mexico as the best place in America to learn archeology, Alan enrolled at the University of New Mexico (UNM) in Albuquerque in 1961 to pursue a degree in Archeology. During his time at UNM, Alan was president of the UNM Anthropology Club through which he first met Fred Wendorf, who would play a significant role in Alan's later academic and professional development. Dr. Wendorf was not the only important figure Alan met through the UNM Anthropology Club, he also met Nina Montgomery Runyon

(Figure 1). They were married in 1965, the same year he graduated from UNM.



Figure 1. Alan and Nina.

After stints in Northern Arizona, Tucson, and North Carolina, Alan and Nina found themselves in Dallas in 1968 after Alan was offered a job doing contract work for SMU through the Anthropology Department under Jim Sciscenti, the Director of the Texas Archaeological Salvage Project (TASP) for at SMU. In the same year they welcomed their first child, Tara, Alan led excavations at the Sam Kaufman site (41RR16) (Skinner et al. 1969) and started archeological survey of the DeCordova Bend Reservoir which resulted in a settlement pattern study that still stands as one of Alan's seminal publications (Skinner 1971). Alan's work with TASP led to his enrollment into SMU Anthropology's graduate program under the direction of Joel Shiner.

During this time, Alan began developing relationships that would have short- and long-term implications on his life and career. At the behest of Jay Blaine, who Alan considers a mentor and father figure, Alan joined TAS in 1971. This resulted in Alan organizing the 1971 and 1972 TAS Field Schools in the Turtle

Creek Watershed in Kerrville. Alan used the data collected from these field schools to write his dissertation, "Prehistoric Settlement of a 'Natural Area'", which he defended in 1974 (Skinner 1974). Perhaps more importantly, his work in Kerrville marked the start of his relationship with and service to a large and active volunteer archeology community in Texas that continues to this day.

Simultaneous to his involvement with TAS, Alan worked with his local archeological society (DAS) to record sites throughout the Dallas area. Through his work with DAS, Alan met Bill Young, whom he also describes as a mentor and friend. Alan ultimately led TAS Field Schools in 1975 and 2005-2006, was president of TAS in 1974-1975, and served as president of DAS in 1972-1973. In one of the great surprises of his career, as he was serving as the TAS Awards Committee Chair, Alan was awarded the TAS Lifetime Achievement Award in 2014.

Upon receiving his PhD from SMU, Alan was hired as an Assistant Professor and Director of the Archaeological Research Program (formerly known as the TASP), which brought in approximately \$700,000 in contracts annually. Alan and Nina welcomed another daughter, Rebecca, and a son, Josh, during this time while conducting archeological work throughout the state and teaching and mentoring SMU graduate students. Alan left SMU in 1980 and began a career in private consulting as the lead archeologist for Environment Consultants, Inc. Hannah, Alan and Nina's fourth and final child, was born in 1981 (Figure 2) and two years later Alan founded AR Consultants (ARC) as a small, part-time consulting business he ran simultaneous to his full-time job managing a landscaping service.



Figure 2. Josh, Hannah (and her gerbils), Nina, Alan, Tara, and Rebecca in 1994.

For 17 years Alan kept a foot in Texas archeology through ARC. He credits helping develop the Archaeology Merit Badge, and his love of archeology, with reigniting his desire to pursue it as a full-time career again. And so, in 2000 he sold his landscaping business to his employees and incorporated ARC, opening it as a full-time archeological consulting practice. Over the last 24 years, Alan and ARC have been involved in some of the most consequential projects in Northeast Texas including identifying and recording a World War I (WWI) era concrete airplane training site (41TR197) (Skinner and Trask 2011), trenching in the Trinity River watershed and proving the existence of deeply buried, intact cultural resources, and the development and implementation of large-scale archeological projects associated with the construction of Bois d'Arc Lake and Lake Ralph Hall. However, a career is not entirely built on the biggest projects one is associated with. Alan has conducted, overseen, and been quality control for *more than a thousand* projects throughout Texas, Oklahoma, Louisiana, Arkansas, New Mexico, and Kansas since 2000. The results of those projects, even in instances when no cultural resources were identified, have contributed an immense amount of data to the archeological record.

In addition to his professional obligations for ARC, Alan continued collaborating and writing with Jay Blaine, Bill Young, and

others. A glance at Alan's bibliography provides a wonderful cross-section of what is perhaps the defining feature of Alan's career. He is intellectually curious in a way that borders on obsession. There are cell phones, handheld GPS units, and cameras buried in shovel tests, old wells, and cisterns throughout the state of Texas attesting to this. But it is also the type of obsession, and frankly, sense of duty to friends, colleagues, and the field of archeology that has led to a list of publications that span from treatises on prehistoric settlement patterns and discussions of prehistoric ceramic and lithic typologies, to studies on the significance of the aforementioned WWI concrete airplane (Skinner and Trask 2011), a post-Civil War farmstead (Davis et al. 2012), and a steam boiler found abandoned in an Oklahoma pasture (Skinner and Pocklington 2014).

In recent years, Alan has worked tirelessly to publish with Jay Blaine on a variety of sites identified and artifact assemblages collected by Jay and his wife Jerrylee (Blaine and Skinner 2023, 2024; Blaine et al. 2017; Blaine et al. 2024; Skinner 2024; Skinner and Hall 2018a, 2018b). Alan's contribution to this current volume is the result of both his work with Jay and because a member of NTAS presented Alan with a question and his curiosity took over. Encouraging and amplifying the voices of avocational and amateur archeologists has been, and will continue to be, one of Alan's greatest contributions. The papers in this volume are representative of the breadth and length of Alan's career and the depth of his intellectual curiosity, but they are also a tribute to his continued relationship with the volunteer archeological community.

Throughout the last 24 years, Alan has managed and collaborated with students, colleagues, avocational archeologists, and professionals. His management style has not strayed far from the teacher and mentor he was in his early days at SMU. Working for, and with, Alan is more aptly described as

learning from him. Alan has spent his career dedicated to the individual growth and development of those who work for and with him. On the right margin of the whiteboard in his office are a set of "Notes" that will be familiar to all who've worked with Alan (Figure 3). Alan, I hope this was long enough to cover the subject, but short enough to be interesting. I'm sure I missed a Harrington Dairy or two in recounting a long and productive career, but I know you'll be around to help me find them. We are all beneficiaries of a career and life well led, and this journal dedication is one small way to say, "Thank you, Alan."

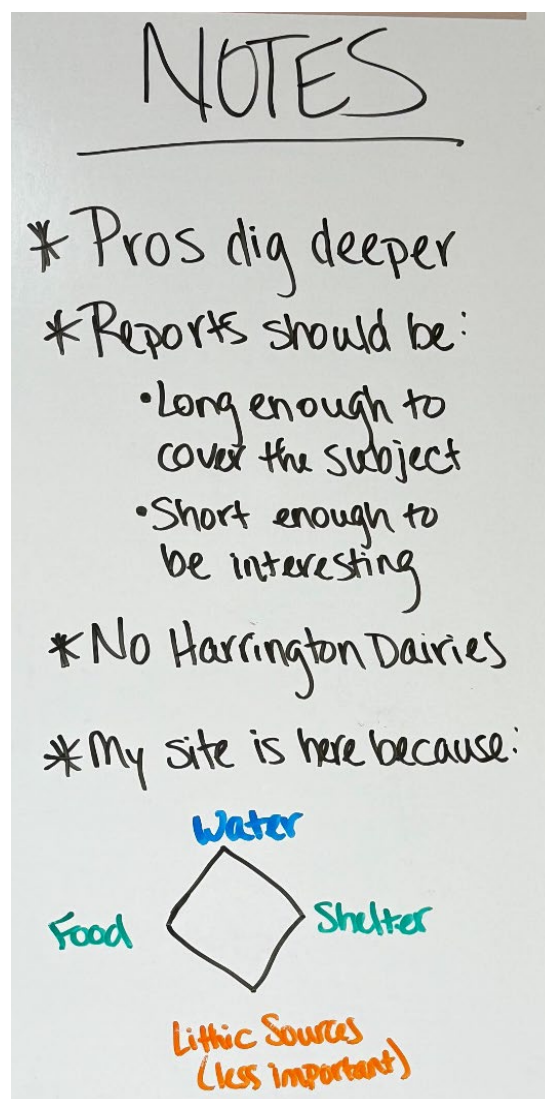


Figure 3. Inspirational directives from the desk of Alan Skinner.

REFERENCES CITED

- Blaine, Jay C. and S. Alan Skinner
 2023 Mid-1700s Bridle Bits from the Gilbert Site and Other Sites on the Southern High Plains. *Bulletin of the Texas Archeological Society* 94(1):85-106.
- 2024 The Implications of an Unfired Lead Ball "Cache" at the Longest Site, Oklahoma. *Caddo Archeology Journal* 34(1):61-72.
- Blaine, Jay C., S. Alan Skinner, and Dawn M. Crawford
 2024 Is the "Late Spot" at Longest a Missed Opportunity? *Plains Anthropologist*, in press.
- Blaine, Jay C., S. Alan Skinner, and Molly A. Hall
 2017 The Saga of Winkler-1: A Midland Site in Southeast New Mexico. *PaleoAmerica* 3(1):48-73.
- Davis, Cody S., Kathryn M. Pocklington, and S. Alan Skinner
 2012 *The Redwine Site (41COL228), A Post-Civil War Farmstead in Collin County, Texas*. Cultural Resources Report 2012-60, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Molly A. Hall (editors)
 2018 *Neither Snow, Nor Rain, Nor Heat, Nor Gloom of Night Stays These Couriers, Essays Honoring Jay C. Blaine*. AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Molly A. Hall
 2018 Wichita Recycling of French Brass Kettles at Spanish Fort. In *Neither Snow, Nor Rain, Nor Heat, Nor Gloom of Night Stays These Couriers, Essays Honoring Jay C. Blaine*, edited by S. Alan Skinner and Molly A. Hall, pp. 19-40. AR Consultants, Inc., Richardson, Texas.
- Pocklington, Kathryn M. and S. Alan Skinner
 2014 The Coal County Steam Boiler. *Oklahoma Anthropological Society Bulletin* 57(1):43-50.
- Skinner S. Alan and Lance K. Trask
 2011 The Last Concrete Airplane at Taliaferro Field, Texas. *Archeological Journal of the Texas Prairie-Savannah* 1(1):48-56.
- Skinner, S. A., R. K. Harris, and K. M. Anderson (editors)
 1969 *Archaeological Investigations at the Sam Kaufman Site, Red River County, Texas*. Contributions in Anthropology No.5. Department of Anthropology, Southern Methodist University, Dallas.
- Skinner, S. Alan
 1971 Prehistoric Settlement of the De Cordova Bend Reservoir, Central Texas. *Bulletin of the Texas Archeological Society* 42(1):149-269.
- 1974 Prehistoric Settlement of a "Natural Area." Unpublished PhD dissertation, Department of Anthropology Southern Methodist University.
- 2024 Dedication in Memoriam Jay C. Blaine. *Bulletin of the Texas Archeological Society*, in press.

THE INFLUENCE OF S. ALAN SKINNER¹

IN HONOR OF DR. ALAN SKINNER

James E. Barrera

What immense respect I have for Dr. Alan Skinner. Met Dr. Skinner around 2001 while working for the Center for Archeological Studies (CAS) at Texas State University in San Marcos. He rolled in to see his buddy Dr. Britt Bousman, my boss at the time. He brought stacks of reports and other publications as donations to the CAS library to help this fledgling program. In these 100% hard copy days we were awed by the array of pubs and other great stuff Dr. Skinner donated, also by the immense archeological experience and legend that he was well-known for at this time. It was a memorable visit for a staff archeologist who absorbed every nugget of info and wisdom possible during this welcome break from sorting fine screen matrix, floating, applying B-72 (remove/reapply), fieldwork, reporting, and everything else that kept us hopping.

Over the next many years, I was privileged to see Dr. Skinner at Texas Archeological Society Annual Meetings, Council of Texas Archeologist meetings, and other events where we got to know each other better. Then Christmas came early for Dr. Skinner in May of 2012, and I surprised him by moving from the Austin archeology scene to the DFW archeology world. He was the first person to warmly greet me to DFW as I, the foreigner (originally from south Texas), entered a foreign land and archeological realm. It was very comforting to know that I had a colleague, an archeological role model, and someone who just welcomed and helped me get situated through introductions with folks at AR Consultants, Inc., NTAS (TCAS back then), and other events and organizations. As time marched along we began to work together more and more especially after I joined the U.S. Army Corps of Engineers.

Learning more about each other over the years was awesome, including days out in the field somewhere.

Proud to say that Dr. Alan Skinner is beyond a role model in archeology for me. A pinnacle of respect, kindness, professionalism, and hard work. I see the extreme hard work that he puts in day after day, in the field, office, and outside of work. His name graces countless reports and other publications, site forms across Texas (starting in the 1960s, y'all!) and other states, and as a member and avid participant of every archeological organization I can think of. Dr. Skinner has been involved with establishing Texas's state standards for archeology – how many can say they were truly part of establishing something like that? Also involved with the standards and archeology in many other states including New Mexico and Oklahoma. How do you achieve such a legacy in archeology within Texas and beyond? He puts in the work and always has put in hard work. His work ethic is unmatched and through this quality he has achieved a legacy of someone who has worked in academia, cultural resource management, archeological organizations (in so many capacities and so well), mentored generations of archeologists and leaders in the field, and continues to be excited about archeology always putting his heart and soul into it with passion. Through engaging with Dr. Skinner, and his infectious style of always asking questions about archeological topics which are not studied or are understudied, I chose the topic for the article in this volume. Thank you, Dr. Alan Skinner, for all you have provided to Texas archeology and beyond. There are very few who can say they have contributed near as much.

¹ Photographs throughout this section were contributed by the Archaeology Research Collections at Southern Methodist University (ARC@SMU) and Cody S. Davis (CSD).

THE COWBOY OF SCIENCE

Cody S. Davis

Over the last quarter of a century working as an archeologist, I can say I have learned a lot of do's and do not's in the world of Cultural Resource Management (CRM). Most have been in the last 17 working directly with Dr. Alan Skinner, or Alan, as he prefers. There were more do's than do not's, but they have all been life lessons that I have taken to heart, and I think they are worth sharing with future archeologists.

Early on, during my time at Texas State University, I learned that archeologists were the "Cowboys of Science" and that has always rung true for most, but it is especially for Alan.

While as whole we have seen many improvements in working conditions, standards, technologies, and methodologies as they are related to archeological research in CRM, I can say that before those were commonplace, many times we as these "cowboys" had to do things in a "wild west" fashion, in order to obtain the data necessary to understand and/or make recommendations about archeological sites on projects. Most times these were on-the-fly, in-the-moment decisions, because in CRM there are an infinite number of variables constantly being thrown at us while we only have a finite amount of money we can spend.



Alan leading the charge with Nick Coleman, Lee Green, Justin Boxwell, and myself on clearing the collapsed superstructure at the Redwine site (41COL228). Photo credit: CSD.

Alan's many do's included conducting extensive background research and always visiting your study area. This was something we were always encouraged to do at AR Consultants, Inc. (ARC). This has always been imperative to Alan, and he continually jumps in, heels first, in his cowboy boots, no less, when a prospective project comes along. I can recall when we first started developing the research design for the Bois d'Arc Lake project in 2008, Alan would come to me and say, "Let's go take a drive." We would get in his truck and head up to Fannin County, and drive throughout the project area taking notes and photos on the terraces and the creeks. Utilizing old maps and trying to tie them to historic structures located along the county roads. I remember one particular trip; it had just been raining for days and we really wanted to see what it was like in the Bois d'Arc valley and did we ever. We were driving down County Road 2965, now FM 897, through the central part of the new lake basin. We had driven down this road many times and we knew it was a solid road. However, this time when we started down the large hill from the southern terrace there was water already lapping at the toeslope of the one-mile-wide floodplain. But we pressed on and drove all the way across that floodplain with water up to the running boards of his truck. Since the floodplain is so wide and flat, the water was only about 18 inches deep or less and we could see the road and even drove over the three small wooden bridges that crossed the main channels of the creek. The creek was not a raging river but was more like a large slowly draining pond. While in retrospect, we both recognize now how risky this really was, it was an experience that both of us to this day still look back upon, sigh, and chuckle. We agree now we should not have done it, and would never do it again, but it gave us a unique perspective on that project area that helped us through the many years of working in that watershed.



Alan and Nick Coleman ca. 2010 in Oklahoma profiling banks on the North Canadian River. Photo credit: CSD.

While that drive was a once-in-a-lifetime event, I recall another time Alan and I needed to access somewhere that was just impossible to get to without walking numerous miles out of our way or doing something drastic like parachuting in. However, Alan the Eagle Scout had an idea. I remember getting a call from him and him telling me to meet him outside of Forney, Texas at a gas station. When he showed up, he had a canoe strapped to the top of his truck. He said, "We're going to take a canoe ride down the East Fork of the Trinity River." We were trying to scout out some trench locations as well as look for the footings to an old bridge that we needed to record, and this was the best way to do it. I remember that day well and thought to myself, "Wow, how great this is that I'm getting to go on a canoe ride to a project area." So, it never fails, Alan is always creative in figuring out solutions to roadblocks or problems in order to keep a project moving forward.

Over the years excavating prehistoric and historic sites, I have seen the various ways in which we as archeologists want to get that perfect photograph of excavation blocks. I remember when I was at the Texas State field school and Dr. Britt Bousman rented a scissor lift to accomplish this from the parking lot next to Spring Lake. While most of the time in CRM we do not have the luxury of being able to just bring in a scissor lift and we also do not usually have a nice stable parking lot next to our excavation, so we improvise. What we do have access to is heavy machinery like large excavators or backhoes, as well as trees. While it is not done anymore these days, and has become a rule not to at ARC, I can remember watching Alan or even myself take those bucket rides on the excavator in order to quickly get that overview photo. Furthermore, most folks know that Alan ran a very successful landscaping business for many years in DFW, where he got very accustomed to climbing trees, especially with a chainsaw. The first time I saw Alan do this on a site, he only had a camera, and he knew just what overview photo he needed. Over the years, he has climbed more trees than I can count, but he always got that shot. Thankfully technology has become much more convenient, and we've been able to make leaps and bounds in what is possible. So now Alan does not have to climb trees, take bucket rides, or even climb one of his very tall ladders, unless he just wants to, he just asks me to go out with our drone and take photos for him. I think he now loves this even more, because it can give him an even better perspective on the subject matter, since it can go much higher than he could previously. It also lets us collect a massive amount of information relatively quickly that is useful beyond just getting that one good report photo. So, I am so very thankful for him allowing me to develop those skills.

Alan always had a vested interest in historic structures and features, and most know he has been on a hunt for information for cattle dipping vats across Texas. There have been a handful of projects over the years that were

lucky enough to encounter such features, so when we found them in the field and began clearing out the dirt and vegetation concealing these features, we did not think twice. If you have ever worked with Alan, you know he is great at clearing sites to facilitate better documentation, especially of historic features overtaken by vegetation. It was while clearing one of these vats with the crew that we asked ourselves, should we be doing this a different way? If you know how these features were used, you know just how much arsenic was added to the water for them to drive the cattle through and kill the ticks. Once we learned that all that water evaporated or spilled out into the surrounding area, we recognized it was likely in those sediments. So, we adapted and provided additional safety measures for our crew and tried hard not to stir up as much dust as we could. While Alan is still on the hunt for those features, he goes about it in a much different manner now. Nonetheless, it is always amazing to see how much effort Alan will put into clearing a site, because you never know what has been hidden in the years since it's been abandoned.



Alan taking a bucket ride out of the swamps ca. 2009 off the Elm Fork of the Trinity River. Photo credit: CSD.



Alan ca. 2008 in Grimes County getting that great overhead photo. Jesse Todd and Lance Trask supervise. Photo credit: CSD.

One of Alan's most trusted tools is his chainsaw, and chances are, if you have worked a site with him, you have probably seen it in action. Alan using a chainsaw at a site is just part of the norm, whether it's removing branches in the way of our vehicles and equipment or in the way of our excavation units he was always working to properly clear a site so we could document it. So, Alan is no stranger to using a chainsaw. That is another thing I am thankful for, him teaching us safe ways to use a chainsaw. However, he is always happy to just go out and do it for the crew, as he would say "Learn from my mistakes" and show you the scar on his arm. Simply, it did not matter if it is using power or hand tools, or even conducting research, Alan is a wealth of knowledge and loves to share that with those interested in learning from him.



Alan using his chainsaw to help clear the debris left by the collapse of the superstructure at the Redwine Site (41COL228).

While many of the previous topics were things that we learned not to do or to do better, there were many things in which Alan taught us, we should always be doing. This mainly stemmed from his encouragement and love of archeology and life-long learning. It did not matter if it was a prehistoric or historic site, Alan was always able to find something that made him want to know more or pushed him to research into deeper topics. He is always looking at things from different angles to understand why these things happened, why were these things used, and what was going on when these folks were occupying these sites and leaving these artifacts and features behind. It is because of Alan that I was so fortunate to be a part of so many different excavations and because of him I have been able to meet many of the previous generations' great minds such as Bill Young. I recall when we were excavating at a historic log cabin in Navarro County, and Bill came to visit the site. I felt like I was meeting a celebrity, as after hearing all the stories Alan and others at ARC, that would recant of their adventures together and the amazing archeology they would find. They were quite the team, Bill operating a backhoe and Alan directing him, while documenting some amazing sites. So, getting to meet Bill and have him teach us his tips and knowledge on identifying artifacts right there on the spot was a great experience. I was also lucky to get his input and knowledge on

different types of stone tools as Alan pushed me to reach out to Bill and others like Don Wycoff or Missi Green. Learning from them were invaluable lessons and something I will always cherish. While there are too many others out there to name, it is because of Alan's love of learning that he is constantly seeking out others for their expertise or perspectives. These connections have been invaluable for being able to reach out to other folks to help further research and analysis of the sites we were dealing with. Alan never hesitated to reach out to others in any field and get their impressions and insights on topics or artifacts he was wrestling with. No matter what it was that Alan came across, if it was something that he could not figure out or he wanted to know more about it, he knew of someone who could help or at least point him in the direction of someone else who might. While I know many archeologists specialize in one type of site or artifact analysis, that has never been the case for Alan. Whether it is researching stone tools or farm equipment or looking at the layout of a farmstead associated with a freedom colony, a craft dairy farm, or even a dipping vat, his love for archeology always shines brightly, and I have enjoyed riding off into the sunset on many projects with Alan's wonderful guidance and mentorship. It has been an honor to work with him as long as I have. Thank you, Alan.



Alan, Katy Crater Gershtein (then Pocklington), Rebecca Shelton, and myself as we completed the excavations at the Redwine Site (41COL228).

ALAN'S LEGACY

Molly A. Hall

As I started thinking about how to express my thoughts about Alan Skinner (heaven forbid I call him "Dr."), I also started working on my portion of the compilation of his publications for this volume. As I worked on formatting the abundance of gray literature reports, I started to realize that the report titles and authors outlined the story of Alan's professional life. He started AR Consultants (ARC; not yet "Inc.") in 1983. Formatting and reading each of these references, I saw unfolding the evolution of a company which is really the evolution of Alan. Of course, his archeological path started before ARC, with work in New Mexico and Arizona in the 1960s followed by a stint at Southern Methodist University in the

1970s, as reflected in his publications. The articles also show a flurry of chatter about the Boy Scout Merrit Badge that he helped to develop in the mid-1990s and his many variety of research topics with Jay Blaine over the most recent decade or so.

By following the publication history of ARC reports, we can trace the coming and going of a litany of ARC employees starting with occasional collaborations, gradually adding employees including Brenda Whorton, Lance Trask, Floyd Kent, and Sonny Wheeler, all staples of ARC through the 1990s and early 2000s. Occasionally there were collaborations with other legends such as Reid Ferring and

Britt Bousman. It was touching to see Nina listed as an author on reports and envision the couple enjoying themselves on mini adventures across the state. Then came the appearance of more familiar ARC staff from my tenure with the company: Becky Shelton in 2007, Cody Davis in 2008, and the unicorn Nick Coleman in 2009. Shortly thereafter, the company saw exponential growth and an abundance of new authors, some who came and went quickly and others, like Katy Crater Gershtein (née Pocklington) and Allen Rutherford, who have stuck around as pillars of the firm.

Seeing the first use of a full-page photo on a cover in 1984, was heartening in that it is known around the office now as something saved for projects that decidedly pique Alan's interest, or ones near towns where he saw a building he loved or another eye-catching relic of history.

This record of Alan's publications is also a record of the infrastructure expansion of Dallas, the Metroplex, and rural Texas. One could track economic trends in northeast Texas by the number and size of projects conducted by ARC each year. Trends started to pop out as I continued to compile reports. Alan surveyed land for Walmarts from Dallas to El Paso and for the expansion of dozens of water supply corporations across rural Texas counties. I found projects that 20-30 years later I would survey the expansions of as part of the ARC team. As Dallas has always been

the hub of ARC, there were plenty of local projects overlapping with famous landmarks around Dallas (the arboretum, numerous parks, major thoroughfares, etc.) as well as places with significant meaning just for me, including the neighborhood where I bought my first house.

This list of reports could serve as a scrapbook of sorts. Providing the same sort of nostalgia as flipping through a family photo album. Milestones of note are the incorporation of ARC in 2000, the expansion of work into Oklahoma in 2001, and the move of the office from Dallas to Richardson in 2011. There were also iconic projects like the Trinity River Greenpark, the Shores of Richland Chambers, and The Dalbey Site, among numerous others.

All of this is evidence of Alan's love for archeology and of his insistence that research should be shared with others. Though much of it is in the stereotypically "hidden" grey literature of client reports, Alan has never rebuffed anyone asking for a copy of one of his reports. ARC's library (truly Alan's library) is one of the best archeological libraries in North Texas. The list of his articles that appear in more traditional publications show his resolve to continue researching any seemingly little thing and to never settle for the bare minimum on any project. In fact, he submitted two articles to this very journal before knowing the 2024 volume would be dedicated to him (one appears herein, and one will appear in the 2025 volume).

ALAN'S MAPPING SKILLS

William A. Martin

In 1968, Alan excavated in two mounds at the Sam Kaufman site on the Red River in Red River County. The Eastern Mound contained a large circular shaft tomb 4.12 m in diameter excavated from the top of the mound through the mound fill, reaching a depth of 2.1 m. The shaft tomb contained the remains of 11 individuals buried with several ceramic

vessels, shell beads and a variety of stone objects. In 1990, a tremendously wet spring caused major flooding from Dallas eastward, threatening to damage or destroy the mounds along the Red River. Jim Bruseth at the Texas Historical Commission offered to head up a Texas Archeological Society field school that summer to investigate the mounds.

Unfortunately, the western mound was totally washed away before the summer field school could begin. I was the supervisor at the site (which had been renamed the Arnold Roitsch site at the insistence of the new owner – it was the only way he would let us work on the site) and we had as many as 300 people working on the site each day. The week prior to the start of the field school, I mapped the site, finding Alan's datum from 1968. I had never had to tie in to someone else's grid before and hoped I had gotten it right, but assumed I was likely to be somewhat off in one direction or another. Then, during excavation, we came upon some of the old units from the 1968 work, and I saw that our grid matched the orientation of the

units almost perfectly. Thirty years later, on a visit to Bois d'Arc Lake, I shared that story with Alan and told him I was able to do that using a transit that dated from WWI. I was pretty proud of my work until he told me that he had mapped the entire site using nothing but a plane table and alidade. Even though I learned to use that equipment at the Southern Illinois University field school I attended in 1975, I never used one again in my career. I'm not sure how many young archeologists even know what that equipment is or how it works these days, but I was really impressed with the level of precision of his original mapping using nothing more than that.



Alan giving a tour of Fort Graham at Lake Whitney, 1972. Photo credit ARC@SMU.

RECOLLECTIONS OF DR. ALAN SKINNER

Dan McGregor

In the summer of 1977, following my first year of graduate school at Southern Methodist University (SMU), Dr. Alan Skinner (then Director of SMU's Archaeology Research Program) hired me as a crew member for the Trinity River Project. Under the direction of Project Archaeologist Jeff Richner, part of our survey efforts included floating down the Trinity River channel in a jon boat and recording archeological sites exposed in the river's erosional cut banks. Other crew members included Tim Perttula, Reed Lee, Joe Bagot, Chet Shaw, and Mary Johnston. We discovered and recorded numerous sites with evidence of human occupation buried at various depths within the exposed Holocene alluvial deposits. We also conducted limited test excavations at a few of these sites (Richner 1982; Richner and Bagot 1978).

My experiences that summer led to a career-long "obsession" with the archeological potential of these Holocene alluvial sites, first expressed in my very minor contribution to the Project Report, entitled "shell lens sites" (in Richner and Bagot 1978:158-164). I was impressed by the fact that these sites contained well-stratified deposits of vertically separated remains from discrete episodes of human occupation. Our limited test excavations recovered a few diagnostic artifacts tightly associated with enough charcoal for radiocarbon dating. The most significant of these were a solid date for the "Carrollton" dart point type (from 41FT226 in Freestone County) and relatively early dates for the ubiquitous Gary dart point type (from 41HE245 in Henderson County). Alan, thank you for giving me the opportunity for that formative experience!



Alan at Lake Whitney, 1972. Photo credit ARC@SMU.

The following summer (1978) Alan hired me as the Crew Chief for SMU's test excavations at Aquilla Lake. During that field season, Alan himself discovered his own Holocene alluvial site: the McDonald Site (41HI105). That site turned out to be what I consider the most significant archeological property at Aquilla Lake (Brown, et al. 1987).

Alan facilitated my initial introduction to Texas archeology, and also served as Committee Chairman for my 1979 master's degree from SMU. Although Alan left SMU for opportunities in the private sector, I have kept in touch with him over all these many years and have truly appreciated his contributions to my development as a North Central Texas archeologist.

References Cited

- Brown, David O., R.P. Watson, D. Peter, and R. Rawn-Schatzinger
 1987 *McDonald Site – 41HI105(X41HI171) In: Archeology at Aquilla Lake 1978-1982 Investigations, Vol II*, compiled by D.O. Brown, pp. 38-1 to 38-145. Research Report 81. Texas Archeological Survey, University of Texas at Austin.
- Richner, Jeffery
 1982 *Tennessee Colony III*. Archaeology Research Program, Southern Methodist University, Dallas.
- Richner, Jeffery and Joe Bagot
 1978 *A Reconnaissance Survey of the Trinity River Basin, 1976-1977*. Archaeology Research Program, Southern Methodist University, Dallas

ALL IS NOT IN THE NAME

Dr. Jay Newman

One of my first archeological projects in Texas after coming down from Illinois & the Koster Site excavations was at Aquilla Lake, Texas. Alan was great on the project, a very good boss; though in lieu of per diem he would take all the field crew to dinner (arrgghh....). One interesting thing: it is a **very** interesting experience to call Alan by his given first name (the "S" in S. Alan Skinner). Also, I **almost**

feel partly sorry for breaking the project's bank for the last dinner celebrating the successful completion of excavations at Aquilla in West, Texas (**not** west Texas) where I and all crew members drank beer from around the world several times until early morning with Alan picking up the check. Thank you, Alan. You certainly were not responsible for the next morning's hangover.

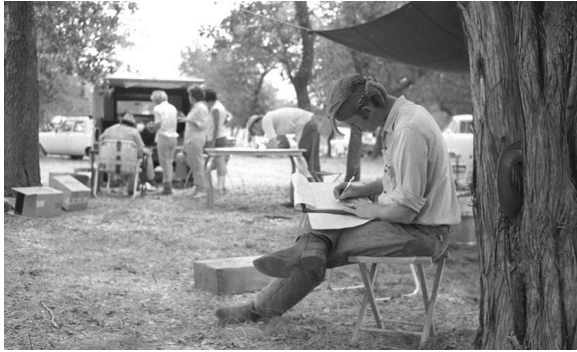
WORKING WITH DR. ALAN SKINNER THROUGHT THE CORPS OF ENGINEERS REGULATORY ARCHEOLOGY PROGRAM

Robert F. (Skipper) Scott, IV

I have no memory of the first time I met Dr. Alan Skinner. This sounds odd, but it is also a statement of how long I have known Alan. I assume we met in the 1970s when Texas professional archeology was a smaller community scattered mostly between major universities. Whenever I met him is immaterial now, and it is safe to say I have now known Alan – and worked with him – forever.

I came to work at the U.S. Army Corps of Engineers (USACE) Regulatory program in Ft. Worth in 1982, originally working with Ms. Daphne Derven, then as her replacement in 1985. The part of the USACE I worked in handled Federal reviews under the Clean Water Act ('Regulatory'). The program is very unusual within National Historic Preservation Act (NHPA) review because it is primarily on projects that are on private land with no Federal funding. Costs of the NHPA compliance work are borne by the landowners

(or developers), an obvious point of friction. To complicate this more, the reach of the NHPA federal authority is determined by rules defining waterways. Initially I was one of only two archeologists handling Clean Water Act NHPA reviews in the entire U.S.



Alan mapping. Photo credit: ARC@SMU.

Alan was already handling some small Regulatory projects by the time I took the position. Again, I do not remember the first time he and I worked together to coordinate a project, but before 1988 we were routinely coordinating projects with SHPO – it was almost weekly for the next 28 years. ARC provided a list of USACE reviews that I combined with an incomplete list of my own for a total of (about) 80 projects. I would guess that is less than half of the actual total of projects that Alan submitted. I reviewed more ARC projects than any other single consultant.

Alan and ARC were uniquely positioned (or cursed?) to have NHPA expertise specific to the Dallas-Ft. Worth area as it exploded with development. Alan also understood the issues within the Regulatory program at a time when we saw the greatest growth in our work. The downside of that is that Alan ended up with surveys of every major sewer interceptor expansion along the Trinity River. With its deeply buried sites and problematic geomorphology, I think we met next to more backhoe trenches than we did in the office. Alan's work within the Dallas Floodway was notable for the trenches that were filled with a century of City of Dallas trash.

Alan worked on every conceivable type of project, everything from a single day survey of a small water line, to running large project with major excavations like Lake Ralph Hall. Because of the variety, there were running complications of Federal vs. State review authority, costs, timing, cancellations, changes in design, etc. Some projects could start and stop multiple times over a period of multiple years (Lake Ralph Hall). Pressure from developers to lower costs and hurry fieldwork was a reality as well. Alan was always able to navigate these problems with a good attitude and enviable patience.

Coordinating Federal NHPA and Texas Antiquities Code review (the so-called Section 106 process) was the gist of my work that Alan submitted to the USACE. It could be difficult to come to conclusions to balance the Federal and State requirements to start/conclude a process. Alan was often in the unenviable position between satisfying the NHPA legal requirements, then maintaining a rapport with his client paying the bills. I can't emphasize enough how Alan's professionalism made it possible to work through this process time after time. Even when there were problems that became contentious, Alan was always professional and good-humored. I can't over-emphasize how much I appreciate that, and how it made my job easier through all of our reviews.

You can't do as much work as Alan did without some moments that stand out. A few of my favorites:

- The golf course where the person sent to clean some trash in the area decided to bulldoze a 19th century historic home.
- The industrial area where a minister who happened to have a side-gig doing ground penetrating radar located some graves
- The area near Los Colinas that exploded into the news when Alan identified a site that included bone fragments, later to be

determined to be redeposited fill from a destroyed site

- The public meeting for archeology and paleontology we held at Lake Ralph Hall (maybe the only one in NEPA history), and 90% of the people brought only fossils.
- The time Alan tested my rusty zooarcheology skills with a very strange skull fragment he found in an area that had formerly been a game park – it was so odd, I finally guessed baboon. It turned out to be a pit bull.

Throughout all of this Alan has remained a good friend and the nicest person anyone could know. I leaned on him frequently for information from his multiple avocational contacts, his encyclopedic memory of the literature on North Texas archeology, and occasionally landscaping advice. He never failed to be generous with his help and his time. He made working in a complicated corner of NHPA compliance much easier. It is a pleasure to have a chance to share a few snippets from our long working relationship, and a pleasure to have a chance to highlight his contributions to history and prehistory in Texas.

IN HONOR OF DR. S. ALAN SKINNER

Tim Sullivan, Ph.D.

Most reading this will know Dr. Alan Skinner as a researcher, writer, and owner of AR Consultants, a cultural resource management (CRM) firm that has operated since the early 1980s. Others will know him as an involved, “boots on the ground, hands in the dirt” field archeologist who has contributed widely to our understanding prehistory and history of Texas, surrounding states, and North Texas in particular. While I can attest to both views, I can add that I know Alan as a friend, colleague, and one who has deeply influenced my appreciation of avocational archeology and what it has contributed to our understanding of archeology in North Texas and surrounding areas.

I was an undergrad at the University of Southern California, when I heard a former professor offer an anecdote that shaped my early perception of avocational archeologists. That professor related how, at a social gathering, he had been approached by a dentist who, upon learning he was an archeologist, had commented “Oh, what a coincidence! You know, I’m an amateur archeologist myself.” A bit irritated, the professor had replied, “Well, this is a coincidence; it so happens I am an amateur

dentist!” The story’s message was clear: those lacking formal training, especially “hobby archeologists,” (commonly referred to as “pot-hunters”) should never assume the title of “archeologist.” Following that lead, I was under the mistaken impression that most, if not all, “amateur” archeologists, if not selling their finds, were adding to their personal collections and destroying the context from which artifacts were obtained. Well-meaning and (perhaps) well read, archeology aficionados, were to be welcomed for their support. In the meantime, however, they should step aside and leave the work to professionals. This early impression was soon to change.

I first met Dr. Alan Skinner in the Spring of 1972 when I entered the graduate Anthropology program at Southern Methodist University (SMU) and was assigned to work in the Archeology Research Program lab under his direction. In those days, the Dallas Archeological Society (DAS) held their monthly meetings at SMU, and many graduate archeology majors were encouraged to attend. It was through those meetings that I learned about the larger Texas Archeological Society (TAS) and Alan’s involvement with

them. As I listened to presentations, read papers, and got to know members of the DAS, my early stereotypes gradually dissolved. Not only was the level of passion of these “avocational” archeologists matched by competence but there appeared to be full cooperation and collaboration between professionals and their avocational colleagues. The fact that Alan had carried out field research for his dissertation using volunteers from TAS Field Schools was especially striking. Although there had been others, he was the first professional I knew who had so completely engaged with and based much of his work on material collected by a volunteer organization combining efforts of so-called “amateurs” with professional archeologists.



Alan at SMU ca. 1970. Photo credit: ARC@SMU.

Alan was a mentor and colleague to me, serving as the Principal Investigator on the Lake Bob Sandlin Project, which became my master's thesis, and later as a colleague when I was working on small CRM projects while teaching at a community college in South Dallas County. Our paths have continued to cross over the years, as I have been involved in TAS in an off-and-on basis. After completing my Ph.D. in History in 2003, I returned to more active involvement in TAS, and later I became a member of the Tarrant County Archeological Society, presenting some of my work in their meetings. Those years at SMU, under Alan's tutelage had an impact on how I now view the important role TAS, DAS,

Tarrant County Archeological Society (TCAS), and now the North Texas Archeological Society (NTAS) play in our understanding of Texas prehistory/history. In the last five years of my tenure at the Richland Campus of Dallas College, I co-sponsored a Learning Community Project combining history and anthropology students investigating the mostly forgotten African American community of Little Egypt, once located in the heart of what was to become Lake Highlands in Dallas, Texas. In our initial stages of archeological work, Chris Meis and Glynn Osburn, both members of TCAS (now NTAS) ventured over into Dallas to offer their assistance. As work progressed, I was able to present updates on the work at NTAS meetings. Of course, Alan Skinner was there to listen and to offer comments and advice. Alan supported that work in other ways as well. Since the Little Egypt Project site was located near AR Consultants, Alan's firm, he visited our site more than once and helped with both advice and a bucket of large nails we sorely needed to stake out areas where our grid coordinates had to be removed after each semester.

I recently analyzed and documented the Rosick collection of artifacts, and the report will appear in the 2025 volume of the Journal of the NTAS. This project has allowed me the opportunity to revisit and reflect on my thoughts on the importance of “amateur archeologist” groups and their role in the growth of Texas archeology. Don Rosick was a teenager in the 1950s when he obtained the artifacts in this collection. As I began searching for background and early field work notes by the TCAS, I encountered the excitement and challenges confronting those early pioneering investigators of the mid-1950s and early 1960s. The first newsletter of the TCAS, *The Catalogue*, mentions plans for “upcoming investigations” of a site in Tarrant County, near Hadley, a small community located in far west Arlington. I recognized names in the list of members, including Don Rosick, that were also affiliated with the DAS.

Thus, my research inevitably took me to the neighboring DAS, already a strong organization at the time, with members willing to offer support. Like our projects often do, my research for the Rosick Collection had taken on a life of its own, rapidly becoming as much an investigation into the origins and history of the nascent Tarrant County Archeological Society as well as a study of the artifacts in Don Rosick's collection. Coincidentally, Dr. Skinner offered his support once again, providing contact with persons possibly able to offer information on

the Dallas side of that history. My career seems to have come full circle, returning to a recognition and deeper appreciation of the contributions of avocational (aka "amateur") archeologists to our knowledge of North Texas prehistory/ history, and some of those professionals, particularly Alan, who recognized those contributions early on. I am delighted to have a report on the Rosick Collection scheduled to appear in the 2025 volume of this journal - thanks to Dr. S. Alan Skinner, his work, life and friendship.

ALAN SKINNER

Jesse Todd

I met Alan at a Dallas Archeological Society meeting where he mentioned excavations at the Rough Green site which I volunteered to help at. There, I met Lance Trask and worked with other members of the Dallas and Tarrant County archeological societies, especially Jim Blanton. I was interested in analyzing shells, and Alan allowed me to examine those at the site. As an aside, I still remember the smell of the cowboy coffee wafting across the site.

Alan and I became friends, and later he asked me if I wanted to go with him to see the Allen dam. The problem was that there was ice and snow on the ground. We went anyway. It was then that my wife questioned the wisdom of marrying me! I received my Masters in Anthropology and Alan hired me.

I don't have many exciting stories about surveys with Alan because he trusted me to conduct my own surveys, which I did mainly with Lance. There is one survey in South Texas that stuck in my mind. While Alan and I were surveying, one of us kept an eye out for a six- to eight-foot alligator that was in the area. Alan always supported and helped me when I

wanted to do research articles. Being a researcher himself, it was down his alley.

Alan did make me one promise that he kept faithfully. He promised me that I would see more of Texas than I had expected in my life. He was not wrong. Some of it I gladly would have skipped and some of it was beautiful.

Alan has been an excellent boss and mentor and is a very dear friend. He knows that there is a cup of coffee at Antoinette's and my home with his name on it!



Alan screening during the Lake Fork Reservoir Project. Photo credit: ARC@SMU.

ALAN SKINNER'S CONTRIBUTION TO NTAS AND TEXAS ARCHEOLOGY

Lance K Trask

I started working for Alan in 1995 and back then it was just him, Brenda Whorton, and me, and when I left 14 years later, I was in awe at how much had changed and how the company had grown over those years. Alan is a great friend, great mentor, and as Jesse Todd noted; always had a cup of coffee in his hand. Probably the most interesting story of our time together was when we found the concrete airplane north of Fort Worth. Alan, Jesse Todd, Floyd Kent, Ronald van Oeveren, and I were doing a survey of a tract of land, and Floyd called me over to inspect some strange shaped feature at ground level. At first, because of the ground cover, we thought it was some type of trough or watering feature, but why was the rim only slightly above the ground? After much thought and lots of digging we were able to see that the shape of the feature resembled an airplane. But why was there only erosion/damage on the back side of the feature? Back at the office we were scratching our heads as to what it was and

why there? Later Alan's wife Nina informed us that the damage was from bullets!! Fast forward after extensive research on Ronald's part and we find out that it was one of ten ground targets used by Airmen from WWI flying from Hicks Airfield, across the road from our survey. They were built so pilots could use them for gunnery strafing practice, and they were constructed to be slightly depressed into ground so they could be filled with water from nearby windmills. With water in the target, it was easier for the pilots and ground crews to determine the accuracy of their strafing runs, thus the destruction of only certain parts of the concrete airplane. Alan was able to persuade the developer to set aside the WWI aerial target and preserve it. It was an awesome journey with Alan and ARC and being part of that amazing group of folks made me a better archeologist. Watching the company grow being a part of that is very special to me and I will always cherish those time.



A series of photos of Alan(in the red shirt) instructing others on how to build a bridge during the Lake Fork Reservoir Project. Photos credit: ARC@SMU.

S. ALAN SKINNER PUBLICATIONS & REPORTS

Compiled by Robert F. (Skipper) Scott, IV¹ and Molly A. Hall²

1 Regulatory Archeologist, US Army Corps of Engineers Ft. Worth District (retired)

2 AR Consultants, Inc.

PUBLICATIONS

- | | |
|--|---|
| <p>Blaine, Jay C. and S. Alan Skinner
2023 Mid-1700s Bridle Bits from the Gilbert Site and Other Sites on the Southern High Plains. <i>Bulletin of the Texas Archeological Society</i> 94(1):85-106.</p> <p>2024 The Implications of an Unfired Lead Ball "Cache" at the Longest Site, Oklahoma. <i>Caddo Archeology Journal</i> 34(1):61-72.</p> <p>Blaine, Jay C., S. Alan Skinner, and Dawn M. Crawford
2024 Is the "Late Spot" at Longest a Missed Opportunity? <i>Plains Anthropologist</i>, in press.</p> <p>Blaine, Jay C., S. Alan Skinner, and Molly A. Hall
2017 The Saga of Winkler-1: A Midland Site in Southeast New Mexico. <i>PaleoAmerica</i> 3(1):48-73.</p> <p>Bousman, C. Britt and S. Alan Skinner
2007 The Search for Late Pleistocene pre-Clovis Archeology in Texas: Problems and Potentials. <i>Bulletin of the Texas Archeological Society</i> 78(1):37-46.</p> <p>Bousman, C. Britt, Jesse Todd, and S. Alan Skinner
2015 Archaeological Investigations at the Dalbey Site (41DL350), Dallas County, Texas. <i>Bulletin of the Texas Archeological Society</i> 86(1):61-85.</p> <p>Erwin, Charlene, S. Alan Skinner, and Gerald Franklin
2024 The Erwin Bridle Bit, A Mid-1700s Equestrian Artifact. <i>Journal of the North Texas Archeological Society</i> 3:101-114.</p> <p>Gumerman, George and S. Alan Skinner
1968 A Synthesis of the Prehistory of the Central Little Colorado Valley, Arizona. <i>American Antiquity</i> 33(2):185-199.</p> <p>Pocklington, Kathryn M. and S. Alan Skinner
2014 The Coal County Steam Boiler. <i>Oklahoma Anthropological Society Bulletin</i> 57(1):43-50.</p> <p>Skinner, S. Alan
1964 Lizard Cave: A Rockshelter in Northeastern New Mexico. <i>El Palacio</i> 71(3):22-29.</p> <p>1965 The Sedillo Site: A Pit House Village in Albuquerque. <i>El Palacio</i> 72(1):5-24.</p> | <p>1966 Review of "Archaeology of the Ute Dam and Reservoir, Northeastern New Mexico" by Laurens C. Hammack, <i>The Kiva</i> 32(1):39-40.</p> <p>1966 A Survey of Field Houses at Sapawe, North Central New Mexico. <i>Southwestern Lore</i> 31(1):18-24.</p> <p>1967 A Ceremonial Room at Pottery Mound. <i>Southwestern Lore</i> 32(1):19-23.</p> <p>1967 Four Historic Sites near Flagstaff, Arizona. <i>Plateau</i> 39(3):105-123.</p> <p>1968 Camp Willow Grove, Arizona Territory. <i>Plateau</i> 41(1):1-13.</p> <p>1968 Further Excavations at the Sedillo Site. <i>Southwestern Lore</i> 34(3):69-81.</p> <p>1968 Two Historic Period Sites in the El Rito Valley, New Mexico. <i>Plains Anthropologist</i> 13(39):63-70.</p> <p>1971 Prehistoric Settlement of the De Cordova Bend Reservoir, Central Texas. <i>Bulletin of the Texas Archeological Society</i> 42(1):149-269.</p> <p>1974 Gearing Up for Contract Archaeology. In <i>Proceedings of the 1974 Cultural Resource Management Conference, Federal Center, Denver</i>, edited by W.D. Lipe and A.J. Lindsay, Jr., pp. 69-73. Museum of Northern Arizona, Technical Series No. 14, Flagstaff, Arizona.</p> <p>1974 Prehistoric Settlement of a "Natural Area." Unpublished PhD dissertation, Department of Anthropology Southern Methodist University.</p> <p>1977 Quality Control in American Archaeology. <i>1977 Proceedings of the American Society for Conservation Archaeology</i>.</p> <p>1978 Historic Wichita Figures from the Edge of the Llano Estacado. <i>Great Plains Journal</i> 17:40-48.</p> <p>1979 Bid Solicitation and Award Protestation: A Case Study. <i>Journal of Field Archaeology</i> 6(1):108-111.</p> <p>1979 A Secondary Burial Cache from West Texas. <i>Journal of Field Archaeology</i> 4(5):484-489.</p> <p>1980 Pre-adaptation for the Southern Cult in the Caddoan Heartland. <i>Louisiana Archaeology</i> 6(1):207-221.</p> <p>1980 Public Archaeology and the ELCOR Burial Cave. <i>Plains Anthropologist</i> 25(87):1-15.</p> |
|--|---|

- 1988 Where Did All the Indians Go? *The Record of the Dallas Archeological Society* 42(3):101-104.
- 1993 Indiana Jones is a Boy Scout without a Merit Badge. *Society of Professional Archeologists Newsletter* 17(6):6-8.
- 1994 Archaeological Integrity and Integration: Mercenaries, Weasel Words, and Privatization. *Society of Professional Archeologists Newsletter* 18(3):1-6.
- 1995 Scouting for Archaeology. *CRM* 18(3):39-41.
- 1997 The Boy Scouts Are Calling. *Bulletin of the Society for American Archaeology* 15(4):17.
- 2004 The Field of Rocks Site. *Bulletin of the Texas Archeological Society* 75(1):121-129.
- 2005 The Rainbow Site, An Unusual Syrup Mill in Gregg County, Texas. *Journal of Northeast Texas Archeology* 21(1):1-13.
- 2016 Crevice Burials and Tipi Rings on the Southern Great Plains. In "History and Archaeology-Connecting the Dots, Papers in Honor of David H. Snow," edited by Emily J. Brown, Carol J. Condie, and Helen K. Crotty. Special Issue, *Papers of the Archaeological Society of New Mexico* 42(1):217-238.
- 2021 The Cobb-Pool Site, A Caddo Settlement in the Mountain Creek Valley. *Caddo Archeological Journal* 31(1):76-85.
- 2024 Dedication in Memoriam Jay C. Blaine. *Bulletin of the Texas Archeological Society*, in press.
- Skinner, S. Alan, S. E. Bearden, and P. P. Steed, Jr.
1974 Prehistory at MILEHIGH. *The Artifact of the El Paso Archeological Society* 12(1):1-84.
- Skinner, S. Alan, Cody S. Davis, Katheryn Crater Gershtein
2024 Unexpected Bois d'Arc at the Redwine Site. *Journal of Texas Archeology and History*, in press.
- Skinner, S. Alan and Philip Fisher
2025 The Prehistoric and Historic Occupation of the Franty Watson Site (41PP116) in Palo Pinto County, Texas. *Journal of the North Texas Archeological Society*, in press.
- Skinner, S. Alan and Molly A. Hall (editors)
2018 *Neither Snow, Nor Rain, Nor Heat, Nor Gloom of Night Stays These Couriers, Essays Honoring Jay C. Blaine*. AR Consultants, Inc., Richardson, Texas. pp. 19-40. AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Molly A. Hall
2018 Wichita Recycling of French Brass Kettles at Spanish Fort. In *Neither Snow, Nor Rain, Nor Heat, Nor Gloom of Night Stays These Couriers, Essays Honoring Jay C. Blaine*, edited by S. Alan Skinner and Molly A. Hall, pp. 19-40. AR Consultants, Inc., Richardson, Texas.
- Skinner, S. A., R. K. Harris, and K. M. Anderson (editors)
1969 *Archaeological Investigations at the Sam Kaufman Site, Red River County, Texas*. Contributions in Anthropology No.5, Department of Anthropology, Southern Methodist University, Dallas.
- Skinner, S. Alan and Mark S. Henderson
1973 *Archaeological Survey of Nambe Falls Reservoir*. Research Report 20, Archaeology Research Program, Southern Methodist University, Dallas.
- Skinner, S. Alan, C. Saunders, D. Poirier, D. Krofina, and P. Wheat
1998 Be Prepared, The Archeology Merit Badge is Here. *Common Ground* 3(1):38-43.
- Skinner, S. Alan, Jesse Todd, Antoinette Todd, Robert Scott, and Leslie L. Bush
2007 The Ubil Site and the White Rock Escarpment. *The Record of the Dallas Archeological Society* 55(1):1-47.
- Skinner S. Alan and Lance K. Trask
2011 The Last Concrete Airplane at Taliaferro Field, Texas. *Archeological Journal of the Texas Prairie-Savannah* 1(1):48-56.
- Skinner, S. Alan and Ronald van Oeveren
2007 A Stranger Came to Texas. In "Texas and Points West: Papers in Honor of John A. Hedrick and Carrol P. Hedrick," edited by Regge N. Wiseman, Thomas C. O'Laughlin, and Cordelia T. Snow. Special Issue, *Archaeological Society of New Mexico* 33(1):155-161.
- Skinner, S. Alan, Catrina B. Whitley, C.S. Davis, W.W. Crook, III, and Mark D. Hughston
2014 An Engraved Slate Gorget from the Upper Rockwall Site (41RW2), Rockwall County, Texas. *Archeological Journal of the Texas Prairie-Savannah* 4(1):68-75.
- Whitley, Catrina B. and S. Alan Skinner
2015 A Late Archaic Multiple Burial at Lake Ray Hubbard. *Bulletin of the Texas Archeological Society* 86(1):209-236.
- Whorton, Brenda B. and S. Alan Skinner
1995 The Coho and Nancy Jane Smith Homestead: A Unique Rural Archaeological Site. *Heritage* 13(1):16-19.

TECHNICAL REPORTS¹

- Anglin, Deborah and S. Alan Skinner
2012 *Historical Review of the Blossom City Dam*. Cultural Resources Report 2012-70, AR Consultants, Inc., Richardson, Texas.
- Bennett, Jeyne and S. Alan Skinner
1984 *Archaeological Data Recovery at Bay Springs Lake, Tishomingo County, Northeast Mississippi*. Cultural Resources Report 84-16, AR Consultants, Dallas.
- Bousman, Britt and S. Alan Skinner
1984 *An Archaeological Survey of Five Wise Electric Cooperative Right-of-Ways*. Cultural Resources Report 84-13, AR Consultants, Dallas.
- Boxwell, Justin and S. Alan Skinner
2012 *Archaeological Survey of the Westhaven Development Site*. Cultural Resources Report 2012-66, AR Consultants, Inc., Richardson, Texas.
- 2013 *Archaeological Study of the Cummings Tract, Denton and Dallas Counties, Texas*. Cultural Resources Report 2013-68, AR Consultants, Inc., Richardson, Texas.
- Boxwell, Justin, S. Alan Skinner, Nick Coleman, and Rebecca Shelton
2012 *Cultural Resource Survey of the Proposed Trinity Mainstem Pipeline Route*. Cultural Resources Report 2012-52, AR Consultants, Inc., Richardson, Texas.
- Boxwell, Justin, S. Alan Skinner, Allen M. Rutherford, Nick Coleman, and Rebecca Shelton
2014 *A Cultural Resources Survey of the Proposed Trinity Mainstem Pipeline Route in Kaufman County, Texas*. Cultural Resources Report 2014-32, AR Consultants, Inc., Richardson, Texas.
- Chapman, Rebecca and S. Alan Skinner
2006 *The Archaeological Potential of the Dallas/Fort Worth International Airport, Dallas and Tarrant Counties, Texas*. Cultural Resources Report 2006-50, AR Consultants, Inc., Dallas.
- Coleman, Nick, Molly A. Hall, and S. Alan Skinner
2014 *An Archaeological Evaluation of the Proposed Houston Leon Seismic Activities, Houston & Leon Counties, Texas*. Cultural Resources Report 2014-56, AR Consultants, Inc., Richardson, Texas.
- 2015 *An Archaeological Evaluation of the Proposed Houston County Seismic Activities, Houston County, Texas*. Cultural Resources Report 2015-26, AR Consultants, Inc., Richardson, Texas.
- Coleman, Nick, Kathryn M. Pocklington, and S. Alan Skinner
2014 *An Archaeological Evaluation of the Proposed Leon County Seismic Activity Area, Leon & Houston Counties, Texas*. Cultural Resources Report 2014-68, AR Consultants, Inc., Richardson, Texas.
- Coleman, Nick and S. Alan Skinner
2010 *A Cultural Resources Evaluation of the Canyon Oak Cliff Development Site*. Cultural Resources Report 2010-59, AR Consultants, Inc., Dallas.
- 2011 *Archaeological Reconnaissance of the Proposed Fall Creek Residential Subdivision, Allen, Texas*. Cultural Resources Report 2011-49, AR Consultants, Inc., Richardson, Texas.
- 2011 *Archaeological Survey of the Hillsboro City Park, Hill County, Texas*. Cultural Resources Report 2011-08, AR Consultants, Inc., Dallas.
- 2014 *Class III Cultural Resources Inventory Report for Sandridge Exploration & Production, LLC Bromlow 2015 1-34H Well Pad, Major County, Oklahoma*. Cultural Resources Report 2014-48, AR Consultants, Inc., Richardson, Texas.
- 2015 *An Archaeological Evaluation of the Proposed Rock Ridge East 3D Extension Seismic Exploration Activities, Houston County, Texas*. Cultural Resources Report 2015-27, AR Consultants, Inc., Richardson, Texas.
- 2015 *A Class III Cultural Resources Inventory of Bravo Natural Resources LLC's Stella Tucker #2-22/27H & #3-22/27H Well Pad, Lease Road, and Pipeline, Coal County, Oklahoma*. Cultural Resources Report 2015-12, AR Consultants, Inc., Richardson, Texas.
- 2015 *Class III Cultural Resources Inventory for Red Rocks Oil & Gas Operating, LLC Anna Hampton #2 Well Pad, Lease Road, and Pipeline, Grady County, Oklahoma*. Cultural Resources Report 2015-19, AR Consultants, Inc., Richardson, Texas.
- 2015 *Damage Assessment Report for the Enervest Operating, LLC Sun Bear #1H-3 Well Pad, Lease Road, and Pipeline, Roger Mills County, Oklahoma*. Cultural Resources

¹ While it is unorthodox to include technical reports in these kinds of lists of an individual's publications, we felt that the magnitude of Alan Skinner's contributions to archeology is best exemplified by the variety and quantity of these types of reports that he has authored.

- Report 2015-10, AR Consultants, Inc., Richardson, Texas.
- 2016 *Class III Cultural Resources Inventory for the Crown Energy Resources, LLC Gertie to Harris Riser 12" SWD Pipeline and Canyon 8" Gas Pipeline, Payne County, Oklahoma.* Cultural Resources Report 2016-27, AR Consultants, Inc., Richardson, Texas.
- 2016 *Class III Cultural Resources Inventory for the Kaiser-Francis Oil Company BIA 5-8-9 1H Well Pad, Lease Road, and Pipeline, Caddo County, Oklahoma.* Cultural Resources Report 2016-34, AR Consultants, Inc., Richardson, Texas.
- 2016 *Class III Cultural Resources Inventory for the Sandridge Exploration and Production, LLC Hawk Haven 2710 1-22H Well Pad and Utilities, Alfalfa County, Oklahoma.* Cultural Resources Report 2016-24, AR Consultants, Inc., Richardson, Texas.
- 2016 *Damage Assessment Report for Petroquest Energy, LLC Kemp #3-18H Well Pad, Lease Road, and Pipeline, Pittsburg County, Oklahoma.* Cultural Resources Report 2016-26, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory for the Council Oak Resources, LLC Sisson 1-25H Well Pad, Lease Road, and Pipeline, Blaine County, Oklahoma.* Cultural Resources Report 2017-13, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Christensen 22_15-16N-12W 1HX Well Pad, Tank Battery, Lease Road, and Pipeline, Blaine County, Oklahoma.* Cultural Resources Report 2017-11, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Cottontail 31_30-17N-11W 1HX Well Pad, Pipeline, and Lease Road, Blaine County, Oklahoma.* Cultural Resources Report 2017-14, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Pierce 7_6-15N11W 1HX Well Pad and Lease Road, Blaine County, Oklahoma.* Cultural Resources Report 2017-12, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Porcupine 34_27-16N-12W 1HX Well Pad, Pipeline, and Lease Road, Blaine County, Oklahoma.* Cultural Resources Report 2017-15, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for Council Oak Resources, LLC Cox 1-7H/1-8H Well Pad, Lease Road, and Pipeline, Blaine County, Oklahoma.* Cultural Resources Report 2017-28, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for the Council Oak Resources LLC Ear Rings #1-15H Well Pad, Lease Road, and Pipeline, Blaine County, Oklahoma.* Cultural Resources Report 2017-20, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for Devon Energy Production Company, L.P. Rhino 8_5-14N-9W 1HX Well Pad and Lease Road, Canadian County, Oklahoma.* Cultural Resources Report 2017-19, AR Consultants, Inc., Richardson, Texas.
- Coleman, Nick, S. Alan Skinner, Steve W. Ahr, Cody S. Davis
2012 *An Archaeological Survey of the Proposed Somervell County Water District Pipeline Route.* Cultural Resources Report 2012-02, AR Consultants, Inc., Richardson, Texas.
- Coleman, Nick, S. Alan Skinner, and Kathryn M. Pocklington
2015 *Class III Cultural Resources Inventory Report for Stephens Production Company USA No. 3-9 Well Pad and Utilities, Sebastian County, Arkansas.* Cultural Resources Report 2015-01, AR Consultants, Inc., Richardson, Texas.
- Coleman, Nick, Cameron Turley, and S. Alan Skinner
2010 *Class III Cultural Resources Inventory Report for Devon Energy Production Company, L.P., Hecken Master Development Plan, Tarrant County, Texas.* Cultural Resources Report 2010-42, AR Consultants, Inc., Dallas.
- Crater Gershtein, Kathryn P., Emily D. Goetchius, Abigail E. Fisher, Philip Fisher, Allen M. Rutherford, Tyler J. Rhoads, Kathryn A. Cross, and S. Alan Skinner
2020 *Archaeological Survey of the Proposed Riverton-Sand Lake 138 and 345 KV Transmission Lines Route.* Cultural Resources Report 2020-15, AR Consultants, Inc., Richardson, Texas.
- Crater Gershtein, Kathryn P., Emily D. Goetschius, Danielle Zickus, and S. Alan Skinner
2018 *Class III Cultural Resources Inventory for the Staghorn Petroleum, LLC Sapper 19-13-*

- 9-16 1H Well Pad and Lease Road, Blaine County, Oklahoma. Cultural Resources Report 2018-38, AR Consultants, Inc., Richardson, Texas.
- Crater Gershtein, Kathryn P. and S. Alan Skinner
2019 *Class III Cultural Resources Inventory for the Trinity Operating Carney 1-8/5H, Bernice 3-7/6H Well Pad and Lease Road, Pittsburg County, Oklahoma.* Cultural Resources Report 2019-02, AR Consultants, Inc., Richardson, Texas.
- Craver, Jeff and S. Alan Skinner
2005 *Archaeological Survey of Uptown Village at Cedar Hill, TX.* Cultural Resources Report 2005-03, AR Consultants, Inc., Dallas.
- 2006 *An Archaeological Survey of the Loop 410 Property San Antonio, Texas.* Cultural Resources Report 2006-31, AR Consultants, Inc., Dallas.
- 2006 *Cultural Resources Survey for the Nacogdoches Power Project.* Cultural Resources Report 2006-42, AR Consultants, Inc., Dallas.
- 2007 *Archaeological Testing of Sites 41GM410 and 41GM412, Grimes County, Texas.* Cultural Resources Report 2007-33, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of the Proposed Walsh Ranch Parkway.* Cultural Resources Report 2008-07, AR Consultants, Inc., Dallas.
- 2008 *An Archaeological Survey of the Sandhills Pipeline Route, Kearny County, Kansas.* Cultural Resources Report 2008-16, AR Consultants, Inc., Dallas.
- Craver, Jeff, S. Alan Skinner, and Jesse Todd
2006 *Cultural Resources Survey at The Shores of Richland/Chambers.* Cultural Resources Report 2006-38, AR Consultants, Inc., Dallas.
- Cross, Kathryn A., Emily D. Goetschius, and S. Alan Skinner
2018 *Class III Cultural Resources Inventory for Devon Energy Production Co., LP Cottontail 31_30-17n-11W 2HX And Cottontail 31_30-17n-11W 3HX Well Pads, Pipelines, and Lease Roads, Blaine County, Oklahoma.* Cultural Resources Report 2018-49, AR Consultants, Inc., Richardson, Texas.
- Cross, Kathryn A., and S. Alan Skinner
2019 *Archaeological Survey of The Proposed South Canadian Wastewater Treatment Plant Improvements, Cleveland County, Oklahoma.* Cultural Resources Report 2019-28, AR Consultants, Inc., Richardson, Texas.
- 2019 *Phase I Cultural Resource Survey of the Austin Collage Caretaker Home Project, Lake Texoma, Grayson County, Texas.* Cultural Resources Report 2019-31, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., Nick Coleman, and S. Alan Skinner
2009 *Archaeological Survey of the Elm Fork Flood Protection Project.* Cultural Resources Report 2009-41, AR Consultants, Inc., Dallas.
- 2010 *An Archaeological Survey of Haltom City's Whites Branch Park and Trail Extension.* Cultural Resources Report 2010-49, AR Consultants, Inc., Dallas.
- 2014 *Archaeological Survey of Dallas Water Utilities Electra Street Pipeline Replacement Project, Dallas County, Texas.* Cultural Resources Report 2014-30, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., Nick Coleman, Cameron Turley and S. Alan Skinner
2012 *An Archaeological Survey within the Dallas Water Utilities Eastside 120-Inch Pipeline Route, Dallas County, Texas.* Cultural Resources Report 2012-71, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., Kathryn M. Pocklington, and S. Alan Skinner
2012 *The Redwine Site (41COL228), A Post-Civil War Farmstead in Collin County, Texas.* Cultural Resources Report 2012-60, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., Nick Coleman, S. Alan Skinner, and Deborah Anglin
2012 *Archaeological Survey of the Proposed Lake Texoma Outfall to Wylie Water Treatment Plant Raw Waterline.* Cultural Resources Report 2012-25, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., Allen M. Rutherford, and S. Alan Skinner
2023 *Archaeological Investigations of the Bois D'Arc Lake Mitigation Properties: Riverby Ranch, Grassland Mitigation Tract, & Upper Bois d'Arc Creek Mitigation Site, Fannin and Lamar Counties, Texas.* Cultural Resources Report 2023-04. AR Consultants, Inc., Richardson, Texas., Richardson.
- Davis, Cody S., Rebecca Shelton, and S. Alan Skinner
2013 *Archaeological Survey at Fort Worth's Northwest Community Park, Tarrant County, Texas.* Cultural Resources Report 2013-11, AR Consultants, Inc., Richardson, Texas.

- Davis, Cody S., and S. Alan Skinner
 2009 *Cultural Resources Survey of the Benbrook Federal #1H and #15H Wells, Tarrant County, Texas*. Cultural Resources Report 2009-28, AR Consultants, Inc., Dallas.
- 2010 *Cultural Resources Evaluation of the Dallam Ranch Wind Farm, Dallam County, Texas*. Cultural Resources Report 2010-60, AR Consultants, Inc., Dallas.
- 2010 *Cultural Resource Evaluation of the Proposed 1,000 Acre LBJ Grasslands 3D Seismic Project, Wise County, Texas*. Cultural Resources Report 2010-50, AR Consultants, Inc., Dallas.
- 2018 *Archaeological Investigation at the Witcher Property Within the Proposed Lower Bois d'Arc Creek Reservoir, Fannin County, Texas*. Cultural Resources Report 2018-18, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., S. Alan Skinner, Deborah Anglin, and Kathryn M. Pocklington
 2016 *Archeological Survey of the Proposed Lower Bois D'Arc Creek Reservoir Pipeline Project, Fannin County, Texas*. Cultural Resources Report 2016-02, AR Consultants, Inc., Richardson, Texas.
- Davis, Cody S., S. Alan Skinner, and Molly A. Hall
 2011 *Archaeological Survey of the Proposed Lower Bois D'Arc Creek Reservoir Fannin County, Texas*. Cultural Resources Report 2011-44. AR Consultants, Inc., Richardson, Texas.
- 2014 *Archaeological Survey of the Proposed Lower Bois d'Arc Creek Reservoir, Fannin County, Texas*. Cultural Resources Report 2014-60, AR Consultants, Inc., Richardson, Texas.
- Doming, Kandi L. and S. Alan Skinner
 2014 *Archaeological Reconnaissance of the Lebanon Ridge Development Phase 2, Denton County, Texas*. Cultural Resources Report 2014-45, AR Consultants, Inc., Richardson, Texas.
- Fisher, Philip, Emily D. Goetschius, and S. Alan Skinner
 2018 *Class III Cultural Resources Inventory for the Le Norman Operating, LLC Berryman USA 1H-14 Well Pad, Pipeline, and Lease Road, Ellis County, Oklahoma*. Cultural Resources Report 2018-15, AR Consultants, Inc., Richardson, Texas.
- Fisher, Philip and S. Alan Skinner
 2017 *Archaeological Survey of the Proposed Line WL-201 Pipeline Route, Clay County, Texas*. Cultural Resources Report 2017-47, AR Consultants, Inc., Richardson, Texas.
- 2017 *Archaeological Survey of the Quail Valley Development, Parker and Tarrant Counties, Texas*. Cultural Resources Report 2017-30, AR Consultants, Inc., Richardson, Texas.
- 2018 *Archaeological Survey of the Proposed Oklahoma City Landfill Expansion CP Realty, Oklahoma County, Oklahoma*. Cultural Resources Report 2018-50, AR Consultants, Inc., Richardson, Texas.
- Fisher, Philip, Joy C. Tatem, and S. Alan Skinner
 2018 *Class III Cultural Resources Inventory for Armor Energy, Sable 2H Well Pad, Pipeline, and Lease Road, Canadian County, Oklahoma*. Cultural Resources Report 2018-07, AR Consultants, Inc., Richardson, Texas.
- Frederick, Charles D., Lance K. Trask, and S. Alan Skinner
 2006 *Archaeological Testing for the Trinity River Parkway*. Cultural Resources Report 2006-32, AR Consultants, Inc., Dallas.
- Glander, W., T. N. Sanders, and S. Alan Skinner
 1973 *Archaeological Resources at MILEHIGH, Hudspeth County, Texas*. Research Report 21, Archaeology Research Program, Southern Methodist University, Dallas.
- Goetschius, Emily D., Philip Fisher, and S. Alan Skinner
 2018 *Archaeological Survey of the Proposed Oklahoma City Landfill Expansion, Oklahoma County, Oklahoma*. Cultural Resources Report 2018-41, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for the Devon Energy Production Co., LP Chipmunk Bia Loop Pipeline, Blaine County, Oklahoma*. Cultural Resources Report 2018-32, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for Devon Energy Production Company, L.P. Moose 35-16N-12W 1H Well Pad and Pipeline, Blaine County, Oklahoma*. Cultural Resources Report 2018-05, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for EOG Resources, Inc. Hurst-Boughan 08#3H, 0805#4H, and 08#5H Well Pad, Pipeline, and Lease Road, Ellis County, Oklahoma*. Cultural Resources Report 2018-03, AR Consultants, Inc., Richardson, Texas.
- Goetschius, Emily D. and S. Alan Skinner
 2018 *Class III Cultural Resources Inventory for the Ranken Energy Corporation Linney #1-11 Well Pad and Lease Road, Cleveland*

- County, Oklahoma. Cultural Resources Report 2018-33, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for the Sandridge Exploration & Production, LLC Bromlow 2015 3-34H Well Pad Extension and Lease Road, Major County, Oklahoma.* Cultural Resources Report 2018-16, AR Consultants, Inc., Richardson, Texas.
- Goetschius, Emily D., S. Alan Skinner, and Molly A. Hall
2018 *Class III Cultural Resources Inventory for the Devon Energy Production Company, LP Eagle 23_14-18N-15W 1HX Well Pad and Lease Road, Dewey County, Oklahoma.* Cultural Resources Report 2018-13, AR Consultants, Inc., Richardson, Texas.
- Haines, Dan and S. Alan Skinner
1984 *Archaeological Survey of Structure 5-B, Southwest Laterals Water Shed, Concho County, Texas.* Cultural Resources Report 84-7, AR Consultants, Dallas.
- Hall, Molly A., Cody S. Davis, and S. Alan Skinner
2019 *National Register of Historic Places Testing and Archival Research At 17 Sites Within the Proposed Lower Bois D'arc Creek Reservoir, Fannin County, Texas.* Cultural Resources Report 2019-06, AR Consultants, Inc., Richardson, Texas.
- Hall, Molly A. and S. Alan Skinner
2012 *An Evaluation of the Archaeological Potential of the Nobel Pipeline Route, Weld County, Colorado.* Cultural Resources Report 2012-39, AR Consultants, Inc., Richardson, Texas.
- 2014 *An Archaeological Survey of the Proposed City Park North Trail Link, Erath County, Texas.* Cultural Resources Report 2014-27, AR Consultants, Inc., Richardson, Texas.
- 2014 *An Archaeological Survey of the Proposed Oak Trail Shores Pipeline, Hood County, Texas.* Cultural Resources Report 2014-26, AR Consultants, Inc., Richardson, Texas.
- 2015 *A Class III Cultural Resources Inventory of the Proposed Plains All-American, LLC Lea to New McKee Pipeline Route, Lea County, New Mexico.* Cultural Resources Report 2015-22, AR Consultants, Inc., Richardson, Texas.
- 2015 *Class III Cultural Resources Inventory Report for Eagle Rock Mid-Continent Operating, LLC, Blalock #4-34H/#5-34H, R1 Brangus #1-34H/#2-34H, & Clyde Hansen Farms #1-34H/#2-34H Well Pads and Utilities, Canadian County, Oklahoma.* Cultural Resources Report 2015-12, AR Consultants, Inc., Richardson, Texas.
- 2017 *Addendum to the Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Cottontail 31_30-17N-11W 1HX Well Pad, Pipeline, and Lease Road, Blaine County, Oklahoma.* Cultural Resources Report 2017-44, AR Consultants, Inc., Richardson, Texas.
- Hall, Molly A., S. Alan Skinner, Cody S. Davis, and Nick Coleman
2012 *Glass Mountain Pipeline Report.* Cultural Resources Report 2012-50, AR Consultants, Inc., Richardson, Texas.
- Jennings, Thomas A. and S. Alan Skinner
2005 *Archaeological Reconnaissance in Wood and Smith Counties, Texas.* Cultural Resources Report 2005-20, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey and Testing at the Keller Springs Development.* Cultural Resources Report 2005-14, AR Consultants, Inc., Dallas.
- Jennings, Thomas A., S. Alan Skinner, and Paul Lorrain
2005 *Archaeological Survey at the Lamar Ranch Development.* Cultural Resources Report 2005-15, AR Consultants, Inc., Dallas.
- Keller, John E. and S. Alan Skinner
2013 *Archaeological Survey of the Proposed Transfer Facility on South Padre Island, Cameron County, Texas.* Cultural Resources Report 2013-26, AR Consultants, Inc., Richardson, Texas.
- Lang, Brett, Jesse Todd, and S. Alan Skinner
2008 *Cultural Resources Survey for the Sections of the City of Meadow Solid Waste Facility.* Cultural Resources Report 2008-79, AR Consultants, Inc., Dallas.
- Kent, Floyd D. and S. Alan Skinner
1998 *Archaeology of the Steamboat Mountain Area, Taylor County, Texas.* Cultural Resources Report 98-8, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Cedar Mountain Preserve.* Cultural Resources Report 98-12, AR Consultants, Dallas.
- 1998 *Archaeological Survey of Austin Ranch, Denton County, Texas.* Cultural Resources Report 98-20, AR Consultants, Dallas.
- 2001 *Cultural Resources Evaluation of System Improvements Western Cass Water Supply Corporation.* Cultural Resources Report 2001-3, AR Consultants, Inc., Dallas.

- 2001 *Archaeological Survey of the Little Mound to Holly Lake Transmission Line, Upshur and Wood Counties, Texas.* Cultural Resources Report 2001-8, AR Consultants, Inc., Dallas.
- 2000 *Cultural Resources Survey of the Proposed London/Croft #1 Well Site.* Cultural Resources Report 2000-06, AR Consultants, Dallas.
- 2000 *Cultural Resources Survey of the Proposed West Marshall Antenna Site.* Cultural Resources Report 2000-07, AR Consultants, Dallas.
- 2002 *Archaeological Survey at the Junction of Elizabeth and Henrietta Creeks, Denton County, Texas.* Cultural Resources Report 2002-27, AR Consultants, Inc., Dallas.
- Kent, Floyd D., S. Alan Skinner, and Lance K. Trask
1998 *Cultural Resources Evaluation of the Waxahachie Creek Corridor Project.* Cultural Resources Report 98-1, AR Consultants, Dallas.
- 2001 *An Archaeological Evaluation of Site 41DL407, Balch Springs, Texas.* Cultural Resources Report 2001-44, AR Consultants, Inc., Dallas.
- Kent, Floyd D., Lance K. Trask, and S. Alan Skinner
1998 *Cultural Resources Evaluation of the Eldorado Heights Park.* Cultural Resources Report 98-7, AR Consultants, Dallas.
- 2001 *Cultural Resources Investigation adjacent to Tom Braniff Drive at the Crossing of the Elm Fork of the Trinity River, Irving, Texas.* Cultural Resources Report 2001-25, AR Consultants, Inc., Dallas.
- Kibbler, Karl, and S. Alan Skinner
2020 *Archaeological Investigations in the Denton Creek Floodplain at the Blackberry Farms Addition, Dallas County, Texas.* Cultural Resources Report 2020-17, AR Consultants, Inc., Richardson, Texas.
- Lang, Brett and S. Alan Skinner
2007 *An Archaeological Survey of the Bull Creek Wind Farm Borden County, Texas.* Cultural Resources Report 2007-54, AR Consultants, Inc., Dallas.
- 2007 *Dell City Telephone Optic Line.* Cultural Resources Report 2007-02, AR Consultants, Inc., Dallas.
- 2008 *The Archaeological Survey of the Cass County Texas Cell Tower.* Cultural Resources Report 2008-40, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of the El Dorado Diesel Pipeline Route, Union County, Arkansas.* Cultural Resources Report 2008-17, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of the Proposed ABEC Group, Inc. Development Site, Anderson County, Texas.* Cultural Resources Report 2009-05, AR Consultants, Inc., Dallas.
- 2015 *Archaeological Survey of the Proposed Lakewood Hills Development, Denton County, Texas.* Cultural Resources Report 2015-29, AR Consultants, Inc., Richardson, Texas.
- Lang, Brett, Jeff Craver, and S. Alan Skinner
2007 *Archaeological Survey of the Wolf Ridge Wind Farm, Cooke County, Texas.* Cultural Resources Report 2007-59, AR Consultants, Inc., Dallas.
- Nuncio, Katrina and S. Alan Skinner
2006 *The Archaeological Potential of the Great Republic WRA, Coke County, Texas.* Cultural Resources Report 2006-51, AR Consultants, Inc., Dallas.
- 2007 *The Archaeological Potential of the TXU Midstream Pipeline, Tarrant and Dallas Counties, Texas.* Cultural Resources Report 2007-01, AR Consultants, Inc., Dallas.
- Pocklington, Kathryn M. Nick Coleman, and S. Alan Skinner
2015 *Class III Cultural Resources Inventory Report for Stephens Production Company Reserve #1-36 Lateral Pipeline Route, Sebastian County, Arkansas.* Cultural Resources Report 2015-08, AR Consultants, Inc., Richardson, Texas.
- Polk, Michael R., Bradford R. Cole, and S. Alan Skinner
1984 *A Cultural Resources Overview, Survey and Evaluation of the Veterans Administration Medical Center, Boise, Idaho.* Cultural Resources Report 84-11, AR Consultants, Dallas.
- Roberson, Joanna and S. Alan Skinner
2008 *Archaeological Potential of The Rocky Cliffs Pipeline, LLC, Weld County, Colorado and Laramie County, Wyoming.* Cultural Resources Report 2008-50, AR Consultants, Inc., Dallas.
- Roberson, Joanna, Brett Lang, and S. Alan Skinner
2008 *An Archaeological Survey of the Proposed Hull Substation and Transmission Line, Panola County, Texas.* Cultural Resources Report 2008-74, AR Consultants, Inc., Dallas.

- Rutherford, Allen M., Philip Fisher, and S. Alan Skinner
 2018 *Class III Cultural Resources Inventory for the Newfield Exploration Mid-Continent, Inc. Hoile 1611 5H-25X, 7H-25X, and 12H-25X Well Pads and Utility Routes, Blaine County, Oklahoma*. Cultural Resources Report 2018-04, AR Consultants, Inc., Richardson, Texas.
- Rutherford, Allen M., Molly A. Hall, and S. Alan Skinner
 2017 *Archaeological Survey of the Proposed Bastrop Transfer Station, Bastrop County, Texas*. Cultural Resources Report 2017-38, AR Consultants, Inc., Richardson, Texas.
- Rutherford, Allen M. and S. Alan Skinner
 2014 *An Archaeological Evaluation of the Proposed Sprague EDAP Project, Hidalgo County, Texas*. Cultural Resources Report 2014-14, AR Consultants, Inc., Richardson, Texas.
 2014 *Archaeological Survey of the Proposed Bill Moore Mitigation Bank, Ellis and Navarro Counties, Texas*. Cultural Resources Report 2014-16, AR Consultants, Inc., Richardson, Texas.
 2017 *Archaeological Survey of the Routh Woods Tract, Collin County, Texas*. Cultural Resources Report 2017-07, AR Consultants, Inc., Richardson, Texas.
- Rutherford, Allen M., S. Alan Skinner, and Philip Fisher
 2017 *Archaeological Survey of the Routh Creek Tract, Collin County, Texas*. Cultural Resources Report 2017-21, AR Consultants, Inc., Richardson, Texas.
- Rutherford, Allen M., Joanna Suckling, and S. Alan Skinner
 2016 *Archaeological Survey of the Proposed Lake Texoma Raw Water Intake Pump Station Site and Pipeline Route, Grayson County, Texas*. Cultural Resources Report 2016-05, AR Consultants, Inc., Richardson, Texas.
- Shelton, Rebecca, Justin Bowell, and S. Alan Skinner
 2013 *Archaeological Survey of Proposed Pipeline Routes in the North Runnels WSC Service Area*. Cultural Resources Report 2013-18, AR Consultants, Inc., Richardson, Texas.
- Shelton, Rebecca, Nick Coleman, Justin Boxwell, and S. Alan Skinner
 2012 *An Archaeological Survey at the Proposed Housing Development at Custer and Ridgeview*. Cultural Resources Report 2012-20, AR Consultants, Inc., Richardson, Texas.
- Shelton, Rebecca, Cody S. Davis, S. Alan Skinner, and Jesse Todd
 2008 *An Archaeological Survey for Chesapeake Energy Corporation at DFW International Airport, Dallas and Tarrant Counties, Texas*. Cultural Resources Report 2008-25, AR Consultants, Inc., Dallas.
- Shelton, Rebecca and S. Alan Skinner
 2007 *Capricorn Phases III & IV*. Cultural Resources Report 2007-67, AR Consultants, Inc., Dallas.
 2008 *Archaeological Potential of Generation Energy Wind Farm Project Area, Cimarron County, Oklahoma*. Cultural Resources Report 2008-46, AR Consultants, Inc., Dallas.
 2008 *Archaeological Potential of Seiling Wind Farm Research Area, Dewey County, Oklahoma*. Cultural Resources Report 2008-26, AR Consultants, Inc., Dallas.
 2008 *Archaeological Survey of the Capricorn Ridge Wind Farm Phase V, Sterling and Coke Counties, Texas*. Cultural Resources Report 2008-51, AR Consultants, Inc., Dallas.
 2008 *Archaeological Survey of the Horse Hollow Wind Farm Phase V, Nolan and Taylor Counties, Texas*. Cultural Resources Report 2008-32, AR Consultants, Inc., Dallas.
 2008 *Archaeological Survey of the NRG Union Pacific Rail Spur, Leon and Limestone Counties, Texas*. Cultural Resources Report 2008-90, AR Consultants, Inc., Dallas.
 2012 *Reconnaissance Survey of the Trinity River Authority RO-4 Rehabilitation Pipeline Survey*. Cultural Resources Report 2012-23, AR Consultants, Inc., Richardson, Texas.
 2013 *Archaeological Survey of the Sam's Club Site El Paso County, Texas*. Cultural Resources Report 2013-61, AR Consultants, Inc., Richardson, Texas.
 2013 *Archaeological Survey of a Section of the Coates to Driver Pipeline, Reagan County, Texas*. Cultural Resources Report 2013-60, AR Consultants, Inc., Richardson, Texas.
- Shelton, Rebecca, S. Alan Skinner, and Nick Coleman
 2013 *Class III Cultural Resources Inventory for Devon Energy Production Company, L.P., Robedaux 28-22N-1E 1MH & Robedaux 33-22N-1E 1MH Well Pad*. Cultural Resources Report 2013-06, AR Consultants, Inc., Richardson, Texas.
- Shelton, Rebecca, S. Alan Skinner, and Jeff Craver
 2007 *Archaeological Survey of Phase I and Phase II at Capricorn Ridge Wind Farm, Sterling*

- County, Texas. Cultural Resources Report 2007-76, AR Consultants, Inc., Dallas.
- Shelton, Rebecca, S. Alan Skinner, and Cody S. Davis
2009 *Archaeological Survey of the APFM Pipeline from Muddy Creek to Lavon Lake*. Cultural Resources Report 2009-33, AR Consultants, Inc., Dallas.
- Shelton, Rebecca, S. Alan Skinner, and Jesse Todd
2008 *Cultural Resource Study for the Hardeman Wind Project Area*. Cultural Resources Report 2008-61, AR Consultants, Inc., Dallas.
- Skinner, S. Alan
1974 *An Evaluation of the Archaeological Resources at Lake Whitney, Texas*. Contributions in Anthropology No. 14, Department of Anthropology, Southern Methodist University, Dallas.
- 1978 *Archaeology of the Thurber Coal Lease*. Archaeology Research Program, Southern Methodist University, Dallas.
- 1983 *An Archaeological Survey at Fairfield Lake State Recreation Area*. Cultural Resources Report 83-1, AR Consultants, Dallas.
- 1983 *An Archaeological Survey of the F.S. Hill #1 Well Site, Freestone County, Texas*. Cultural Resources Report 83-7, AR Consultants, Dallas.
- 1983 *Cultural Resource Evaluation of Well Site No. 8 Lake Mineral Wells State Park*. Cultural Resources Report 83-2, AR Consultants, Dallas.
- 1983 *Cultural Resources Overview of the Lake Fork Raw Water Transmission Line*. Cultural Resources Report 83-3, AR Consultants, Dallas.
- 1983 *Cultural Resources Overview of the Northern Hudspeth County Sites, HU-1A and HU-1B*. Cultural Resources Report 83-6, AR Consultants, Dallas.
- 1983 *Cultural Resources Overview of Site NP-F9A, Dimmit County, Texas*. Cultural Resources Report 83-5, AR Consultants, Dallas.
- 1983 *Cultural Resources Survey of a Well Location in the Lance Rosier Unit of the Big Thicket National Preserve*. Cultural Resources Report 83-4, AR Consultants, Dallas.
- 1984 *An Archaeological Survey of the Exxon Pipeline at Fairfield Lake State Recreation Area*. Cultural Resources Report 84-5, AR Consultants, Dallas.
- 1984 *Cultural Resources Evaluation of Expansion Area of Mineral Wells Municipal Airport*. Cultural Resources Report 84-19, AR Consultants, Dallas.
- 1984 *Cultural Resources Evaluation of a Pipeline Right-of-Way, Lake Mineral State Park*. Cultural Resources Report 84-2, AR Consultants, Dallas.
- 1984 *Cultural Resources Evaluation of Well Site #9, Lake Mineral Wells State Park*. Cultural Resources Report 84-15, AR Consultants, Dallas.
- 1984 *Cultural Resources Overview of a Site NP-E11F, McMullen County, Texas*. Cultural Resources Report 84-14, AR Consultants, Dallas.
- 1984 *Cultural Resources Overview of Site NP-W18D, Lasalle County, Texas*. Cultural Resources Report 84-3, AR Consultants, Dallas.
- 1984 *Cultural Resources Survey of the Lake Fork Raw Water Transmission Line*. Cultural Resources Report 84-6, AR Consultants, Dallas.
- 1984 *Cultural Resources Survey of a MidCon Texas Pipeline, Young County, Texas*. Cultural Resources Report 84-21, AR Consultants, Dallas.
- 1984 *Cultural Resources Survey of Two Seismic Lines in the Beaumont Unit of the Big Thicket National Preserve*. Cultural Resources Report 84-4, AR Consultants, Dallas.
- 1984 *Cultural Resource Surveys in Hunt and Collin Counties, Texas*. Cultural Resources Report 84-20, AR Consultants, Dallas.
- 1984 *Cultural Resources Surveys in Kaufman and Van Zandt Counties, Texas*. Cultural Resources Report 84-18, AR Consultants, Dallas.
- 1984 *An Investigation of Site 41SR80, Starr County, Texas*. Cultural Resources Report 84-1, AR Consultants, Dallas.
- 1984 *A Supplemental Cultural Resources Survey for Expansion Areas of the Troup Mine Block, Texas*. Cultural Resources Report 84-10, AR Consultants, Dallas.
- 1985 *Cultural Resources Investigation of Site NP-E11F, McMullen County, TX*. Cultural Resources Report 85-2, AR Consultants, Dallas.
- 1985 *Cultural Resources Survey of the Alba 69kv Transmission Line Corridor*. Cultural Resources Report 85-8, AR Consultants, Dallas.
- 1985 *Cultural Resources Survey in Brazos Bend State Park*. Cultural Resources Report 85-5, AR Consultants, Dallas.

- 1985 *Cultural Resources Survey in Eastland & Stephens Counties, TX.* Cultural Resources Report 85-4, AR Consultants, Dallas.
- 1985 *Cultural Resource Survey at Lake Texana State Park.* Cultural Resources Report 85-6, AR Consultants, Dallas.
- 1985 *Cultural Resource Survey of the Maxwell Creek Landfill Site.* Cultural Resources Report 85-9, AR Consultants, Dallas.
- 1985 *Cultural Resource Survey of the Valley Creek Subdivision, Dallas County, Texas.* Cultural Resources Report 85-10, AR Consultants, Dallas.
- 1985 *Cultural Resources Surveys in Garland Parks.* Cultural Resources Report 85-1, AR Consultants, Dallas.
- 1986 *Cultural Resources Reconnaissance of the Fort Hancock Site.* Cultural Resources Report 86-8, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey 6666 Ranch, King County, TX.* Cultural Resources Report 86-9, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey of the E. Burges 69kv Transmission Corridor.* Cultural Resources Report 86-6, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey of the Glenn Pine Transmission Line.* Cultural Resources Report 86-1, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey of the Greenwich 69kv Transmission Corridor.* Cultural Resources Report 86-4, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey of the Lau Tract.* Cultural Resources Report 86-5, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey in Mitchell County, Texas.* Cultural Resources Report 86-7, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey of the Pin Mills 69kv Transmission Line Corridor.* Cultural Resources Report 86-2, AR Consultants, Dallas.
- 1986 *Cultural Resources Survey of the Proposed City of La Grulla Water Line.* Cultural Resources Report 86-3, AR Consultants, Dallas.
- 1987 *Borrower's Environmental Report Bowie-Cass Electrical Cooperative, Inc. 1987-1988 Work Plan, Bowie, Cass, Franklin, Morris, Red River, and Titus Counties, Texas.* Cultural Resources Report 87-6, AR Consultants, Dallas.
- 1987 *Borrower's Environmental Report Farmers Electric Cooperative, Inc. 1985-1986 Work Plan Blackland Tie Line and Conversion, Rockwall County, Texas.* Cultural Resources Report 87-2, AR Consultants, Dallas.
- 1987 *Cultural Resources Survey in Hardeman County, Texas.* Cultural Resources Report 87-4, AR Consultants, Dallas.
- 1987 *Cultural Resources Survey of the Morris Grove to Coke 69kV Transmission Line Corridor.* Cultural Resources Report 87-3, AR Consultants, Dallas.
- 1987 *Cultural Resources Survey of Project 203, 1987-1988 Work Plan.* Cultural Resources Report 87-5, AR Consultants, Dallas.
- 1987 *Cultural Resources Surveys of Some Tie Lines in the 1987-1988 Work Plan.* Cultural Resources Report 87-7, AR Consultants, Dallas.
- 1988 *Cultural Resource Survey near Talty, TX.* Cultural Resources Report 88-3, AR Consultants, Dallas.
- 1988 *Cultural Resources Survey of Parts of the Birome Water Supply System.* Cultural Resources Report 88-2, AR Consultants, Dallas.
- 1988 *Cultural Resources Survey of the South Franklin 69Kv Transmission Line.* Cultural Resources Report 88-4, AR Consultants, Dallas.
- 1988 *Cultural Resources Survey of Two Seismic Lines in the Lance Rosier Unit of the Big Thicket National Preserve.* Cultural Resources Report 88-6, AR Consultants, Dallas.
- 1988 *Cultural Resources Survey of the Winnsboro Water Line.* Cultural Resources Report 88-1, AR Consultants, Dallas.
- 1989 *Cultural Resources Survey near Cox, Texas.* Cultural Resources Report 89-1, AR Consultants, Dallas.
- 1989 *Cultural Resources Survey of the Explorer to Jackson Tap Transmission Line.* Cultural Resources Report 89-7, AR Consultants, Dallas.
- 1989 *Cultural Resources Survey of Jefferson Capital, L.P.* Cultural Resources Report 89-5, AR Consultants, Dallas.
- 1989 *Cultural Resources Survey of Jefferson Manor, L.P.* Cultural Resources Report 89-6, AR Consultants, Dallas.
- 1989 *Cultural Resources Survey of the R. E. Good Park 8.* Cultural Resources Report 89-4, AR Consultants, Dallas.
- 1989 *Cultural Resources Survey of the Signal Bay Park.* Cultural Resources Report 89-2, AR Consultants, Dallas.
- 1989 *Cultural Resources Surveys in Northeast Texas.* Cultural Resources Report 89-8, AR Consultants, Dallas.

- 1989 *Environmental Assessment of the Eylau to Buchanan 138kV Route*. Cultural Resources Report 89-3, AR Consultants, Dallas.
- 1990 *Cultural Resource Survey at Barksdale Air Force Base*. Cultural Resources Report 90-11, AR Consultants, Dallas.
- 1990 *Cultural Resource Survey of the Lone Star Gas PL*. Cultural Resources Report 90-10, AR Consultants, Dallas.
- 1990 *Cultural Resources Investigations for the 1990-1991 Work Plan*. Cultural Resources Report 90-3, AR Consultants, Dallas.
- 1990 *Cultural Resource Survey of the Fish Creek Site, Grand Prairie, TX*. Cultural Resources Report 90-5, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey across Battle Creek*. Cultural Resources Report 90-8, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey of the Big Bear Creek Interceptor Extension Section II*. Cultural Resources Report 90-4, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey of the Quitman City Park*. Cultural Resources Report 90-6, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey of the Rowlett Community Park*. Cultural Resources Report 90-1, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey of the Spring Creek Forest Preserve*. Cultural Resources Report 90-2, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey of the Wilson Creek Park, IV*. Cultural Resources Report 90-7, AR Consultants, Dallas.
- 1990 *Cultural Resources Survey in Wise and Montague Counties, TX*. Cultural Resources Report 90-12, AR Consultants, Dallas.
- 1991 *Cultural Resource Survey near Chalk Mountain, Texas*. Cultural Resources Report 91-9, AR Consultants, Dallas.
- 1991 *Cultural Resources Survey of Firemens Park Expansion*. Cultural Resources Report 91-3, AR Consultants, Dallas.
- 1991 *Cultural Resources Survey at Lake Lavon*. Cultural Resources Report 91-1, AR Consultants, Dallas.
- 1991 *Cultural Resources Survey of McClendon Park Expansion*. Cultural Resources Report 91-11, AR Consultants, Dallas.
- 1991 *Cultural Resources Survey of the Spring Creek Nature Area*. Cultural Resources Report 91-4, AR Consultants, Dallas.
- 1992 *Archaeological Survey and Testing of Hebron Parkway*. Cultural Resources Report 92-18, AR Consultants, Dallas.
- 1992 *Crayfish and Fire Ant Mounds: A Cultural Resources Survey of a Kaufman County Tie Line*. Cultural Resources Report 92-17, AR Consultants, Dallas.
- 1992 *Cultural Resources Investigation of the 69KV Transmission Line from Coke to Sandfield to Yantis (An Interim Report)*. Cultural Resources Report 92-7, AR Consultants, Dallas.
- 1992 *Cultural Resources Investigation in the Multi County Water Supply Corporation Area*. Cultural Resources Report 92-2, AR Consultants, Dallas.
- 1992 *Cultural Resources Revisit to the 69kV Transmission Line from Coke to Sandfield to Yantis*. Cultural Resources Report 92-10, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey of the Beltex Lateral PL*. Cultural Resources Report 92-1, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey of Small Wetland Tract in Longview, Texas*. Cultural Resources Report 92-4, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey near Stephenville, TX*. Cultural Resources Report 92-5, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey of the Stonebridge Park*. Cultural Resources Report 92-12, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey of the Tyler Fish Hatchery Expansion*. Cultural Resources Report 92-9, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey of Parts of the Jonah Special Utility District Water System, Williamson County, Texas*. Cultural Resources Report 92-14, AR Consultants, Dallas.
- 1992 *Monitoring Cultural Resource Exposures at the Central Waste Water Treatment Plant*. Cultural Resources Report 92-15, AR Consultants, Dallas.
- 1993 *Archaeological Survey of the Proposed Highland Village Community Park*. Cultural Resources Report 93-17, AR Consultants, Dallas.
- 1993 *Archaeological Testing at the Henry Sayles House, Abilene, TX*. Cultural Resources Report 93-16, AR Consultants, Dallas.
- 1993 *Cultural Resource Survey of the Spring Creek Greenbelt*. Cultural Resources Report 93-13, AR Consultants, Dallas.
- 1993 *Cultural Resources Evaluation of the Bachman Intake Area*. Cultural Resources Report 93-20, AR Consultants, Dallas.
- 1993 *Cultural Resources Survey near Gorman, Texas*. Cultural Resources Report 93-22, AR Consultants, Dallas.

- 1993 *Cultural Resources Survey of the Prairie Hill Water Supply Improvements*. Cultural Resources Report 93-19, AR Consultants, Dallas.
- 1993 *A Cultural Resources Survey from Talty to Combine*. Cultural Resources Report 93-11, AR Consultants, Dallas.
- 1993 *Cultural Resources Survey in the Upper Aquilla Creek Watershed*. Cultural Resources Report 93-21, AR Consultants, Dallas.
- 1993 *Cultural Resources Surveys in Cherokee County, Texas*. Cultural Resources Report 93-2, AR Consultants, Dallas.
- 1994 *Cultural Resource Survey of the C.A. Roan Linear Park*. Cultural Resources Report 94-1, AR Consultants, Dallas.
- 1994 *Cultural Resources Evaluation of the La Hacienda Dairy*. Cultural Resources Report 94-10, AR Consultants, Dallas.
- 1994 *Cultural Resources Evaluation Northwest Highway Widening Grapevine, TX*. Cultural Resources Report 94-7, AR Consultants, Dallas.
- 1994 *Cultural Resources Survey for the Craft-Turney Water Supply Corporation*. Cultural Resources Report 94-4, AR Consultants, Dallas.
- 1994 *Cultural Resources Survey of the Tehuacana Limestone Mine*. Cultural Resources Report 94-2, AR Consultants, Dallas.
- 1995 *Cultural Resources Evaluation of a Baylor County Water Line*. Cultural Resources Report 95-10, AR Consultants, Dallas.
- 1995 *Cultural Resources Survey of a Distribution Line at Copper Breaks State Park*. Cultural Resources Report 95-3, AR Consultants, Dallas.
- 1995 *Cultural Resources Survey of the Proposed South Texarkana city Park*. Cultural Resources Report 95-20, AR Consultants, Dallas.
- 1995 *Cultural Resources Survey of Segments A1, D1, D2, H1, H2, H3, and K2 of Dallas Water Utilities' Proposed Lake Palestine Raw Water PL*. Cultural Resources Report 95-4, AR Consultants, Dallas.
- 1996 *Archaeological Evaluation of Boat Ramp Site at Baird, Texas*. Cultural Resources Report 96-27, AR Consultants, Dallas.
- 1996 *Archaeological Evaluation of Mid-Villa Estates*. Cultural Resources Report 96-15, AR Consultants, Dallas.
- 1996 *Archaeology of the Elm Creek Channel, Abilene, Texas*. Cultural Resources Report 96-26, AR Consultants, Dallas.
- 1996 *Archaeology of the Elm Creek Watershed, Abilene, Texas*. Cultural Resources Report 96-22, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of Bear Creek Parkway Keller-Smithfield Road to Davis Blvd*. Cultural Resources Report 96-21, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of the Carleen Bright Arboretum Site*. Cultural Resources Report 96-25, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of the Dallas North Tollway Extension*. Cultural Resources Report 96-11, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation for the Possum Kingdom Water Supply Corporation*. Cultural Resources Report 96-22, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of the Valley View City Park*. Cultural Resources Report 96-1, AR Consultants, Dallas.
- 1996 *Cultural Resources Revaluation of the Johnson Creek Watershed*. Cultural Resources Report 96-28, AR Consultants, Dallas.
- 1996 *Cultural Resources Survey of a Bridge Relocation on the Leon River*. Cultural Resources Report 96-2, AR Consultants, Dallas.
- 1996 *Cultural Resources Survey of the Proposed Boulder Park Flood Control Dam Site*. Cultural Resources Report 96-13, AR Consultants, Dallas.
- 1996 *Cultural Resources Survey of the Nichols Green Park*. Cultural Resources Report 96-7, AR Consultants, Dallas.
- 1996 *Cultural Resources Survey of the Proposed Mount Pleasant City Park*. Cultural Resources Report 96-3, AR Consultants, Dallas.
- 1997 *An Archaeological Evaluation of the TU Electric Site Dallas*. Cultural Resources Report 97-14, AR Consultants, Dallas.
- 1997 *Archaeological Survey of the Hedgecoxe Road Athletic Site*. Cultural Resources Report 97-1, AR Consultants, Dallas.
- 1997 *Archaeological Survey of the Woodbridge Development*. Cultural Resources Report 97-11, AR Consultants, Dallas.
- 1997 *Archaeology of the Arcadia Park North*. Cultural Resources Report 97-12, AR Consultants, Dallas.
- 1997 *Cultural Resources Evaluation of the East Texas Arboretum*. Cultural Resources Report 97-13, AR Consultants, Dallas.

- 1997 *Cultural Resources Inventory and Evaluation of the Sludge Force Main Study Corridor from the Central Waste Water Treatment Plant to the Southern Plant.* Cultural Resources Report 97-5, AR Consultants, Dallas.
- 1997 *Cultural Resources Investigation in the Martin Creek Flood Plain.* Cultural Resources Report 97-7, AR Consultants, Dallas.
- 1997 *Cultural Resources Investigation of the Proposed Martin Lake Pipeline.* Cultural Resources Report 97-6, AR Consultants, Dallas.
- 1997 *Cultural Resources Survey of FM 2499.* Cultural Resources Report 97-2, AR Consultants, Dallas.
- 1997 *Cultural Resources Survey of the Napoleonville to Tebone Pipeline, Louisiana.* Cultural Resources Report 97-15, AR Consultants, Dallas.
- 1997 *Cultural Resources Survey of the Tyler Target Distribution Center Site.* Cultural Resources Report 97-8, AR Consultants, Dallas.
- 1997 *Cultural Resources Survey of Two Well Sites at Medicine Mound Ranch.* Cultural Resources Report 97-10, AR Consultants, Dallas.
- 1998 *Archaeological Investigations at the Chinn's Chapel Cemetery Log Cabin.* Cultural Resources Report 98-17, AR Consultants, Dallas.
- 1998 *Archaeological Potential of the Stemmons Access Road Extension.* Cultural Resources Report 98-13, AR Consultants, Dallas.
- 1998 *Archaeological Survey for the City of Point.* Cultural Resources Report 98-31, AR Consultants, Dallas.
- 1998 *Archaeological Survey at Heritage Hill County.* Cultural Resources Report 98-14, AR Consultants, Dallas.
- 1998 *Archaeological Survey of Sunset Ranch, Texas.* Cultural Resources Report 98-21, AR Consultants, Dallas.
- 1998 *Archaeological Survey of the Thornbridge Park.* Cultural Resources Report 98-28, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Clements Ranch.* Cultural Resources Report 98-27, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Expanded US 287 Highway Route from Stratford to Kerrick.* Cultural Resources Report 98-29, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the McKinney Municipal Golf Course.* Cultural Resources Report 98-3, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Preferred Sludge Force Main Corridor from the Central Waste Water Treatment Plant to the Southern Plant.* Cultural Resources Report 98-5, AR Consultants, Dallas.
- 1998 *Cultural Resources Reconnaissance of Pounds Field Airport.* Cultural Resources Report 98-30, AR Consultants, Dallas.
- 1998 *Cultural Resources Survey for the 1997-1999 Work Plan Midwest Electric Cooperative, Inc.* Cultural Resources Report 98-2, AR Consultants, Dallas.
- 1998 *Cultural Resources Survey of the Loop 340 Site Waco, Texas.* Cultural Resources Report 98-23, AR Consultants, Dallas.
- 1998 *Cultural Resources Survey of Phase 1 of the West McKinney Community Park.* Cultural Resources Report 98-25, AR Consultants, Dallas.
- 1998 *Cultural Resources Survey of the Proposed Pantego Bible Church Site.* Cultural Resources Report 98-19, AR Consultants, Dallas.
- 1998 *Cultural Resources Survey of the Ship Shoal Loop Pipeline.* Cultural Resources Report 98-6, AR Consultants, Dallas.
- 1998 *Cultural Resources Survey of Two Drilling Sites at Lake Bridgeport.* Cultural Resources Report 98-24, AR Consultants, Dallas.
- 1999 *Archaeological Evaluation of the Cisco Water Pipeline.* Cultural Resources Report 99-13, AR Consultants, Dallas.
- 1999 *Archaeological Evaluation of the Lone Star Plaza Site Grand Prairie, Texas.* Cultural Resources Report 99-30, AR Consultants, Dallas.
- 1999 *Archaeological Evaluation of Two Historic Sites at Joe Pool Lake.* Cultural Resources Report 99-28, AR Consultants, Dallas.
- 1999 *Archaeological Investigation Adjacent to the Trees Cemetery, Duncanville, Texas.* Cultural Resources Report 99-16, AR Consultants, Dallas.
- 1999 *Archaeological Survey in the Bradshaw Area, Runnels and Taylor Counties, Texas.* Cultural Resources Report 99-44, AR Consultants, Dallas.
- 1999 *Archaeology Survey of a Colorado River Crossing.* Cultural Resources Report 99-31, AR Consultants, Dallas.
- 1999 *Archaeological Survey of Faulkner Park.* Cultural Resources Report 99-26, AR Consultants, Dallas.

- 1999 *Archaeological Survey of the Firewheel Golf Course*. Cultural Resources Report 99-27, AR Consultants, Dallas.
- 1999 *Archaeological Survey in Grayson County, Texas*. Cultural Resources Report 99-1, AR Consultants, Dallas.
- 1999 *Archaeological Survey of the North Star Park Richardson, Texas*. Cultural Resources Report 99-29, AR Consultants, Dallas.
- 1999 *Archaeological Survey of the Rhome Sewer Plant Site*. Cultural Resources Report 99-14, AR Consultants, Dallas.
- 1999 *Archaeological Survey of the Wagon Wheel Park Site Coppell, Texas*. Cultural Resources Report 99-33, AR Consultants, Dallas.
- 1999 *Archaeology Survey of the Orion Pipeline Route, Ector and Midland Counties, Texas*. Cultural Resources Report 99-18, AR Consultants, Dallas.
- 1999 *Cultural Resource Incident at the Sandy Lake Road Swale, Carrollton, Texas*. Cultural Resources Report 99-21, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of the Laguna Park Site, Bosque County, Texas*. Cultural Resources Report 99-24, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of the Mabank Linear Parks*. Cultural Resources Report 99-9, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of Rowlett Creek at the Brand Street Crossing, Dallas County, Texas*. Cultural Resources Report 99-12, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation for the Parker County Water Supply Corporation*. Cultural Resources Report 99-17, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of the Weatherford Lake Site*. Cultural Resources Report 99-23, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of System Expansions for the Baylor WSC*. Cultural Resources Report 99-15, AR Consultants, Dallas.
- 1999 *Cultural Resources Investigation at Andrew Brown Community Park Coppell, Texas*. Cultural Resources Report 99-8, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of the Heath City Parks*. Cultural Resources Report 99-11, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of Kimzey Park*. Cultural Resources Report 99-40, AR Consultants, Dallas.
- 1999 *Cultural Resources Overview of the Kirby Creek Watershed*. Cultural Resources Report 99-6, AR Consultants, Dallas.
- 1999 *Cultural Resources Overview of the Lower Johnson Creek Watershed*. Cultural Resources Report 99-3, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of the Nichols Green Park Phase II*. Cultural Resources Report 99-39, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of the Proposed Wake Village X Relief Tower Site*. Cultural Resources Report 99-22, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of the Southport Marina Site*. Cultural Resources Report 99-5, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of System Improvements Chatfield Water Supply Corp*. Cultural Resources Report 99-25, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of System Improvements Men Water Supply Corporation*. Cultural Resources Report 99-20, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of System Improvements Navarro Mills WSC, Navarro County, Texas*. Cultural Resources Report 99-32, AR Consultants, Dallas.
- 1999 *Cultural Resources of the Trinity River Floodplain from Irving to Loop 12*. Cultural Resources Report 99-4, AR Consultants, Dallas.
- 2000 *Archaeological Evaluation & Survey for the Comanche County Water Supply Corporation Phase I*. Cultural Resources Report 2000-29, AR Consultants, Dallas.
- 2000 *An Archaeological Evaluation of System Improvements for the Brookesmith Special Utility District*. Cultural Resources Report 2000-22, AR Consultants, Dallas.
- 2000 *An Archaeological Evaluation of System Improvements for the Lee County Water Supply*. Cultural Resources Report 2000-11, AR Consultants, Dallas.
- 2000 *Archaeological Evaluation of System Improvements to the R.P.M. Water Supply*. Cultural Resources Report 2000-9, AR Consultants, Dallas.
- 2000 *Archaeological Reconnaissance of Upper Grapevine Creek, Irving, Texas*. Cultural Resources Report 2000-26, AR Consultants, Dallas.
- 2000 *Archaeological Survey in East Laredo, Texas*. Cultural Resources Report 2000-16, AR Consultants, Dallas.

- 2000 *Archaeological Survey of the Gateway Power Plant Project*. Cultural Resources Report 2000-05, AR Consultants, Dallas.
- 2000 *Archaeological Survey at Treaty Oaks, Hood County, Texas*. Cultural Resources Report 2000-28, AR Consultants, Dallas.
- 2000 *Cultural Resources Survey at Lonesome Dove Development*. Cultural Resources Report 2000-04, AR Consultants, Dallas.
- 2000 *Cultural Resources Survey of the Mount Pleasant Golf Course Expansion*. Cultural Resources Report 2000-19, AR Consultants, Dallas.
- 2000 *The History and Archaeological Evaluation of the Pole Yard Property*. Cultural Resources Report 2000-01, AR Consultants, Dallas.
- 2000 *Prehistoric Occupation of Mine Creek in the Catfish Creek Watershed, Henderson County, Texas*. Cultural Resources Report 2000-30, AR Consultants, Dallas.
- 2000 *A Study of Ridge Roads and First Order Drainages: An Archaeological Survey of System Improvements for the Lee County Water Supply Corporation*. Cultural Resources Report 2000-14, AR Consultants, Dallas.
- 2001 *Archaeological Evaluation & Survey for the Comanche County Water Supply Corporation Phase 2*. Cultural Resources Report 2001-7, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Evaluation & Survey for the Westbound Water Supply Corporation, Eastland County, Texas*. Cultural Resources Report 2001-5, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Potential of the Radio Shack Site, Fort Worth, Texas*. Cultural Resources Report 2001-16, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Sites Testing at the Abilene Southside Water Treatment Plant*. Cultural Resources Report 2001-36, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey along the Cedar Creek Pipeline, Abilene, Texas*. Cultural Resources Report 2001-38, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey in the East Fork Floodplain, Dallas and Kaufman Counties, Texas*. Cultural Resources Report 2001-42, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Far North Fort Worth Community Park*. Cultural Resources Report 2001-6, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey in Johnson County, Texas*. Cultural Resources Report 2001-9, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey below the Lake Weatherford Dam, Parker County, Texas*. Cultural Resources Report 2001-10, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Longview Site, Gregg County, Texas*. Cultural Resources Report 2001-19, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Northeast Extension Pipeline Route, Denton & Wise Counties, Texas*. Cultural Resources Report 2001-20, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Palestine Water Pipeline, Anderson County, Texas*. Cultural Resources Report 2001-2, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the San Benito Site*. Cultural Resources Report 2001-14, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Shumard Property, Boerne, Texas*. Cultural Resources Report 2001-4, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey in South Central Taylor County, Texas*. Cultural Resources Report 2001-22, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Timson Road/High School Park Site, Center, Texas*. Cultural Resources Report 2001-46, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Wichita Falls Landfill Expansion, Wichita County, Texas*. Cultural Resources Report 2001-41, AR Consultants, Inc., Dallas.
- 2001 *Cultural Resources Evaluation of the Proposed Dove Road Extension, Grapevine, Texas*. Cultural Resources Report 2001-43, AR Consultants, Inc., Dallas.
- 2001 *Cultural Resources Survey at Eagle Mountain Lake, Fort Worth, Texas*. Cultural Resources Report 2001-32, AR Consultants, Inc., Dallas.
- 2001 *Cultural Resources Survey of the Proposed Enos Weaver #DA54XC403 Tower Site, Marshall County, Oklahoma*. Cultural Resources Report 2001-27, AR Consultants, Inc., Dallas.
- 2001 *Cultural Resources Survey of the Proposed Mead Armor/DA54XC401 Tower Site, Marshall County, Oklahoma*. Cultural Resources Report 2001-28, AR Consultants, Inc., Dallas.
- 2001 *On the Divide between Sanders and Pine Creeks: Archaeological Survey of the B & B Landfill Site, Lamar County, Texas*. Cultural Resources Report 2001-35, AR Consultants, Inc., Dallas.

- 2001 *The Trinity River Channel in Downtown Dallas*. Cultural Resources Report 2001-24, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Investigation at the Old Stone Dam, Allen, Texas*. Cultural Resources Report 2002-02, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey along Office Creek, Denton County, Texas*. Cultural Resources Report 2002-03, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey in Central Brazos County, Texas*. Cultural Resources Report 2002-04, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Investigation of West Fork Relief Interceptor WF-11A, Grand Prairie, Texas*. Cultural Resources Report 2002-06, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of System Improvements for the Brookesmith Special Utility District*. Cultural Resources Report 2002-09, AR Consultants, Inc., Dallas.
- 2002 *The Cason Alley Edge of Woodlawn and Hillside Cemeteries, Dallas, Texas*. Cultural Resources Report 2002-13, AR Consultants, Inc., Dallas.
- 2002 *Site 41DL12 at Sandy Lake Road, Coppell, Texas*. Cultural Resources Report 2002-19, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Evaluation for Shackelford Water Supply Corporation*. Cultural Resources Report 2002-21, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of the SH 449 Borrow Pit, Harrison County, Texas*. Cultural Resources Report 2002-22, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of the Northwest Sewer Line, Sherman, Texas*. Cultural Resources Report 2002-23, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of System Improvements for the Marlow Water Supply Corporation, Milam County, Texas*. Cultural Resources Report 2002-26, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey and Evaluation of the Poolville to Rhome Pipeline Route*. Cultural Resources Report 2002-28, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Study near Sealy, Texas*. Cultural Resources Report 2002-30, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of Systems Improvements for the Brookesmith SUD at Lake Brownwood State Park*. Cultural Resources Report 2002-31, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of the River Bend Demonstration Plot*. Cultural Resources Report 2002-32, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of Line 303650 to McAlister Compressor, Wise County, Texas*. Cultural Resources Report 2002-35, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of Sandy Creek Lake, Henderson County, Texas*. Cultural Resources Report 2002-36, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of the Southside Water Pipeline Route, Dallas and Denton Counties, Texas*. Cultural Resources Report 2002-37, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey in Eastern Parker County and Western Tarrant County, Texas*. Cultural Resources Report 2002-43, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey Adjacent to Palo Duro Creek, Canyon, Texas*. Cultural Resources Report 2002-45, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Surveys in Hidalgo County, Texas*. Cultural Resources Report 2002-53, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Delimitation of Site 41MK38, Brady, Texas*. Cultural Resources Report 2002-56, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Assessment of The North Groesbeck Water Supply Corporation Service Area*. Cultural Resources Report 2003-9, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Evaluation of System Improvements for the North Milam Water Supply*. Cultural Resources Report 2003-18, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Investigation of the Rockport Wal-Mart Access Road*. Cultural Resources Report 2003-1, AR Consultants, Inc., Dallas.
- 2003 *The Archaeological Potential of Five Pipeline Routes in Southern Grayson County and Adjacent Collin County, Texas*. Cultural Resources Report 2003-4, AR Consultants, Inc., Dallas.
- 2003 *Archaeology of Pipeline Routes in Southern Taylor County, Texas*. Cultural Resources Report 2003-7, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Reconnaissance of the Thousand Oaks Property College Station, Texas*. Cultural Resources Report 2003-22, AR Consultants, Inc., Dallas.

- 2003 *Archaeological Survey in Central Hidalgo County, Texas*. Cultural Resources Report 2003-25, AR Consultants, Inc., Dallas.
- 2003 *An Archaeological Survey of the Early, Texas Sanitary Sewer System*. Cultural Resources Report 2003-29, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey of the Hutchins Transfer Station Site*. Cultural Resources Report 2003-28, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey at Medicine Mound Ranch*. Cultural Resources Report 2003-12, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey for the Shackelford Water Supply Corporation*. Cultural Resources Report 2003-20, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey of The Summerlee-Stepp No. 1 Well Site at Medicine Mound Ranch*. Cultural Resources Report 2003-17, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey at The Villages of Indian Lakes*. Cultural Resources Report 2003-15, AR Consultants, Inc., Dallas.
- 2003 *Cultural Resources Survey at the Edge of the Trinity River Floodplain*. Cultural Resources Report 2003-11, AR Consultants, Inc., Dallas.
- 2003 *Cultural Resources Survey of the Rothermel South Pipeline Route*. Cultural Resources Report 2003-38, AR Consultants, Inc., Dallas.
- 2003 *Cultural Resources Survey of the Texas Frontier Trails Amphitheater Site*. Cultural Resources Report 2003-33, AR Consultants, Inc., Dallas.
- 2003 *Rucker Family Cemetery*. Cultural Resources Report 2003-47, AR Consultants, Inc., Dallas.
- 2004 *Archaeology Reconnaissance Along the Brazos Loop Line Texas and Oklahoma*. Cultural Resources Report 2004-25, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey in Alice, Texas*. Cultural Resources Report 2004-40, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey and Evaluation of the Boyd to LaJunta PL Route*. Cultural Resources Report 2004-10, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey of the Hawkins Ranch Pipeline Route*. Cultural Resources Report 2004-35, AR Consultants, Inc., Dallas.
- 2004 *Archaeology Survey in Northeast Abilene*. Cultural Resources Report 2004-19, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey of the Resaca Del Rancho Viejo Site*. Cultural Resources Report 2004-05, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey for the Stephens County Rural Water Supply Corporation*. Cultural Resources Report 2004-23, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey of the Summerlee Unit No. 4 Well Site at Medicine Mounds Ranch*. Cultural Resources Report 2004-20, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey of the Veale Ranch #9 PL Route*. Cultural Resources Report 2004-34, AR Consultants, Inc., Dallas.
- 2004 *Cultural Resources Evaluation of the Feather Bay Golf Course Lake Brownwood, TX*. Cultural Resources Report 2004-21, AR Consultants, Inc., Dallas.
- 2004 *Cultural Resources Survey of the Summit Senior Village Site Gainesville, TX*. Cultural Resources Report 2004-26, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Investigation above the Grand Saline Salt Dome*. Cultural Resources Report 2005-25, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Potential of Horse Hollow II*. Cultural Resources Report 2005-23, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey for the Brookesmith Sud*. Cultural Resources Report 2005-32, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey of the Decatur Survey Area*. Cultural Resources Report 2005-11, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey at Fannin Farm West*. Cultural Resources Report 2005-27, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey of the Spillers #1- 18 PL Route, Louisiana (Phase I Survey)*. Cultural Resources Report 2005-34, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey of the Summerlee Unit 8H Well Pad Site, Medicine Mounds Ranch, Hardeman County, Texas*. Cultural Resources Report 2005-41, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey of the Whitehouse Replacement PL Route*. Cultural Resources Report 2005-02, AR Consultants, Inc., Dallas.

- 2006 *Archaeological Survey of the Fountains of Conroe*. Cultural Resources Report 2006-52, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Evaluation of San Isidro East*. Cultural Resources Report 2006-57, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Evaluation of San Isidro West*. Cultural Resources Report 2006-56, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Potential of Fox Ridge Wind Farm*. Cultural Resources Report 2006-11, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Palo Pinto Mountains Wind Farm*. Cultural Resources Report 2006-12, AR Consultants, Inc., Dallas.
- 2006 *Archaeological South Palo Pinto Wind Farm*. Cultural Resources Report 2006-13, AR Consultants, Inc., Dallas.
- 2006 *An Assessment of Select Archaeological Sites in the Karnes Electric Cooperative Service Area*. Cultural Resources Report 2006-01, AR Consultants, Inc., Dallas.
- 2006 *Cultural Resources Survey at Glade Parks, Euless, Texas*. Cultural Resources Report 2006-58, AR Consultants, Inc., Dallas.
- 2007 *An Archaeological Survey of the Sherbino Mesa Wind Farm Site, Pecos County, Texas*. Cultural Resources Report 2007-47, AR Consultants, Inc., Dallas.
- 2008 *An Archaeological Investigation at Walnut Creek, Lillian, Texas*. Cultural Resources Report 2008-69, AR Consultants, Inc., Dallas.
- 2008 *An Archaeological Survey in Floresville, Texas*. Cultural Resources Report 2008-67, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of a Northern Natural Gas Pipeline*. Cultural Resources Report 2008-38, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Testing at Site 41WM321, Granger Lake, Texas*. Cultural Resources Report 2008-63, AR Consultants, Inc., Dallas.
- 2008 *Cultural Resources Survey of the Avex 2H Well Pad Site, Dallas County, Texas*. Cultural Resources Report 2008-33, AR Consultants, Inc., Dallas.
- 2008 *Cultural Resources Survey of the Courts Federal #1H Well*. Cultural Resources Report 2008-05, AR Consultants, Inc., Dallas.
- 2008 *Cultural Resources Survey of the Lowes Property, Brazos County, Texas*. Cultural Resources Report 2008-34, AR Consultants, Inc., Dallas.
- 2008 *Cultural Resources Survey of the Kayleigh Pipeline Route, Permian Basin, Texas*. Cultural Resources Report 2008-101, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Evaluation of the Briscoe County Site*. Cultural Resources Report 2009-37, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Potential of the Western Ranch Solar Project Site*. Cultural Resources Report 2009-56, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of the 6" See to Cushing North Pipeline Route, Payne County, Oklahoma*. Cultural Resources Report 2009-46, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of the Chappel Woods #1H Well Montgomery County, Texas*. Cultural Resources Report 2009-67, AR Consultants, Inc., Dallas.
- 2009 *Cultural Resources Survey of the Proposed Gaines Bend Marina, Palo Pinto County, Texas*. Cultural Resources Report 2009-09, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of a Section of the White Cliffs Pipeline Route, Noble County, Oklahoma*. Cultural Resources Report 2009-43, AR Consultants, Inc., Dallas.
- 2009 *An Archaeological Survey of a Small Tract in the Former City of Lisbon, Dallas County, Texas*. Cultural Resources Report 2009-51, AR Consultants, Inc., Dallas.
- 2009 *An Archaeological Evaluation of the Expanded Galveston Landfill Site*. Cultural Resources Report 2009-17, AR Consultants, Inc., Dallas.
- 2010 *Archaeological Evaluation of the Holman 6 Property, Brewster County, Texas*. Cultural Resources Report 2010-32, AR Consultants, Inc., Dallas.
- 2010 *Cultural Resources Evaluation of the Proposed Wimberley Water Treatment Project, Hays County, Texas*. Cultural Resources Report 2010-29, AR Consultants, Inc., Dallas.
- 2011 *Archaeological Survey of the Canutillo Tracts, El Paso County, Texas*. Cultural Resources Report 2011-10, AR Consultants, Inc., Dallas.
- 2011 *Class III Cultural Resources Inventory Report for XTO Energy, Inc. Ryffel-Benbrook Federal Pad, Tarrant County, Texas*. Cultural Resources Report 2011-31, AR Consultants, Inc., Richardson, Texas.
- 2011 *Cultural Resources Evaluation of the Denison, Texas Proposed High School Site*.

- 2011 Cultural Resources Report 2011-23, AR Consultants, Inc., Richardson, Texas.
- 2011 *Cultural Resources Evaluation of the Marengo Tract, Waller County, Texas.* Cultural Resources Report 2011-03, AR Consultants, Inc., Dallas.
- 2011 *Class III Cultural Resources Inventory Report for QEP Energy Company Conservation #1-4H Well Pad at the Packsaddle Wildlife Management Area, Ellis County, Oklahoma.* Cultural Resources Report 2011-19, AR Consultants, Inc., Richardson, Texas.
- 2012 *Class III Cultural Resources Inventory for Petroquest Energy, LLC, Denney #1-3H Pipeline Route, Pawnee County, Oklahoma.* Cultural Resources Report 2012-46, AR Consultants, Inc., Richardson, Texas.
- 2012 *Class III Cultural Resources Inventory for Petroquest Energy, LLC, Shores #1-3H Pipeline Route, Pawnee County, Oklahoma.* Cultural Resources Report 2012-46, AR Consultants, Inc., Richardson, Texas.
- 2012 *Class III Cultural Resources Inventory for Petroquest Energy, LLC, Shores #1-4H Pipeline Route, Pawnee County, Oklahoma.* Cultural Resources Report 2012-45, AR Consultants, Inc., Richardson, Texas.
- 2012 *Cultural Resource Potential of the Ensign Wind Energy Center, Gray County, Kansas.* Cultural Resources Report 2012-18, AR Consultants, Inc., Richardson, Texas.
- 2013 *Archaeological Survey of the Unnamed Spring Creek Tributary in the Guapo Development.* Cultural Resources Report 2013-53, AR Consultants, Inc., Richardson, Texas.
- 2013 *Archaeological Survey of the Wal-Mart Neighborhood Market in El Paso, Texas.* Cultural Resources Report 2013-25, AR Consultants, Inc., Richardson, Texas.
- 2013 *Class III Cultural Resources Inventory for Apache Corporation from Denney #2-19HB Pipeline to Leddy #1-19HB, Roger Mills County, Oklahoma.* Cultural Resources Report 2013-02, AR Consultants, Inc., Richardson, Texas.
- 2013 *Class III Cultural Resources Inventory for BlueKnight Energy Partners, LP STOM-14 Pipeline Segment, Carter County, Oklahoma.* Cultural Resources Report 2013-17, AR Consultants, Inc., Richardson, Texas.
- 2013 *Class III Cultural Resources Inventory for Red Fork (USA) Investments, Inc. Axel #1-22H/Barossa #1-15H Well Pad and Lease Road.* Cultural Resources Report 2013-12, AR Consultants, Inc., Richardson, Texas.
- 2013 *Class III Cultural Resources Inventory for Red Fork (USA) Investments, Inc. Mornington #1-35H/Nagambie #1-26H Well Pad and Lease Road.* Cultural Resources Report 2013-14, AR Consultants, Inc., Richardson, Texas.
- 2013 *Class III Cultural Resources Inventory for Sandridge Exploration & Production, LLC Ruby Trust 2709 2-6H, Alfalfa County, Oklahoma.* Cultural Resources Report 2013-13, AR Consultants, Inc., Richardson, Texas.
- 2013 *Cultural Resources Evaluation of the CTEP Tract, Caldwell County, Texas.* Cultural Resources Report 2013-39, AR Consultants, Inc., Richardson, Texas.
- 2014 *Archaeological Investigation at Blackberry Farm, Dallas County, Texas.* Cultural Resources Report 2014-44, AR Consultants, Inc., Richardson, Texas.
- 2014 *Archaeological Survey of the Paradise Peninsula Seawall Site on Lake Ray Hubbard, Rockwall County, Texas.* Cultural Resources Report 2014-02, AR Consultants, Inc., Richardson, Texas.
- 2014 *Class III Cultural Resources Evaluation at Archaeological Site 34CA92 Cox Penn Sand Unit #162, Carter County, Oklahoma.* Cultural Resources Report 2014-07, AR Consultants, Inc., Richardson, Texas.
- 2014 *Class III Cultural Resources Evaluation in the Vicinity of Archaeological Site 34CA93 Cox Penn Sand Unit #161, Carter County, Oklahoma.* Cultural Resources Report 2014-09, AR Consultants, Inc., Richardson, Texas.
- 2014 *Class III Cultural Resources Inventory Report for Cimarex Energy Company, Haley 9-13-9 2H, Haley 9-13-9 3H, Haley 9-13-9 7H, and Haley 9-13-9 8H Well Pad Sites Canadian County, Oklahoma.* Cultural Resources Report 2014-29, AR Consultants, Inc., Richardson, Texas.
- 2014 *Class III Cultural Resources Inventory Report for Encino Energy, LLC Conservation 21 #2H and 3H Well Pads at the Packsaddle Wildlife Management Area, Ellis County, Oklahoma.* Cultural Resources Report 2014-31, AR Consultants, Inc., Richardson, Texas.
- 2014 *Class III Cultural Resources Inventory Report for Lighthouse Oil & Gas, Chinook 1-10HT Well Pad on the River Bend Ranch, Dewey County, OK.* Cultural Resources Report 2014-38, AR Consultants, Inc., Richardson, Texas.
- 2014 *Class III Cultural Resources Survey of the Citation Oil & Gas Corporation Cox Penn Unit #165 Well Pad, Carter County,*

- Oklahoma. Cultural Resources Report 2014-48, AR Consultants, Inc., Richardson, Texas.
- 2014 *Damage Assessment Report for Newfield Exploration Mid-Continent, Inc. Margie #1-28X Well Pad, Kingfisher County, Oklahoma.* Cultural Resources Report 2014-52, AR Consultants, Inc., Richardson, Texas.
- 2014 *The Hooper East to Graford Pipeline Route, A Cultural Resources Survey of Two Crossings in the Upper Keechi Watershed, Palo Pinto County, Texas.* Cultural Resources Report 2014-17, AR Consultants, Inc., Richardson, Texas.
- 2014 *The Perrin to Graford Loop Pipeline Route, A Cultural Resources Evaluation in the Upper Keechi Watershed, Jack County, Texas.* Cultural Resources Report 2014-18, AR Consultants, Inc., Richardson, Texas.
- 2015 *Archaeological Survey of the Reserves at Brookside at Borger, Hutchinson County, Texas.* Cultural Resources Report 2015-03, AR Consultants, Inc., Richardson, Texas.
- 2015 *Class III Cultural Resources Inventory Report for Eagle Rock Mid-Continent Operating, LLC Sparks 1-34-03XH Well Pad, Lease Road, and Pipeline, Grady County, Oklahoma.* Cultural Resources Report 2015-06, AR Consultants, Inc., Richardson, Texas.
- 2015 *Class III Cultural Resources Inventory for Sandridge Exploration and Production, LLC Richard 2710 1-14/23H Well Pad and Utilities, Alfalfa County, Oklahoma.* Cultural Resources Report 2015-11, AR Consultants, Inc., Richardson, Texas.
- 2017 *Archaeological Survey of Drainage Crossings along the Line A-77 Ranch to A22 Junction Pig Traps Pipeline Route, Wichita County, Texas.* Cultural Resources Report 2017-41 AR Consultants, Inc., Richardson, Texas.
- 2017 *Archaeological Survey of Drainage Crossings along the Line A-77 Ranch to A22 Junction Pig Traps Pipeline Route, Wilbarger County, Texas.* Cultural Resources Report 2017-42 AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory for Marathon Oil Company London Grayce BIA 1411 1-31MH Well Pas and Pipeline Route, Blaine County, Oklahoma.* Cultural Resources Report 2017-43, AR Consultants, Inc., Richardson, Texas.
- 2017 *Cultural Resources Survey of the Garrad Pipeline, Grady County, Oklahoma.* Cultural Resources Report 2017-17, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for the Continental Resources Caskey Federal 1-30-31XHW Well Pad and Access Road, Dewey County, Oklahoma.* Cultural Resources Report 2018-43, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Deborah Anglin
2011 *Archaeological Survey of the Pintail Landfill Tract, Waller County, Texas.* Cultural Resources Report 2011-35, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and LeAnne Baird (editors)
1985 *The Archaeology and History of Lake Ray Roberts: Settlement in a Marginal Zone, Volume III.* Cultural Resources Report 85-11, AR Consultants, Dallas.
- 1987 *Cultural Resources Survey of the Texoma Diversion Project.* Cultural Resources Report 87-1, AR Consultants, Dallas.
- Skinner, S. Alan, P. Bandy, and T. Turner
1980 *Archaeological Excavations at Sanderson Canyon Watershed, Terrell, Pecos, and Brewster Counties, Texas.* Research Report 80-17, Environment Consultants, Inc., Dallas.
- Skinner, S. Alan and Jeyne Bennett
1985 *Fort Waul: A Confederate Earthworks Fort, Gonzales County, Texas.* Cultural Resources Report 85-7, AR Consultants, Dallas.
- Skinner, S. Alan and C. Britt Bousman
1973 *Prehistoric Archaeology in the Three-Mile and Sulphur Draw Watershed.* Research Report 26, Archaeology Research Program, Southern Methodist University, Dallas.
- 1985 *Prehistoric Archaeology at Salt Gap, Texas.* Cultural Resources Report 85-3, AR Consultants, Dallas.
- Skinner, S. Alan, C. Britt Bousman, Neely Plumb, Anita P. Wilson, Jesse Todd, and Thomas A. Jennings
2005 *Archaeology and Quaternary Geology at Lake Ralph Hall, Fannin County, Texas.* Cultural Resources Report 2005-31. AR Consultants, Inc., Dallas.
- Skinner, S. Alan, C. Britt Bousman, Jesse Todd, Jeff Craver, Thomas A. Jennings, Leslie L. Bush, and Art Tawater
2005 *Archaeological Investigation at the Dalbey Site (41DL350), Dallas.* Cultural Resources Report 2005-35, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Justin Boxwell
2011 *Archaeological Survey of the BlueKnight Pipeline Crossing of Midland Draw.* Cultural

- Resources Report 2011-40, AR Consultants, Inc., Richardson, Texas.
- 2011 *Class III Cultural Resources Report for Cimarex Energy Company, Base Master Development Plan*. Cultural Resources Report 2011-41, AR Consultants, Inc., Richardson, Texas.
- 2012 *Archaeological Evaluation of the Proposed Pipeline Routes in the North Runnels WSC Service Area, Central Texas*. Cultural Resources Report 2012-69, AR Consultants, Inc., Richardson, Texas.
- 2013 *A Class III Cultural Resource Survey of Five Creek Crossings Along the Washita*. Cultural Resources Report 2013-31, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and S. Christopher Caran
1997 *Cultural Resources Investigation of the Proposed Arlington to TRA Trinity River Pipeline*. Cultural Resources Report 97-18, AR Consultants, Dallas.
- Skinner, S. Alan and Nick Coleman
2010 *An Archaeological Survey of the Magnolia Trace Development, Dallas*. Cultural Resources Report 2010-08, AR Consultants, Inc., Dallas.
- 2012 *Addendum to the Archaeological Potential of the Trinity Materials Wetland Site, Henderson and Kaufman Counties, Texas*. Cultural Resources Report 2012-72, AR Consultants, Inc., Richardson, Texas.
- 2015 *Class III Cultural Resources Inventory for Saddlehorn Pipeline Company, LLC Eleven Bureau of Indian Affairs Properties in Payne & Noble Counties, Oklahoma*. Cultural Resources Report 2015-14, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Kathryn P. Crater Gershtein, and Mark P. Simon
2020 *Cultural Resources Ex Post Facto Survey Report for The Citizen Energy III, LLC Vickrey 32-5-11-8 1WXH, 2MXH, & 3WXH Well Pad, Canadian County, Oklahoma*. Cultural Resources Report 2020-11, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Jeff Craver
2004 *Archaeological Potential of the Horse Hollow Wind Ranch*. Cultural Resources Report 2004-37, AR Consultants, Inc., Dallas.
- 2004 *Cultural Resources Survey of the Bengal PL Route in the Mississippi River Valley, Louisiana*. Cultural Resources Report 2004-36, AR Consultants, Inc., Dallas.
- 2005 *An Archaeological Survey of the Proposed Texas Municipal Power Agency Railroad Route*. Cultural Resources Report 2005-33, AR Consultants, Inc., Dallas.
- 2005 *Archaeological Survey of the Vixen PL Route, Louisiana (Phase 1 Survey)*. Cultural Resources Report 2005-09, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Survey of Whiskey Springs Development*. Cultural Resources Report 2006-16, AR Consultants, Inc., Dallas.
- 2008 *The Log Cabin at the Shores*. Cultural Resources Report 2008-42, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jeff Craver, Thomas A. Jennings, Jesse Todd, Leslie L. Bush, and Art Tawater
2006 *Archaeological Testing of Site 41GM416*. Cultural Resources Report 2006-40, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jeff Craver, Brett Lang, and Cody S. Davis
2008 *Goodin Site (41GM410): A Pre-Civil War Log Cabin in Grimes County, Texas*. Cultural Resources Report 2008-53, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jeff Craver, Peggy Riddle, Kate Singleton, and Lance K. Trask
2006 *The History and Archaeology of the Tarrant County College Downtown Campus Site*. Cultural Resources Report 2006-37, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jeff Craver, and Sonny Wheeler
2005 *Archaeological Survey of the Proposed Eagle Mountain Lake Pipeline Ft. Worth, TX*. Cultural Resources Report 2005-21, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, S. Christopher Caran, and Lace K. Trask
1999 *Archaeological Excavations in River Legacy Park*. Cultural Resources Report 99-41, AR Consultants, Dallas.
- Skinner, S. Alan, S. Christopher Caran, Brenda B. Whorton, and Lance K. Trask
1997 *Cultural Resources Evaluation from the Tarantula Bridge to White Settlement, Fort Worth, Texas*. Cultural Resources Report 97-19, AR Consultants, Dallas.
- Skinner, S. Alan and Nick Coleman
2009 *Archaeological Reconnaissance of the White Stallion Energy Project, Matagorda County, Texas*. Cultural Resources Report 2009-52, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of the 20" Cushing North to Teppco South Pipeline Route*,

- Payne County, Oklahoma. Cultural Resources Report 2009-44, AR Consultants, Inc., Dallas.
- 2009 *A Class III Cultural Resources Inventory of the Proposed West Texas Loop Expansion Project, Lea and Eddy Counties, New Mexico.* Cultural Resources Report 2009-45, AR Consultants, Inc., Dallas.
- 2010 *Archaeological Potential of the Trinity Materials Wetland Site, Henderson and Kaufman Counties, Texas.* Cultural Resources Report 2010-26, AR Consultants, Inc., Dallas.
- 2011 *Class III Cultural Resources Inventory Report for Ramsey Property Management, LLC, Hippopotamus #1-17, Osage County, Oklahoma.* Cultural Resources Report 2011-16, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Nick Coleman, and Cody S. Davis
- 2010 *Archaeological Reconnaissance at Silver Creek Materials, Tarrant County, Texas.* Cultural Resources Report 2010-30, AR Consultants, Inc., Dallas.
- 2010 *An Archaeological Survey of the Oklahoma Landfill Expansion, Oklahoma County, Oklahoma.* Cultural Resources Report 2010-27, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Cody S. Davis
- 2009 *Archaeological Investigation near the Emanuel Hebrew Rest Cemetery.* Cultural Resources Report 2009-25, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of Pipeline Routes North of Black Fork Creek, Tyler Texas.* Cultural Resources Report 2009-24, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of the South Wastewater Interceptor, Bonham, Texas.* Cultural Resources Report 2009-31, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Cody S. Davis, and Rebecca Shelton
- 2010 *Research Design for the Proposed Lower Bois D'Arc Creek Reservoir Project, Fannin County, Texas.* Cultural Resources Report 2010-28, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Kandi L. Doming
- 2014 *Archaeological Survey of Portions of the Cimarex Triple Crown Pipeline Route, Culberson, Reeves, and Loving Counties, Texas.* Cultural Resources Report 2014-42, AR Consultants, Inc., Richardson, Texas.
- 2014 *An Archaeological Survey at Sid Richardson Cout Camp, Wise County, Texas.* Cultural Resources Report 2014-69, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Kandi L. Doming, and Nick Coleman
- 2014 *Archaeological Study of the Silver Lake Development Site, Tarrant County, Texas.* Cultural Resources Report 2014-47, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Kandi L. Doming, and Molly A. Hall
- 2014 *An Archaeological Survey of the Proposed Bethel and Coppell Road Improvements, Dallas County, Texas.* Cultural Resources Report 2014-63, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and C. Reid Ferring
- 1999 *The Hackberry Creek Archaeological Site Irving, Texas.* Cultural Resources Report 99-7, AR Consultants, Dallas.
- Skinner, S. Alan and Emily D. Goetschius
- 2018 *Archaeological Trenching of the Proposed Largent Lake Storm Drain, Tarrant County, Texas.* Cultural Resources Report 2018-27, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Mad Dog 31_30-14N-11W Well Pad, Lease Road, and Pipeline Route, Blaine County, Oklahoma.* Cultural Resources Report 2018-08, AR Consultants, Inc., Richardson, Texas.
- 2018 *Class III Cultural Resources Inventory for Newfield Exploration Mid-Continent, Inc. Fed Stroud 1509 7, 8, & 9H-29LM and Fed Stroud 1509 10, 11, & 12H-29LM Well Pads, Lease Roads, and Pipeline, Kingfisher County, Oklahoma.* Cultural Resources Report 2018-11, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Emily D. Goetschius, and Joy C. Tatem
- 2018 *Archaeological Investigation at the Dallas Hunting and Fishing Club, Dallas County, Texas.* Cultural Resources Report 2018-29, AR Consultants, Inc., Richardson, Texas.
- 2018 *Damage Assessment Report for The Fourpoint Energy, LLC Cripple Bear 19x18-17-23 1HB/2HA Well Pad and Lease Road, Ellis County, Oklahoma.* Cultural Resources Report 2018-39, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Lee Green
- 2011 *An Archaeological Survey at the Crosby County Wind Farm Site.* Cultural Resources Report 2011-20, AR Consultants, Inc., Richardson, Texas.
- 2011 *Archaeological Survey of the Paradigm One Project Anaerobic Digester Plant.* Cultural

- Resources Report 2011-21, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Molly A. Hall
2012 *An Archaeological Evaluation of site 5WL4088 on the Noble Pipeline Route, Weld County, Colorado*. Cultural Resources Report 2012-37, AR Consultants, Inc., Richardson, Texas.
- 2012 *Archaeological Survey of the City of Lawn Emergency Pipeline Route Across Myrtle Ranch, Coleman County, Texas*. Cultural Resources Report 2012-49, AR Consultants, Inc., Richardson, Texas.
- 2013 *Archaeological Evaluation of the Proposed Rockin' K Mitigation Bank Site, Navarro County, Oklahoma*. Cultural Resources Report 2013-36, AR Consultants, Inc., Richardson, Texas.
- 2013 *Cultural Resources Survey of the 130 Environmental Park Tract, Caldwell County, Texas*. Cultural Resources Report 2013-43, AR Consultants, Inc., Richardson, Texas.
- 2014 *Archaeological Survey of the Avalon Extension Pipeline, Loving County, Texas*. Cultural Resources Report 2014-13, AR Consultants, Inc., Richardson, Texas.
- 2014 *Phase I Intensive Archaeological Survey of the Proposed Dixie Lateral Pipeline Route, Caddo Parish, Louisiana*. Cultural Resources Report 2014-03, AR Consultants, Inc., Richardson, Texas.
- 2015 *An Archaeological Survey of the Horse Creek Wind Farm Site*. Cultural Resources Report 2015-36, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Molly A. Hall, and C. Britt Bousman
2021 *Lake Ralph Hall Research Design: A Channel Through the Past in The Upper North Sulphur River Valley, Fannin County, Texas*. Cultural Resources Report 2017-75. AR Consultants, Inc., Richardson, Texas.
- S. Alan Skinner, Molly A. Hall, and Nick Coleman
2012 *Archaeological Survey of the FS920 and FS920E Roads, LBJ National Grasslands, Wise County, Texas*. Cultural Resources Report 2012-36, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Molly A. Hall, and Cody S. Davis
2011 *Archaeological Survey of the Proposed Paline Pipeline Project*. Cultural Resources Report 2011-28, AR Consultants, Inc., Richardson, Texas.
- Skinner S. Alan and Gerald K. Humphreys
1973 *The Historic and Prehistoric Archaeological Resources of the Squaw Creek Reservoir*. Southern Methodist University Contributions (SMU) in Anthropology No. 10. Dallas.
- Skinner, S. Alan, Tom Jennings, Jeff Craver, and Angela Milano
2005 *Archaeological Evaluation of Three Railroad Sidings in San Antonio, TX*. Cultural Resources Report 2005-13, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, John E. Keller, Roberto Ruiz, and Cameron Turley
2010 *Historic Archaeology and Architecture at the Brownsville Multimodal Terminal, Cameron County, Texas*. Cultural Resources Report 2010-24, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Floyd D. Kent
1998 *Archaeological Survey of Johnson Creek Interceptor Phase 1*. Cultural Resources Report 98-18, AR Consultants, Dallas.
- 1998 *Archaeological Survey of the Trails of Frisco Golf Course*. Cultural Resources Report 98-15, AR Consultants, Dallas.
- 1998 *Archaeological Survey of the Trinity Ranch North Golf Course*. Cultural Resources Report 98-16, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Stephenville City Park*. Cultural Resources Report 98-9, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Tucker Lake Borrow Pit*. Cultural Resources Report 98-4, AR Consultants, Dallas.
- 1998 *Cultural Resources Investigation of an Elm Fork Wetland Mitigation Area*. Cultural Resources Report 98-22, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of the Fairview Park*. Cultural Resources Report 99-10, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of the Golf Course at Stonebridge Ranch*. Cultural Resources Report 99-2, AR Consultants, Dallas.
- 2000 *Archaeological Reconnaissance in Eastern Wood County, Texas*. Cultural Resources Report 2000-35, AR Consultants, Dallas.
- 2000 *Archaeological Survey of the Lake Fork Pipeline, Wood to Hunt Counties, Texas*. Cultural Resources Report 2000-32, AR Consultants, Dallas.
- 2000 *Cultural Resources Evaluation of the Midway High School Site, McLennan County, Texas*. Cultural Resources Report 2000-13, AR Consultants, Dallas.

- 2001 *Archaeological Survey of the Fort Worth C & D Landfill Expansion, Tarrant County, Texas.* Cultural Resources Report 2001-39, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey of the Porter Site, Montgomery County, Texas.* Cultural Resources Report 2001-21, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Floyd D. Kent, and Lance K. Trask
1997 *Cultural Resources Survey of the Sorrento to Grangeville Pipeline Route, Louisiana.* Cultural Resources Report 97-17, AR Consultants, Dallas.
- 1998 *Cultural Resources Evaluation of the Lantana Ridge Lodge Site Ray Roberts Lake State.* Cultural Resources Report 98-10, AR Consultants, Dallas.
- 1998 *Cultural Resources Investigation of the Proposed Grand Prairie Business Park.* Cultural Resources Report 98-11, AR Consultants, Dallas.
- Skinner, S. Alan, Floyd Kent, Sonny Wheeler III, Lance K. Trask, and Jesse Todd
2002 *Archaeological Monitoring of the Oncor Pipeline Crossing of the East Fork Floodplain.* Cultural Resources Report 2002-34, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Brett Lang
2007 *An Archaeological Survey of the ATV Area at Buffalo Springs Lake, Lubbock County, Texas.* Cultural Resources Report 2007-55, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Crystal Lea Lawson
2010 *An Archaeological Investigation Adjacent to the Myers Cemetery, Johnson County, Texas.* Cultural Resources Report 2010-03, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Linda D. Lindsay, Brenda B. Whorton, and William L. Young
1992 *Cultural Resources Investigation of Four Sites on the West Oak Cliff Line, Dallas.* Cultural Resources Report 92-8, AR Consultants, Dallas.
- Skinner, S. Alan, Linda D. Lindsay, and William L. Young
1992 *Cultural Resources Survey of the Proposed Pleasant Valley Golf Course.* Cultural Resources Report 92-13, AR Consultants, Dallas.
- Skinner, S. Alan and Roger G. Moore
1994 *Cultural Resources Evaluation of the Wortham Theater Site, Houston, Texas.* Cultural Resources Report 94-6, AR Consultants, Dallas.
- Skinner, S. Alan and W. Neely Plumb
2002 *An Archaeological Survey of the SH 30 Landfill Site, Grimes County, Texas.* Cultural Resources Report 2002-11, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Kathryn M. Pocklington
2014 *Class III Cultural Resources Evaluation of Archaeological sites 34CA2 and 34CA93 at Cox Penn Unit #160, Carter County, Oklahoma.* Cultural Resources Report 2014-21, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Kathryn M. Pocklington, and Nick Coleman
2015 *A Class III Cultural Resources Inventory of the Proposed Enterprise Products Operating, LLC Potash to Trunk A Compressor Station Project, Eddy County, New Mexico.* Cultural Resources Report 2015-46, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Kathryn M. Pocklington, Nick Coleman, and Molly A. Hall
2015 *A Class III Cultural Resources Inventory of the Proposed Enterprise Products Operating, LLC Salt Lake Extension II Pipeline Project in Eddy County, New Mexico.* Cultural Resources Report 2015-07, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Albert J. Redder
1987 *Cultural Resources Survey Near Gholson, Texas.* Cultural Resources Report 87-9, AR Consultants, Dallas.
- Skinner, S. Alan, J. J. Richner, and M. R. Johnston
1978 *Dallas Archaeological Potential, Procedures for Locating and Evaluating Prehistoric Resources.* Research Report 111, Archaeology Research Program, Southern Methodist University, Dallas.
- Skinner, S. Alan and Joanna Roberson
2008 *Environmental Report of the Proposed Hull Substation and Transmission Line, Panola County, Texas.* Cultural Resources Report 2008-78, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of the Proposed Cathey North Tie Line, Wood County, Texas.* Cultural Resources Report 2008-60, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of the Proposed Sand Springs 138-kV Transmission Line, Wood.* Cultural Resources Report 2008-64, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and M. Rohrt
1974 *Archaeological Survey of Histon, C&L, and Washburn Draws and Cornudas, North and*

- Culp Draws Watershed, West Texas and Southeast New Mexico*. Research Report 51, Archaeology Research Program, Southern Methodist University, Dallas.
- Skinner, S. Alan, C. Shaw, C. Carter, M. Cliff, and C. Heathington
1980 *Archaeological Investigations at Nambe Falls*. Research Report 121, Archaeology Research Program, Southern Methodist University, Dallas.
- Skinner, S. Alan and Rebecca Shelton
2008 *An Archaeological Evaluation of the Blue Summit Generation Tie Line*. Cultural Resources Report 2008-56, AR Consultants, Inc., Dallas.
- 2008 *An Archaeological Evaluation of the Horse Hollow Generation Tie Line*. Cultural Resources Report 2008-57, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey for the Haynes Recreation Center, Webb County, Texas*. Cultural Resources Report 2009-03, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Rebecca Shelton, and Kathryn M. Pocklington
2014 *Class III Cultural Resource Inventory Stella #1-22MH-27 & Tucker #2-22MH-27 Well Pad, Lease Road, and Pipeline, Coal County, Oklahoma*. Cultural Resources Report 2014-10, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan, Rebecca Shelton, Cameron Turley, and Nick Coleman
2010 *Archaeological Survey of the Eagle 6" Extension Pipeline Route, Payne and Lincoln Counties, Oklahoma*. Cultural Resources Report 2010-17, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Nina Skinner
1996 *Cultural Resources Evaluation of the Allen Station Park Site*. Cultural Resources Report 96-18, AR Consultants, Dallas.
- 1997 *Archaeology of the Brownwood Landfill Site*. Cultural Resources Report 97-16, AR Consultants, Dallas.
- Skinner, S. Alan and Anthony J. Smith
2007 *An Archaeological Survey of the Proposed McNabb #1H Pipeline Route, Matagorda County, Texas*. Cultural Resources Report 2007-12, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Joy C. Tatem and Nick Coleman
2016 *Class III Cultural Resources Inventory Report for Stephens Production Company Clarkston #1-14H Well Pad and Utilities, Logan County, Arkansas*. Cultural Resources Report 2016-16, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Jesse Todd
1999 *Cultural Resources Survey of the Mexia Wal-Mart Site*. Cultural Resources Report 99-43, AR Consultants, Dallas.
- 2004 *Archaeological Investigation of the Proposed Jacksboro Landfill Site*. Cultural Resources Report 2004-12, AR Consultants, Inc., Dallas.
- 2004 *Archaeological Survey of the West El Paso Tract*. Cultural Resources Report 2004-8, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Survey of the Little Mound to Piney Woods Transmission Line Route*. Cultural Resources Report 2006-03, AR Consultants, Inc., Dallas.
- 2007 *An Archaeological Survey of the Northeast Lakeview Sanitary Force Main Route Cedar Hill State Park, Texas*. Cultural Resources Report 2007-04, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of the Borrow Pits Near the Franklin County Dam, Franklin County, Texas*. Cultural Resources Report 2008-10, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Survey of the Proposed North Sales Line 1 Pipeline Route, Bienville and Red River Parishes, Louisiana*. Cultural Resources Report 2009-20, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jesse Todd, Tom Jennings, and Meghan Dennis
2004 *Archaeological Survey at the Greenwood Farms Landfill, Smith County, Texas*. Cultural Resources Report 2004-02, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jesse Todd, and Lance K. Trask
2003 *Archaeological Survey of the Hamlin Water Pipeline Route, Jones and Taylor Counties, Texas*. Cultural Resources Report 2003-6, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Jesse Todd, Lance K. Trask, and Sonny A. Wheeler, III
2003 *Archaeological Testing at The McCommas Bluff Landfill Site*. Cultural Resources Report 2003-24, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Lance K. Trask
1996 *An Archaeological Evaluation of the Mosquito Island Site Sam Rayburn Lake, Texas*. Cultural Resources Report 96-12, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of Site 41COL79, Stonebridge Ranch, Texas*.

- Cultural Resources Report 96-9, AR Consultants, Dallas.
- 1999 *Archaeological Survey from the Darenco Goab to Bivins*. Cultural Resources Report 99-42, AR Consultants, Dallas.
- 1999 *Archaeological Survey in the Tenison West Golf Course*. Cultural Resources Report 99-35, AR Consultants, Dallas.
- 1999 *Cultural Resources Evaluation of the Beach Street Weir Site Fort Worth, Texas*. Cultural Resources Report 99-19, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey for Four Timber Sale Areas, Sam Rayburn Lake, Texas*. Cultural Resources Report 99-36, AR Consultants, Dallas.
- 2000 *Archaeological Investigation below the White Rock Lake Spillway, Dallas, Texas*. Cultural Resources Report 2000-27, AR Consultants, Dallas.
- 2000 *Archaeological Survey of the Lantana Development*. Cultural Resources Report 2000-15, AR Consultants, Dallas.
- 2000 *Archaeological Survey at Lone Star Ranch*. Cultural Resources Report 2000-25, AR Consultants, Dallas.
- 2000 *Archaeological Survey in Northwest Grand Prairie*. Cultural Resources Report 2000-03, AR Consultants, Dallas.
- 2000 *Archaeological Survey in of the Rice WSC Pipeline, Ellis County, Texas*. Cultural Resources Report 2000-18, AR Consultants, Dallas.
- 2000 *Archaeological Survey near Sanger, Texas*. Cultural Resources Report 2000-08, AR Consultants, Dallas.
- 2001 *Archaeological Evaluation & Survey for the One-Five-O Water Supply Corporation, San Jacinto County, Texas*. Cultural Resources Report 2001-11, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Investigations at Opportunity Park, Dallas, Texas*. Cultural Resources Report 2001-1, AR Consultants, Inc., Dallas.
- 2001 *Archaeological Survey along Heron Drive, Fort Worth, Texas*. Cultural Resources Report 2001-12, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey along Brady Creek*. Cultural Resources Report 2002-18, AR Consultants, Inc., Dallas.
- 2003 *Cultural Resources Investigation in Conjunction with Shell's Ethylene Pipeline Route under the Sabine River*. Cultural Resources Report 2003-34, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Lance K. Trask, and Johnny Byers
2000 *Archaeological Survey of the Graveyard Branch Sanitary Sewer Line, Denton County, Texas*. Cultural Resources Report 2000-21, AR Consultants, Dallas.
- Skinner, S. Alan, Lance Trask, and Brett Lang
2008 *Archaeological Survey of the Proposed East First Street Widening, Fort Worth, Texas*. Cultural Resources Report 2008-89, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Lance K. Trask, and Sonny A. Wheeler
2000 *Archaeological Survey in the Study Butte Area, Brewster County, Texas*. Cultural Resources Report 2000-23, AR Consultants, Dallas.
- Skinner, S. Alan, Lance K. Trask, and Brenda B. Whorton
1995 *The Place of Lawther Drive in White Rock Creek Archaeology*. Cultural Resources Report 95-16, AR Consultants, Dallas.
- 1996 *Archaeological Survey in Tenison Memorial Park*. Cultural Resources Report 96-5, AR Consultants, Dallas.
- Skinner, S. Alan and Cameron Turley
2008 *An Archaeological Survey of the Stillwater Landfill Expansion, Payne County, Oklahoma*. Cultural Resources Report 2008-87, AR Consultants, Inc., Dallas.
- 2010 *Archaeological Potential of the Orton Ranch Solar Project*. Cultural Resources Report 2010-09, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Cameron Turley, and Nick Coleman
2011 *An Archaeological Survey of the J.J. Lemon Road Development*. Cultural Resources Report 2011-48, AR Consultants, Inc., Richardson, Texas.
- 2011 *Archaeological Survey of the New Boston Landfill Expansion*. Cultural Resources Report 2011-06, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Ronald van Oeveren, Lance K. Trask, and Floyd Kent
2001 *Greenwood South: The Archaeology of Woodside Alley*. Cultural Resources Report 2001-18, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Sonny A. Wheeler, III
2000 *The Trinity River Parkway Archival and Archaeological Evaluation*. Cultural Resources Report 2000-24, AR Consultants, Dallas.
- 2002 *Archaeological Survey at the Rock Prairie Road Landfill Site, Brazos County, Texas*.

- Cultural Resources Report 2002-38, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Sonny A. Wheeler, and Lance K. Trask
2000 *An Archaeological Survey of System Improvements for the 410 Water Supply Corporation*. Cultural Resources Report 2000-20, AR Consultants, Dallas.
- Skinner, S. Alan, Sonny A. Wheeler, III, and Ronald van Oeveren
2002 *Archaeological Survey of the Graham Ranch 12" Delivery Line, Wise County, Texas*. Cultural Resources Report 2002-46, AR Consultants, Inc., Dallas.
- Skinner, S. Alan and Catrina Banks Whitley
2012 *An Archaeological Investigation at the Edge of Magnolia Cemetery*. Cultural Resources Report 2012-08, AR Consultants, Inc., Richardson, Texas.
- Skinner, S. Alan and Brenda B. Whorton
1991 *Cultural Resources Evaluations on Post Oak Creek*. Cultural Resources Report 91-10, AR Consultants, Dallas.
- 1991 *Cultural Resources Survey of Friendship Park Expansion, Grand Prairie, TX*. Cultural Resources Report 91-2, AR Consultants, Dallas.
- 1992 *Cultural Resources Investigations at the Dallas Convention Center Expansion*. Cultural Resources Report 92-11, AR Consultants, Dallas.
- 1992 *Cultural Resources Survey of the West Munson-Quinlan-Weiland 138 KV Transmission*. Cultural Resources Report 92-6, AR Consultants, Dallas.
- 1993 *Archaeological Survey of Arcadia Trail Park*. Cultural Resources Report 93-7, AR Consultants, Dallas.
- 1993 *Archaeological Survey of the Engler Tract Park Site*. Cultural Resources Report 93-10, AR Consultants, Dallas.
- 1993 *Archaeological Survey of the Green Valley Park Site*. Cultural Resources Report 93-15, AR Consultants, Dallas.
- 1993 *Archaeological Survey of the Little Lemmon Lake Project*. Cultural Resources Report 93-3, AR Consultants, Dallas.
- 1993 *Cultural Resources Evaluation of the Azle Municipal Golf Course*. Cultural Resources Report 93-12, AR Consultants, Dallas.
- 1993 *Cultural Resources Evaluation of the Forrester Sewer System Improvements*. Cultural Resources Report 93-8, AR Consultants, Dallas.
- 1993 *Cultural Resources Evaluation of Russell Creek Park, Plano, Texas*. Cultural Resources Report 93-4, AR Consultants, Dallas.
- 1993 *Cultural Resources Evaluation of Transmission Corridor Alternatives*. Cultural Resources Report 93-18, AR Consultants, Dallas.
- 1993 *Cultural Resources Potential for the Melissa Site*. Cultural Resources Report 93-1, AR Consultants, Dallas.
- 1993 *Cultural Resources Survey of the Winnsboro Prison Site*. Cultural Resources Report 93-14, AR Consultants, Dallas.
- 1994 *Archaeological Survey of the Archer Park Development Project Archer County, TX*. Cultural Resources Report 94-5, AR Consultants, Dallas.
- 1994 *Cultural Resources Evaluation of the Plano Municipal Golf Course*. Cultural Resources Report 94-8, AR Consultants, Dallas.
- 1994 *Cultural Resources Survey of the Kathryn Rose Memorial Park*. Cultural Resources Report 94-9, AR Consultants, Dallas.
- 1995 *Archaeological Investigations in Southwestern Montague County, TX*. Cultural Resources Report 95-8, AR Consultants, Dallas.
- 1995 *Cultural Resources Evaluation of the Blue Flat Disposal Site*. Cultural Resources Report 95-11, AR Consultants, Dallas.
- 1995 *Cultural Resources Evaluation of the Ranger Wastewater Treatment Plant Site*. Cultural Resources Report 95-13, AR Consultants, Dallas.
- 1995 *Cultural Resources Evaluation in Van Alstyne, TX*. Cultural Resources Report 95-5, AR Consultants, Dallas.
- 1995 *Cultural Resources Survey through Pelican Plantation, LA*. Cultural Resources Report 95-12, AR Consultants, Dallas.
- 1995 *Monitoring Cultural Resource Exposures at the Central Waste Water Treatment Plant Expansion*. Cultural Resources Report 95-15, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of the Arbor Hills Nature Preserve*. Cultural Resources Report 96-17, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of the Graves Farm Stonebridge Ranch, Texas*. Cultural Resources Report 96-10, AR Consultants, Dallas.
- 1995 *Cultural Resources Evaluation of the Pratt Site, TX*. Cultural Resources Report 95-6, AR Consultants, Dallas.
- 1996 *Cultural Resources Survey of the Proposed Atlanta Wal-Mart Supercenter*. Cultural

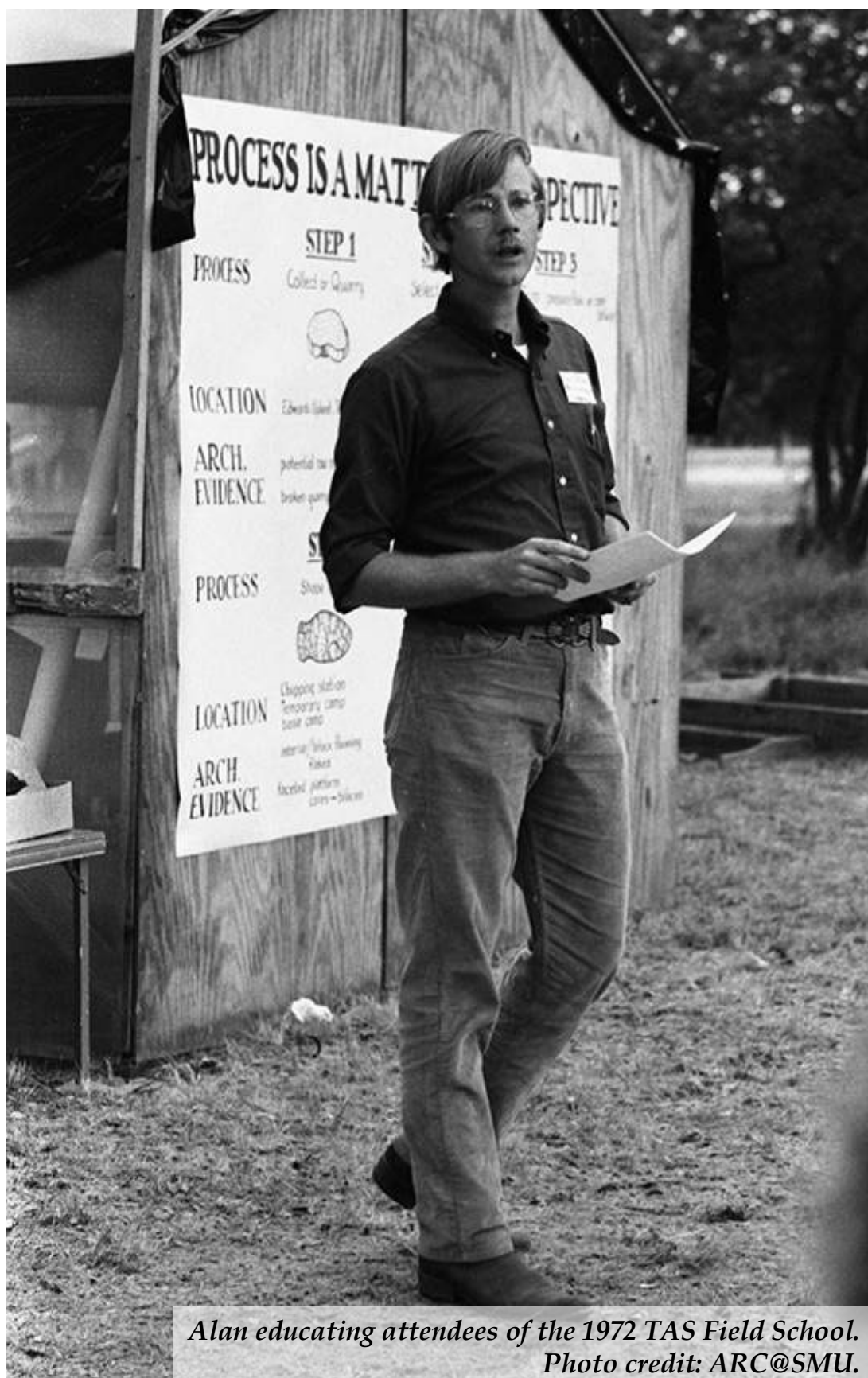
- Resources Report 96-6, AR Consultants, Dallas.
- 1997 *Archaeological Evaluation of the Potter's Field Greenwood Cemetery Dallas*. Cultural Resources Report 97-4, AR Consultants, Dallas.
- 1997 *Cultural Resources Survey of the Proposed Mansfield Wal-Mart*. Cultural Resources Report 97-3, AR Consultants, Dallas.
- Skinner, S. Alan, Brenda B. Whorton, and Jeremy S. Dillon
- 1994 *Cultural Resources Survey of the Proposed Veterans Administration National Cemetery Dallas, TX*. Cultural Resources Report 94-12, AR Consultants, Dallas.
- Skinner, S. Alan, Brenda B. Whorton, and Lance K. Trask
- 1995 *Cultural Resources Survey from Sorrento, LA to Mont Belvieu, TX*. Cultural Resources Report 95-18, AR Consultants, Dallas.
- 1996 *The Archaeological Monitoring of the Dallas Floodway Channel Modifications and Levee Fill Modifications Phase I*. Cultural Resources Report 96-19, AR Consultants, Dallas.
- 1996 *Cultural Resources Evaluation of the Hand Place (41COL69) Stonebridge Ranch, Texas*. Cultural Resources Report 96-29, AR Consultants, Dallas.
- 2001 *Cultural Resources Survey of the Panama Road Landfill Site, Palo Pinto County, Texas*. Cultural Resources Report 2001-30, AR Consultants, Inc., Dallas.
- Skinner, S. Alan, Brenda B. Whorton, Lance K. Trask, Robert Scott, S. Chris Caran, and Jeremy S. Dillon
- 1995 *Archaeological Investigations of the South Oak Cliff Line and DART Cultural Resources Management*. Cultural Resources Report 95-1, AR Consultants, Dallas.
- Skinner, S. Alan, Brenda B. Whorton, and William L. Young
- 1991 *Cultural Resources Assessment of the Central Wastewater Treatment Expansion, Dallas, TX*. Cultural Resources Report 91-6, AR Consultants, Dallas.
- Skinner, S. Alan, Brenda B. Whorton, William L. Young, and Ray Hubbard III
- 1991 *Cultural Resources Survey in the Files Valley Water Supply Area*. Cultural Resources Report 91-5, AR Consultants, Dallas.
- Skinner, S. Alan and William L. Young
- 1991 *A Proposal for Cultural Resources Monitoring of Construction Areas in the Rochester Park Levee Project*. Cultural Resources Report 91-7, AR Consultants, Dallas.
- Skinner, S. Alan, William L. Young, and Brenda B. Whorton
- 1990 *Cultural Resource Investigations of the Rochester Park Levee, Dallas*. Cultural Resources Report 90-9, AR Consultants, Dallas.
- Suckling, Joanna, Nick Coleman, and S. Alan Skinner
- 2017 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. Cope 23_14-19N-16W-1HX Well Pad and Lease Road, Dewey County, Oklahoma*. Cultural Resources Report 2017-08, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for the Bravo Arkoma, LLC Turner West 4-31/30H Well Pad, Lease Road, and Pipeline, Hughes County, Oklahoma*. Cultural Resources Report 2017-25, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for the Council Oak Resources, LLC Enlow 1-8-5XH Well Pad, Lease Road, and Pipeline, Blaine County, Oklahoma*. Cultural Resources Report 2017-31, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for the Devon Energy Production Company, L.P. Redbud 7_6-15N-12W 1HX Lease Road and Pipeline, Blaine County, Oklahoma*. Cultural Resources Report 2017-32, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for the Devon Energy Production Company, L.P. Willow 12_1-15N-12W 1HX Well Pad, Lease Road, and Pipeline, Blaine County, Oklahoma*. Cultural Resources Report 2017-50, AR Consultants, Inc., Richardson, Texas.
- Suckling, Joanna, Philip Fisher, Joy C. Tatem, and S. Alan Skinner
- 2018 *Class III Cultural Resources Inventory for Devon Energy Production Co., LP Ellison 7HX & 8HX Well Pad, Access Road, and Pipeline Route, Canadian County, Oklahoma*. Cultural Resources Report 2018-14, AR Consultants, Inc., Richardson, Texas.
- Suckling, Joanna and S. Alan Skinner
- 2017 *Class III Cultural Resources Inventory Report for the Devon Energy Production Company, L.P. Cheetah 32_29-15N-10W 1HX Well Pad, Lease Road, and Pipeline, Blaine County, Oklahoma*. Cultural

- Resources Report 2017-52, AR Consultants, Inc., Richardson, Texas.
- Suckling, Joanna, Joy C. Tatem, Nick Coleman, and S. Alan Skinner
- 2017 *Class III Cultural Resources Inventory for the Devon Energy Production Company, L.P. The Moon 18-13N-7W 1H Well Pad, Pipeline, and Lease Road, Canadian County, Oklahoma.* Cultural Resources Report 2017-35, AR Consultants, Inc., Richardson, Texas.
- Tatem, Joy C., Nick Coleman, and S. Alan Skinner
- 2017 *Class III Cultural Resources Inventory for the Marathon Oil Company Mike Stroud BIA 1509 1-33MH/4-28-22MXH/6-28-22MXH & Mike Stroud BIA 1509 5-28-22MXH/6-28-22MXH/7-28-22MXH Well Pads, Lease Roads, and Pipelines, Kingfisher County, Oklahoma.* Cultural Resources Report 2017-36, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for the Bravo Arkoma, LLC Eileen 1-30/31H Well Pad, Hughes County, Oklahoma.* Cultural Resources Report 2017-23, AR Consultants, Inc., Richardson, Texas.
- 2017 *Class III Cultural Resources Inventory Report for Le Norman Operating, LLC Berryman-Shrewder Trust 2H-7 Well Pad, Lease Road, and Pipeline, Ellis County, Oklahoma.* Cultural Resources Report 2017-27, AR Consultants, Inc., Richardson, Texas.
- Tatem, Joy C. and S. Alan Skinner
- 2016 *Archaeological Survey of the City of Commerce Sludge Lagoon Closure Project, Hunt County, Texas.* Cultural Resources Report 2016-36, AR Consultants, Inc., Richardson, Texas.
- 2018 *Archaeological Survey of the Proposed Elan Preserve Development, Tarrant County, Texas.* Cultural Resources Report 2018-21, AR Consultants, Inc., Richardson, Texas.
- Tiné, Angela, S. Alan Skinner, and Jesse Todd
- 2007 *Archaeological Investigation at the Sonntag Family Cemetery.* Cultural Resources Report 2007-08, AR Consultants, Inc., Dallas.
- Todd, Jesse, Cody S. Davis, and S. Alan Skinner
- 2008 *Archaeological Survey of the Proposed Rowlett Sub-basin Relief Pipeline Routes, Garland, Texas.* Cultural Resources Report 2008-76, AR Consultants, Inc., Dallas.
- Todd, Jesse and S. Alan Skinner
- 2002 *An Archaeological Evaluation of the Lake Lewisville Toll Bridge Project.* Cultural Resources Report 2002-24, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Evaluation of Proposed Section 4 Routes for the Dallas North Tollway, Collin and Denton Counties, Texas.* Cultural Resources Report 2002-15, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of the Doe Branch Wastewater Treatment Plant, Denton County, Texas.* Cultural Resources Report 2002-50, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of the Lewisville Toll Bridge Access Road, Denton County, Texas.* Cultural Resources Report 2002-33, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of the Paris Sports Complex, Lamar County, Texas.* Cultural Resources Report 2002-51, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey near Roanoke, Texas.* Cultural Resources Report 2002-10, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey near Tehuacana Creek, McLennan County, Texas.* Cultural Resources Report 2002-14, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of Three Proposed Pipeline Right-of-Ways on Pecan and Mustang Creeks near Aubrey, Texas.* Cultural Resources Report 2002-48, AR Consultants, Inc., Dallas.
- 2002 *The Archaeological Potential of a Northeast Denton County Ecotone: An Archaeological Evaluation of the Additions to the Mustang Water Supply Corporation System.* Cultural Resources Report 2002-08, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Reconnaissance of the West Fork Wetland Mitigation Areas, Tarrant County, Texas.* Cultural Resources Report 2002-07, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of the Aubrey Wastewater Treatment Plant Expansion Area.* Cultural Resources Report 2002-49, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey in the Carter Ranch Development, Collin County, Texas.* Cultural Resources Report 2002-52, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of the Peninsula Water Reclamation Plant, Cross Roads, Texas.* Cultural Resources Report 2002-25, AR Consultants, Inc., Dallas.
- 2002 *A Cultural Resources Survey in the Blackland Prairie, Waco, Texas.* Cultural Resources Report 2002-12, AR Consultants, Inc., Dallas.

- 2003 *Archaeological Survey of the Brazos County Exposition Site, Texas*. Cultural Resources Report 2003-8, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey Across the Denton Creek Floodplain North of Roanoke, TX*. Cultural Resources Report 2003-14, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey of the Lake Crook Trails*. Cultural Resources Report 2003-21, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey for the Las Pampa Water Supply Corporation*. Cultural Resources Report 2003-19, AR Consultants, Inc., Dallas.
- 2003 *An Archaeological Survey of the Springtown Park Site, Parker County, Texas*. Cultural Resources Report 2003-23, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey of Two Proposed Sewer PL Corridors in Bridgeport, TX*. Cultural Resources Report 2003-5, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Survey in the West Fork Floodplain*. Cultural Resources Report 2003-16, AR Consultants, Inc., Dallas.
- 2003 *Archaeological Testing of the Duke Development Property*. Cultural Resources Report 2003-2, AR Consultants, Inc., Dallas.
- 2003 *Cultural Resources Survey of the Rothermel North Pipeline Route*. Cultural Resources Report 2003-35, AR Consultants, Inc., Dallas.
- 2004 *Cultural Resources Survey Along Walnut Creek Mansfield, TX*. Cultural Resources Report 2004-31, AR Consultants, Inc., Dallas.
- 2005 *An Archaeological Survey of the Proposed Lowe's Development Site, San Antonio, Texas*. Cultural Resources Report 2005-45, AR Consultants, Inc., Dallas.
- 2005 *An Archaeological Survey of the Proposed Whitehouse Sewer Pipeline Route, Smith County, Texas*. Cultural Resources Report 2005-28, AR Consultants, Inc., Dallas.
- 2005 *Cultural Resources Survey of the Proposed East Fork Water Reuse PL Route*. Cultural Resources Report 2005-12, AR Consultants, Inc., Dallas.
- 2007 *Archaeological Potential of the Proposed Lower Bois d'Arc Creek Reservoir, Fannin County, Texas*. Cultural Resources Report 2007-06, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Survey within the Billingsley Retail Cell, Coppell, Texas*. Cultural Resources Report 2006-26, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Testing of the Gilkey Hill Site (41DL06)*. Cultural Resources Report 2006-04, AR Consultants, Inc., Dallas.
- 2006 *Archaeological Testing at the White Rock Lake Spillway*. Cultural Resources Report 2006-49, AR Consultants, Inc., Dallas.
- 2006 *A Cultural Resources Assessment of the Proposed East Fork Raw Water Supply Project, Constructed Wetland Component, Kaufman County, Texas*. Cultural Resources Report 2006-35, AR Consultants, Inc., Dallas.
- 2007 *Cultural Resources Survey of a Proposed Equestrian/Biking Trail within the Mineola Nature Preserve on the Sabine River*. Cultural Resources Report 2007-51, AR Consultants, Inc., Dallas.
- 2008 *The Archaeological Potential of the Proposed Lower Bois D'Arc Reservoir Pipeline Route*. Cultural Resources Report 2008-23, AR Consultants, Inc., Dallas.
- 2008 *Archaeological Survey of the Gateway Track and Trail Facility, Childress, Texas*. Cultural Resources Report 2008-41, AR Consultants, Inc., Dallas.
- Todd, Jesse, Jeff Craver, and S. Alan Skinner
2007 *Archaeological Monitoring of the Elm Fork Relief Interceptor Pipeline, Irving, Texas*. Cultural Resources Report 2007-53, AR Consultants, Inc., Dallas.
- Todd, Jesse, Lance K. Trask, S. Alan Skinner, and Sonny A. Wheeler, III
2004 *Archaeological Survey Within the Wakefield Development Site*. Cultural Resources Report 2004-18, AR Consultants, Inc., Dallas.
- Todd, Jesse, Sonny Wheeler, III, and S. Alan Skinner
2002 *Archaeological Survey in the Timber Creek Development, Collin County, Texas*. Cultural Resources Report 2002-41, AR Consultants, Inc., Dallas.
- Trask, Lance K., S. Christopher Cara, Brenda B. Whorton, Jeremy S. Dillon, and S. Alan Skinner
1995 *The Geoarchaeology of the West Fork Relief Sewer Project*. Cultural Resources Report 95-9, AR Consultants, Dallas.
- Trask, Lance K., Floyd Kent, and S. Alan Skinner
2000 *An Archaeological Evaluation of System Improvements for the 410 Water Supply Corporation*. Cultural Resources Report 2000-12, AR Consultants, Dallas.
- 2002 *Archaeological Survey of Woldert Park, Tyler, Texas*. Cultural Resources Report 2002-01, AR Consultants, Inc., Dallas.

- Trask, Lance K. and S. Alan Skinner
 1996 *Cultural Resources Evaluation of Southwestern Bell Easement Benbrook Lake, Texas*. Cultural Resources Report 96-16, AR Consultants, Dallas.
- 1999 *Archaeological Survey of MacArthur Park Coppell, TX*. Cultural Resources Report 99-34, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of the Proposed Bringle Lake Park*. Cultural Resources Report 99-38, AR Consultants, Dallas.
- 1999 *Cultural Resources Survey of Tram Island and Compartment 6 at Sam Rayburn Lake, Texas*. Cultural Resources Report 99-37, AR Consultants, Dallas.
- 2001 *Archaeological Reconnaissance of the Preserve at Tealwood, Texas*. Cultural Resources Report 2001-45, AR Consultants, Inc., Dallas.
- 2000 *Archaeological Survey of the FM 2499 Route Section 5, Danton County, Texas*. Cultural Resources Report 2000-36, AR Consultants, Dallas.
- 2001 *Archaeological Survey of the Forney Pipeline, Kaufman County, Texas*. Cultural Resources Report 2001-34, AR Consultants, Inc., Dallas.
- 2000 *Archaeological Survey of the Proposed Coppell City Service Center*. Cultural Resources Report 2000-02, AR Consultants, Dallas.
- 2001 *Archaeological Survey of River Park*. Cultural Resources Report 2001-13, AR Consultants, Inc., Dallas.
- 2000 *Archaeological Survey of System Improvements to the R.P.M. Water Supply Corporation*. Cultural Resources Report 2000-17, AR Consultants, Dallas.
- 2001 *Archaeological Survey of the Western Segment of the Water Pipeline for the Forney Electric Power Plant, Kaufman County, Texas*. Cultural Resources Report 2001-40, AR Consultants, Inc., Dallas.
- 2000 *The Clyde Lane Edge of the Potter's Field*. Cultural Resources Report 2000-31, AR Consultants, Dallas.
- 2000 *Cultural Resources Evaluation of Blocks 9, 10, 11, and 23, Fort Worth, Texas*. Cultural Resources Report 2000-10, AR Consultants, Inc.
- 2001 *Cultural Resources Inventory of the FM 2181 Corridor, Denton County, Texas*. Cultural Resources Report 2001-29, AR Consultants, Inc., Dallas.
- 2001 *Cultural Resources Survey at the Fountain Park Development, Euless, Texas*. Cultural Resources Report 2001-23, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Evaluation of System Improvements for Brashear WSC*. Cultural Resources Report 2002-20, AR Consultants, Inc., Dallas.
- 2002 *An Archaeological Survey of the Rowlett Cell Tower*. Cultural Resources Report 2002-17, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey at Chapel Hill, Tarrant County, Texas*. Cultural Resources Report 2002-5, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey along Hackberry Branch and Stewart Creek, Denton County, Texas*. Cultural Resources Report 2002-16, AR Consultants, Inc., Dallas.
- 2002 *Archaeological Survey of the Trail at Muddy Creek Preserve, Dallas County, Texas*. Cultural Resources Report 2002-47, AR Consultants, Inc., Dallas.
- 2002 *Cultural Resources Survey of the Gordon Wastewater Treatment Plant Site, Palo Pinto County, Texas*. Cultural Resources Report 2002-54, AR Consultants, Inc., Dallas.
- Trask, Lance K., S. Alan Skinner, and Ronald van Oeveren
 2001 *Archaeological Survey within the Hickory Creek Ranch Tract, Denton County, Texas*. Cultural Resources Report 2001-17, AR Consultants, Inc., Dallas.
- Trask, Lance K., Jesse Todd, and S. Alan Skinner
 2008 *Archaeological Testing of Site 41DL441, Dallas, Texas*. Cultural Resources Report 2008-83, AR Consultants, Inc., Dallas.
- Trask, Lance K., Sonny A. Wheeler, III, and S. Alan Skinner
 2000 *Archaeological Survey in the Blackland of Johnson County, Texas*. Cultural Resources Report 2000-34, AR Consultants, Dallas.
- Trask, Lance K., Brenda B. Whorton, and S. Alan Skinner
 1995 *Archaeological Survey of Hutton Branch Carrollton, Tx*. Cultural Resources Report 95-2, AR Consultants, Dallas.
- 1995 *Archaeological Survey of the West Fork Relief Interceptor Grand Prairie, TX*. Cultural Resources Report 95-7, AR Consultants, Dallas.
- 1996 *Archaeological Survey for the Prairie Creek Interceptor*. Cultural Resources Report 96-14, AR Consultants, Dallas.
- 1996 *Archaeological Survey of the Proposed Swale Area in McInnish Park, Carrollton,*

- Texas. Cultural Resources Report 96-4, AR Consultants, Dallas.
- 1996 *Cultural Resources Survey of Two Parks at Lake Grapevine, Texas*. Cultural Resources Report 96-20, AR Consultants, Dallas.
- 1997 *Archaeological Monitoring of the West Bank Relief Interceptor, Dallas*. Cultural Resources Report 97-9, AR Consultants, Dallas.
- Turley, Cameron and S. Alan Skinner
2009 *Archaeological Evaluation of Distribution Lines in the 2008-2011 Construction Work Plan*. Cultural Resources Report 2009-23, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Evaluation of the Proposed City of Fort Worth Reuse Pipeline Route*. Cultural Resources Report 2009-06, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Evaluation of the Chester Ditto Water Reuse Pipeline Route, Tarrant County, Texas*. Cultural Resources Report 2009-14, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Evaluation of the Proposed Dunlop Park Water Reuse Pipeline, Tarrant County, Texas*. Cultural Resources Report 2009-13, AR Consultants, Inc., Dallas.
- 2009 *Archaeological Evaluation of the Proposed Viridian Development Water Pipeline Route*. Cultural Resources Report 2009-16, AR Consultants, Inc., Dallas.
- Turley, Cameron, S. Alan Skinner, and Brett Lang
2009 *Archaeological Survey at Light Farms*. Cultural Resources Report 2009-11, AR Consultants, Inc., Dallas.
- 2009 *An Archaeological Survey of Portions of the Proposed East Texas H2 Pipeline Route*. Cultural Resources Report 2009-21, AR Consultants, Inc., Dallas.
- Wheeler, Sonny A., III and S. Alan Skinner
2002 *Historic Structural Resources Review along the Kirby Creek Pipeline Route*. Cultural Resources Report 2002-40, AR Consultants, Inc., Dallas.
- Whitley, Catrina Banks and S. Alan Skinner
2012 *Discovery of the Montgomery Hill Cemetery, Navarro County, Texas*. Cultural Resources Report 2012-15, AR Consultants, Inc., Richardson, Texas.
- 2012 *Recovery of Human Remains from Site 41DL8, Lake Ray Hubbard, Dallas County, Texas*. Cultural Resources Report 2012-28, AR Consultants, Inc., Richardson, Texas.
- 2013 *Archaeological Investigation at the Western Edge of the Old Eastside Cemetery*. Cultural Resources Report 2013-37, AR Consultants, Inc., Richardson, Texas.
- Whitley, Catrina Banks, S. Alan Skinner, Kathryn P. Crater Gershtein, and Cody S. Davis
2024 *Archaeological Investigation of the Lake Edge at the Upper Rockwall Site (41RW2), Lake Ray Hubbard, Rockwall County, Texas*. Cultural Resources Report 2024-02. AR Consultants, Inc., Richardson, Texas., Richardson.
- Whitley, Catrina Banks, S. Alan Skinner, Joseph B. Motley, Molly A. Hall, and Daniel Davenport
2017 *Discovery and Reinterment of the Scott Family Cemetery (41DL530), Dallas*. Cultural Resources Report 2017-02, AR Consultants, Inc., Richardson, Texas.
- Whorton, Brenda B. and S. Alan Skinner
1993 *Cultural Resources Evaluation of the North Dallas Bank and Trust company, Plano, Tx*. Cultural Resources Report 93-5, AR Consultants, Dallas.
- 1993 *Cultural Resources Survey of Bear Run Park, Grapevine, Texas*. Cultural Resources Report 93-6, AR Consultants, Dallas.
- 1994 *Cultural Resources Evaluation of the Denton Drive Expansion*. Cultural Resources Report 94-11, AR Consultants, Dallas.
- 1994 *Cultural Resources Survey of Arcadia Park South, Tarrant County, Texas*. Cultural Resources Report 94-14, AR Consultants, Dallas.
- 1995 *Cultural Resources Survey of Arcadia Park South*. Cultural Resources Report 95-14, AR Consultants, Dallas.
- 1995 *Cultural Resources Survey of Eules Municipal Golf Course and Sports Complex*. Cultural Resources Report 95-17, AR Consultants, Dallas.
- Young, William L. and S. Alan Skinner
1991 *Cultural Resources Survey Below Navarro Mills Lake*. Cultural Resources Report 91-12, AR Consultants, Dallas.



*Alan educating attendees of the 1972 TAS Field School.
Photo credit: ARC@SMU.*



*Alan inspecting the banks of Bois d'Arc Creek ca. 2010.
Photo credit: CSD.*

WYLIE PITS AND RELATED FEATURES ARE STILL OUT THERE, BUT MAYBE NOT FOR LONG

William A. Martin

ABSTRACT

The Wylie focus was defined in 1952 by Stephenson using data from several sites recorded along the East Fork of the Trinity River and adjacent tributaries. Most sites assigned to this focus contained large pits, several of which were visible as roughly oval surface depressions that ranged in size between 27 x 19 m and 24 x 14 m with depths ranging between 2.4 and 4.2 m. In the 1970s, avocational archeologist Bill Young discovered two sites with similar pits along Richland Creek in Navarro and Freestone counties. These sites were excavated by SMU in the early 1980s prior to inundation of the Richland-Chambers Reservoir. They exhibited the same characteristics associated with the East Fork sites, thereby extending the range of known pits about 60 miles down the Trinity River. In the past few years, work conducted by Alan Skinner's crews uncovered another large pit at a site in Bois d'Arc Lake in Fannin County, roughly 40 miles northeast of the East Fork sites. The discovery of this pit suggests that other large pits could be out there, and over a broader area than previously thought. In light of the enormous amount of construction that is ongoing in the area between the East Fork sites and Bois d'Arc Lake, the opportunity to find more of these features is diminishing rapidly.

This article summarizes information known about the large pits first identified along the East Fork of the Trinity River and its tributaries that have come to be known as Wylie focus pits. The last time any such pits were excavated and studied occurred along Richland Creek in Navarro and Freestone counties between 1982 and 1986. Given the long hiatus in research on these pits, the current generation of archeologists is unlikely to have anything other than cursory knowledge about them. For example, a young archeologist spoke with me about Wylie pits at the Spring 2024 meeting of the Council of Texas Archeologists. His interpretation was that the pits represent a western manifestation of the Mississippian ceremonial complex. I was impressed that he was even aware of the existence of Wylie pits, but it was clear that his understanding was off base. That is not surprising considering that they are often characterized simply as large roasting pits in the cultural background sections of reports. I was inspired to write this article to remind archeologists of what is known about these pits and to make them aware that more are likely to be out there.

Although the pit features were originally called Wylie focus pits by early researchers, Bruseth and Martin (1987) argued that the Wylie focus as originally defined was too

broad a construct to be useful because almost any site in North Central Texas could be included. We concluded that it was no longer useful for advancing our understanding of the archeology of the region. For this reason, I refer to the pits in this article simply as Wylie pits.

A BRIEF HISTORY OF PAST RESEARCH ON WYLIE PIT SITES

As is often the case when avocational archeological societies are very active, some of the best sites along the East Fork of the Trinity River, and the first sites with Wylie pits, were identified and studied by members of the Dallas Archeological Society (DAS) as early as the 1930s (Figure 1). They noted that the pits were once much deeper, but that plowing and erosion had caused them to fill in with soil (Martin and Bruseth 1988: 20). For details on early DAS and professional work, see the following: Harris 1936, 1942; Harris and Hatzenbeuhler 1948; Hatzenbeuhler 1942; Housewright and Wilson 1942; Stephenson 1949, 1952a, 1952b; and Wilson 1946.

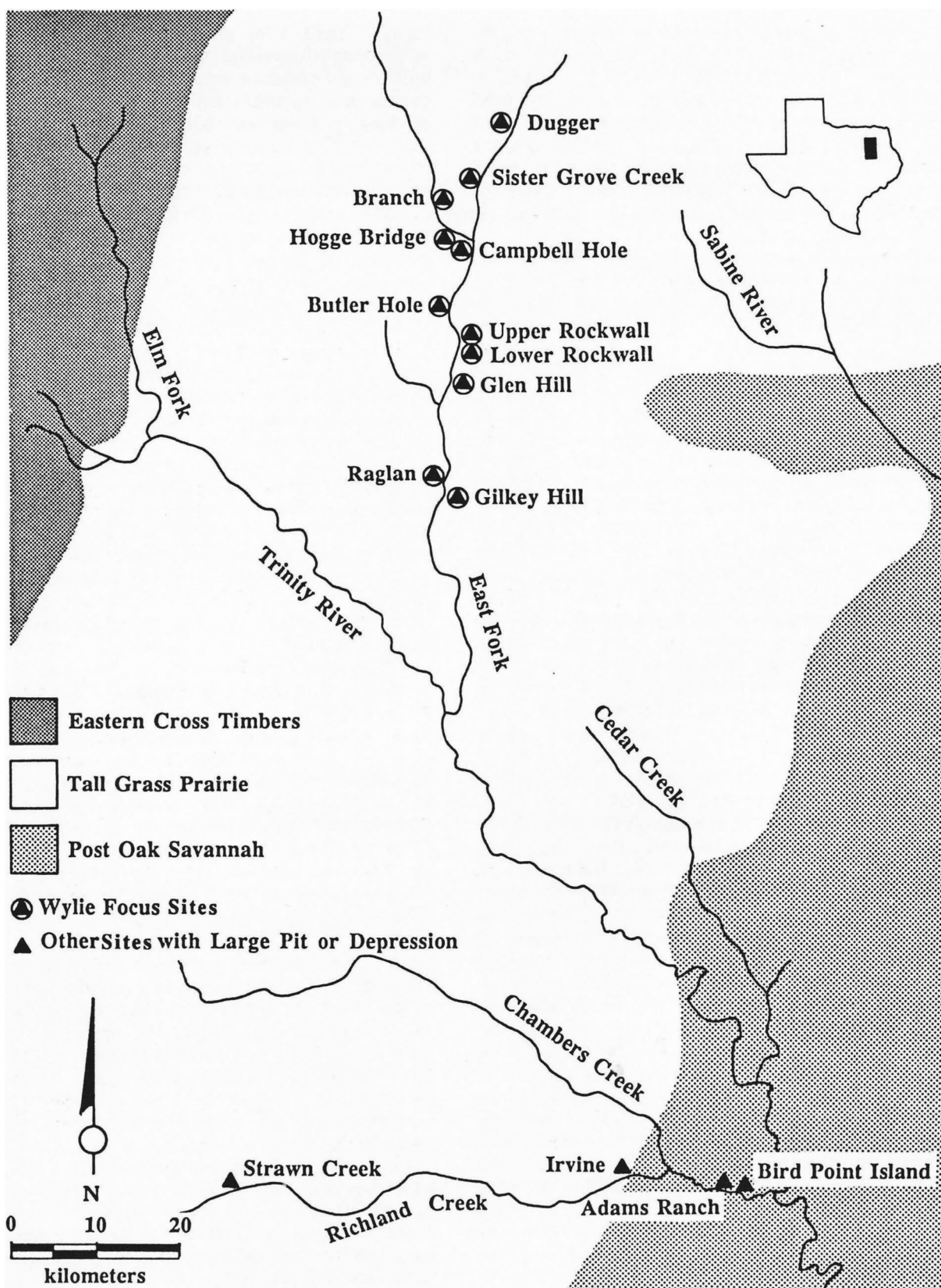


Figure 1. Location of the Wylie pit sites along the East Fork of the Trinity River and large pits along Richland Creek (from Martin and Bruseth 1988:Figure 1).

Stephenson conducted excavations at the Hogge Bridge, Campbell Hole, and Branch sites in 1949, but only the Hogge Bridge site was reported in detail. He noted that the pit was 90 ft. in diameter and that the spoil from excavation of the pit excavation was thrown up around the edge of the pit to form a rim 8-10 ft. high (Stephenson 1952a). Stephenson defined the Wylie focus, using the McKern system, as follows:

1. Most sites (only three exceptions) contain roughly circular pits with built up rims.
2. Pottery is fairly abundant and is all trade material.
3. All burials are flexed.
4. No burial furniture is present.
5. Burials consist of both single and multiple interments.
6. Artifacts of all types are fairly consistent throughout all components and are fairly distinctive.

In the 1960s, investigations were conducted by professional and avocational archeologists in Forney Reservoir (now called Lake Ray Hubbard) (Harris and Suhm 1963). The excavations focused on three Wylie pit sites: Glen Hill, Upper Rockwall, and Lower Rockwall. Archaic and Late Prehistoric materials were found together, which was the beginning of the doubt that was cast on the Wylie Focus as a useful concept (Lorrain and Hoffrichter 1968; Ross 1966). The work by Ross inside the pit was conducted by stratigraphic level, which demonstrated that the lowest portion of the pit was largely devoid of artifacts.

In the 1970s, a proposal to enlarge Lake Lavon prompted survey and test excavations at the McGuire and Dawson sites (Dawson and Sullivan 1973). The most notable work, however, was conducted at the Sister Grove Creek site (Lynott 1975). Extensive excavations were conducted inside the

depression and the midden, albeit mostly by backhoe. Regardless of the excavation method used, good information on pit formation was obtained. The pit had been dug down into sterile yellow clay, was partially filled with dark brown clay, and a 50 cm thick transition zone was visible at the bottom of the pit. Radiocarbon dates of AD 980 $\pm$ 200 and AD 1590 $\pm$ 70 indicated multiple fill episodes, although these were not visible in the field. Five hearths with oxidized clay lenses and FCR were identified, indicating that cooking or roasting had occurred within the pit. Only one flexed burial was found during this work.

In the 1980s, Southern Methodist University (SMU) conducted survey, testing and mitigation excavations prior to inundation of the Richland-Chambers Reservoir in Navarro and Freestone counties. Major excavations were focused on the two sites along Richland Creek where avocational archeologist Bill Young had identified Wylie pits: Bird Point Island (41FT201) and Adams Ranch (41NV177). The Wylie pits at these two sites were investigated through intensive hand excavation and are the most thoroughly documented pits found to date (Bruseth and Martin 1987; Martin and Bruseth 1988). The pit at Bird Point Island measured 17 x 13 m and was 2.7 m deep, and the pit at Adams Ranch measured roughly 18 x 16 m, reaching a depth of 2.4 m. Each pit appeared to encompass three zones of fill, with dark brown soil in Zone 1 (the upper zone) grading into lighter brown in Zone 2 and lighter yellowish brown in Zone 3 (Figures 2 and 3). Very little change in color was observed between Zones 2 and 3, which led to the suggestion that they may represent a single fill episode at Bird Point Island. Although few continuous clear, sharp boundaries were observed across the profiles, radiocarbon dates and patterns of artifact distribution supported the division into three distinct zones.

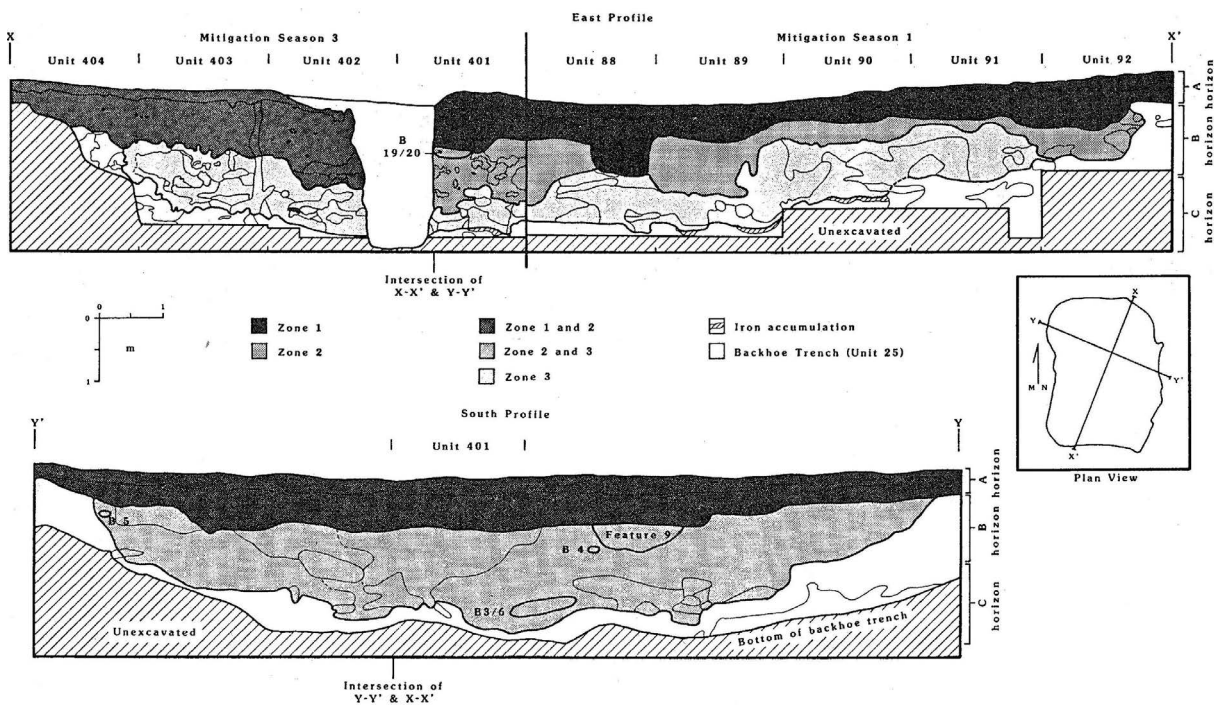


Figure 2. Profiles of Feature 1 at Bird Point Island showing the three principal zones of fill (from Martin and Bruseth 1988:Figure 5).

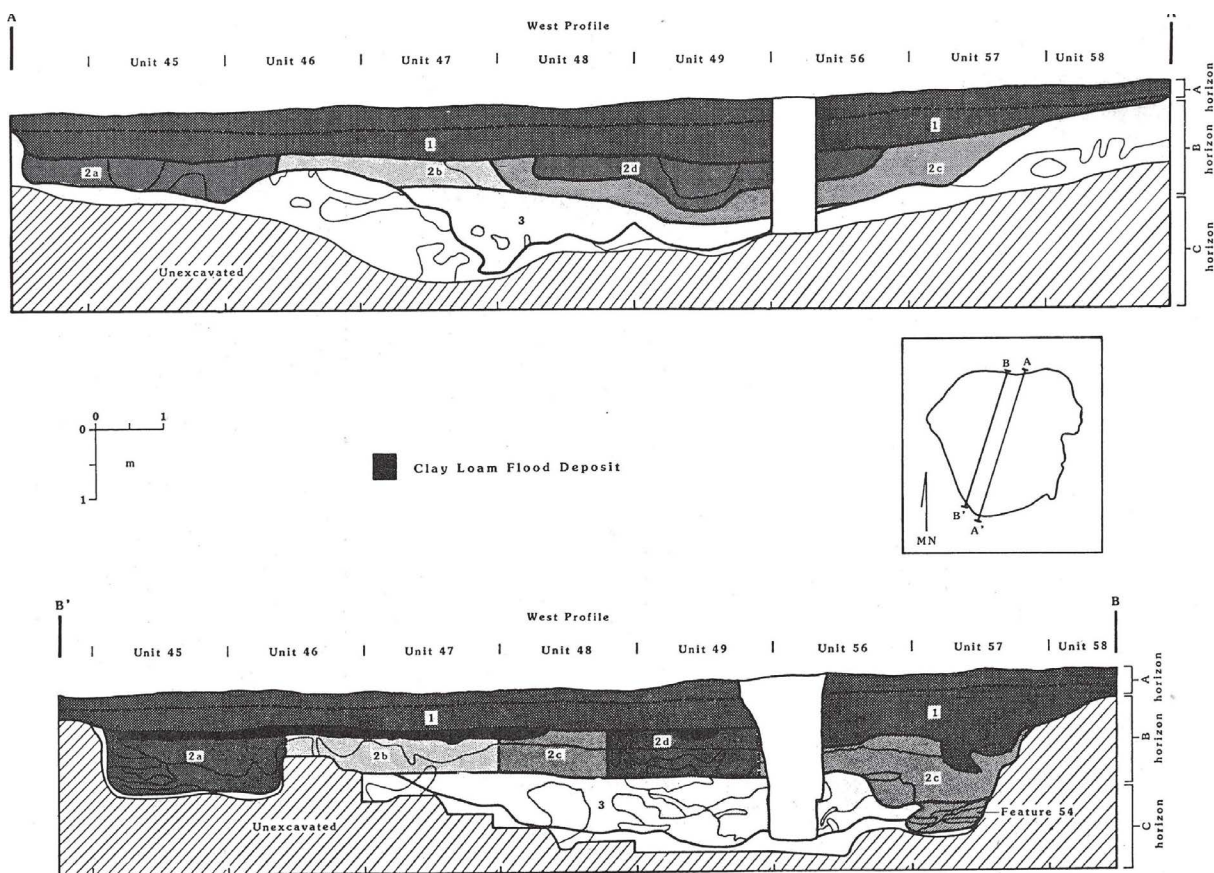


Figure 3. Profiles of Feature 1 at the Adams Ranch Site showing the three Principal zones of fill and the intrusive pit that intersected the southern edge of the Wylie pit (from Martin and Bruseth 1988: Figure 4).

One of the major contributions to our understanding of the initial period of Wylie pit excavation and use was provided by the radiocarbon dates obtained at Richland-Chambers Reservoir.

Seven uncorrected radiocarbon dates obtained from Zone 1 at Bird Point Island ranged from AD 1390 $\pm$ 90 to AD 1510 $\pm$ 60. Zone 2 dates were AD 700 $\pm$ 100 and AD 720 $\pm$ 140. Due to the lack of charcoal in Zone 3, the only dates obtainable were bone dates from collagen and apatite. Zone 3 dates were AD 140 $\pm$ 110, AD 36 $\pm$ 110, and 107 BC $\pm$ 239. The dates from Adams Ranch get older with depth but appear to indicate use at different times than the pit at Bird Point Island. The bottom of Zone 1 produced an uncorrected date of AD 200 $\pm$ 100. The next date further up the profile was AD 640 $\pm$ 70. The outermost edge of the Wylie pit had been intersected by an intrusive pit with features containing materials that appeared to be ceremonial in nature, such as whole deer antlers buried in smaller pits that had been excavated into the base of this larger intrusive pit. Smaller pits containing charcoal and burned bone were present in the bottom of the intrusive pit. These features may have functioned as hearths, or possibly cremations. The bone was too fragmented to be identified by the physical anthropologist. One of these features (Feature 42) yielded a charcoal date of AD 880 $\pm$ 80.

The uppermost dates, which were recovered about 40-50 cm below the top of the pit, yielded dates of AD 910 $\pm$ 210 and AD 960 $\pm$ 80. The dates obtained from Zone 3 in both pits document an origin during the Late Archaic period. Artifacts from that period had been found in several of the East Fork pits, suggesting an Archaic origin, but these radiocarbon dates provided firm documentation that they did indeed date to the Late Archaic period.

Artifacts recovered from the Richland-Chambers Wylie pits exhibited a vertical distribution that fit well with the radiocarbon

dates. Ratios of arrow points to dart points in Zone 1 at Bird Point Island was 5:1, whereas in Zone 2 the trend was reversed with a ratio of 1:4. Zone 3 contained only dart points, suggesting that initial excavation and use began during the Late Archaic period. Ceramics were almost completely confined to Zone 1 and included sherds identified as Caddo types, including Canton Incised (associated with the Sanders focus) and Maydelle Incised (associated with the later Frankston focus). At the Adams Ranch site, a somewhat similar trend was observed. In Zone 1 the ratio of arrow points to dart points was 2.7:1. The Zone 2 ratio was similar with a ratio of 2.2:1. Zone 3 contained mostly dart points with a ratio of 0.28:1. Many ceramic sherds were decorated with crosshatched incised lines or diagonal incised lines, similar to Canton Incised sherds. There were also brushed, slipped, and fingernail punctated sherds. An unexpected find was 10 shell tempered sherds that were associated with Zone 3, meaning that they were older than the grog tempered sherds. A few early shell tempered sherds had also been found elsewhere in the project area, and some had been reported from sites at nearby Jewett Mine (Fields 1995) and at Lake Limestone (Dan Prikryl, personal communication 1991).

PIT FUNCTION

Why were these pits excavated in the first place? What were they really used for? These questions have plagued Texas archeologists since the early days of their discovery. The initial ideas on the subject by Stephenson (1949) included use for water storage, defensive breastworks, dance arenas, gaming areas, or open-air council chambers.

Water storage was given little credence by Stephenson because water was readily available in nearby creeks and springs. This idea was eliminated entirely by Ross because the pit at Upper Rockwall had been dug down into the gravel layer, which allowed water to drain from the pit (Ross 1966). Ross also rejected the defensive breastwork hypothesis

because all of the known pits are located on the slope below the highest part of the landform, which is an untenable defensive position. Lynott (1977) evaluated all of Stephenson's hypotheses and rejected all of them based on his work at the Sister Grove Creek site. Instead, he proposed that the pits were created as focal points for ritual feasting, stating that the pits represented a form of community symbol and that activities conducted within them would have had significance for the entire group (Mark Lynott, personal communication 1985).

Bill Young believed that the Richland-Chambers pits functioned as inverse mounds. Since the pits are about the same size as some borrow pits identified on Caddo mound sites, and burials were found in all of the known pits, this was an interesting hypothesis that turned the tables on traditional mortuary behavior in the region. However, it did not account for activities that created the burned rock concentrations. Moreover, when all known pits are considered, the number of burials recovered from each were highly variable, with only one burial found at the Dugger site (where 90% of the pit was excavated) and two at the Upper Rockwall site, compared with 13 individuals and one skull recovered from the pit at the Hogge Bridge site.

Some archeologists with a background in Southwest archeology have suggested that the pits might have functioned as large pit houses. However, no evidence of post holes indicative of a structure covering the pit has been found at any of the known pits. Excavations exposed the edges of the pit and portions of the area beyond the edge, where post holes to anchor a roof should be found, but none were observed. Any roof covering pits as large as the Wylie pits would have required massive timbers near the center to support the roof, or, possibly, numerous smaller posts, but neither has been reported at any of the excavated pits, so the pit house idea just does not work.

While the mortuary function of the pits is perhaps the most obvious aspect of pit use, and one that has provided useful bioarcheological information, it was probably not the main function given the dramatic variability in the number of interments uncovered in these pits from site to site. Because burned rock concentrations were found within the pits, an effort was made to assess the degree to which the pits may have been used for roasting.

The artifacts found in Zone 3 of the Wylie pits at Bird Point Island and Adams Ranch were compared with smaller pits from each site that clearly had been used as roasting pits during the Late Prehistoric period (Bruseth and Martin 1987:281). Feature 38 at Bird Point Island was irregular in plan view, but was roughly oval, measuring about 6 x 4 m and about 1 m deep. It was adjacent to a circular house and was probably used on a regular basis for food preparation. Feature 51 at Adams Ranch looked remarkably similar to Feature 38, only slightly larger, measuring approximately 8 x 5 m and 1 m deep. These features contained high quantities of burned rock, baked clay and charred plant remains, with a much lower incidence of other artifact types.

The fire-cracked rock within Features 38 and 51 was not very noticeable while excavation was ongoing because the local rock used in the pits was Wilcox sandstone, which crumbles and exfoliates into very small pieces after use. Pit profiles contained small (pea- to nickel-sized) pieces of stone and baked clay spread throughout the entire profile as a result of frequent reuse, and numerous small fragments of burned rock were found during water screening. Once analysis was conducted, and artifacts recovered were expressed as percentages, the percentage of fire-cracked rock in these pits was 90.6% for Feature 38 and 89.9% for Feature 51. Zone 3 of the Wylie pit at Bird Point Island had a percentage of 84.8%, quite similar to the roasting pits, whereas Zone 3 at Adams Ranch had a lower

percentage of 53.1% (Bruseth and Martin 1987:283).

The similarities between the Late Prehistoric roasting pits and Zone 3 of the Wylie pits indicated that some degree of food preparation, or perhaps preservation, had taken place by roasting within the Wylie pits, but this comparison is somewhat misleading because Zone 3 in both pits had fewer artifacts than subsequent layers and each was lighter in color than Zones 1 and 2, and roasting pit Features 38 and 51. Still, the mere presence of fire-cracked rock indicates that some degree of food preparation had occurred during the earliest use of the pits.

A lot of time and effort was devoted to excavating and analyzing data from the Wylie pits at Richland-Chambers Reservoir and comparing results with what had been recovered from the East Fork sites. The hypothesized use of these features, including roasting plant foods during periods of group aggregation and use as a cemetery (Bruseth and Martin 1987) seems to account for what was observed in the field and identified in the lab, but it may not be the definitive answer. After spending multiple field seasons working on the pits and untold hours analyzing the materials found within the pit fill and materials recovered from the intrusive features, one question has eluded a satisfactory answer. Why dig a pit half the size of an Olympic swimming pool to roast food or bury the dead? Hunter-gatherers from many areas of the globe are known to have gathered annually to work together to harvest and preserve foods during the brief period when they are harvestable (Gould 1982; Weissner 1982), but no groups that I am aware of, aside from people living along the Blackland Prairie/Post Oak Savannah interface, did so by digging such massive pits.

The proposed function of the Wylie pits is comparable to that of the burned rock middens of Central Texas and beyond, which were also used for the cooking/roasting of

plant foods, and frequently contained human interments. Those middens started out as relatively shallow pits filled with heated limestone that, over time, through episodes of reuse, eventually formed burned rock mounds visible above the surrounding ground surface. Currently, there seems to be no clearly satisfactory answer to the question of why the Wylie pits were as large and deep as they are.

FEATURE 350 AT SITE 41FN151

At the time of this writing, analysis has not yet begun on the numerous features excavated at site 41FN151 at Bois d'Arc Lake. I first visited this site with Alan Skinner and Cody Davis many years ago during the initial survey. At that time, I thought that it appeared to be one of the best sites in the reservoir, but that assessment was based on the fact that occupations from different time periods exhibited almost complete horizontal separation, so there would be little mixing of artifacts from different components. I had some idea that portions of the site closest to the creek might also have vertical stratigraphic separation, but had no idea how much there actually was. Feature 350 is the only feature pertinent to this discussion of large pits, but readers should be on the lookout for the report on this site when it comes out, because it had some of the most unusual and interesting features I have seen in the 40 years I have worked in Texas.

Feature 350 was discovered by Charles Frederick while he was assessing the geoarcheology of the site near the end of the final field season at the lake. At first, he thought he was excavating inside a filled-in gully, but as it kept expanding in width but not in depth, he realized that he must be working inside a large pit. At that point, he stopped his backhoe work so that the remaining half of the pit could be excavated by hand (Figure 4 and profiles could be drawn (Figure 5). Allen Rutherford, site director at 41FN151, reports that it was clearly a manmade feature as evidenced by digging stick impressions documented along the

bottom of the pit (Allen Rutherford, personal communication 2024). The pit was located within the Late Archaic portion of the site, based on radiocarbon dates recovered from nearby features, which fits well with the radiocarbon dates recovered from the lower zones in pits at Richland-Chambers Reservoir, as well as Archaic artifacts prevalent in the lower zone of several pits along the East Fork. Unlike the Wylie pits, Feature 350 exhibited no evidence of use after the Late Archaic period (Allen Rutherford, personal communication 2024).

The pit measured about 9 m in diameter (perhaps 10 m, given that the pit appeared to be truncated along the eastern edge) and 2 m in depth, which is roughly half the length and about the same depth as some of the Wylie pits found along the East Fork and Richland Creek. However, it closely approximates the dimensions of two large pits, Features 17 and 18, found at the Irvine site (41NV182), in the Richland-Chambers Reservoir (McGregor et al. 1987). Feature 17 dimensions were recorded as 7 x 11 m and Feature 18 was reported to be 7 x 12 m, (Bruseth and Martin 1987:275). The profile of Feature 17 showed a shallow, lighter colored fill along the western 2.5 m before the rest of the pit dipped down to a depth of about 1.2 m, so the western shallow portion might have represented an expansion during a later use of the pit (Figure 6). If so, Feature 17 is very similar in size to Feature 350 at 41FN151. The contents of Feature 17 were more or less the same as those found within Wylie pits: fire-cracked rock, a burial and artifacts related to both Late Archaic and Late Prehistoric period, with the primary occupation occurring between AD 700 and 900.



Figure 4. Photograph of Feature 350 at 41FN151 showing the plan view as an unenhanced photograph with the rectangle area also shown enhanced by DStretch (courtesy of Charles Frederick).

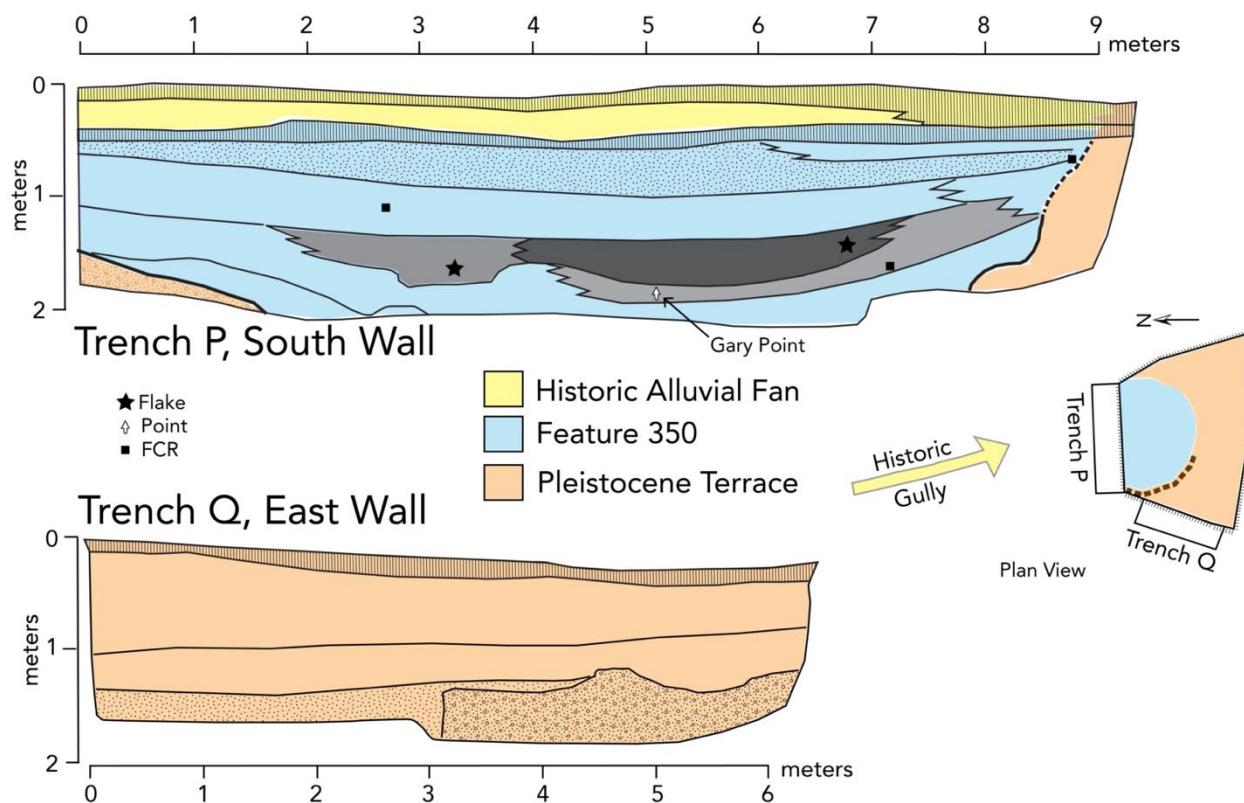


Figure 5. Profiles and simplified plan view of Feature 350 at 41FN151 (courtesy of Charles Frederick).

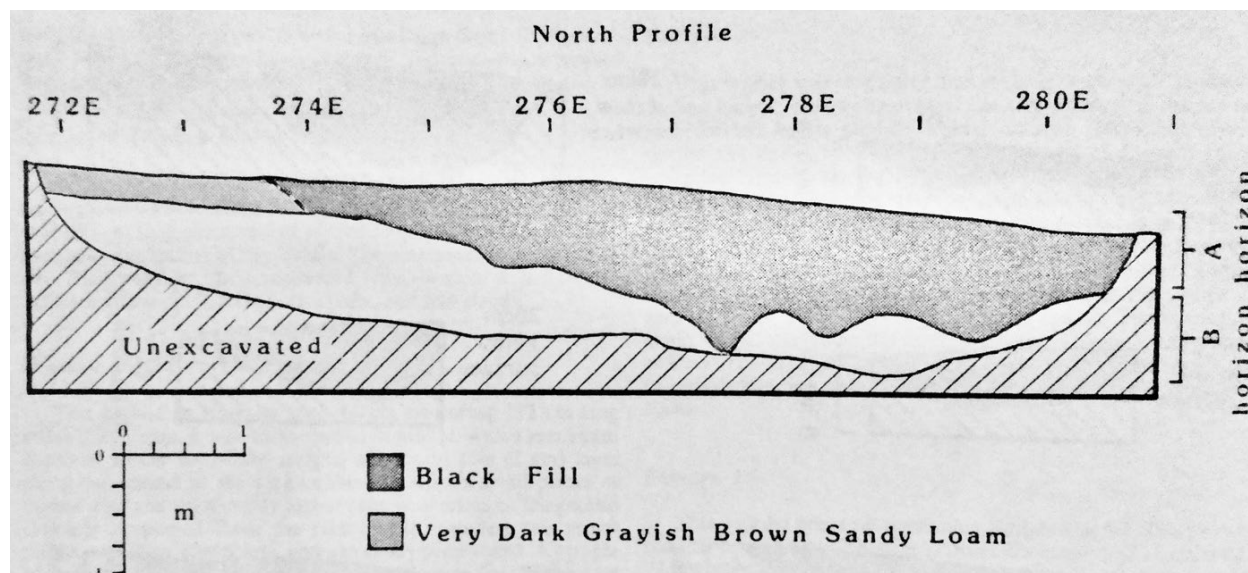


Figure 6. Profile of Feature 17 at the Irvine Site (41NV182) (from McGregor et al. 1987:Figure 12-6).

One other site along Richland Creek also had a large pit that was similar to Wylie pits, but smaller. The Strawn Creek site, located at the confluence of Strawn Creek and Richland Creek, was excavated in 1961 by Duffield of the Texas Archeological Research Project (Duffield 1963). A midden measuring 6 x 15 m turned out to be a large irregularly shaped pit with fill 70 cm deep and a number of smaller intrusive pits were observed. Artifacts were similar to those found at the Richland-Chambers and East Fork sites, but no burned rock concentrations were recorded.

LARGE PIT FEATURES ACROSS THE BLACKLAND PRAIRIE/POST OAK SAVANNAH INTERFACE

Fields (1995) presented an excellent discussion of the archeology along the Post Oak Savannah, noting the similarities in artifacts and burials observed at sites along the Blackland Prairie/Post Oak Savannah interface from Northeast Texas down to the southern portion of North Central Texas (Figure 7). His assessment focused on sites at Cooper Lake and Jewett Mine, where he had conducted most of his research, but he also referenced the work at Richland-Chambers Reservoir, Lake Limestone, and Gibbons Creek Mine. Having worked at sites in Richland-Chambers Reservoir, Jewett Mine, and Cooper Lake, and later having reviewed much of the work done on all of those projects as a reviewer for the Texas Historical Commission, I found his assessment to be insightful. However, he only mentioned the Wylie Pit sites at Richland-Chambers briefly, probably because they appeared to be rare outliers related to the concentration of pits along the East Fork of the Trinity River. The discovery of the pits at Richland-Chambers showed that these pits were not just an East Fork phenomenon but appeared to be a Trinity River phenomenon. However, given the discovery of Feature 350 at 41FN151, it seems likely that other large pit features may occur across this entire region (Figure 7).

The difficulty for archeologists will be finding these pits, especially the smaller ones, such as Feature 350 and the pits at the Strawn Creek and Irvine sites, which had no surface depression or rim. Even the larger Wylie pits that exhibited shallow depressions would be very hard for the average archeologist to identify. If I had had been the one who found the Bird Point Island site, I would have assumed that the large shallow surface depression along the terrace slope was the result of agricultural activity and erosion, since the only known sites with large depressions were 60 miles away. It would not have occurred to me that anything like them would have been present in that area. Also, even if large pits that once may have had visible depressions are out there, they would have been subjected to 40 years of agricultural activity more than the pits identified at Richland-Chambers, so the chances of observing any rim remnants or shallow depressions may now be nil. Perhaps LiDAR or other newer remote sensing approaches could be used to detect otherwise imperceptible evidence of the shallow depressions that remain.

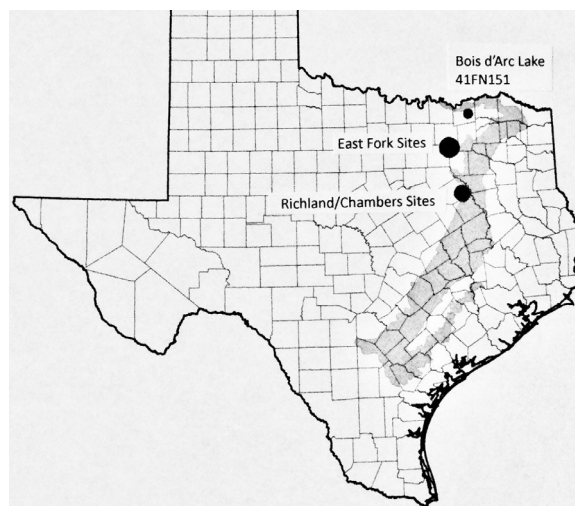


Figure 7. Map showing the Post Oak Savannah (Texas Parks and Wildlife Department 2024) in relation to the locations of Wylie pit sites along the East Fork of the Trinity River and Richland Creek, as well as the large pit at 41FN151 at Bois d'Arc Lake.

CONCLUSION

The discovery of a large pit feature at Bois d'Arc Lake that was similar in size to pits found at two sites along Richland Creek in Navarro County (Irvine and Strawn Creek), suggests that the use of large pits may have occurred throughout the Blackland Prairie/Post Oak Savannah interface during the Late Archaic period, extending much farther to the east than was originally believed. While the pit investigated at 41FN151 would not be classified as a Wylie pit based on its size, its similarity to the two pits found along Richland Creek suggests that other similar pits, and possibly larger Wylie pits, are likely be present in that portion of the state. Archeologists working in the region need to be aware of this and actively search for them.

If other Wylie pits are found, perhaps intensive excavation and analysis using improvements in remote sensing, dating techniques and other newer analytical approaches can provide a clearer picture of their role in prehistory. For instance, radiocarbon dates for all of the Wylie pits are standard dates using the original technique developed around 1950. AMS dating wasn't invented until the 1970s, and even though the Richland-Chambers sites were excavated in the early 1980s, AMS dating was not readily commercially available, and the project budget was dependent on the use of the SMU radiocarbon lab. In the future, soil columns with AMS dates from multiple levels could help with our understanding of the pit filling sequence. Similarly, analysis of soil chemistry and soil micromorphology, and identification of microartifacts might present evidence of other uses not even imagined by previous researchers.

Dee Ann Story once said that the Wylie pits at Richland-Chambers Reservoir were the most thoroughly studied of any of the known pits but noted that we still are not sure exactly what they were really used for. She concluded that we may never know. That assessment may be correct, but if we don't try to find and

study the other pits that may still be out there, we will never know any more about them than we do now. The rampant growth of subdivisions and associated development in Rockwall and areas further to the east and northeast has been underway for several years with no sign of letting up. Archeologists need to be on the lookout for these features while there is still something left to study.

REFERENCES CITED

- Bruseth, J.E. and W.A. Martin
 1987 The Wylie Focus: Cultural Reality or Archaeological Myth? In *The Bird Point Island and Adams Ranch Sites: Methodological and Theoretical Contributions to North Central Texas Archaeology*, edited by James E. Bruseth and William A. Martin, pp. 267-284. Archaeology Research Program, Southern Methodist University, Dallas.
- Dawson, G.L. and T.L. Sullivan
 1973 *Excavations at Lake Lavon: 1969*. Archaeology Research Program, Southern Methodist University, Dallas.
- Duffield, L. F.
 1963 *The Strawn Creek Site: A Mixed Archaic and Neo-american Site at Navarro Mills Reservoir, Navarro County, Texas*. The Texas Archeological Salvage Project, The University of Texas at Austin.
- Fields, R.
 1995 The Archeology of the Post Oak Savannah of East Central Texas. *Bulletin of the Texas Archeological Society* 66:301-330.
- Gould, R.
 1982 To Have or Have Not: the Ecology of Sharing Among Hunter-Gatherers. In *Resource Managers: North American and Australian Hunter-Gatherers*, edited by N. Williams and E. Hunn, pp.69-92. AAA Selected Symposium 67, Westview, Boulder, Colorado.
- Harris, R.K.
 1936 Indian Camps of the Upper Trinity River Drainage. *Bulletin of the Texas Archaeological and Paleontological Society* 8:113-133.
- 1942 The Gilkey Hill Pottery Site. *The Record* 3(9):48-53.

- Harris, R.K. and R. Hatzenbeuhler
1948 Culture Traits, The Ragland Site. *The Record* 6(8):32-33.
- Harris, R.K. and D.A. Suhm,
1963 *An Appraisal of the Archaeological Resources of Forney Reservoir, Collin, Dallas, Kaufman, and Rockwall Counties, Texas*. The Texas Archaeological Salvage Project, The University of Texas at Austin.
- Hatzenbeuhler, R.
1942 The Ragland Site. *The Record* 4(1):3-13.
- Housewright, R. and L. Wilson
1942 A Flaking Tool Burial at Butler Hole, Collin County, Texas. *The Record* 3(7):40-44.
- Lorrain, D. and N. Hoffrichter
1968 *The Lower Rockwall Site, Rockwall County, Texas*. Salvage Project, Southern Methodist University, Dallas.
- Lynott, M.
1975 *Archaeological Excavations at Lake Lavon: 1974*. Archaeology Research Program, Southern Methodist University, Dallas.
1977 A Regional Model for Archaeological Research in Northcentral Texas. Ph.D. dissertation, Department of Anthropology, Southern Methodist University, Dallas.
- Martin, W.A. and J.E. Bruseth
1988 Wylie Focus Pits: A New Look at Some Old Features, *The Record* 42(3):20-35.
- McGregor, D.E., J. Bohlin, J. Bruseth, G.J. Fritz, P. Murray and G. Rutenberg
1987 Excavations at 41NV182, the Irvine Site. In *Hunter-Gatherer Adaptations Along the Prairie Margin, Site Excavations and Synthesis of Prehistoric Archaeology*, edited by D.E. McGregor and J.E. Bruseth, pp. 125-147. Richland Creek Technical Series, Volume III, Archaeological Research Program, Southern Methodist University, Dallas.
- Ross, R.E.
1966 *The Upper Rockwall and Glen Hill Sites, Forney Reservoir*. The Texas Archaeological Salvage Project, The University of Texas at Austin.
- Stephenson, R.L.
1949 Archaeological Survey of Garza-Little Elm Reservoir Report. *Bulletin of the Texas Archaeological and Paleontological Society* 20:21-62.
1952a The Hogge Bridge Site and the Wylie Focus. *American Antiquity* 17:299-312.
1952b *The 1950 Excavation in the Lavon Reservoir, Collin County, Texas*. River Basin Surveys, Smithsonian Institution, Washington, DC.
- Texas Parks and Wildlife Department
2024 Target Species East Central Texas Plains (Post Oak Savannah) Ecoregion. Electronic document, https://tpwd.texas.gov/huntwild/wild/wildlife_diversity/texas_nature_trackers/target_species/east_central_plains.phtml, accessed September 19, 2024.
- Weissner, P.
1982 Beyond Willow Smoke and Dogs' Tails: A Comment on Binford's Analysis of Hunter-Gatherer Settlement Systems. *American Antiquity* 47:171-178.
- Wilson, L.
1946 Problematical Pits on the East Fork. *The Record* 5(3):11-12.

CERAMIC SHERDS, PIPES, AND FIGURINES FROM THE UPPER TUCKER SITE (41MU17), MONTAGUE COUNTY, TEXAS

Timothy K. Perttula¹

¹ Research Associate, Archaeology Research Collections, Southern Methodist University

During the 1966 Wichita Archaeology and Ethnohistory project (Bell et al. 1967), three archeological sites on the Red River were excavated in Montague County in North Central Texas (Figures 1 and 2). The sites are in the Western Cross Timbers in the Spanish Fort Bend of the Red River. The sites are: Upper Tucker (41MU17 [SMU: X41MU17]), Glass (41MU24 [SMU: X41MU24]), and the Coyote (41MU28 [SMU: X41MU28] ²) site. In this article, I discuss a re-examination of the ceramic and clay artifacts from the Upper Tucker site excavations, with a second report to follow concerning the Glass and Coyote sites.

SITE SETTING

The Upper Tucker site is a late-18th-century Wichita site on an alluvial terrace of the Red River that covered about four acres. Surface evidence of large bone concentrations, including bison bone, was apparent in two areas. The western area was referred to as Lot A, and the eastern area was referred to as Lot B. A series of test units were excavated by hand at various positions across the site, and those that encountered archeological features were expanded into larger excavations. At least 15 hand-dug trenches were also placed across the site in search of midden deposits and cultural features (Figure 3). Test Pit 2 identified a northern and a southern cluster of intersecting house pits in Lot A, labelled

Feature 1A-C and Feature 5A-B (Figures 4 and 5). Four large pits, called “cache pits” by Woodall (1967), were identified in the trenching in Lot B: Features 2, 6, 7, and 8 (Woodall 1967:Figure 4).

CERAMIC SHERDS

The assemblage from Upper Tucker includes 24 sherds and 29 sherdlets (less than 1.5 cm in length and width; sherdlets are not further discussed herein) (Table 1). Fifty percent of the sherds are from Features 1A (n=2) and 1B (n=10), and only 25% are from Feature 5A (n=3) and 5B (n=5); 25% of the sherds are from the surface (n=6).

A sample (79%, n=19) of the larger sherds from Upper Tucker have been analyzed in detail, where information has been obtained on sherd provenience, lot and specimen numbers, decoration (if present), sherd type, temper, firing conditions, surface treatment, and thickness (Table 2).

Three of the total of 24 sherds (12.5%) are decorated, which is a plain to decorated sherd ratio (P/DR) of 7.0 (21/3). Although a very small sample size, this is closely comparable to the 6.1 P/DR for the ceramic assemblage from the apparently contemporaneous Stone site (41ML38), a 1770-1786 Wichita site in the Brazos River basin (Perttula 2019), suggesting the same ceramic tradition was in place at both Wichita sites. The high P/DR means that plain vessels are much more commonly in use than decorated wares at the two sites.

Two of the decorated sherds are from the same vessel in Feature 1B. They are rim sherds from a grog-bone-tempered compound bowl with a single horizontal engraved line on the upper rim panel (Figure 6). The ceramic type cannot be identified. The compound rim and use of engraving suggests that this bowl was

² Prior to the establishment of a singular repository for archeological site information in Texas, SMU—like many other institutions—maintained its own site catalog and numbering system composed of a pseudo-trinomial preceded by an “X” to distinguish these numbers from trinomials assigned by the University of Texas. In the case of the Wichita project, the official trinomial and the SMU pseudo-trinomial are effectively identical, but this is not always the case with sites studied by SMU’s River Basin Surveys salvage program and by the later Archaeology Research Program.

likely manufactured by a Caddo potter, perhaps living farther downstream on the Red

River or in the upper Sabine or Sulphur River basins (Perttula 2021).

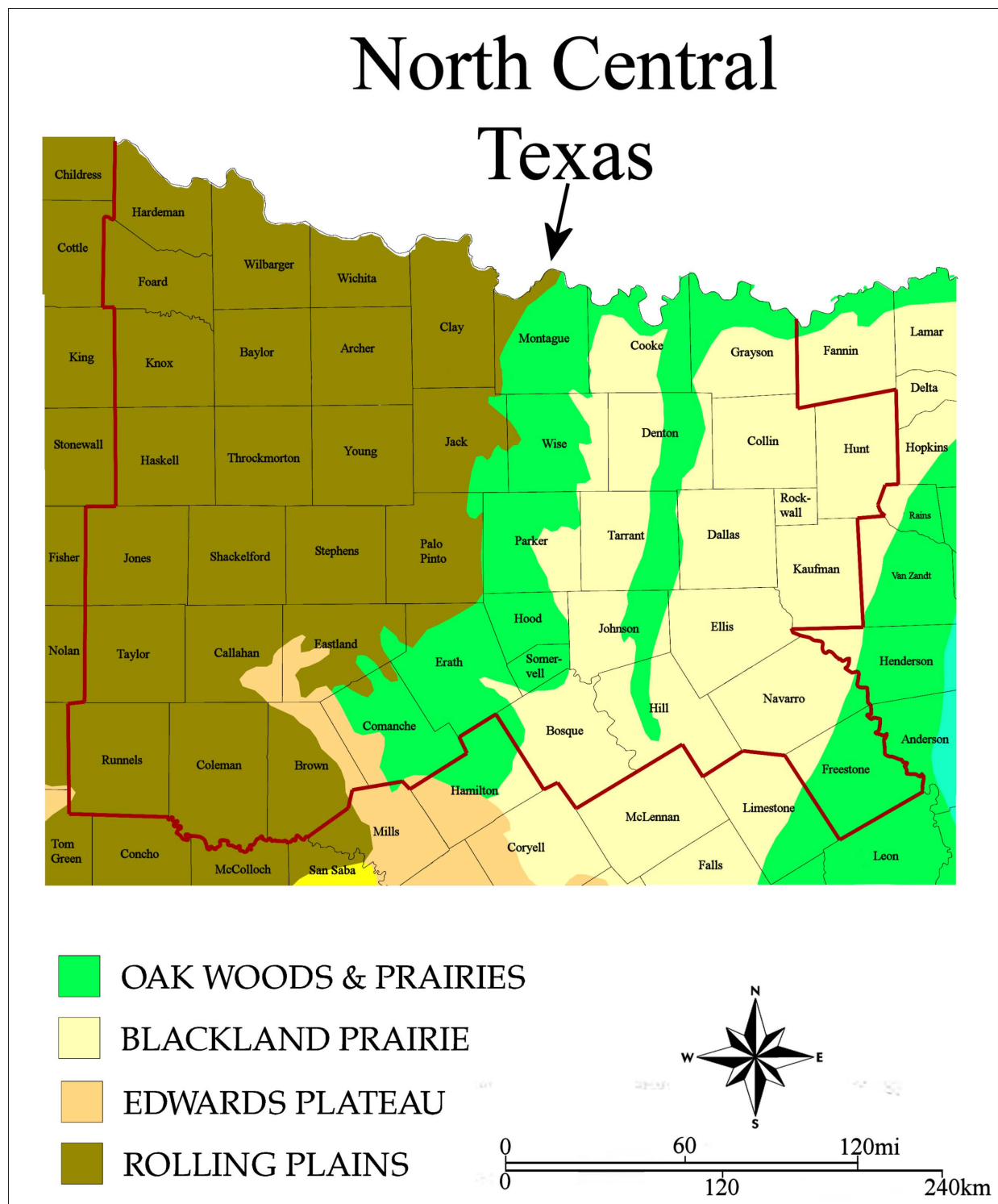


Figure 1. Montague County in North Central Texas.

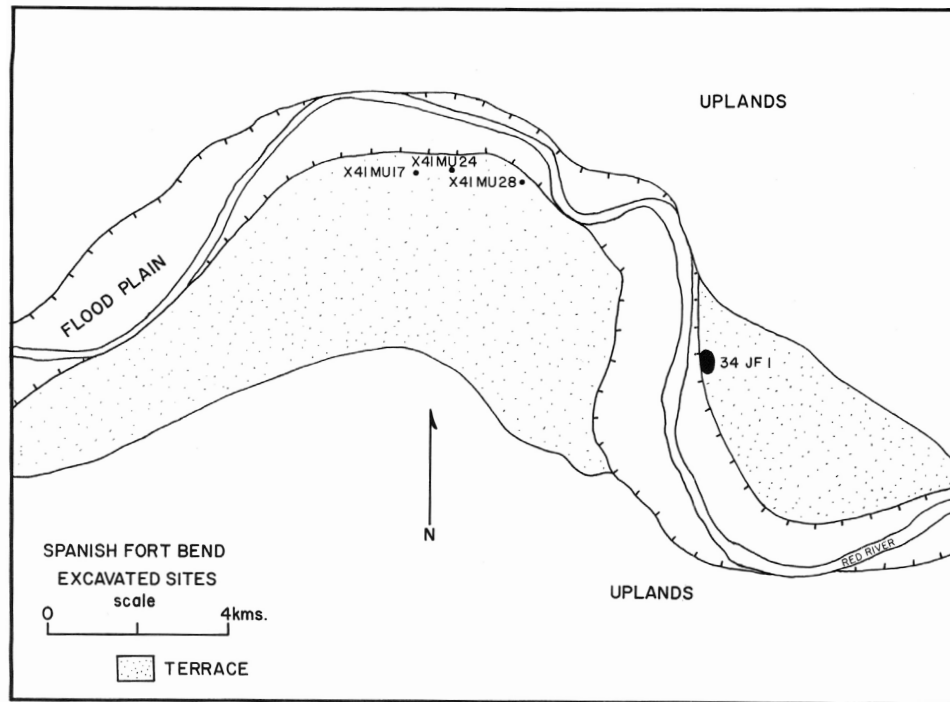


FIG. 2

Figure 2. Map of the Upper Tucker (left), Glass (center), and Coyote (right) sites in the Spanish Fort Bend of the Red River, and the Longest site (34JF1) (from Bell et al. 1967:Figure 2).

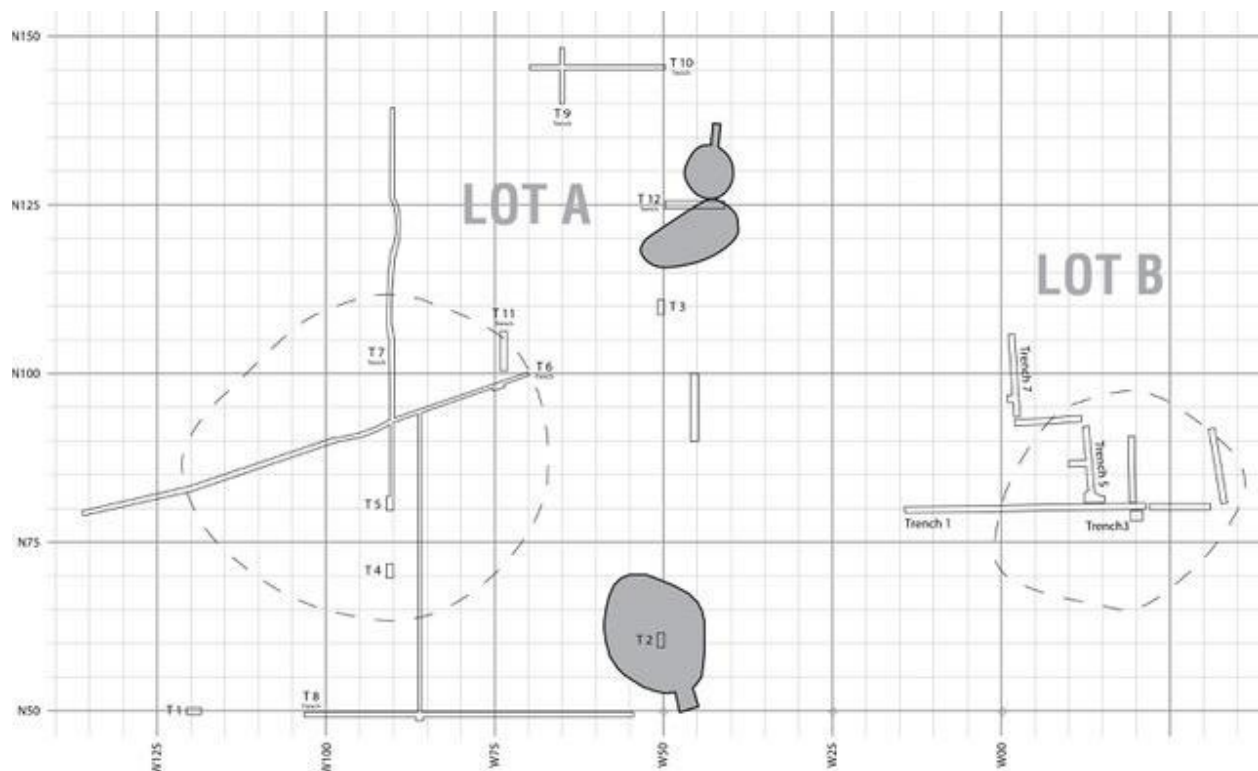


Figure 3. Map of the Upper Tucker site. Feature 1 house pits to the south and Feature 5 house pits to the north. Map courtesy of Matthew T. Boulanger and the Archaeology Research Collections at Southern Methodist University.

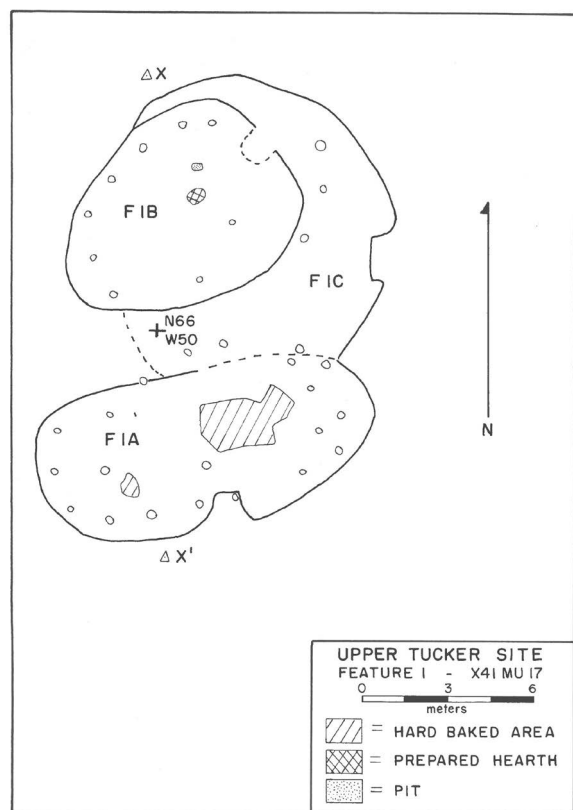


FIG. 5

Figure 4. Features 1A, 1B, and 1C at the Upper Tucker Site (from Bell et al. 1967:Figure 5).

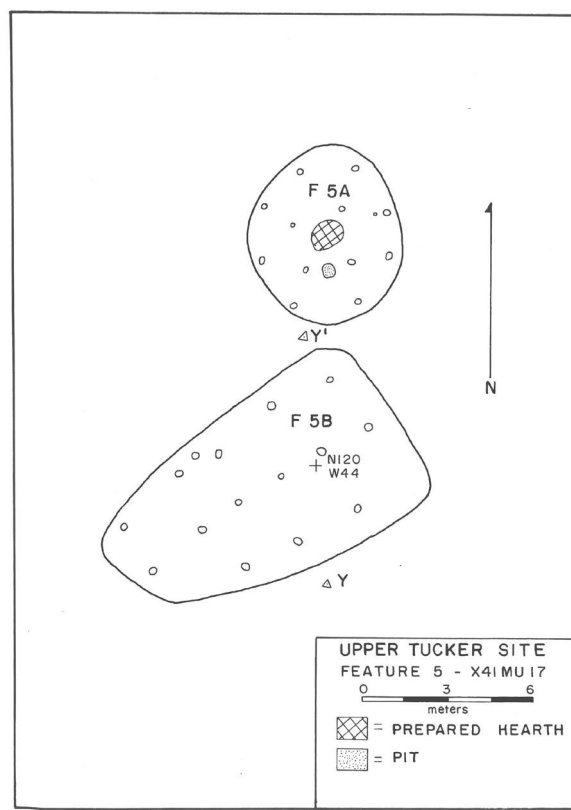


FIG. 12

Figure 5. Features 5A and 5B at the Upper Tucker site (from Bell et al. 1967:Figure 12).

Table 1. Clay Artifacts Inventory, 41MU17.

Provenience	Sherds	Sherdlets	Pipes	Figurines	Daub	Burned Clay	Total
Feature 1A	2	1	-	-	17	38	58
Feature 1B	10	3	2	-	2	10	27
Feature 1C	-	-	1	-	-	-	1
Feature 2	-	2	-	-	4	23	29
Feature 5A	1	4	3	2	1	2	13
Feature 5B	5	12	9	4	7	32	71*
Feature 8	-	1	-	-	2	3	6
Surface	6	2	2	-	-	2	12
Trench 4	-	4	-	-	-	-	4
Segment B	-	-	-	-	11	47	58
Unidentified	-	-	1	-	-	-	1
Totals	24	29	18	6	44	157	278

*Also includes two clay coil fragments (Lots 232 and 391)

Table 2. Detailed Analysis of Ceramic Vessel Sherds, 41MU17.

Provenience	Lot/ Specimen No.	Decoration	Sherd Type	Temper	Firing Condition*	Surface Treatment	Thickness (mm)
Feature 1A	66.1	Plain	body	shell	B	-	9
	122.1	Plain	body	shell	B	interior/exterior, exterior smoothed	7.8
Feature 1B	15.1	Plain	body	shell	B	exterior burnished	5.3
	85.1	Horizontal engraved line	rim	grog- bone	F	interior/exterior burnished	5.7
	87.1	Plain	body	grog	F	exterior burnished, interior smoothed	4.3
	91.1	Plain	body	grog	D	-	7.6
	124.1	Plain	body	grog- bone	F	interior/exterior burnished	4.4
	149.1	Plain	body	grog	F	interior/exterior burnished	9.3
	149.2	Plain	body	grog	F	exterior burnished	4.2
	180.1	Horizontal engraved line	rim	grog- bone	B	interior/exterior burnished	5.7
	180.2	Plain	body	grog	F	interior/exterior burnished	4.8
	180.3	Plain	body	grog	F	interior/exterior burnished	4.3
Feature 5A	364.1	Plain	body	shell	B	-	4.6
Feature 5B	232.1	Plain	rim	grog	B	exterior smoothed	6.7
	255.1	Plain	body	none	A	-	7.5
	298.1	Fingernail punctated row	body	grog	G	-	11.3
Surface	1.1	Plain	body	bone	A	interior/exterior exterior smoothed	4.3
	401.1	Plain	body	shell	G	exterior burnished	7.2
	401.4	Plain	body	shell	G	exterior smoothed	7.6

*(see Telster 1993)



Figure 6. Horizontal engraved rim sherd from Feature 1B (Lot 180.1).

The other decorated sherd is a body sherd from a thick (11.3 mm) grog-tempered vessel with a row of fingernail punctations (Lot 298.2). It is identified as a sherd from an Emory Punctated vessel, likely also made in

the Caddo area, perhaps in the upper Sabine River basin at the Gilbert site (1740-1767) based on the frequency of this type found there (Story et al. 1967).

The ceramic sherds are from vessels tempered with grog (42%), grog-bone (10.5%), bone (5.3%), and shell (42%) (Table 3). The majority of the sherds in Feature 1A and Feature 1B have grog (50%) and grog-bone temper (25%), and 25% have shell temper. Feature 5A and Feature 5B sherds have the same temper proportions, with 50% grog-tempered, and 25% are shell-tempered, while 67% of the surface sherds are from shell-tempered vessels. In general, the proportion of sherds with shell temper at the Upper

Tucker sites is more consistent with ca. 1750-1800 Wichita Indian sites on the Red River and in the Trinity and Brazos River basins than with pre-1750 Wichita Indian sites in the Arkansas River basin that have extensive ceramic sherd assemblages (see Trabert 2019). For example, at the Lasley Vore (Odell 2002) and the Bryson-Paddock (Hartley and Miller 1977) sites, dating from 1719-1750, between 95.4-97.7% of the ceramic sherds are from shell-tempered vessels.

Table 3. Temper of sherds analyzed in detail, 41MU17.

Provenience	Grog	Grog-Bone	Bone	Shell	Total
Feature 1A	-	-	-	2	2
Feature 1B	6	2**	-	2	10
Feature 5A	-	-	-	1	1
Feature 5B	2**	-	-	-	2*
Surface	-	-	1	3	4
Totals	8	2	1	8	19

*one sherd has no visible temper

**includes one or two decorated sherds

There are two primary ways in which vessels at the Tucker site were fired. The first and most common method was to fire them in a low oxygen or reducing environment and pulled from the fire to cool in the open air or oxidizing environment (see Teltser 1993:Figure 2f-g). This method of firing is typical of Late Caddo (ca. A.D. 1440-1690) and Historic Caddo period ceramics from sites on the Red River (Regnier et al. 2021) and in East Texas (Perttula 2021), suggesting these sherds are from Caddo vessels. About 53% of the sherds (n=10) are from vessels fired in this way, typically grog-tempered vessels (62.5% of the grog-tempered sherds, 66.7% of the grog-bone-tempered sherds, and 33% of the shell-tempered sherds, see Table 2). The second principal way vessels have been fired is to fire and cool them in a reducing or low oxygen environment (see Teltser 1993:Figure 2b), accounting for 32% of the sherds analyzed in detail (n=6). Sixty-seven percent of the shell-tempered sherds are from vessels fired in this way, compared to only 18% of the grog and grog-bone-tempered

sherds. One sherd (5.3%) from Feature 1B is from a vessel that was incompletely oxidized during firing (see Teltser 1993:Figure 2d). Lastly, two sherds (10.5%) with bone temper or no temper are from vessels that were fired and cooled in a high oxygen or oxidizing environments (see Teltser 1993:Figure 2a).

In the case of sherd surface treatment, 83% of the detailed analysis sherds from Feature 1A and Feature 1B (n=10) have either been burnished on interior and/or exterior surfaces (n=9) or have been smoothed on interior and exterior surfaces (n=1). The burnished sherds are most common in the grog-bone-tempered ware (100%, n=3) and the grog-tempered ware (62.5%) in Feature 1B. Thirty-three percent of the shell-tempered sherds (n=2) have exterior burnished surfaces. In Feature 5A and 5B, only 25% of the sherds (n=1), a shell-tempered ware, have any surface treatment, that being smoothing on the interior sherd surface. The sherds from the surface have either exterior burnished or smoothed interior/exterior surfaces.

The sherds are from moderately thick vessels, with a mean thickness of 6.2 mm for grog- and grog-bone-tempered rim sherds. The grog-bone and bone-tempered wares have thin vessel walls with a mean thickness of only 4.25 mm, from either grog-, bone-, and grog-tempered sherds in Feature 1B and from the surface. One thin shell-tempered sherd is from Feature 5A. The mean body thickness of the sherds are: 5.83 mm for the grog-tempered ware; 4.4 mm for the grog-bone-tempered wares; 4.3 mm for the bone-tempered wares; and 7.1 mm for the shell-tempered wares.

CERAMIC PIPES

Ceramic pipes are relatively abundant from the site. Twelve of the 18 ceramic pipe sherds (67%) from the Upper Tucker site are from Features 5A and 5B (see also Table 1). Another three pipe sherds (16.7%) are from Feature 1B and Feature 1C, two are from the surface (11%), and the last pipe sherd (5.6%) has an unknown provenience (Table 4). These sherds

are from elbow pipes with relatively short and flaring rims and flat lips, and longer bowls, able to hold considerable amounts of smoking material (possibly tobacco) (see Bell et al. 1967:Figure 47k-cc).

The pipes from Features 1B and 1C are made from a likely local gray clay (probably gathered from the Red River floodplain), and with no visible temper (see Table 4). One of the pipe sherds is from a pipe that was clearly fired in an oxidizing environment. None of the Feature 1B and Feature 1C pipe sherds are polished. These pipe sherds differ from the Feature 5B pipe sherds in several ways.

Seven of the Feature 5A and Feature 5B pipe sherds (58%) are tempered with either burned bone or burned bone-hematite (see Table 4). The remainder have no visible temper. A gray clay was used in the manufacture of a majority of the Feature 5 pipes, and they are very commonly fired in a reducing environment. Only one of the Feature 5 pipes is fired in an oxidizing environment. Two pipe sherds have been polished on their exterior surface, and one from Feature 5B has a horizontal raised ridge on the bowl.

Table 4. Details of the Ceramic Pipe Sherds from the Upper Tucker Site.

Provenience	Lot No.	Sherd Type	Oxidized/Reduced	Temper
Feature 1B	232	stem	oxidized fired/gray clay	no visible temper
	359	bowl	gray clay	no visible temper
Feature 1C	142	bowl rim	gray clay	no visible temper
Feature 5A	297	bowl rim	reduced fired/gray clay	no visible temper
	297	bowl	reduced fired/gray clay	no visible temper
	299	bowl rim	reduced fired/gray clay	no visible temper
Feature 5B	209	long stem frag.	-	grog
	210	bowl with horizontal raised ridge.	reduced fired	bone
	277	bowl rim	reduced fired	bone-hematite
	309	bowl rim*	reduced fired/gray clay	no visible temper
	313	bowl rim	reduced fired/gray clay	bone
	313	lower bowl-stem*	reduced fired/gray clay	bone
	313	stem	reduced fired	bone
	342	stem and lower bowl	oxidized fired/gray clay	no visible temper
	421	stem	reduced fired	bone
Surface	406	stem	gray clay	
	406	stem	gray clay	
Unidentified	54	stem*	reduced fired	bone

*polished

FIGURINES

The six clay figurine fragments, none with a visible temper, are from Feature 5A and Feature 5B (see Table 1) house pits, suggesting their use was confined only to the house areas. The two figurine fragments from Feature 5A may represent part of a limb or leg (18.5 x 7.0 mm in length and width), while the second is

an unknown form that is 23.5 x 6.0 mm in length and width. It has fingernail impressions on it.

One figurine fragment in Feature 5B is highly polished and may be a leg element from a human figure; it is 18.8 x 7.0 mm in length and width; another conical fragment may be

another leg element. There are two figurine body fragments in this feature. One has random incised lines in one area, and measures 57.0 x 28.0 mm in length and width. Figure 7 illustrates figurines that are comparable to those from the Upper Tucker site and were found on Historic Wichita Indian sites in the Spanish Fort Bend area (Figure 7).

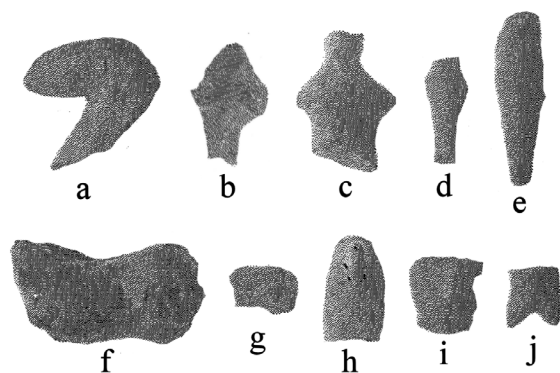


Figure 7. Figurines from Historic Wichita Indian sites (from Prikryl and Perttula 1995:Figure 15).

DAUB AND BURNED CLAY

Pieces of daub and burned clay are most common in two of the house pits (Feature 1A and Feature 5B) and in a large pit (Feature 2) (see Table 1), and in Segment B in the eastern part of the site. The daub in the house pit deposits indicates that two of the houses built on the site were wattle-daub and grass-thatched structures that burned down, preserving impressions of grass and fingernail impressions on the daub that fell into the house pits. The burned clay pieces may be remnants of hearths or cooking ovens, or possibly even small eroded pieces of daub.

The daub was fired almost exclusively in a reducing environment ($n=43$, 98%), with only one fired in an oxidizing environment. This suggests that the daub on the walls of the house pits were smothered by the remainder of the grass-thatched house walls. The burned clay: pieces were also mainly fired in a reducing environment ($n=127$, 81%), and only 19% ($n=30$) were fired in an oxidizing environment. Use of ovens and pits may have

produced most of the oxidized pieces of burned clay, as well as sometimes in the use of hearths, while cooking and the burning of trash and abandoned house pits could account for the prevalence of burned clay pieces.

HISTORIC ARTIFACTS

The few historic artifacts from the Upper Tucker in the ceramic collection are likely associated with the late 18th century Wichita occupation at the site. One pearlware rim sherd (1770-1820, see Green 2024) was collected from the surface of the site (Lot 1.1) along with a body sherd also from the surface (Lot 300.1). There are three kaolin pipe stem sherds from Feature 5B (Lot 343.1-.3). These sherds most closely resemble kaolin pipes manufactured between 1770-1820 (Peach State Archaeological Society 2024). The last of the historic artifacts in this assemblage from the Upper Tucker site is a possible gun flint fragment made of gray chert (Lot 85.2). 3

SUMMARY AND CONCLUSIONS

This paper is a reexamination of the ceramic sherds and other clay artifacts from the Upper Tucker site (41MU17) on the Red River in the Spanish Fort Bend of Montague County, Texas. The site was excavated in 1966 by J. N. Woodall of Southern Methodist University as part of the Wichita Archeology and Ethnohistory Project (Bell et al. 1967; Woodall 1967), and the collections from the site are curated at Archaeology Research Collections at Southern Methodist University in Dallas, Texas.

The Upper Tucker site is a late-18th-century Wichita Indian site, perhaps settled by the Taovayas (Bell et al. 1967), with habitation features (house pits) and storage pits. Despite the extensive excavations at the site, only 24

³ Note that numerous other historic artifacts were recovered from Upper Tucker (see Bell et al. 1967:14); however, the focus of this study was solely on the ceramic artifacts. The gunflint was encountered in this study simply because it had been inadvertently bagged with the ceramic artifacts.

ceramic vessel sherds and 29 vessel sherdlets represent the vessel sherd assemblage. The low proportion of ceramic sherds is a product of the fact that after ca. 1750, Wichita Indian peoples “were relying on Caddo ceramic vessels obtained through French trade networks” (Perttula 2019:54), rather than making their own, and they were also commonly using copper kettles (Beach 2015:86). The few sherds are from grog-, grog-bone-, bone-, and shell-tempered wares, and they appear to be from vessels made by the neighboring Caddo Indians living downstream to the east along the Red River (in the area of the McCurtain phase, see Regnier et al. 2021:Figure3.15) and southeastwards among Caddo peoples living in the upper Sulphur and Sabine River basins (Perttula 2021:Figure 6-10), descendants of Titus phase communities. The sherds are distinctive in that they are from well-burnished vessels and they have engraved decorations on compound bowls (cf. Perttula et al. 2021:Figure 1-3d) and fingernail punctations on an Emory Punctated jar.

In addition to the few ceramic vessel sherds, there are clay artifacts in the Upper Tucker artifact assemblage. These include plain clay elbow pipes, sometimes tempered with bone and sometimes with no visible temper, almost all from Features 5A and 5B house pits, and clay figurines. The figurine fragments resemble human limbs and body pieces, and they are also from Features 5A and 5B. Lastly there are numerous pieces of daub and burned clay in the collection. These pieces are mainly from Feature 1, Feature 2 (a storage pit), and Feature 5. They are the product of the burning down of the wattle-daub and grass thatch-covered Features 1 and 5 houses as well as probable pieces from interior hearths and hard-packed clay areas.

The few historic artifacts in this collection from the Upper Tucker site appear to be temporally associated with the clay artifacts. These include a few sherds of English

pearlware, 1770-1820 kaolin pipe sherds, and a gray chert gunflint.

ACKNOWLEDGMENTS

Thanks foremost to Matt T. Boulanger of Archaeology Research Collections at SMU for access to the ceramic collections from the Upper Tucker site, reviewing a draft of this paper, and providing Figure 3. Lance Trask prepared Figures 1 and 6.

REFERENCES CITED

- Beach, S. D.
2015 Wichita Women and Their Roles in the World Economy: How Postcontact Ceramics Inform Culture Change in the Southern Plains. Master's thesis, Department of Anthropology, University of Oklahoma, Norman.
- Bell, R. E., E. B. Jelks, and W. W. Newcomb (assemblers)
1967 *A Pilot Study of Wichita Indian Archeology and Ethnohistory*. Final Report for Grant GS-964, National Science Foundation, Washington. D.C.
- Green, M. M.
2024 Refined Earthenware in Texas. *Bulletin of the Texas Archeological Society* 95:259-280.
- Hartley, J. D. and A. F. Miller
1977 *Archaeological Investigations at the Bryson-Paddock Site: An Early Contact Period Site on the Southern Plains*. Archaeological Site Report No. 32. Oklahoma River Basin Survey, University of Oklahoma Office of Research Administration, Norman.
- Odell, G. H.
2002 *La Harpe's Post: A Tale of French-Wichita Indian Contact on the Eastern Plains*. University of Alabama Press, Tuscaloosa.
- Peach State Archaeological Society
2024 Clay Trade Pipes. <https://peachstatearchaeologicalsociety.org/artifact-identification/pipes/clay-trade-pipes/>, accessed July 4, 2024.
- Perttula, T. K.
2019 The Ceramics from the Stone Site (41ML38), a Later Eighteenth Century Wichita Site in McLennan County, Texas. *La Tierra* 42:53-62.
2021 East Texas Caddo Ceramic Traditions. In *Ancestral Caddo Ceramic Traditions*, edited

- by D. P. McKinnon, J. S. Girard, and T. K. Perttula, pp. 116-142. Louisiana State University Press, Baton Rouge.
- Perttula, T. K., J. S. Girard, D. P. McKinnon, and D. G. Robinson
2021 Approaches to the Study of Ancestral Caddo Ceramics. In *Ancestral Caddo Ceramic Traditions*, edited by D. P. McKinnon, J. S. Girard, and T. K. Perttula, pp. 116-142. Louisiana State University Press, Baton Rouge.
- Prikryl, D. J. and T. K. Perttula
1995 North Central Texas. *Bulletin of the Texas Archeological Society* 66:189-195.
- Regnier, A. L., T. K. Perttula, and P. C. Livingood
2021 Caddo Ceramics in the Red River Basin in Southeastern Oklahoma and Northeastern Texas. In *Ancestral Caddo Ceramic Traditions*, edited by D. P. McKinnon, J. S. Girard, and T. K. Perttula, pp. 39-70. Louisiana State University Press, Baton Rouge.
- Story, D. A., B. Barber, E. Cobb, H. Cobb, R. Coleman, K. Gilmore, R. K. Harris, and N. Hoffrichter
1967 Pottery Vessels. In "The Gilbert Site: A Norteno Focus Site in Northeast Texas," edited by E. B. Jelks. *Bulletin of the Texas Archeological Society* 37:112-187.
- Teltser, P. A.
1993 An Analytic Strategy for Studying Assemblage-Scale Ceramic Variation: A Case Study from Southeast Missouri. *American Antiquity* 58(3):530-543.
- Trabert, S.
2019 Partners and Power: Understanding Ancestral Wichita and French Trade at the Deer Creek Site. *International Journal of Historical Archaeology* 23(2):444-461.
- Woodall, J. N.
1967 The Upper Tucker Site. In *A Pilot Study of Wichita Indian Archeology and Ethnohistory*, assembled by R. E. Bell, E. B. Jelks, and W. W. Newcomb, pp. 3-14. Final Report for Grant GS-964, National Science Foundation, Washington. D.C.

CORONADO'S WEATHER REPORT WHY THE CORONADO EXPEDITION DID NOT PERISH IN THE PLAINS

C. Britt Bousman¹

¹ Center for Archaeological Studies and Department of Anthropology, Texas State University

ABSTRACT

The Coronado Expedition routes in 1540-42 from Mexico to Quivira and through Arizona, New Mexico and Texas have been debated for over 150 years, and still are. Tree ring evidence indicates the conditions in the Southwest and Southern Plains were relatively wet and mild in the summer of 1541. In the Texas portion of Coronado's route, debate still exists as to the location and order of occupation of the two large canyons (barrancas) where Coronado camped even though Blanco Canyon clearly was one. In this paper a GIS least-cost path analysis is used to help determine the most efficient routes that could have been taken using established landmarks. The routes were programmed to minimize topographic slope changes using the freeware program QGIS. Finally, an explanation for the failure of the expedition is offered.

In the Texas Plains our anthropological and archeological understanding of the early historic period, known as the protohistoric, and the Native American peoples who lived there at that time is strongly informed by the Spanish narratives recorded by sixteenth- and seventeenth- century exploratory expeditions and missionaries. While overall the record of Spanish expeditions is sparingly documented (Forbes 1959), a few have surprisingly detailed narratives of their journeys. One of the most important, and in some ways most detailed, was the expedition organized and led by Francisco Vázquez de Coronado between 1539 and 1542. Coronado was looking for riches in North America hoping to duplicate the successes of Cortez and Pizarro in Mexico and Peru (Flint and Flint 1992, 1993, 1997, 2005; Hammond and Rey 1940, 1966; Weber 1992; Winship 1896, 1904). As part of this effort, he recorded the peoples and their lifeways in the Southwest and Southern Plains, but these incursions had colossal effects on the inhabitants in these regions. An understanding of where his expedition travelled and under what conditions is important to our full comprehension of those events and their consequences. This paper explores the possible routes and weather conditions experienced by the Coronado expedition.

ARCHIVAL RECORD OF CORONADO'S EXPEDITION

Coronado's was the first large Spanish expedition to reach the American Southwest and the Southern Plains (Hammond and Rey 1940, 1966; Flint and Flint 2005; Winship 1896, 1904). It began in 1540 from Compostela, Mexico and ended in 1542. This expedition provides the earliest and one of the most detailed eyewitness accounts that document the American Southwest and the Plains. As such the chronicles provide a unique record of Native Americans on the Plains. There are over 200 documents written before, during and after the expedition that provide background, describe the journey and complete the expedition's narrative. The most informative documents are a letter that Coronado wrote to King Charles V near the end of the expedition when they had returned to New Mexico from the Plains, a longer and more complete narrative written by Pedro de Castañeda de Nájera, a second narrative written by Juan Jaramillo and an anonymous document called the *Relacion del Suceso* (Flint and Flint 2005:317-325, 378-493, 494-507, 508-524). It is possible that Cabeza de Vaca skirted the Southern Plains earlier, and it is well known that Fray Marcos de Niza traveled to the Southwest, but neither provided as detailed observations as the Coronado expedition, especially for the Plains (Weber 1992).

The distances recorded in the Coronado records are fairly consistent and seemingly accurate as Holden (1944:6) observed. A single individual was responsible for recording the distances traveled by counting the steps (Winship 1896:399, 508). Coronado clearly had the use of compasses (Flint and Flint 2005:501; Winship 1896:396, 399, 577), but in the sixteenth century it was not known that there was a difference between polar north and magnetic north. According to the gUFM model provided by the National Oceanic and Atmospheric Administration's (NOAA's) National Centers for Environmental Information (Jackson et al. 2000), magnetic north for the year AD 1590, the earliest year that magnetic declination can be documented, was approximately 5 degrees west of polar north, so it appears that the readings may be as much as roughly 13 degrees west of modern magnetic north readings (NOAA 2024a)⁴. This rotates the compass counterclockwise and would make southern readings actually be southeastern headings and northeast readings point more toward the north. For those few historians who considered declination (Holden 1944), they and most of the others used the wrong headings in reconstructing their Coronado routes. At this time latitude was more easily measured with an astrolabe (sextants were not invented until the eighteenth century) or a cross-staff, but longitude was much more difficult and required the invention of accurate clocks known as chronometers. This was not accomplished until 1730 by John Harrison (Sobel 1995). The only navigation equipment that Coronado is known to have had was a compass. Astrolabes were complex and expensive; it is possible he could have had a cross-staff as they were widely in use at that time but there is no evidence those tools were brought and there are no records of such measurements.

⁴ Magnetic pole in 1590 was at 248.169 E, 73.923 N, in 2024 it is at 141.945 E, 85.958 N. NOAA provides a map of magnetic north locations during the historic period (NOAA 2024b).

Another complication is the switch from Julian to Gregorian calendars in 1582 (Flint 2003). Most of the documents use the older Julian calendar and some use the new Gregorian. For specific events Flint (2003:Table 9.1) provides a conversion from the Julian dates to the modern Gregorian dates and it is the latter that are used here. Other events not in Flint's Table 9.1 are converted from Julian to Gregorian dates with Walker's Fourmilab Calendar Converter (Walker 2024).

Coronado left Compostela, Mexico on March 5, 1540, with a large expeditionary force of conquistadors, Native Americans from Mexico, some wives and other women, slaves, and large herds of livestock looking for the Lost Cities of Cibola purported to be cities of gold (Bolton 1949; Flint and Flint 2005; Winship; 1896:382). It is estimated that there were 1,800-2,000 people, approximately 1,600 head of large stock (horses, mules, and cattle), and over 5,000 head of small livestock (sheep, goats and pigs) at the beginning of the trip (Flint 2005, Flint 2008:49-64). They traveled along the Sinaloa coast reaching San Miguel de Culiacán on April 7, 1540 (Winship 1896:384). On May 2, 1540, Coronado left San Miguel de Culiacán (Winship 1896:386) and made his way to Cibola (Zuni Pueblo) in western New Mexico, which his force attacked on July 17, 1540. Coronado violently gained access to the first town in Cibola believed to be the Zuni community of Hawikuh. From there they moved to the other Zuni Pueblos and eventually to the northern Rio Grande valley reaching the Tiguex Pueblos by September 17, 1540, causing destruction along their entire path (Bolton 1949; Flint and Flint 2005; Winship 1896, 1904).

In the winter of 1540-1541 Coronado camped at Santiago (Coofor), Arenal and Moho Pueblos in the Tiguex province in the Rio Grande Valley north of Albuquerque near Bernalillo until April of 1541 (Flint and Flint 2005; Vierra 1992, Vierra and Hordes 1997, Vierra, et al. 1989; Winship 1904.). It was a

harsh winter with frigid conditions and heavy snowfalls. They violently forced the Pueblo Indians to provide shelter and clothing and took all the food they could steal. This was an aggressive attack on the community which forced the Pueblo inhabitants to abandon their homes. In the spring when the weather warmed, the Spanish left the Tiguex Province on May 3, 1541 arriving at Pecos Pueblo (Cicuye), often considered the gateway to the Southern Plains, a few days later on May 6. They were guided by two Native Americans from Cicuye, one they called Bigotes (Whiskers) and they did not record the name of the second. And again, the Spanish treated the Puebloan Peoples harshly forcing them to provide shelter and food by kidnapping their Pueblo guides. But, fueled by stories of golden cities, Coronado's expedition began to make their way to Quivira in central Kansas across the Southern Plains (Bolton 1949; Flint and Flint 2005; Winship 1896, 1904).

After a few days' stay at Pecos Pueblo, they made their way downstream on the Pecos River by May 9, where they were forced to build a bridge so the small livestock could cross and they could proceed to Quivira. Building the bridge took four days but Coronado and an advanced guard left the expedition at the river and the advanced guard reached the Plains by May 11. The greater expedition caught up with them later. On the Plains leg of the trip, Coronado's guide, known as El Turco, attempted to confuse the expedition by taking them into the Plains in unknown directions, and cause them to perish for lack of water and food. The Southern Plains are renowned for lack of surface water and droughts in the summer. This strategy was hatched by the Pecos Indians in collusion with El Turco. They probably thought this was the best plan for getting rid the Spanish without any significant loss of Native life and in many years, this would be a successful strategy. However, it depended on the Plains weather cooperating by living up to its reputation of hot droughty summers, but there is now evidence that truly harsh drought

conditions did not happen while Coronado was on the Plains.

While in the Plains Coronado complained of the lack of water and having to drink muddy water (Flint and Flint 2005:320; Hammond and Rey 1940:187; Winship 1904:216) perhaps because of the lack of larger streams and rivers and the bison-trampled waterholes. Coronado did have the full expedition including stock with him on the way east across the Plains (Flint and Flint 2005:408) and their water needs would have been considerable. But the Castañeda de Nájera narrative also speaks about the rich grasslands with many small *playas*, often with water even if brackish (Flint and Flint 2005:411; Winship 1904:76), and what must be thousands if not millions of bison. This claim is supported by Coronado, himself, in a letter written to the King when he had returned to the Rio Grande valley at Tiguex (Flint and Flint 2005:319). Today in wet summers the thousands of small seasonal lakes known as *playas* can hold millions of gallons of water, but during a dry summer with an absence of large streams and rivers, especially if the *playas* are dry across the flat expanses, the Llano Estacado can be a true death trap.

After 10 days in the plains the expedition encountered a *ranchería*, i.e., a camp, of pedestrian bison hunters called Querechos living in bison hide tipis. This may be by May 21 if the 10 days can be added to the date of May 11. The location of this encampment is unknown, but it may be somewhere in eastern New Mexico in the greater Pecos valley or on the western side of the Llano Estacado near the Texas border (Holden 1944). They were not walking in a straight-line pathway across the Plains. Clearly knowing this was not a good situation, the Querechos broke camp the next day, while Coronado continued to travel toward the east for another two days. During this portion of the trip Castañeda de Nájera describes a ravine in which stampeding bison fell and were trampled to death along with three of their bridled horses (Flint and Flint

2005:408); this could imply they were below or on the western edge of the Llano Estacado as the draws on the Llano Estacado are shallow and gently sloped. Coronado sent a contingent ahead to look for a supposed large community that El Turco described as living two days further march to the east. After the advanced contingent did not return in due course (presumably after another two days), Coronado ordered two smaller groups to search for them following a small stream course; one group going back upstream and the other downstream, both looking for tracks that crossed the stream channel (Flint and Flint 2005:408). The search groups were to follow the stream channel so as not to get lost in the featureless landscape. This obviously implies that by this point the expedition was following one of the southeast flowing draws on the Llano Estacado (Sulphur in the south, Yellow House or Blackwater in the middle, or Running Water in the north; Tierra Blanca and Palo Duro draws flow east to northeast and likely too far north). Flint and Flint (2005: 679) suggest this channel was the Canadian River but that seems much too far north, and the Canadian is much too large of a valley to be confused with the channel discussed by Castañeda de Nájera in this section of his narrative.

The missing forward contingent's tracks were discovered by a separate group looking for fruit about a league away from camp. This foraging party would have been near a draw as fruit trees and bushes would not be found on the high plains. The returning parties "descended the river to the camp" and reported seeing no large encampments or villages in the 20 leagues (roughly 84 km) they had traveled on the Plains (Flint and Flint 2005:409). There are different measured lengths for leagues, but Castañeda de Nájera used the *legua legal* where 1 league = 4.19 km (Chardon 1980; Flint and Flint 2005: 671). Obviously, Coronado was camping in a moderately sized stream channel such as Blackwater Draw or Yellow House Draw that was deep enough to hide the entire expedition

from sight if viewed from the plains, but the drainage was not on the scale of the Canadian River valley.

After traveling 25 days from Santiago Pueblo (Coofor) including the four days lost to building a bridge on the Pecos River (Flint and Flint 2005:408-409, 680), the Coronado expedition successfully crossed the Llano Estacado and discovered another encampment of mobile bison-hunting Native Americans, called Teyas, at a large canyon (*barranca*) formed by the eastern escarpment, i.e., the Caprock of the Llano Estacado. This location is called the First Barranca, and the date may be June 4 or 5. In the First Barranca, one afternoon a whirling windstorm, possibly a tornado, with large hail stones and heavy rain damaged their equipment including breaking all their ceramic cooking pots and stampeding and injuring their horses (Flint and Flint 2005:409). Coronado sent a scouting party out to evaluate their situation, and after four days' travel they found additional Native American *rancherías*. From that location they returned to the main camp in three days.

From the First Barranca the entire expeditionary force and entourage traveled for another five days (Flint and Flint 2005: 680) and discovered additional Teyas *rancherías* densely distributed over an area that extended for three days travel. Another great *barranca* with Teyas settlements was discovered on the eighth day. Flint (2003:155) suggests they reached the Second Barranca on June 10. This Second Barranca was described as "a league from rim to rim" and a small river in the bottom with abundant fruit trees and bushes with plums, grapes, mulberries and rosebushes, walnuts and turkeys (Flint and Flint 2005:410). This region was known as "Cona" (Flint and Flint 2005:409). At the Second Barranca Coronado learned that El Turco was actively attempting to cause their death.

At the Second Barranca the expedition reconnoitered the area for several days. Then Coronado split from the main expedition with 30 horsemen, additional Mexican Native Americans and slaves, and continued to Quivira. He feared the entire expedition would not survive if they attempted to make the entire journey to Quivira in central Kansas. The remainder of the expedition stayed at the Second Barranca for a fortnight (two weeks, which would be until June 24) hunting bison for the return journey's food, then returned to the Rio Grande Pueblos via Pecos Pueblo (Flint and Flint 2005:320; Winship 1896:508-509). On the Quivira legs of the trip, Juan Jaramillo indicates that they traveled 30 days toward Quivira and that they were not long travel days, and they never lacked water as they encountered many streams (Flint and Flint 2005:515). Clearly, they had left the Llano Estacado and were traveling across western Oklahoma and southcentral Kansas. They arrived at a large river they named Saint Peter and Saint Paul that is now believed to be the Arkansas River, three days travel below (upstream of) Quivira on July 9, 1541, reaching Quivira on July 12. Many researchers believe the location where they crossed the stream was near Ford, Kansas (Wedel 1970, 1990). The location of Quivira is probably a series of Native American sites that appear to have been occupied by Wichita peoples. Archeological evidence of Spanish at these localities includes chain mail on the Little Arkansas and Smoky Hill rivers and along Cow Creek near the town of Lyons in central Kansas (Wedel 1975, 1990).

IDENTIFYING THE BARRANCAS

The earlier documentarists such as Bandelier (1890:557) and Winship (1896) thought the bridge was built on the Canadian River near Mora, New Mexico (Bandelier 1890:557, Winship 1896:397-398). But since the mid twentieth century most have accepted that the bridge was on the Pecos River (Bolton 1949:242-243; Holden 1944). Except for Holden (1944) there is a consensus that the First Barranca is south of the Second Barranca

but that is where consensus ends regarding the identification of the First and Second Barrancas. Holden (1944), who knew the Southern Plains and Southwestern physical geography better than any of the other authors, argues that the First Barranca is at Palo Duro Canyon and the Second Barranca is south at Blanco Canyon. Bolton (1949:281) and Chipman (1992:38) argued the First Barranca was probably Tule Canyon and the Second Barranca was Palo Duro Canyon. Recently Cruse (2023:125) argued Yellow House Canyon was the First Barranca and Blanco Canyon was the second. Unquestionable archeological evidence strongly indicates Blanco Canyon was used by Coronado (Blakeslee and Blaine 2003, Blakeslee et al. 1997).

The distance between the First and Second Barrancas can be estimated by the number of days that the scouting party took to get to the Second Barranca from the First, i.e. 3-4 days. Cruse (2023:127) estimates they could cover 40 km (25 miles) per day resulting in a maximum distance of approximately 120-160 km between the First and Second Barrancas. Cattle drivers in the plains and pastoralists in Africa driving herds of cattle usually cover 12-15 miles (20-25 km) per day (Carter 1981, Coppolillo 2000; Haley 1933, Turner 2019). Castañeda de Nájera states they traveled 37 days from Tiguex to reach the Second Barranca during this portion of the expedition and they managed 6-7 leagues (25-30 km) per day (Flint 2003:154; Flint and Flint 2005:410; Winship 1896:508-509). That would result in a distance estimate of 100 km between the barrancas. In straight line distances Yellow House Canyon is only roughly 40 km from Blanco Canyon. Further south there is the Double Mountain Fork Canyon with Cowhead Mesa which is approximately 80 km from Blanco Canyon and the canyons carved by the upper reaches of the Colorado River (Rock, Indian, and Buck Canyons) are approximately 116 km from Blanco Canyon. However, the Colorado River canyons are not as deep and spectacular as those carved by the Brazos or

Red rivers and do not seem to fit the verbal descriptions. To the north Tule Canyon is 105 km from Blanco Canyon and Palo Duro Canyon is 130 km. Yellow House Canyon may be too close to qualify as the First Barranca to a Second Barranca at Blanco Canyon, but the Double Mountain Fork Canyon could qualify as a pair with Blanco Canyon. In the same fashion Tule Canyon is too close to Palo Duro Canyon for those to be considered a viable First/Second Barrancas pair. But other combinations are all within range to qualify in terms of distance (Blanco Canyon as the First and Tule or Palo Duro canyons as the Second), and if Holden (1944) is correct in that the First Barranca is north of the Second Barranca then reverse patterns are possible.

Cruse (2023) plots Protohistoric Garza Complex campsites in the Double Mountain Fork, Yellow House, and Blanco canyons including the recent work of Hurst and Johnson (2017), and there is a remarkable density in this area, which he uses to identify the area known as Cona, a concentration of Teyas villages. Bolton (1949:281) identifies the Tule/Palo Duro canyons area as Cona. The problem with using known site distributions is there have been almost no archeological surveys in the Colorado River's Rock, Indian, and Buck canyons and Tule and Palo Duro canyons have only been partly and unsystematically surveyed. But still there are a number of Protohistoric sites in those canyons (Arias et al. 2019; Hughes 1978, 1991; Hughes and Willey 1978; Katz and Katz 1976; Malone 1970). In sum using site density is problematic because of uneven survey intensity. Also, the Coronado observations were made over a very brief span in a single year and in no way can

be considered an accurate record of long-term Teyas regional settlement density.

One of the reasons to assume that Blanco Canyon is either the First or Second Barranca is the number of Spanish artifacts found there at the Jimmy Owens and Floydada Country Club sites (Blakeslee and Blaine 2003; Word 1963, 1991). Jimmy Owens, an advocational archeologist, remarkably found copper crossbow arrow tips with a metal detector (Cruse 2023) and Blakeslee and Blaine (2003) report additional sixteenth century Spanish artifacts at the Jimmy Owens site, which strongly implicate the presence of Coronado's expedition. Also, a number of other sites in Blanco Canyon have Puebloan ceramics that date to the 16th Century (Northern 1979; Parker 1982; Word 1965) indicating a general relation between the Eastern Pueblos and Garza groups.

A less secure but intriguing reason to accept Blanco Canyon as the First Barranca is that in the *Relacion del Suceso* the anonymous author states that the expedition traveled 100 leagues (419 km) to the east and 50 leagues (209 km) to the south from Pecos Pueblo (Flint and Flint 2005:500; Winship 1896:399, 577). The assumption is that this was to the First Barranca, but if it is the Second Barranca then Holden may be correct as he believed the Second was south of the First. Using Google Earth, the plotting of a point 419 km east and 209 km south of Pecos Pueblo lands at the mouth of Blanco Canyon (Figure 1). Using Pythagoras' theorem and trigonometry, the hypotenuse heading, and distance are 116.5 degrees and 468 km. This also lands in the mouth of Blanco Canyon but not in the exact same spot.

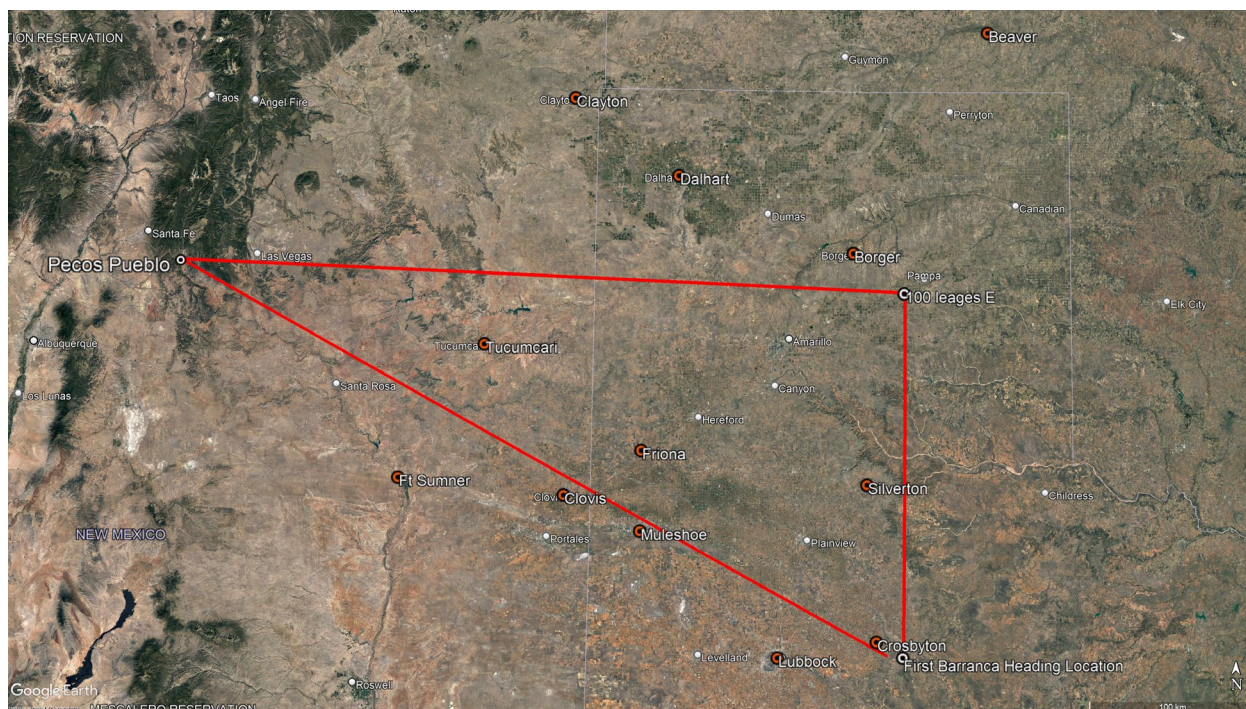


Figure 1. Triangulated position of First Barranca (100 leagues east and 50 leagues south of Pecos Pueblo) shown on Google Earth.

Palo Duro Canyon is 100 degrees azimuth and 381 km from Pecos Pueblo, Tule Canyon is 469 km but only 112 degrees azimuth from Pecos. Yellow House Canyon is 122 degrees azimuth and 444 km away. Even though the accuracy of this estimate is impossible to evaluate, and the reader should not put too much trust in these estimates except to conclude that Palo Duro and Tule seem to be too far north to qualify as this location. For this paper I have used Blanco Canyon as the First Barranca and Palo Duro Canyon as the second but with the caveat that only Blanco Canyon was definitely used by Coronado. I used the recorded size of the Second Barranca (one league wide) to select Palo Duro Canyon as the location of the Second Barranca (Bolton 1949:284-286, 412).

LEAST-COST PATH ANALYSIS OF CORONADO'S ROUTE

Many authors have proposed many different routes for the Coronado expedition departing from Pecos Pueblo and crossing the Llano Estacado to reach Quivira in central Kansas. These routes include ones that extended due

east along the Canadian River, or to the canyons carved by the Brazos River in the south, heading east then south and then back north, and even to the far southeast beyond the edge of the Llano Estacado into Central Texas to the Concho River (Bolton 1949; Brower. 1898; Chipman 1992; Cruse 2023; Dellenbaugh 1897; Donoghue 1929; Flint and Flint 1992, 1993, 1997; Holden 1944; Schroeder 1962 Simpson 1871; Williams 1959; Winship 1896). Little agreement exists.

In order to approach this issue in a more systematic fashion, a least-cost path analysis was undertaken using Quantum Geographic Information System (QGIS), an opensource free GIS software (<https://www.qgis.org/>), to develop hypotheses of the possible routes that Coronado may have taken from Tiguex to Quivira (Figure 2). The pathways are anchored by “known” landmarks starting at Santiago Pueblo on the Rio Grande and ending at Quivira (Vierra, et al. 1989; Wedel 1990). The pathways illustrated in Figure 2 use fixed points for Santiago and Pecos Pueblos; an estimated location for Coronado's

Bridge on the Pecos River; Jimmy Owens site in Blanco Canyon as representing the First Barranca; Palo Duro Canyon as the Second Barranca; Ford, Kansas as the location where Coronado intercepted the large river below Quivira; and Quivira as documented by Wedel (1990). These locations were plotted on Google Earth, saved as kml files, and the Z points were converted to simple point files within QGIS and resaved as shapefiles. Thirty-meter digital elevation models (DEM) from the US Shuttle Radar Topography Mission were used to reconstruct the landscapes illustrated in Figure 2. These had been corrected for gaps and errors. These were converted to slope surfaces in QGIS, and least-cost pathways were calculated to minimize slope variation between two known points.

Figure 2 plots this series of hypothetical routes that Coronado may have taken between the known and estimated points, and each segment is labeled as an individual “leg.” It also shows some of the more significant Garza and Tierra Blanca protohistoric sites in the Southern Plains. Habicht-Mauche (1992) has associated the Garza sites with the groups Coronado identified as Teyas while Tierra Blanca sites have been associated with Coronado’s Querechos groups—both bison-hunting hunter-gatherers. The ethnic identities of these groups are still debated, but their affiliation with Athabaskan, Jumano and Caddo speakers is possible as well as the possibility that they are from the same linguistic family (Boyd 2001). This paper does not attempt to resolve that important question.

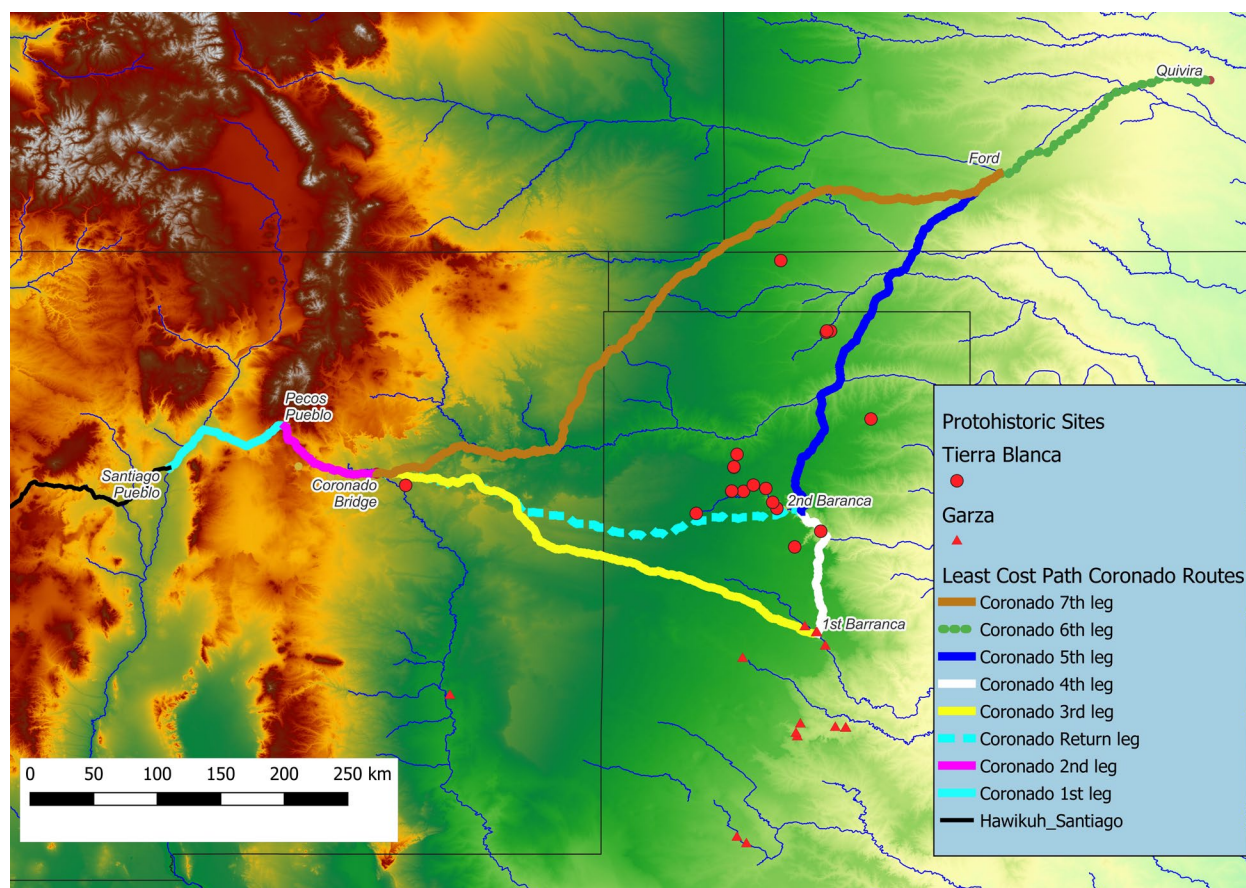


Figure 2. Hypothetical least-cost-path route of the Coronado expedition from Tiguex to Quivira in 1541. Also plotted are Garza and Tierra Blanca protohistoric plains sites.

The resulting routes are based on minimizing slope gain or loss between two known anchor

points and should be viewed as hypotheses that need to be evaluated and verified. Other

routes are certainly possible using different anchor points and different criteria for route selection. The distribution of water was not considered in the GIS calculations except for the Second Leg from Pecos Pueblo to Coronado's Bridge on the Pecos. On that leg, it was assumed that the expedition did not cross the Pecos River because of flooding until the Coronado Bridge location was reached, and a bridge was built which allowed the small livestock to cross the river. This was achieved by removing the DEM raster values north and east of the Pecos River with a mask. This forced an alternative path that was not in the narrow and rugged Pecos River valley downstream of Rowe, New Mexico. The location of the Pecos River bridge is unknown and actively debated (Bandelier 1890; Flint and Flint 1992, 1997; Holden 1944; Schroeder 1962 Winship 1896). I have used the Flints' locale which they call La Junta. My plotting of that location is immediately downstream from the confluence of the Pecos and Gallinas rivers east of the Highway 84 bridge and between Las Vegas and Santa Rosa.

The route from Pecos Pueblo to the Coronado Bridge has similarities with the route plotted by Flint and Flint (1992, 1997) but it differs in that once it climbs to the top of Glorieta Mesa it hugs the northern edge instead of continuing down through Barbero Canyon and Valle Chimal to Cañon Blanco as proposed by the Flints. Another difference is that the route back from Quivira to Pecos Pueblo follows the Canadian River before cutting away to the southwest toward Pecos. Also, the return route from the Second Barranca did not include the large playa lakes near Muleshoe as suggested by Holden (1944:15).

DROUGHT CONDITIONS ON THE PLAINS IN 1541

The weather conditions in the Southern Plains vary greatly from year to year, and thus, the ability to predict the locations of surface water sources in the Southern Plains can be very unreliable. Recently a web-based comprehensive synthesized tree-ring sequence

known as the North American Drought Atlas was made public (North American Drought Atlas 2024). This provides Palmer Drought Severity measures across North America for each year over the last 2,000 years or so (Cook et al. 2010). The North American Drought Atlas can provide maps for individual years that show the distribution of dry and wet conditions for most of North America. The map for the year 1541 indicates that the Southern Plains and the Southwest were fairly wet (Figure 3). Parts of South Texas and Northern Mexico, and the mid Mississippian Valley were dry as was the far west in California and Nevada, but the Plains and the greater Southwest including the Four Corners area were wet.

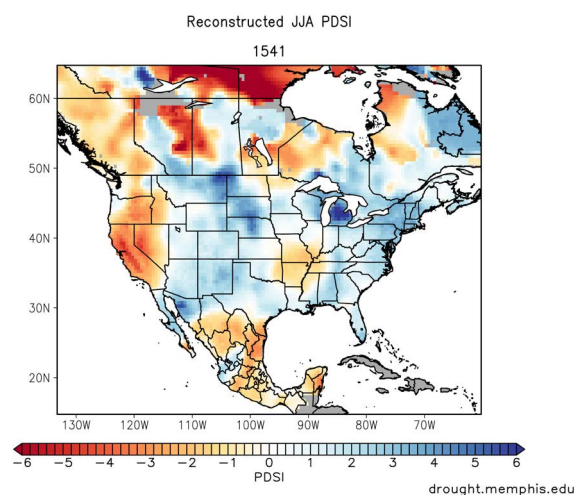


Figure 3. Palmer Drought Severity Index (PDSI) map for June, July, and August (JJA) of 1541.

Using the North American Drought Atlas a sequence was constructed for the Southern Plains spanning the period from AD 1535-1545 (Figure 4). A chart of these values for the region including the Southern Plains shows that the two years before 1541 were also wet. The years 1538 and 1542 were dry but those conditions occurred well before and well after Coronado traveled through the Southwest and Plains. This indicates that by the time Coronado traveled through the Plains it had enjoyed two wet summers and was experiencing another that year. In order to further investigate the availability of water,

the distribution of surface water sources is investigated below, but first an evaluation of Coronado's water requirements is undertaken.

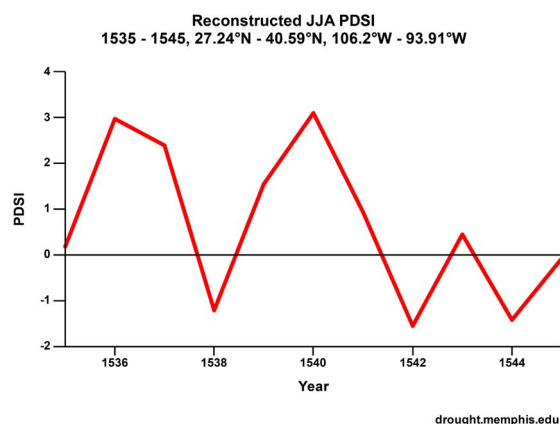


Figure 4. Averaged Reconstructed Palmer Drought Severity Indices for the Southern Plains and surrounding areas in June, July, and August of 1535-1545.

Coronado's water needs would amount to 7-16 gallons per day (26.5-60.6 liters) for each cow, 8-12 gallons per day (30.2-45.4 liters) for each horse, and 1-4 gallons per day (3.38-15.1 liters) for each sheep and goat (McGinty 2010). There is no evidence that Coronado brought pigs into the Plains. As temperatures increase in the summer, water consumption would also increase (Winchester and Morris 1956), and this is confirmed by more recent research (Wagner and Engle 2021). Humans need approximately 3.7 liters for males and 2.7 liters for females (Sawka et al. 2005), but increased exercise and air temperature also will force those needs higher. At the beginning of the expedition Coronado had at least 358 Spaniards; approximately 2,000 Nahuatl, Tarascan, and Caxcán-speaking "Indio amigos," women and slaves (Flint 2008:49-64, Flint and Flint 2019); and over 1,000 horses, 600 mules, 558 cattle, and more than 5,000 sheep, goats and pigs (Flint 2008:49-64; Flint and Flint 2005). But before moving out into the Plains there had been losses of humans and stock during the expedition. For example, at Tiguex the Native Americans killed 50-60 horses and mules and four to five Mexica Indians after Coronado's men forced

the Pueblo Indians to provide clothing, their horses destroyed Puebloan crops, and the Spanish used attack dogs (Winship 1896:392, 496). In the Los Corazones Valley at an unknown location in western Mexico 10-12 horses and men died from exhaustion (Flint and Flint 2005:255-256; Schwennesen 2023:170, 172). At various times horses and other livestock broke free, and cattle, sheep, goats and pigs were eaten. Coronado took the entire expedition into the Plains (Winship 1896:577), and in his letter to the King he claimed that consisted of 1,000 horses, 500 cows, more than 5,000 sheep, and more than 1,500 Indians and servants (Winship 1896:542). It is not clear how many soldiers were still alive at that point but even if we assume a low number of 300 soldiers, the daily water needs would have been approximately 65,160 liters (17,213 gallons), which equates to approximately 2,300 cubic feet of water daily. In the plains on a march during the summer, that would be an enormous amount of water to secure daily. After the hailstorm there is no mention of limited access to water, so it seems highly probable that surface water sources, either standing water in playas or flowing streams or seeps, were common after that storm.

To alleviate the constant search for water as Schwennesen (2023:166) argues, the expedition was not composed of a single moving mass of soldiers, Native Americans, livestock and others, but it had forward vanguards, and rear guards as well as the main group and these were constantly being managed by Coronado to order to provide grazing for the stock, food for the expedition, and water for all (Flint and Flint 2005:261; Schwennesen 2023:170). Many different paths, a braided trail as Schwennesen (2023:168) defines it, were taken. By the time the expedition moved into the Plains it was a dispersed body.

In Figure 5 a plot of the known and recorded spring locations in this region demonstrates that the area below the Llano Estacado

escarpment and north of Blanco Canyon with the Jimmy Owens site extending to the Antelope Hills on the north side of the South Canadian River in western Oklahoma had abundant springs, but on the Llano, itself, the density of springs was much reduced. From the Second Barranca to Quivira the Spanish might have traveled 10-20 km in a day. Below the escarpment heading in a northeast direction toward Quivira they would have encountered many springs. It appears that the

mapping of springs in Kansas is not at the same level of detail as in Texas and Oklahoma. Also, it is clear from other analyses that these recorded spring locations in Texas and Oklahoma are not comprehensive (Bousman 2024), thus inferring there would have been many more springs providing surface water especially during wet years when flow rates would have been higher. Also, their water needs were much lower with this smaller group.

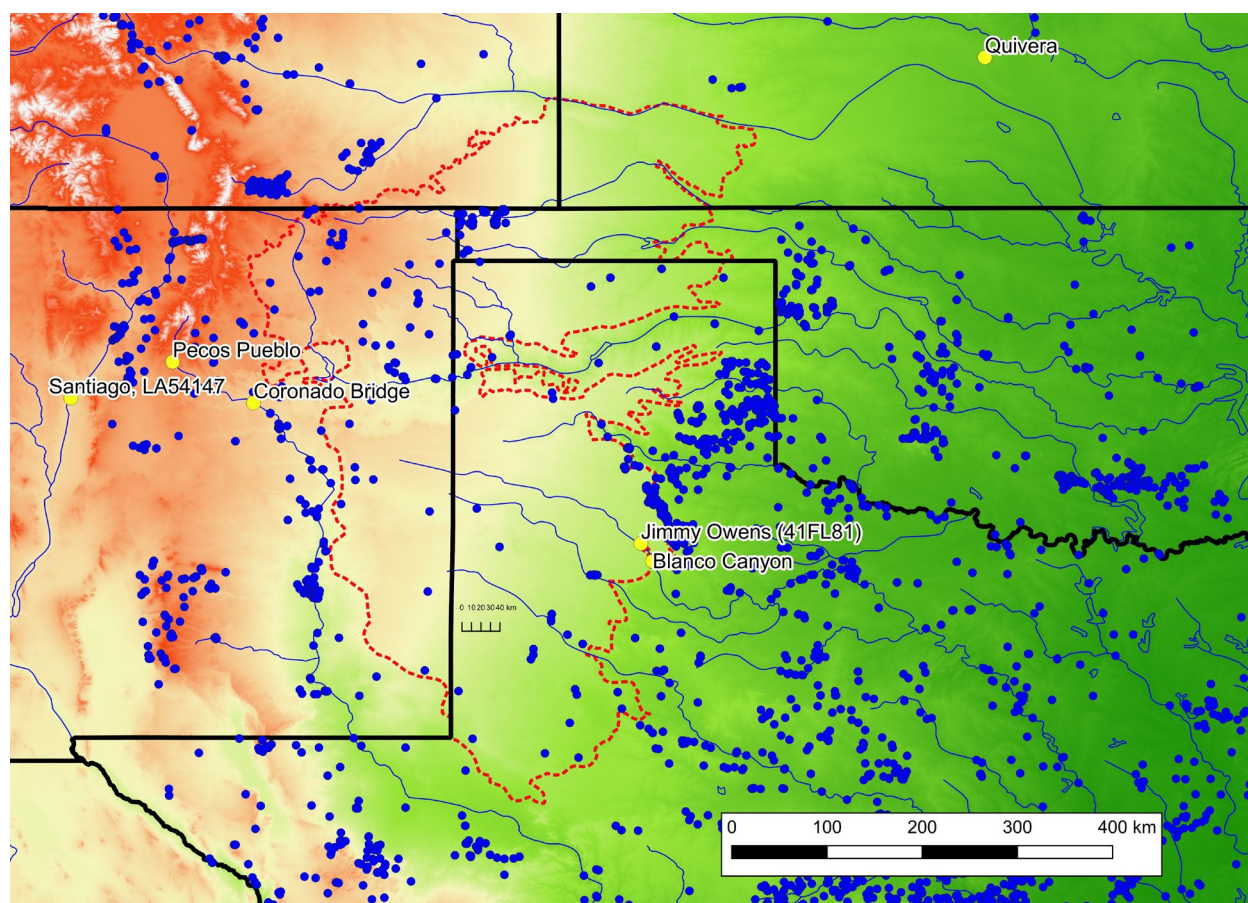


Figure 5. Known springs in Colorado, Kansas, New Mexico, Oklahoma and Texas with significant Coronado sites (U.S. Geological Survey 2022).

As documented in the Texas Tech University Playa and Wetlands Database (Center for Geospatial Technology 2022) the distribution and sheer number of playas on the Southern Plains is illustrated in Figure 6, where 21,893 playas and 14,445 wetlands have been mapped in the Southern Plains region. The number is stunning, and it suggests that during wet years there may have been a remarkable abundance

of surface water sources. The Texas Water Development Board estimates that between 1996 and 2017 the average annual volume of water captured in Texas playas was 221,000 acre-feet (over 72 trillion gallons) which would equate to 1.9 million gallons of surface water for each playa or wetland (Weinberg et al. 2021). Obviously, there is great variation for individual playas and wetlands, but in a wet

year as was the case in the early summer of 1541, Coronado probably would have found water for his large entourage, including stock. It might have been possible that they did not use a route that included the large playas to the south near Muleshoe as suggested by

Holden (1944). These surface water sources would have allowed Coronado's expedition to traverse the Llano Estacado and the Rolling Red Bed Plains much more easily than if it had been a dry year (Figure 7).

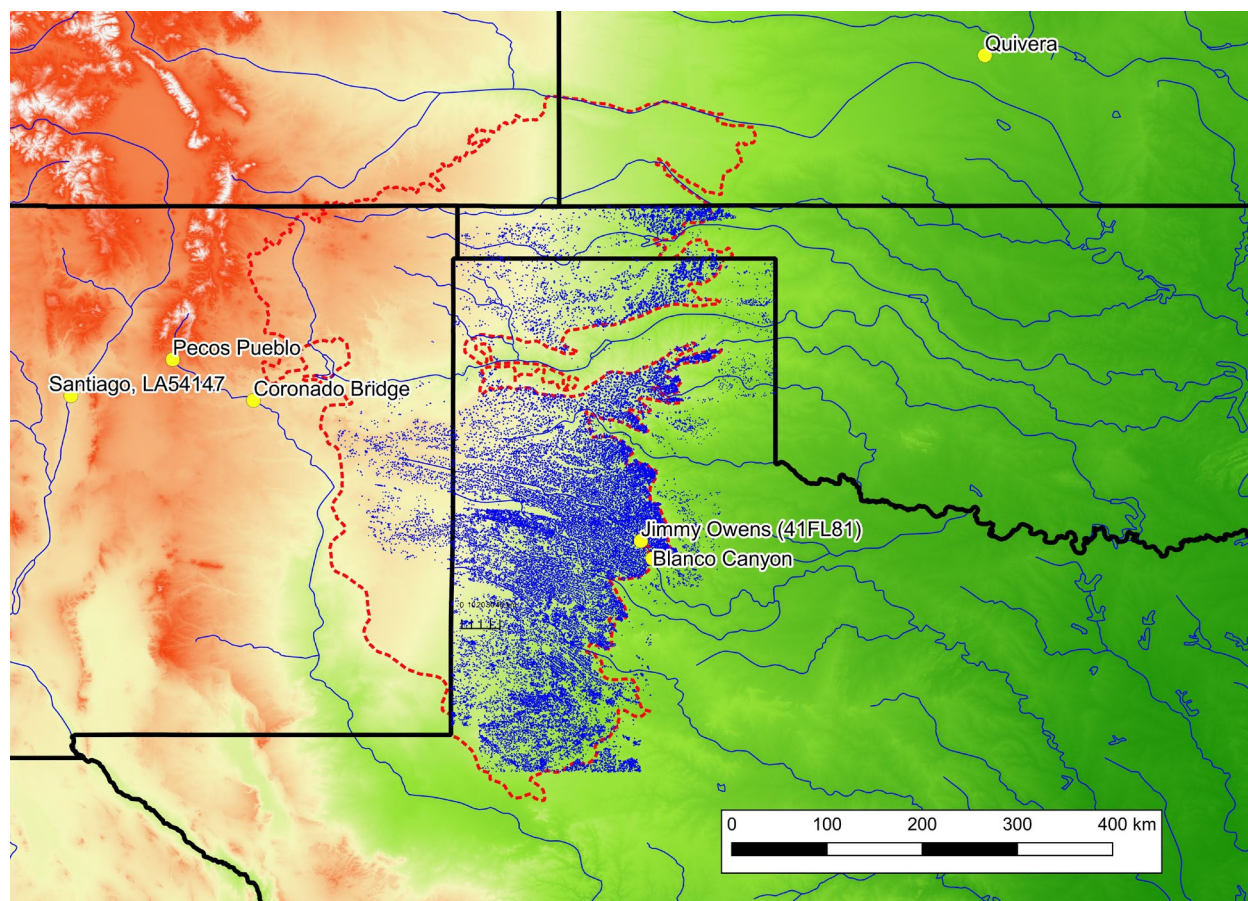


Figure 6. Distribution of playas in Texas, Oklahoma and New Mexico with significant Coronado sites (Center for Geospatial Technology 2022).



Figure 7. This recent painting by Albert T. Reid depicts Coronado and his full expedition crossing the plains. They appear to have a river or a playa behind them. Even though conjectural this painting may be an accurate depiction of the conditions on the Plains in 1541. Courtesy of the Kansas State Historical Society.

DISCUSSION

The decisions Coronado made regarding routes was probably a day-to-day event that was strongly influenced by the guides he forced into service. It is clear that most of the guides were not willing participants in this effort, so it is likely, especially between the Pecos Bridge and the First Barranca, that the most efficient routes were probably not used. But these least-cost path routes provide an unbiased estimate that could be compared to previous and future projected routes and archeological evidence. It is obvious that the Southern Plains were not in drought in 1541, and the expedition's failure was not guaranteed even though their water needs were truly monumental.

As with so many other Spanish invasions into the territories of Native Americans, the Spanish seemed to avoid catastrophes and

survive and even prosper. Their successes have been characterized as technologically superior forces, superior military organization, and other cultural factors (Diamond 1997), but in many ways, it was not much more than "pure luck." The Spanish capturing the Aztecs at Tenochtitlan (Hassig 2014) and conquering the Incan Empire in Peru (Mountjoy and Goetzmann 2009) along with this event in the Southern Plains, all involved very unpredictable conflicts and events "going their way," but these and many other events were totally out of Spanish control. It now is completely understandable why El Turco failed. He did not know how much water was in the Plains that year. One wonders what might have happened if Pecos Indians and El Turco had this information.

REFERENCES CITED

- Arias, Veronica M., Anthony S. Lyle and Rolla H. Shaller
2019 History of Archeological Investigations at Palo Duro Canyon State Park. *Journal of Texas Archeology and History* 5:1-40.
- Bandelier, Adolph F.
1890 Fray Juan de Padilla, the First Catholic Missionary and Martyr in Eastern Kansas, 1542. *The American Catholic Quarterly Review* 15(59):551-566.
- Blakeslee, Donald J. and Jay C. Blaine
2003 The Jimmy Owens Site: New Perspectives on the Coronado Expedition. In *The Coronado Expedition, from the distance of 460 years*, edited by Richard Flint and Shirley Cushing Flint, pp. 203-218. University of New Mexico Press, Albuquerque.
- Blakeslee, Donald J., Richard Flint, and Jack T. Hughes
1997 Una Barranca Grande: Recent Archaeological Evidence and a Discussion of Its Place in the Coronado Route. In *The Coronado Expedition to Tierra Nueva: the 1540-1542 route across the Southwest*, edited by R. Flint and S.C. Flint, pp. 370-383. University Press of Colorado, Niwot.
- Bolton, Herbert E.
1949 *Coronado on the Turquoise Trail: Knight of the Pueblos and Plains*. University of New Mexico Press, Albuquerque.
- Bousman, C. Britt
2024 Middle Ceramic Settlements and Climate Change in the Texan and Oklahoman Panhandles. *Bulletin of the Texas Archeological Society* 94:37-55.
- Boyd, Douglas K.
2001 Querechos and Teyas: Protohistoric Hunters and Gatherers in the Texas Panhandle Plains, A.D. 1540-1700. *Bulletin of the Texas Archeological Society* 72:5-22.
- Brower, Jacob V.
1898 *Quivira*. Vol. 1. HL Collins Company.
- Carter, Harvey L.
1981 Retracing a Cattle Driver: Andy Adam's the Log of a Cowboy. *Arizona and the West* 23(4):355-378.
- Center for Geospatial Technology
2022 Playas and Wetlands Geodatabase. <https://www.depts.ttu.edu/geospatial/center/pwd/index.html>, assessed February 25, 2022.
- Chardon, Roland
1980 The Elusive Spanish League: A Problem of Measurement in Sixteenth-Century New Spain. *Hispanic American Historical Review* 60(2):294-302.
- Chipman, Donald, E.
1992 *Spanish Texas, 1519-1821*. The University of Texas Press. Austin.
- Cook, E.R., R. Seager, R.R. Heim, Jr., R.S. Vose, C. Herweijer, and C. Woodhouse.
2010 Megadroughts in North America: Placing IPCC Projections of Hydroclimatic Change in a Long-Term Palaeoclimate Context. *Journal of Quaternary Science* 25:48-61.
- Coppolillo, Peter B.
2000 The Landscape Ecology of Pastoral Herding: Spatial Analysis of Land Use and Livestock Production in East Africa. *Human Ecology* 28(4):527-560.
- Cruse, J. Brett
2023 The Distribution of Protohistoric Sites on the Texas Southern Plains and the Implications for Coronado's 1541 Route. *Journal of Texas Archeology and History* 7: 111-149.
- Dellenbaugh, F. S.
1897 The True Route of Coronado's March. *Journal of the American Geographical Society of New York* 29(4):399-431.
- Diamond, Jared
1997 *Guns, Germs and Steel: The Fates of Human Societies*. W.W. Norton, New York.
- Donoghue, D.
1929 The Route of the Coronado Expedition in Texas. *The Southwestern Historical Quarterly* 32(3):181-192.
- Flint, Richard.
2003 Reconciling the Calendars of the Coronado Expedition: Tiguex to the Second Barranca, April and May 1541. In *The Coronado Expedition, from the Distance of 460 Years*, edited by Richard Flint and Shirley Cushing Flint, pp. 151-163 University of New Mexico Press, Albuquerque.
- 2005 What They Never Told You about the Coronado Expedition. *Kiva* 71(2):203-217.
- 2008 *No Settlement No Conquest, A History of the Coronado Entrada*. University of New Mexico Press, Albuquerque.
- Flint, Richard, and Shirley Cushing Flint
1992 The Coronado Expedition: Cicuye to the Rio de Cicuye Bridge. *New Mexico Historical Review* 67:2:4.

- 1993 Coronado's Crosses: Route Markers Used by the Coronado Expedition. *Journal of the Southwest* 35(2): 207-216.
- 2005 *Documents of the Coronado Expedition, 1539-1542: "They Were Not Familiar with His Majesty, nor Did They Wish to Be His Subjects"*. Southern Methodist University, Dallas.
- 2019 *A Most Splendid Company: the Coronado Expedition in Global Perspective*. University of New Mexico Press, Albuquerque.
- Flint, Richard, and Shirley Cushing Flint (editors).
1997 *The Coronado Expedition to Tierra Nueva: the 1540-1542 Route across the Southwest*. University Press of Colorado, Boulder.
- Forbes, Jack D.
1959 The Appearance of the Mounted Indian in Northern Mexico and the Southwest, to 1680. *Southwestern Journal of Anthropology* 15(2):189-212.
- Habicht-Mauche, Judith A.
1992 Coronado's Querechos and Teyas in the Archaeological Record of the Texas Panhandle. *Plains Anthropologist* 37(140):247-259.
- Haley, J. Evetts
1933 Driving a Trail Herd. *Southwest Review* 18(4):384-403.
- Hammond, G. P., and A. Rey
1940 *Narratives of the Coronado Expedition 1540-1542*. University of New Mexico Press, Albuquerque.
- Hammond, George, and Agapito Rey.
1966 *Rediscovery of New Mexico*. University of New Mexico Press, Albuquerque.
- Hassig, Ross
2014 *Mexico and the Spanish conquest*. University of Oklahoma Press, Norman.
- Holden, W. C.
1944 Coronado's Route across the Staked Plains. *West Texas Historical Association Year Book*, XX: 3-20.
- Hughes, Jack T.
1978 Archeology of Palo Duro Canyon. In, *The Story of Palo Duro Canyon*, edited by : D. F. Guy, pp. 35-57. Panhandle-Plains Historical Society, Canyon, Texas.
- 1991 Prehistoric Cultural Developments on the Texas High Plains. *Bulletin of the Texas Archeological Society* 60:1-55.
- Hughes, Jack T., and Patrick S. Willey (editors)
1978 *Archeology at Mackenzie Reservoir*. Survey Report 24. Office of the State Archeologist, Texas Historical Commission, Austin.
- Hurst, Stance and Eileen Johnson
2017 Prominent Places on the Landscape: Occupations at Cowhead Mesa along the Eastern Escarpment Edge of the Southern High Plains of Texas. *Plains Anthropologist* 62:241:5-31.
- Jackson, Andrew, Art R.T. Jonkers, and Matthew R. Walker.
2000 Four centuries of geomagnetic secular variation from historical records. *Philosophical Transactions of the Royal Society of London. Series A: Mathematical, Physical and Engineering Sciences* 358(1768):957-990.
- Katz, Suzanna R and Paul R. Katz
1976 *Archeological Investigations in Lower Tule Canyon, Briscoe County, Texas*. Archeological Survey Report 16, Office of the State Archeologist, Texas Historical Commission, Austin.
- Malone, James M.
1970 *Archeological Reconnaissance in the Mackenzie Reservoir Area of Tule Canyon*. Archeological Survey Report Number 8, Texas Historical Survey Committee and Texas Water Department Board, Austin.
- McGinty, Allan
2010 *Reference Guide for Texas Ranchers*. AgriLife Extension, Texas A&M System, College Station. Electronic document, <https://agrilife.org/victoriacountyagmr/files/2010/07/Reference-Guide-for-TX-Ranchers.pdf>, accessed 8/18/2024.
- Mountjoy, Shane and William H. Goetzmann.
2009 *Francisco Pizarro and the Conquest of the Inca*. Infobase Publishing, Dover.
- National Oceanic and Atmospheric Administration
2024a Historical Magnetic Declination. https://www.ncei.noaa.gov/maps/historical_declination/, accessed 8/18/2024.
- 2024b Wandering of the Geomagnetic Poles. <https://www.ncei.noaa.gov/products/wandering-geomagnetic-poles>, accessed Aug 16, 2024.
- North American Drought Atlas
2024 North American Drought Atlas. <https://iridl.ldeo.columbia.edu/SOURCES/LDEO/TRL/NADA2004/pdsi-atlas.html>; accessed February 2, 2020.

- Northern, Martin J.
1979 Archaeological Investigations of the Montgomery Site, Floyd County, Texas. Master's Thesis, Texas Tech University, Lubbock.
- Parker, Wayne.
1982 The Birdwell Site (41CB27). *Transactions of the Regional Archeological Symposium for Southeastern New Mexico and Western Texas* 26:99-114.
- Sawka, Michael N., Samuel N. Cheuvront, and Robert Carter.
2005 Human Water Needs. *Nutrition Reviews* 63, no. suppl_1: S30-S39.
- Schroeder, A.H.,
1962 A Re-Analysis of the Routes of Coronado and Onate into the Plains in 1541 and 1601. *Plains Anthropologist* 7:15:2-23.
- Schwennesen, Paul Timonthy
2023 *Conquering Beasts: How Animals Shaped the De Soto and Coronado Entradas, 1539-1543*. PhD Dissertation. University of Kansas, Lawrence.
- Simpson, J. H.
1871 Coronado's March in the Search of the 'Seven Cities of Cibola,' and Discussion of Their Probable Location. *Annual Report of the Board of Regents of the Smithsonian for the Year 1869*, pp. 309-340, Washington, DC.
- Sobel, Dava
1995 *Longitude: the True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time*. Penguin, New York.
- Turner, Matthew D, and Eval Schlecht
2019 Livestock Mobility in Sub-Saharan Africa: A Critical Review. *Pastoralism Research, Policy and Practice* 9(1):1-15:.
- U.S. Geological Survey
2022 National Water Information System: Mapper. <https://maps.waterdata.usgs.gov/mapper/index.html>, accessed February 25, 2022.
- Vierra, Bradley, J.
1992 A Sixteenth-Century Spanish Campsite in the Tiguex Province: an Archaeologists Perspective. In, *Current Research on the Late Prehistory and Early History of New Mexico*, edited by Bradley J. Vierra, pp. 165-174. New Mexico Archaeological Council, Albuquerque.
- Vierra, Bradley, J., Martha R. Binford, Karen H. Clary, Stanley M. Hordes, Michael P. Marshall, Mollie S. Toll, and Cheryl Wase.
1989 *A Sixteenth-Century Spanish Campsite in the Tiguex Province*. Laboratory of Anthropology Note, No. 475. Laboratory of Anthropology, Santa Fe.
- Vierra, Bradley J. and Stanley M. Hordes
1997 Let the Dust Settle: A Review of the Coronado Campsite in the Tiguex Province. In, *The Coronado Expedition to Tierra Nueva, the 1540-1542 Route Across the Southwest*, edited by Richard Flint and Shirley Cushing Flint, pp. 249-261. University Press of Colorado, Niwot.
- Walker, John
2024 Calendar Converter. <https://www.fourmilab.ch/documents/calendar/>, accessed 8/19/2024.
- Wagner, J. J and T. E. Engle
2021 Invited Review: water consumption and drinking behavior of beef cattle and effects of water quality. *Applied Animal Science* 37:418-435.
- Weber, David J.
1992 *The Spanish Frontier in North America*. New Haven, Yale University Press.
- Wedel, Waldo R.
1970 Coronado's route to Quivira 1541. *Plains Anthropologist* 15:49:161-168.
1975 Chain mail in Plains archeology. *Plains Anthropologist* 20:69:187-196.
1990 Coronado, Quivira, and Kansas: an archeologist's view. *Great Plains Quarterly* 10:3:139-151.
- Weinberg, Andrew, Mark Olden, Dennis Gitz and Cody Byars
2021 Playa Lakes in the Southern High Plains: Runoff, Infiltration and Recharge. Report 386. Austin: Texas Water Development Board. (www.twdb.texas.gov, accessed August 29, 2024).
- Williams, J. W.
1959 Coronado: From the Rio Grande to the Concho. *Southwestern Historical Quarterly* 68:8: 1-31.
- Winchester, C. F., and M. J. Morris.
1956 Water intake rates of cattle. *Journal Animal Science* 15:722-740.
- Winship, George P.
1896 The Coronado Expedition, 1540-1542. In, *Fourteenth Annual Report of the Bureau of American Ethnology of the Smithsonian*

- Institution for 1892-1893, Part 1*, pp. 329-613. Government Printing Office, Washington, DC.
- Winship, George P.
 1904 *The Journey of Coronado, 1540-1542, from the City of Mexico to the Grand Canon of the Colorado and the Buffalo Plains of Texas, Kansas and Nebraska, as told by himself and his followers, by Pedro de Castañeda de Nájera*. Barnes and Noble, New York.
- Word, James H.
 1963 Floydada County Club Site. *Bulletin of the South Plains Archeological Society* 1:37-63.
 1965 The Montgomery Site. *Bulletin of the South Plains Archeological Society* 2:55-102.
 1991 The 1975 Field School of the Texas Archeological Society. *Bulletin of the Texas Archeological Society* 60:57-105.

NOTES ON THE ARCHEOLOGY AND HISTORY OF THE EARLY BRITISH SEA SERVICE BLUNDERBUSS, AND EARLY PIRATICAL UTILITY IN THE “AGE OF PIRATES” 1680-1720

Jay R. Newman¹

1 Program Archaeologist, US Army Corps of Engineers Ft Worth District (Retired 2020)

In the interest of better understanding 17th- and 18th-century battlefield firearms and early shipwreck archeology, the observation and analysis of extant complete surviving original specimens is of extreme importance. The shipwreck archeology of the “age of Pirates” (ca. 1680-1720) are included in these analyses. One of the artifactual recoveries from Blackbeard’s ship *Queen Anne’s Revenge* shipwreck (1718) was a brass blunderbuss/musketoone barrel with London Gunmakers marks of “GP” under a crown and “V” under a crown in oval recesses at the barrel breach along with a flintlock lockplate and brass buttplate (Wilde-Ramsing and Carnes-McNaughton 2018:117). The typing and dating of archeological remains as well as how they fit into a complete whole artifactual specimen is an important function of archeological analysis and interpretation. Understanding the original morphology of archeological/historical specimens is one of the keys to understanding past cultural phenomena.

Prior to the mid-19th century, “model” firearms composed of identical interchangeable component parts essentially did not exist but only followed general acceptable patterns. Firearms (military, civilian, and trade guns) were basically fabricated following “styles” and patterns predominant during the time period of manufacture and as required by particular firearms purchasers. Metrical variability in component parts of firearms was the standard and even critical variability in key components were still uncontrolled and was a basic feature of firearms construction. Individual replacement parts had to be individually crafted and fitted to the gun in need of repair. Part of the reason for this situation was the

lack of formal metrical gauges and the fact that many gunsmiths specializing in particular gun components contributed to a finished firearm. Changes in gun morphology occurred relatively slowly with some changes being functional improvements while many were really only decorative or stylistic. With the advent of more standardization and less variability in the metrics and morphology of parts through time until general interchangeability success in the mid-19th century, military and related firearms also tended toward less decorative features and embellishments and more functional features as a basis of change. This is unsurprising as governments and militaries were attuned to costs of firearm manufacture while seeking optimal functionality while civilian firearms continued to also express desires of usually well-off purchasers with firearms viewed as “art” and of contemporary “style” and often viewed as a status object. Early in firearms development, manufacturers sought to standardize gun parts so as to be interchangeable for military convenience and cost interests predominantly, but also for the civilian economic market for much the same reasons. Interchangeable gun parts were only really achieved by the middle of the 19th century with individual craftsmen/blacksmiths needing to repair broken elements or forge replacement parts and then fit the parts to the individual firearm until this ca. mid-1840s period. Also common prior to about the mid-1840s, firearms were predominantly manufactured with individual particular parts of the gun being manufactured by individual specialists to be then centralized for fabrication by the gunmaker/assembler who contracted for the firearm parts. This was the common practice

for both military and civilian (and trade gun) guns and the system employed by both European (e.g. the early British “Brown Bess”) and American gun makers (e.g. the early Federal firearms produced by Harpers Ferry, Springfield, and many private manufacturers both under contract to European governments, the U.S. Federal government, and U.S. state and private purchasers). The benefit of the government armories/arsenals was that these firearms part specialist craftsmen/manufacturers were geographically centralized in one small area.

BACKGROUND

Particularly within the last quarter of the 17th Century, the French were at the forefront of firearm design and development including artistic features. Many nations followed French developments in technological advancements and artistic designs often following the French design books of Berain and Simonin among others. Indeed, this following creates a situation where if a particular gun has no essential identifying marks, many 17th-century flintlock firearm manufacture origins are difficult to determine. Britain was one of those nations. Some of the reasons for this was a result of the French Edict of Nantes by Louis IV in 1688 where many refugee Huguenots (Protestants) migrated elsewhere in Europe including Britain carrying their manufacturing talents with them. In terms of morphology of British firearms (as common historic archeological part finds on military and Native American contact archeological sites in the northeast United States) were predominantly made with round/convex lockplates indicating last quarter of the 17th century manufacture. Roughly about 1670 the complete lockplate comes to commonly exhibit convex/rounded forms. The 1660s also witnessed the development of the bridle to add strength and support to the sear in the interior of the lockplate. The bridle enabled smoother action for the lock and reduced wear at the point where the tumbler bore upon it in the lockplate. At this time, the sideplate developed

which secured the lockplate from the other side of the wood stock by two screws, which passed through the wood stock. The sideplate (another common historic archeological find on historic military and Native American contact sites) was of metal, usually iron or brass, and prevented the screws from digging into the wood during use and disassembly and reassembly. Firearms manufacturers readily realized the decorative potential of the sideplate of which the snake, dragon, or serpent design became popular on a wide range of guns from about 1725/1730 on to nearly the beginning of the 1900s on certain percussion ignition Northwest trade guns. This “serpent” design feature has come down as particularly recognizable especially in regard to North American Indian trade gun design and decoration. This “serpent” design became very popular among Indian tribes as it had usually indicated gun quality and perhaps for some kind of spiritual significance. Also, about this late 17th-century time, British firearms of fine quality started to become richly ornamented providing for many of the beautiful firearms now in many museums and private collections throughout the world. After about 1700, the convex rounded forms of the lockplate and hammer, popular from the 1660s, gave way to flat surfaces common 60 years earlier. The outline of the lock remained basically the same, but the surface of the lockplate and hammer became flat with beveled edges while the back of the steel (frizzen) and the underside of the powder pan usually were faceted to match.

A SURVIVING CA. 1690 BRITISH FLINTLOCK BLUNDERBUSS (PROBABLY SEA SERVICE-PIRATICAL)

Blunderbusses, as a firearm were commonly employed in the later 17th century until about ca. 1840 or so, as a protection for coaches traveling around Britain. They were also commonly employed on naval sea service ships as well as being utilized by pirates during the “age of piracy” (ca. 1680 to 1725).

The advantage of a short and wide muzzled barrel for loading quickly in these contexts as well as a good spread of projectiles upon firing explains a good part of their popularity in this period. A manuscript of 1684 (“An Act of Allowance of Ordnance , Etc., to H.M. Shipp”) notes that the number of blunderbusses used in the British Sea Service was in proportion to the number of cannon on the individual ship. A ship with 100 cannon carried 10 blunderbusses, a ship with 70-80 cannon five, and ships with less than 60 none (Baxter 1970:14). The advantage of the blunderbuss on ships was its “shock” value and its effectiveness as a “close quarters” firearm.

Beginning with the lockplate of the subject blunderbuss in the collection of the author, the markings are most informative as to origin, gunmaker, and significance of the firearm. In the lower center of the lockplate in front of the hammer is marked the name of the gunmaker “BLEIBERG” (Figure 1). The frizzen (in front of the hammer) has the very early hallmark for pre-1710s flintlocks-the upward “curl” midway along the frizzen arm. This frizzen arm ends in a small curl as well which is common on early flintlock guns up to about circa 1790. This feature has considerable time depth for almost all British and French flintlocks of this time period. The “banana” curve to the lockplate is diagnostic of early circa 1660s to circa 1710 lockplate, with them becoming far more straight after ca. 1710-1720. The hammer has some remnant acanthus or strawberry design engraving worn nearly smooth due to centuries of metal polishing (important for metals in an oceanic salty moist air environment). The brass barrel exhibits the name of the gunmaker “BLEIBERG” between engraved fleur-de-lis arrows (Figure 2). The hammer screw also exhibits some remnant floral engraving as well which is another early feature. The Gunmakers of London barrel proofs are clear with a “GP” under a crown (Gunmakers Proof) and a “V” under a crown (Viewed) in oval recesses and the registered gunmakers mark

of “IB” (for Isaac Bleiberg) under a star within a recess (Figure 3). The wood stock appears to be walnut, with the “bulge” behind the lockplate fairly characteristic of circa 1660s-1720 flintlocks. The hole near the wrist of the stock indicates that a brass swivel for carrying is missing. The brass trigger guard has an “urn” or fleur-de-lis front terminus also characteristic of this early 1660s-1720 period (Figure 4). This feature changed to an acorn after about 1720 and then often to a pineapple after about 1790. This fleur-de-lis trigger guard terminus follows late 17th-century forms, which are common on very early period guns, trade guns, military guns, and civilian firearms (compare to Blaine 1967, 1992, 1993; Gladysz 2011; Hamilton 1976, 1987). The trigger guard is not flush with the wood stock which is another early feature. The brass buttplate is standard with the raised “teardrop” on the stock behind the breech extension is a common early feature which changes to a shell decoration when British society evolved from the Baroque to Rococo art styles. The brass sideplate has a “flowing” floral type motif set with two screws and two square nails (Figure 5). This early flintlock does not exhibit the “serpent” design formulated in later time periods. The complete lockplate side profile of the blunderbuss is given in Figure 6.



Figure 1. Bleiberg lockplate with BLEIBERG at bottom in front of the hammer.



Figure 2. BLEIBERG on top of the brass barrel.



Figure 3. London Gunmakers Company proof marks on breech of barrel.



Figure 4. Bleiberg 1690 blunderbuss sideplate side.



Figure 5. Bleiberg sideplate.



Figure 6. Bleiberg ca. 1690 blunderbuss lock-side view.

Issac Bleiberg was the son of Pierre Bleiberg and born in Angers, France, in 1652. He was a Protestant refugee due to the Edict of Nantes and came to London “upon ye Favour of ye late Majesties Proclamation” and married an English woman (Blackmore 1999:48). A “Berd Gunmaker in ye Haymarket” he was threatened with prosecution in 1686, made free of the London Gunmakers Company by redemption, and his mark of “IB” under a star granted in 1687. He was granted naturalization in 1710. His house “at the Sign of the Gun in the Haymarket” was burgled in 1715, and his last reference is in 1727. Overall, the Bleiberg blunderbuss exhibits the French influence of the late 17th and very early 18th century like many of the British firearms of the same period (e.g. compare to the original ca. 1675 Joseph Staci/Stace/Stacey British horse pistol flintlock of Newman 2001, 2009).

REFERENCES CITED

- Baxter, D.R.
1970 Blunderbusses. Stackpole Books. Harrisburg, Pennsylvania.
- Blackmore, H.
1999 *Gunmakers of London Supplement 1350-1850*. Museum Restoration Service, Alexandria Bay New York & Bloomington, Ontario, Canada.
- Blaine, J.C.
1967 The Gilbert Site. *Bulletin of the Texas Archaeological Society*, 37:33-86.
1992 A Summary and Discussion of Additional Findings at the Gilbert Site, An 18th Century Norteno Occupation in Rains County, Texas. *Bulletin of the Texas Archaeological Society* 63:175-196.
1993 Firearms and Related Artifacts from the Vinson Site. *Bulletin of the Texas Archaeological Society* 64:163-186.
- Gladysz, K.
2011 *The French Trade Gun in North America*. Mowbray Publishers. Woonsocket, Rhode Island.
- Hamilton, T.M.
1976 *Firearms on the Frontier: Guns at Fort Michilimackinac 1715-1781*. Mackinaw Island State Park Commission. Mackinaw City, Michigan.
1987 *Colonial Frontier Guns*. Pioneer Press. Union City, Tennessee.
- Newman, J.R.
2001 Joseph Staci in the Minorities: A 17th Century Gunmaker. *Arms Collecting* 39(3):75-81.
2009 A Staci Special: A Rare 17th Century Horse Pistol. *Classic Arms and Militaria* XVI(6):19-25.
- Wilde-Ramsing, M.U., and Linda F. Carnes-McNaughton
2018 *Blackbeard's Sunken Prize*. University of North Carolina Press, Chapel Hill.

THE ERWIN BRIDLE BIT, A MID-1700s EQUESTRIAN ARTIFACT

Charlene Erwin¹, S. Alan Skinner², and Gerald Franklin³

¹ North Texas Archeological Society

² AR Consultants, Inc.

³ Black Bull Forge, Norman, Oklahoma

ABSTRACT

Horse gear has rarely been reported from open historic Native American sites recorded in the Texas Panhandle and the surrounding Southern Plains. An almost complete wrought iron bridle bit was found by Lloyd Richard Erwin at a site in Gray County, Texas sometime during the Great Depression. Erwin believed that the bit was significant and allowed Elias H. Sellards to examine it. He passed it along with his artifact collection to his descendants. The curb ring, swinging bridge, lateral flappers, and more than two dozen missing jingles, were possibly made from a single piece of wrought iron. It is estimated that the bit was blacksmith-made in the mid-1700s and may have been used by a Spanish equestrian and later by a member of an Indigenous Southern Plains horse riding culture.

The Erwin Bridle Bit was reportedly found on the ground surface somewhere on the Hudgins Ranch in Gray County, Texas during the Great Depression (Figure 1). It may have been found within an archeological site that was known to Lloyd Richard Erwin, a recognized authority on the prehistoric archeology of the McLean, Texas area (Witte 1947:81). Unfortunately, there is no known written documentation that identifies the exact location where the bridle bit was discovered, however an archeological survey of parts of the present-day Hudgins and Pursley Ranches recorded a variety of prehistoric and historic sites and isolated finds in the McLennan Creek area (Brosowski 2010). One of these locations might be where the Erwin Bridle Bit was found.

The bit is part of the artifact collection assembled and preserved by Lloyd Richard Erwin (1920-1992). He was the youngest child of Nora Hudgins Erwin and Hugh Erwin. He grew up in the Texas Panhandle, on three sections of land owned by his maternal grandfather, Walter Terry Hudgins (1854-1930). Hudgins homesteaded the land in 1904 and according to family anecdotal information, most of the artifacts were found there. The ranch was owned by the Hudgins family for three generations, passing from Walter Terry to his son Howard, and then to Howard's son Harvey. When Harvey died, the Hudgins ranch consisted of eight sections.

Erwin reportedly started his artifact collection at age seven. Most of the artifacts, including awls, small buttons, drills, pipes, points, and scrapers, are contained and displayed in ten hand-made frames, nestled in 1930s cotton. Erwin constructed these frames as a teenager. The senior author, Erwin's daughter-in-law, has five of these frames, and the other five frames are now in the possession of another family member. Family photographs taken when Erwin was a teenager document his possession of four of the frames. Photographs taken after he married and had children of his own include many of the frames. He continued collecting artifacts throughout his life, during every visit to the Hudgins Ranch and the surrounding area. Given the construction of the ten frames, it does not appear that subsequent artifacts were added to them.

Three artifacts larger than could fit in the frames are not included in family photographs. One is a broken and restored prehistoric cord-marked pottery vessel that is 23 cm tall and has a circumference of 69 cm. It has a pointed base. This vessel was recently accepted for inclusion in the collection of the Panhandle Plains Museum (Veronica Arias, personal communication 2024). A second vessel, broken and restored, exhibiting an undecorated and smooth surface and a pointed bottom, has four loop handles located just below the rim. This vessel belongs to

another family member. The third artifact is the Erwin Bridle Bit. Erwin's daughter, Nora, stated that the children knew of these pieces but were not allowed to touch them.

The two vessels were possibly photographed when they were in the possession of Dr. Elias H. Sellards at the Texas Memorial Museum (now the Texas Science & Natural History Museum at the University of Texas at Austin [UT]), probably between 1940 and 1944. The senior author has those photographs. The bit was labeled H-272-1 in black ink over white paint, most likely when it was at the museum. A letter from Sellards (E. H. Sellards to L. R. Erwin, letter, 2 December 1944, Erwin Family Collections, Grand Prairie, Texas) established the museum's possession of the bit. When Matthew Boulanger of the Department of Anthropology at Southern Methodist University was researching the Pachuca obsidian blade that he identified in one of the frames (Erwin and Boulanger 2023), the senior author showed him a photograph of the bit. He wrote to the UT to inquire about archived documentation from the museum but has not received a response. Based on the typology and the XRF analysis of the blade, it was concluded that it was probably left behind by a Native American who was part of the Coronado Expedition looking for Grand Quivira on the Southern Plains.

Many of the artifacts in the frames are numbered, which is a possible indication that a basic inventory of the collection was done, either by Erwin or by Sellards. As Sellards stated in his 1944 letter, Erwin donated and

Dr. Sellards accepted some of the artifacts. Sellards met Erwin in 1939, gave him a summer job at a paleontological dig in Clarendon, helped him obtain employment in Austin and registration at UT in the fall of 1939. Erwin's mother died in 1941, and he had no permanent home. He volunteered for the Navy in 1942. Where the artifact collection was stored during his time in the Navy is not known. Given the importance of these artifacts, he may have temporarily left most of the collection in the care of Sellards. Erwin, and later his son, Lloyd H. Erwin, the primary author's husband, placed a high value on the bit and wanted it preserved.

This paper will first provide a brief historical overview of Spanish bridle bits in Texas and the adjacent areas, followed by a description of a typical Spanish bridle bit. The Erwin Bridle Bit will then be described in detail.

HISTORICAL CONTEXT

Ring bits arrived in the New World with the first European explorers and have continued to be used to the present time (Minzenmayer 2011). Their use is attributed to the *la jineta* riding style developed by Muslim cavalrymen of the fifteenth- and sixteenth-century Spanish explorers (Simmons and Turley 2007:100). The *jineta* bridle was fitted with a bit known as *freno de argolla*, which is what we call a ring bit (Minzenmayer 2011:27-29). The saddle associated with this bit was described as the Moorish Cavalry style. In this style, the rider had short stirrups, and this created a "bent knee" look as depicted in art of the period.

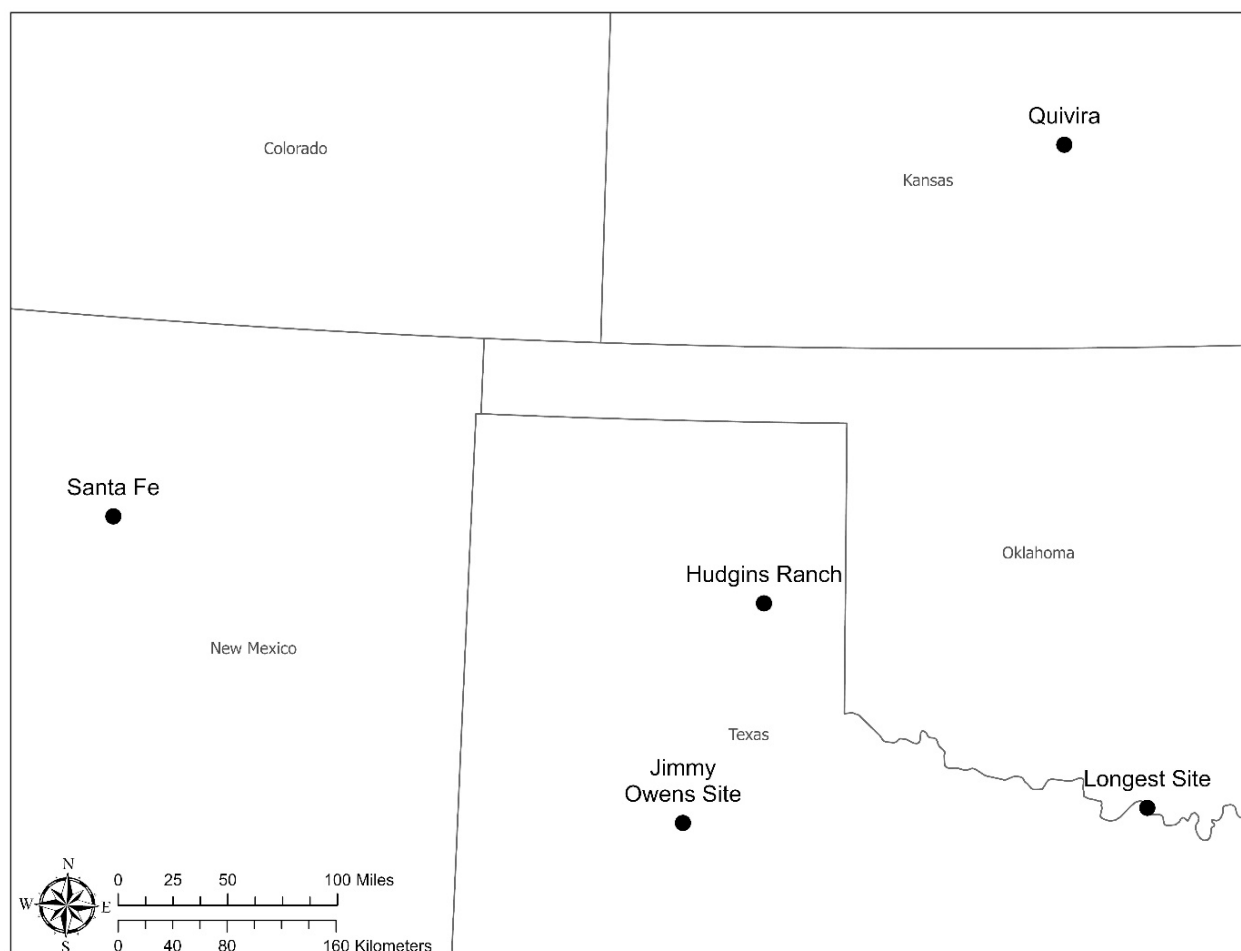


Figure 1. The location of the Hudgins Ranch in the Texas Panhandle as well as sites discussed herein.

Historic bridle bits became popular art collector's items during the twentieth century (Martin and Martin 1997; Martin et al. 2000), particularly bits with unique forms and decorations created by lorimers who put their names on their distinctive bits and spurs (Minzenmayer 2011). In contrast, the archeological recovery of complete bridle bits has been virtually unknown, though unmodified pieces of bridle bits have occasionally been recovered from archeological contexts. This is highlighted in a recent article where pieces of generally unmodified bits had been recovered from subsurface contexts through metal detecting at the Gilbert site in Rains County, Texas as well as from the Spanish Fort area on both sides of the Red River (Blaine and Skinner 2023). Interestingly enough, bridle bits and even bridle bit parts are virtually absent from

most historic Native American village and camp sites in Texas, the Southern Plains, and even in the southeastern United States (Blaine and Skinner 2023:103). The exception to this is that horse paraphernalia is frequently found in 1800s burial contexts in the Southern Plains, particularly in crevice burials (Skinner 2016; Word and Fox 1975:Table 4).

The Erwin Bridle Bit is reminiscent of a similar bit that was found in Seward County, Kansas in 1930 (Minzenmayer 2011:93-97). This bit was attributed to the Coronado Expedition and is similar to the bit described herein. It is possible that Erwin was aware of the Coronado ring bit. The subsequent discovery of the Jimmy Owens site (a Coronado site) in Floyd County, Texas (Blakeslee and Blaine 2003) could not have been known to Erwin, because the site was not

discovered until after his passing in 1992. Defining the Coronado and Oñate routes has been a persistent activity in the Southwest and Southern Plains for years, and a precise route has yet to be confirmed (Flint and Flint 2003).

BIT TERMINOLOGY

The Erwin Bridle Bit is an example of a curb (ring) bit as described by Carter (1982:117-118). The following discussion presents the parts of the Spanish Ring bit (Figure 2) as described by Blaine (1989: Figure 1). A Spanish ring bit was frequently made in one, two, or three pieces to which a curb ring and

at least two different chains (slack and rein) were attached. The parts of a bit include a curb ring, a port with a loop for the curb ring, a mouthpiece bar, two cheek plates (or pieces), and a bridge. An axle bar was generally located midway down the sides of the port and rollers or keys were attached to the axle. The rollers or keys were generally made of copper (Minzenmayer 2011:41) and served to allow the horse's tongue to produce saliva and keep the mouth from getting dry. Although not shown in the illustration, jingles were frequently attached to holes in the bridge and the flange on the curb ring.

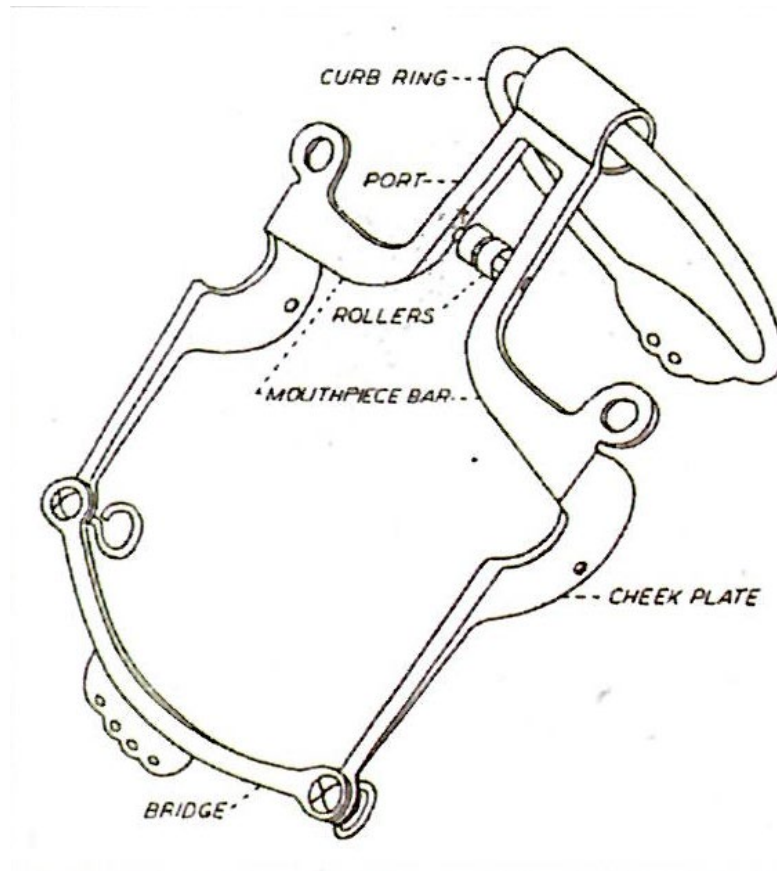


Figure 2. Spanish ring bit nomenclature (Blaine 1989: Figure 1).

ERWIN BRIDLE BIT DESCRIPTION

The Erwin Bridle Bit appears to be almost complete except for the absence of twenty-five jingles and the slack and rein chains (Figures 3 and 4). The bit is described below beginning with the curb ring proceeding to the port loop, the port, the mouthpiece bar, and the cheek

plates, which are all parts of one piece. The bridge is a separate piece of metal that spans the space between the ends of the cheek plates. The lower edge of the bridge contains thirteen empty holes where jingles would have been anchored. Roughly rectangular-shaped "flappers" are anchored, one to the outside

face of each cheek plate, and to the burred ends of the rods at both ends of the bridge. Four empty holes are on each of the flappers. The bit as it is currently weighs 480 g. With

the addition of 26 jingles weighing 2.7 g each, the complete bit assembly is estimated to have weighed at least 550.4 g.

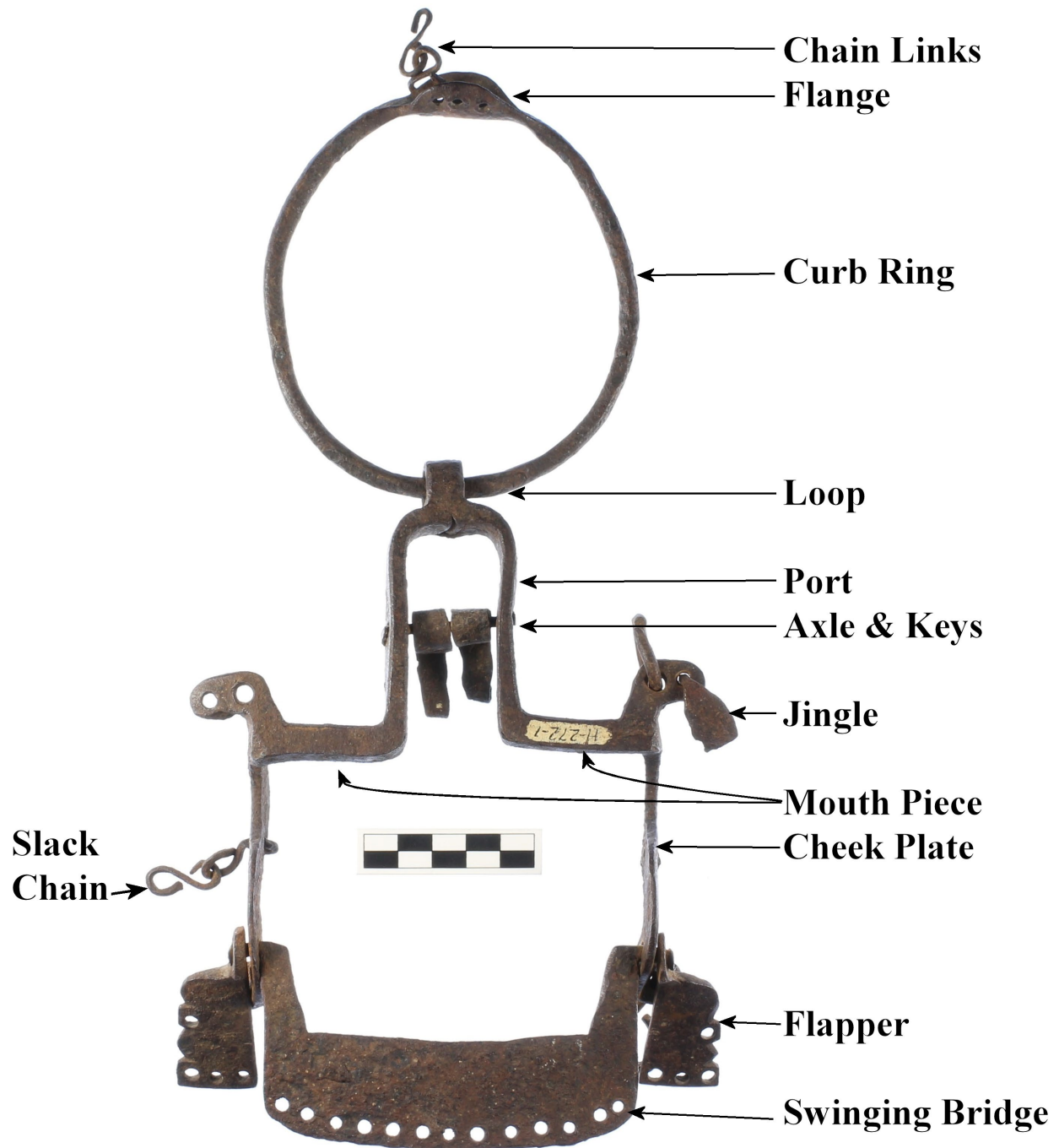


Figure 3. Top view of the Erwin Bridle Bit with the parts labeled. Note the white paint and label H-272-1 that is attributed to Sellards at the Texas Memorial Museum.



Figure 4. Reverse or underside view of the Erwin Bridle Bit.

Curb Ring

The curb ring measures roughly 11.4 cm in diameter and has an outside circumference of 39 cm. The ring ranges from 6.05 to 6.79 mm in cross-section; it appears to have been forged from a square iron bar and then formed into a round shape. Close examination of the ring in Figure 3 reveals a scarfed area near the loop where the ends of the ring were forge-welded together. Slack chains probably connected the flanged section of the curb ring to the cheek plates. The flanged section of the curb ring is 4.9 cm long and consists of two individually forged flanged sections at right angles to each other. One flange wall has three holes that measure 3.25, 3.95, and 4.38 mm in diameter and are bowl-shaped on the inner face of the flange (Figure 5). This bowl-shaped

profile is attributed to the holes having been made with a punch when the flange was at forging heat. The other flange wall has two holes which measure 3.81 and 2.95 mm in diameter. The wider hole has a bowl-shaped profile on the inner face. The smaller hole has a 1.64 mm wide ring of metal on the outer face, but no bowl shape is apparent on the inner face. Two figure-eight chain links are attached to the smaller hole on the two-holed flange. The connected links appear to have been made of a square cross-section bar. The link attached to the flange is 2.9 mm thick, while the second link ranges from 2.45 to 1.65 mm in thickness. A similar curb ring with a flange was found during a survey on the Hudgins Ranch (Brosowske 2010:23, Figure 13).



Figure 5. Expanded views of the flange on the curb ring. Note the two flanges at right angles to each other. Left: the interior view of the flange with chain sections in the two-holed side; right: the exterior wall of the flange showing three holes.

Port

The curb ring passes through the port loop, a looped aperture forged at the proximal end of the bit assembly. This aperture was likely punched through the parent bar as an initial step in forging the bit. It has a 10.82 mm maximum wall width surrounding a roughly 9.38 mm diameter aperture. The loop wall thickness ranges from 3.65 to 3.28 mm. The loop is integral to the port, which is roughly rectangular, a feature of the *crusado* style (Simmons and Turley 1980: Figure 2). The top

of the port is a 12.8 mm wide bar that is 7.62 mm thick. The top of the port is thicker below the loop connection and there is a crack that spans the inner surface of the port below the loop attachment (this shows in Figure 6). This crack may have resulted from the hot iron bar being split with a chisel and the split continuing through the length of the bar due to the granular nature of wrought iron.

The two sides of the port vary in length and thickness (Figure 6). The left side is 67.34 mm long while the right side is 70.9 mm long.

Rather than being parallel-sided, the sides widen midway down their length to 14.95 mm wide on the right side and 14.74 mm on the left side. This difference can be attributed to hand forging which is not a uniform process that would be expected with machine manufacture. A 3.36 mm diameter hole is located at this widening point in the center of the sides and a rounded bar forming an axle spans the width of the port. The ends of the axle are upset on the outside of the port. Two flat metal keys were hung loosely over the bar. The keys are 11.75 mm wide at the end that encircles the axle and 7.78 mm wide at the opposite end. The keys are roughly 74.75 mm long and 1.30 mm thick. The distal end of each key is bent gently backward at a distance of 6.42 mm.



Figure 6. The loop, port, and mouthpiece bars are shown connected to the cheek plates. Note the axle with the two flat keys.

Mouthpiece

The mouthpiece bars are bent at ninety degrees from the bottom of the port and are squared by forging. They measure 9.22 mm by 9.98 mm and 47.03 mm long on the left side and 45.90 mm on the right side. An upward and then outward projecting tab was forged from iron that was split off from the parent bar with a hot-cut chisel to the outer ends of the mouthpiece bars. Two holes are present in each of the flattened projections (Figure 3). The inner holes measure 6.33 mm in diameter and the one on the right has a rounded link that is 4.18 mm thick and 26.12 mm in diameter. This link would have connected to a

chain to the cheek plate. The adjacent hole is slightly smaller in diameter, at 4.33 mm. The shaft of a spatula-shaped jingle passes through the hole. The spatula-shaped jingle expands to a maximum width of 13.15 mm and the metal sheet is 1.27 mm thick. The full length of the jingle is 57.5 mm. The estimated weight of the jingle is 2.7 g. This is the only jingle remaining on the bit, but based on the number of holes present, there may have originally been 26 jingles.

Cheek Plates

The cheek plates have an S-shaped profile and are generally undecorated (Figures 7-10). The right cheek plate is 78.62 mm long and ranges from 15.35 to 16.75 mm wide. The left cheek plate measures 83.79 mm in length and ranges from 14.0 to 16.38 mm wide. Each of the cheek plates get thinner as the distance from the outer end of the mouthpiece bar increases.

The cheek plates are similar in size and shape, so only the right one is described here. The right cheek plate is 6.88 mm thick and decreases to 3.85 mm before the end is bent at a ninety-degree angle to create a projection which has a 5.82 mm hole (Figures 7 and 9). The projection is 16.91 mm long, 14.67 mm wide, and 3.95 mm thick. Located on the right cheek plate is a pivot made of a P-shaped, 4.43 mm thick square rod and the rein chain attaches to it. (Figures 7 and 8).

Short sections of slack chain are attached at the center of the left cheek plate through a hole (Figures 7 and 9). A second hole is near the end of the plate and is where the bridge and the exterior flappers are anchored, and the rein chain would have attached.

The slack chain hole is 5.02 mm in diameter and the remaining chain consists of two figure 8 square rods that are 24.25 mm and 23.53 mm long and 2.38 mm in diameter (Figure 10). The only decoration on the cheek plates is a 6.5 cm long and narrow (less than 1.0 mm wide) line that originates near the right end of

the mouthpiece bar and roughly parallels the upper side of the cheek plate until it approaches the swinging bridge anchor hole.



Figure 7. Right side view of the cheek plate (underside up) with the swinging bridge and the flapper attached to the end of the plate. A circle of rein chain and the single jingle are attached through holes on the projection of the cheek plate and the mouthpiece.

Bridge

A flat metal bridge is anchored in holes near the ends of the respective cheek plates (Figure 11). The bridge measures 130.34 mm from the burred ends of the bridge anchors. There are arms from each of the anchor hole rods that continue to the roughly rectangular body of the bridge which is 108.65 mm wide and 31.09 mm long. Overall, the bridge resembles an ulu-shaped vegetable chopping knife that is used in a wooden bowl or cutting board. The bridge is 3.18 mm thick. Thirteen holes are located along the lower edge of the bridge and there is no other form of decoration on the bridge surfaces. Presumably, metal jingles were crimped in each of the empty holes.

Flappers

Two roughly rectangular flappers are attached to the ends of the cheek plates and are anchored to the burred ends of the bridge anchor rods (Figure 11). Three holes are along the bottom of each flapper and a fourth hole is

located midway along the external edge of each flapper. Filed indentations are present above and between the lateral holes. These filed areas are decorative rather than functional. The right flapper measures 23.88 mm by 43.28 mm and is 3.55 mm thick. The left flapper measures 24.57 mm by 46.15 mm and is 3.86 mm thick. These measurements do not include the projections that attach to the cheek plates.



Figure 8. View of the flat swinging bridge, the associated flapper, and the adjacent cheek plate (underside up).

Visual Reconstruction

Figure 12 is a hypothetical picture of what the Erwin Bridle Bit was likely to have looked like when it was complete. It was clearly made of wrought iron by a skilled blacksmith and was heavily used based on the wear apparent in the jingle holes and in the joints. The bit is similar to what Simmons and Turley (2007:Plate 8) illustrate as a New Mexico ring bit with a pierced and engraved bridge decorated with elaborate jingles. Swinging bridges are not common but rows and rows of jingles are known to occur in many historic drawings and pictures of Southern Plains horse cultures as well as in rock art left by these people that date roughly to the 1700s and 1800s based on the presence of horses.



Figure 9. The outer right side of the cheek plate showing both cheek plates, the swinging bridge, flapper, most of the port, the single loop of the rein chain, and the only jingle.



Figure 10. The opposite face of the bit showing two loops of the slack chain attached to the cheek plate, the outside of the port, the flapper, and the swinging bridge.



Figure 11. View of the lateral flappers anchored by the swinging bridge and showing the jingle holes.

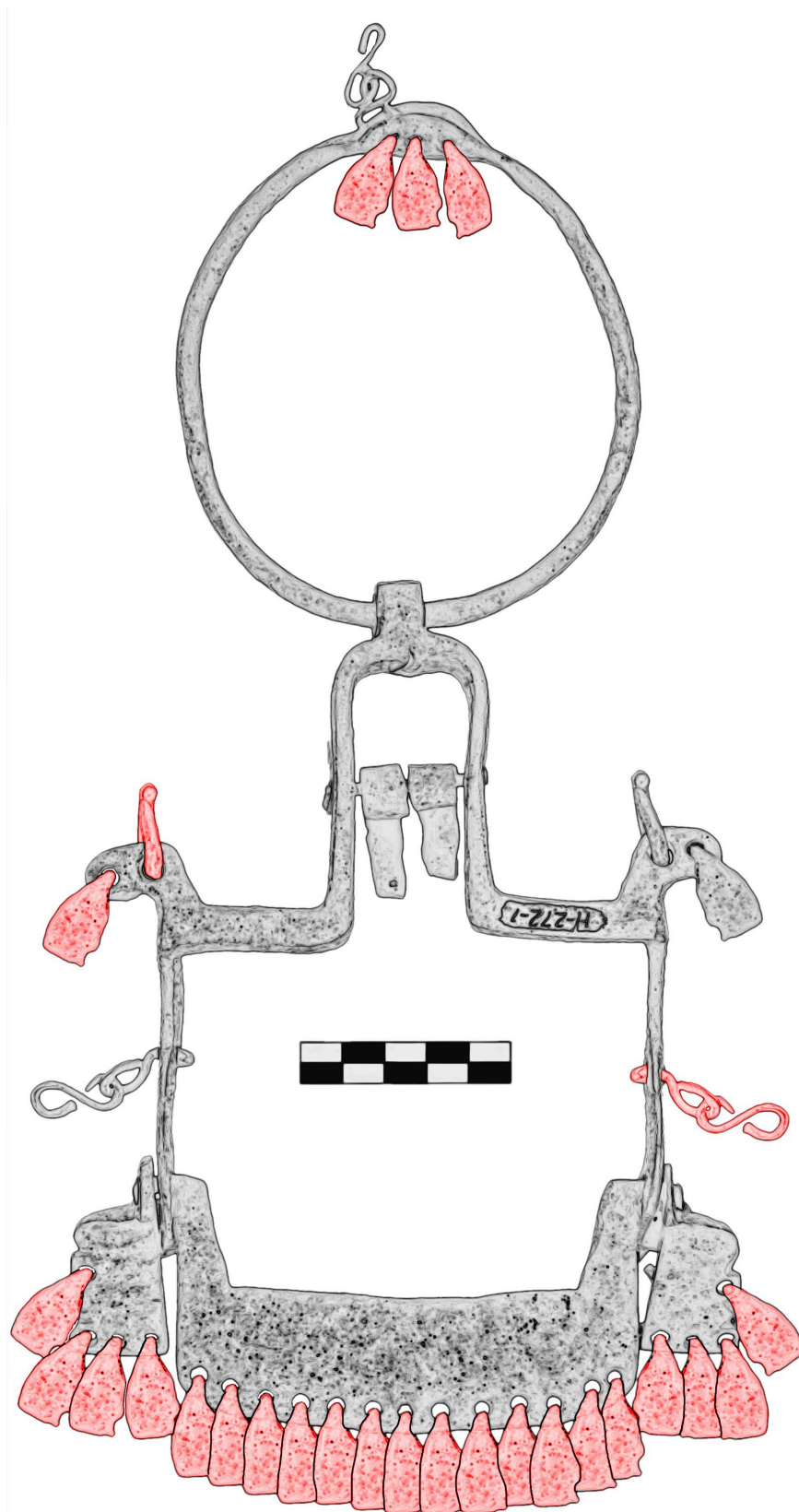


Figure 12. Reconstructed version of the Erwin Bridle Bit showing the addition of jingles and chains. The image was generated by Katy and Eli Crater Gershtein using Affinity Photo 2 software.

CONCLUSION

Although the Erwin Bridle Bit is similar to the Coronado ring bit recovered in Scott County, Kansas (Minzenmayer 2011:94), New Mexico Spanish Colonial experts David Snow and Michael Bletzer (personal communication 2024) indicate that the specific style of the Erwin Bridle Bit probably dates to the mid-1700s, postdating Coronado by more than 100 years. Horses had been plentiful in northern Mexico, New Mexico, Texas, and the Southern Plains in the 1600s (Forbes 1959). Based on subsequent ethnographic research (Ewers 1955:73-73), most of these horses arrived at Native American encampments as herds and would not have needed metal bridles, although Kenner (1969:37) mentions that bridle bits were included in a wide range of trade goods that New Mexico traders had available. The Comanche are described as using bridles or halters of buffalo hair or hide strips (Wallace and Hoebel 1952:97). An informative color painting of probable Comanche warriors using halters on their horses is on the cover of the monograph "Indian Life in Texas" by Charles Shaw (1987).

There is no evidence that Southern Plains horse cultures were making and using Spanish-style bridles at this time, in part due to their mobile way of life. In fact, the Spanish traders (Comancheros) in New Mexico were trading with Apache groups on the South Plains in the 1600s and early 1700s and ultimately with the Comanche (Kenner 1969:23, 73). This trade involved bridle bits that were adorned with chains and were termed "Spanish Chain Bits" by Keyser and Mitchell (2001:200). The spread of these ring bits was documented in the northwestern Plains by the Verendrye Expedition as early as 1739 (Smith 1960:100). The creation of metal horse trappings such as bridle bits was something that the Navajo Nation in the Four Corners area in the Southwest mastered in the early 1800s and continued to manufacture after their relocation to the Bosque Redondo in the mid-1860s (Brugge 1976, 1991; Brugge and Taylor 2001).

The questions are, "Who made the Erwin Bridle Bit? and who used it?" Certainly, it was made by a blacksmith who had the tools for cutting and shaping metal and had the raw material available to create the bridle bit (McRaven 2005). This person also had to be able to generate sufficient heat to forge the metal bar that was used to form the curb ring and then shape the loop, the mouth bar, and the cheek plates. The bridge, flappers, and jingles were probably also made from the same wrought iron source. The blacksmith also had to punch holes in the metal for the jingles and for the swinging bridge. This person had to be able to use the available metal to create a flat sheet for the bridge and the thinner paddle-shaped jingles. It is also feasible that the bit was fabricated from iron that was brought by ship from Spain. Certainly, Spanish blacksmiths were making curb ring bridle bits in Texas and New Mexico in the 1600s (Keyser and Mitchell 2001:200), but there is virtually no evidence that the Southern Plains horse cultures had the tools, high-temperature fire-building capabilities, time in one place, or available wrought iron to make bits like the Erwin Bridle Bit. The Southern Plains horse cultures could have acquired bridle bits during battles with the Spanish-speaking invaders or during raids on settlements in New Mexico, Texas, and adjacent areas (Minzenmayer 2011:37). However, Blaine and Skinner (2023:102) have argued that bridle bit parts at the Gilbert site in East Texas were incidentally acquired on stolen horses. The circular curb rings were recycled by having been broken, straightened, and sharpened by grinding for use as awls. Apparently, the other bridle bit parts were not repurposed and made into other tools such as hide scrapers or cutting tools, nor were they valued as exotic raw materials. The Erwin Bridle Bit shows no evidence that it was discarded because it was worn out nor had it been dismantled with the exception of the jingles. It is an interesting observation, that many trade goods such as firearms parts, brass kettles, hoes, and other metal artifacts were repurposed (Skinner and Hall 2018). In

summary, we conclude that the Erwin Bridle Bit was probably made by a Spanish or Mexican blacksmith in the region that was to become Texas and New Mexico and was later used and left behind by a member of the Southern Plains horse culture.

ACKNOWLEDGEMENTS

The authors want to thank the following people for directly or indirectly participating in the preparation of this article. The late Jay C. Blaine has been advocating for recording horse gear from archeological sites for the better part of his time in Texas. Gerald Franklin of Black Bull Forge in Norman, Oklahoma clarified our descriptions of the manufacturing of the bit and contributed significantly to this article. Matthew Boulanger, Curator of the Archaeology Research Collections in the Department of Anthropology at Southern Methodist University was instrumental in encouraging the study of the Lloyd Richard Erwin artifacts. He also provided copies of a survey report prepared by Scott Brosowske of Courson Archaeological Research. Katy and Eli Crater Gershtein of AR Consultants, Inc. (ARC) used software to create Figure 12 and the bridle bit photographs were taken by Cody Davis, also of ARC. Dave Snow formerly of the New Mexico Laboratory of Anthropology provided his opinion of the bridle's age based on his more than sixty years of dealing with Spanish Colonial archeology in New Mexico and the Southwest. Veronica Arias of the Panhandle-Plains Museum shared information about a cord-marked pottery vessel that was found and restored by Lloyd Richard Erwin and was recently donated to the museum's collection. Judith Erwin allowed us to inspect the second pottery vessel restored by Lloyd Richard Erwin as well as five of the frames that he created.

REFERENCES CITED

Blaine, Jay C.
1989 Eighteenth Century Texas Indian Horse Gear. In *In the Light of Past Experience: Papers in Honor of Jack T. Hughes*,

compiled and edited by Beryl Cain Roper, pp. 93-103. Publication No. 5. Panhandle Archeological Society.

Blaine, Jay C. and S. Alan Skinner
2023 Mid-1700s Bridle Bits from the Gilbert Site and Other Sites on the Southern High Plains. *Bulletin of the Texas Archeological Society* 94:85-106.
2024 The Implications of an Unfired Lead Ball "Cache" at the Longest Site, Oklahoma. *Caddo Archeology Journal* 34:61-72.

Blakeslee, Donald J. and Jay C. Blaine
2003 The Jimmy Owens Site: New Perspectives on the Coronado Expedition. In *Coronado Expedition From the Distance of 460 Years*, edited by Richard Flint and Shirley Cushing Flint, pp. 203-218, University of New Mexico Press, Albuquerque.

Brosowske, Scott D.
2010 *A Cultural Resources Survey of the Hudgen's and Pursley Ranches, Gray County, Texas*. Report prepared by Courson Archaeological Research, Perryton, Texas.

Brugge, David M.
1976 The Horse in Navajo Rock Art at Chaco Canyon. *Awanyu* 4(4):34-46.
1991 Navajo Bridle Bits. *The Indian Trader* 22(4):9-10.

Brugge, David M. and Tobi Taylor
2001 Navajo Ring Bits. *American Indian Art Magazine* 26(4):78-87.

Carter, William Harding
1982 *Horses, Saddles and Bridles, 1982 Edition*. Quail Ranch Books, Santa Monica, California.

Erwin, Charlene and Matthew T. Boulanger
2023 Central Mexico Origin for an Obsidian Prismatic Blade from the Texas Panhandle. *Journal of the North Texas Archeological Society* 2:1-11.

Ewers, John C.
1955 *The Horse in Blackfoot Indian Culture, With Comparative Materials From Other Western Tribes*. Smithsonian Institution, Bureau of American Ethnology, Bulletin 159. Washington, DC.

Flint, Richard and Shirley Cushing Flint
2003 New Vantages on the Coronado Expedition. In *Coronado Expedition From the Distance of 460 Years*, edited by Richard Flint and Shirley Cushing Flint, pp. 1-10, University of New Mexico Press, Albuquerque.

- Forbes, Jack D.
1959 The Appearance of the Mounted Indian in Northern Mexico and the Southwest, to 1680. *Southwestern Journal of Anthropology* 15(2):189-212.
- Kenner, Charles L.
1969 *A History of New Mexico-Plains Indian Relations*. University of Oklahoma Press, Norman.
- Keyser, James D. and Mark Mitchell
2001 Decorated Bridles: Horse Tack in Plains Biographic Rock Art. *Plains Anthropologist* 46(176):195-210.
- Martin, Ned and Jody
1997 *Bit and Spur Makers in the Vaquero Tradition, A Historical Perspective*. Hawk Hill Press, Nicasio, California.
- Martin, Ned and Jody, and Kurt House
2000 *Bit and Spur Makers in the Texas Tradition, A Historical Perspective*. Hawk Hill Press, Nicasio, California.
- McRaven, Charles
2005 *The Blacksmith's Craft, A Primer of Tools and Methods*. Storey Publishing, North Adams, Massachusetts.
- Minzenmayer, Donald
2011 *The Ring Bit, History, Form, & Function*. Schiffer Publishing Ltd., Atglen, Pennsylvania.
- Shaw, Charles
1987 *Indian Life in Texas*. State House Press, Austin.
- Simmons, Marc and Frank Turley
2007 *Southwestern Colonial Ironwork, The Spanish Blacksmithing Tradition*. Sunstone Press, Santa Fe, New Mexico.
- Skinner, S. Alan
2016 Crevice Burials and Tipi Rings on the Southern Great Plains. In *History and Archaeology-Connecting the Dots, Papers in Honor of David H. Snow*, edited by Emily J. Brown, Carol J. Condie, and Helen K. Crotty, Papers of the Archaeological Society of New Mexico, Volume 42:217-238.
- Skinner, S. Alan and Molly A. Hall
2018 Wichita Recycling of French Brass Kettles at Spanish Fort. In *Neither Snow, Nor Rain, Nor Heat, Nor Gloom of Night Stays These Couriers, Essays Honoring Jay C. Blaine*, edited by S. Alan Skinner and Molly A. Hall, pp. 19-40. AR Consultants, Inc., Richardson, Texas.
- Smith, G. Hubert
1960 *Explorations of the La Verendryes*. University of Nebraska Press, Lincoln.
- Wallace, Ernest and E. Adamson Hoebel
1952 *The Comanches, Lords of the South Plains*. University of Oklahoma Press, Norman.
- Witte, Adolph Henry
1947 Certain Archaeological Notes on the High Plains of Texas. *Texas Archeological and Paleontological Society* 18:76-82.
- Word, James H. and Anne Fox
1975 The Cogdell Burial in Floyd County, Texas. *Bulletin of the Texas Archeological Society* 46:1-63.

EXPLORING THE HISTORY OF A NINETEENTH-CENTURY HOMESTEAD FINCA DE CAZA (41JA70), JACK COUNTY, TEXAS

Thomas B. Standefer¹

¹ North Texas Archeological Society

ABSTRACT

In 2016, Thomas and Cynthia Standefer purchased 123 acres of land in far east Jack County, Texas and named their property Finca de Caza. Shortly after this they were shown a cut-stone-lined cistern and other artifacts of an old homestead. Weeks later they learned that the Butterfield Overland Mail (Stage) operated a stop in this general area in late 1860 through March of 1861. The location of this stop is presently unknown. They began their search for information or artifacts that might establish a connection between this site and the Butterfield, and if no connection existed, then they intended to discover as much of the history of the site as possible. Their efforts led them to the North Texas Archeological Society and past-president Jimmy Barrera who led volunteers from the Society in documenting and recording the site (41JA70) as well as continuing to search historic and archeological information that might meet these goals. In this article, I present the historic information learned through searches of published materials, legal documents, and interviews of individuals familiar with the subject, including staff members of the National Park Service following the federal governments' inclusion of the Butterfield Overland Mail route in their National Trails in the spring of 2023. I also include maps and photographs to illustrate the site location in relationship to other known Butterfield sites, copies of legal documents relating to ownership and occupancy of the site, a discussion of the features and artifacts found at the site, and an evaluation of their significance.

This article describes the efforts of Tommy and Cyndi Standefer, the owners of Finca de Caza, Jimmy Barrera, past-president of the North Texas Archeological Society, and other members of the Society to understand the history of the 19th-century homestead located on the Standefer's property, and specifically the possibility of this having served as a stop on the Butterfield Overland Mail stage route.

In the spring of 2016, the Standefers purchased 123 acres along Green Elm Road in Jack County, Texas, approximately two miles north of the community of Wizard Wells. Shortly after the purchase, a friend, Nick Smith, discovered an old stone-lined, hand-dug, water cistern on the property. Surrounding this cistern, there are obvious signs of habitation: metal scraps including wash tubs, horse or mule shoes, plow and wagon parts, broken pottery and bottles, as well as shaped sandstone, and a few bricks.

Later, in June of 2019, on a drive through Texas roughly following the old Butterfield Overland Stage route, visiting Forts Concho, Chadbourne, Phantom Hill, and Griffin, the Standefers noticed a similarity in the style of

their cistern to cisterns or wells that were part of these other historic sites. Also, during this trip, the author purchased a copy of the recently published book on the Butterfield route titled *The Texas Frontier and the Butterfield Overland Mail, 1858-1861*, written by Dr. Glen Ely. After reading the portion of the book that focused on Jack County and finding that there had been a stage stop somewhere near present day Wizard Wells, the location of which had up to now been unidentified, the Standefers began to wonder if this site located on Finca de Caza could possibly have served as this stage stop, and if not, what the actual history of this site might be.

In an attempt to answer these questions, the Standefers began research including correspondence with Dr. Glen Ely, numerous trips to the Jack County Courthouse to examine land records, an internet search of literature and maps related to 19th century Jack County, a visit to the Texas General Land Office (TXGLO) in Austin, and in person and online meetings with the National Park Service (NPS) due to the Butterfield Overland

Mail (Stage) route being declared a National Historic Trail in 2023.

The Standefers also emailed the then president of the North Texas Archeological Society (NTAS), James Everett, but the effort was cut short by the COVID-19 shutdown. Then in 2023, they joined the North Texas Archeological Society and the Texas Archeological Society, and invited Jimmy Barrera, the subsequent NTAS president, to conduct a survey of the site. This visit resulted in the site being recorded as 41JA70.

What follows is a discussion of observations of the site; a review of available literature regarding the history of the area; legal documents relating to ownership of the property; and limited biographical information on the various owners. Though none of the collected data entirely validates the speculation of this possibly having served as a stage stop on the Butterfield Route, the information gathered makes this a strong possibility. Should payment records from the Butterfield Company ever become available for study, a definitive answer may be found.

GEOLOGY AND PHYSIOGRAPHY

Environmental/Topographic Setting

The Finca de Caza site is situated along the lower slope of a sandstone ridge that trends from the southwest to the northeast. The sandstone ridge contains exposed bedrock along the tops and sides of the ridge and the sandstone bedrock and sandstone boulders along this ridge appear to have been used to construct the walls and cistern at the site. The western portion of the site is situated at the base of the steepest portion of the ridge; the central portion of the site appears to be level (or likely leveled); and the eastern portion of the site contains a drop in elevation as though this portion of the ridge has a "step" dropping in elevation moving eastward toward the broader Beans Creek valley. The site is situated along the western valley wall or edge of the Beans Creek valley. It is covered in

mesquite, post oaks, cactus, and mixed grasses that result in low surface visibility. A small three-inch diameter oil/gas gathering line passes through the center of the site. Dozer work in preparation for this line likely damaged the southern wall and the eastern wall, which are described below. This is the greatest impact to the site. Otherwise, land clearing in the past may have contributed to minimal site disturbance (Barrera et al, 2024:2). Additionally, at least one grass/brush fire burned through the area in the early 2000s and may have destroyed or damaged artifacts on the surface of the site.

CULTURAL FEATURES

Three Stacked Sandstone Walls

The western wall (at the base of a steep ridge slope) is the most robust and intact wall section. The western wall consists of six or more courses of stacked sandstone and is approximately 24.5 m long (80.4 ft) by 2.5 m wide (8.2 ft) with a maximum height of 1 m (3.3 ft). (Figures 1 through 3) The western wall has an opening or cut through it approximately halfway along the wall and nearest the cistern. The western wall also is surrounded by a historic artifact scatter primarily to the west, southwest, and around the northern end of this wall (Barrera et al. 2024:3-4).



Figure 1. Photo facing north of west stone wall.



Figure 2. Photo facing south of west stone wall.



Figure 3. Photo illustrating the stacked stones along the west wall, these are just to the south of the opening or cut.

The smallest wall feature is the southern wall that forms a corner with the western wall. The southern wall consists of a single course of stones extending from the western wall for 6.7 m (22 ft) measuring 0.33 m wide (1.08 ft) and is fairly level with the ground, with some of the southern wall stones partially covered in grasses. It is likely that the southern wall was damaged by oil/gas pipeline construction (the

gathering line goes through the southern wall from the southwest to the northeast) or by other disturbances. It is not certain if the southern wall would have connected with the eastern wall, but it is possible (Barrera et al. 2024:3-4).

The eastern wall is not as substantial or intact as the western wall but this wall appears to be nearly as long and approximately as wide. The eastern wall also appears to have a slightly different bearing from the western wall that could indicate this wall was disturbed by the construction of the oil/gas gathering line or other clearing activities. The length of the eastern wall is 15.1 m long (49.52 ft); however, there is an additional extension of rock at the northern end that likely is part of this wall in a more disturbed context. In general, it appears that the eastern wall was likely about the same length as the western wall. The width of the eastern wall is 2.5 m (8.2 ft) and the height is approximately 0.6 m (1.97 ft). One key characteristic of the eastern wall are cut sandstone blocks piled near it, which may have been foundation stones or possibly steps. The overall poor condition of the eastern wall is likely due to disturbance from the oil/gas gathering line and this prohibited the recorders from determining much about the original location of the cut blocks as they were all in a secondary pushed/jumbled context (Barrera et al., 2024:3-4).

A Cut Sandstone Cistern

The cut sandstone cistern is the most obvious feature at the site and consists of well-cut sandstone blocks that are all rectangular in shape and measure approximately 0.75 m x 0.3 m x 0.3 m (2.5 ft x 1 ft x 1 ft) (Figure 4). The blocks along the collar of the cistern contain mortar/grout; however, the recorders observed that the contrasting grout color and age/weathering appear to indicate that the grout could be a more recent repair or addition to the cistern collar. The blocks in the collar were damaged at some point in the past, likely through land clearing or the oil/gas gathering line construction as some of the

blocks in the cistern collar have been knocked out of place (Figure 5). The collar measures approximately 1.5 m across (4.92 ft) with an inside opening of 0.75 m (2.46 ft). The cistern is open and deep. The recorders used a high-powered flashlight and rope to determine that the cistern is bell-shaped below the surface. The cistern appears to be approximately 3 m wide (9.84 ft) and extending at least 6 m below surface (19.68 ft). The interior of the cistern is lined in rectangular cut-stone blocks all the way to the bottom (Figure 6). The labor and skill involved with constructing this cistern is one of the key features and reasons why this site is likely associated with the stagecoach stop as the labor required in squaring stones and even the act of digging and lining the cistern would require the coordinated labor of several adults (Barrera, et al., 2024:3-4).



Figure 4. Photo facing north of the stone cistern.



Figure 5. Photo of cistern showing grout or mortar that is cracked due to damage to structure.



Figure 6. Photo taken at night using artificial light looking into the cistern.

An Artifact Scatter

An artifact scatter was recorded centered around and concentrated west of the western wall (Figure 7). Based on this concentration, it is assumed that the artifact scatter indicates either residential activities or dumping activities (Barrera et al. 2024:3-4).



Figure 7. A sample of the artifacts found scattered around the site, these are located just west of the west stone wall.

A Central Activity Area

The fairly level area inside the western, southern, and eastern walls is likely a central activity area. Since the Butterfield Overland Trail stage stops would tend to have a corral for the teams of horses and/or mules, it is likely that this central level area inside the walls (and around the cistern or at least up to its southern edge) would have been a corral at some point. This area measures approximately 18 m east/west (59.04 ft). However, it is hard to determine the full extent of the enclosed area and whether the level area was square, rectangular, or round. In general, the area inside the walls is level and given the likelihood that this site originated as a stage stop, this was likely a corral. If later occupants used this area for similar activities or other activities is not known (Barrera et al. 2024:3-4).

AREA HISTORY

Late Prehistory

The immediate area around Finca de Caza has a limited number of registered archeological sites. Those reported are primarily related to recordings around Lake Bridgeport, a reservoir built and maintained by the Tarrant Regional Water District in 1931. The fact that most of the area's property is privately owned and functioned as large cattle ranching operations, with the exception being the reservoir, which flooded areas near the river, identification of archeological sites has been limited in this area. A large natural gas pipeline constructed in 2018 exposed scattered lithic artifacts in two locations near Finca de Caza, one located 1.35 miles to the north and a second 2.05 miles north of the first, that provide few clues to the nature of the former inhabitants of Finca de Caza. Two sites approximately five miles to the east provide evidence of some farming through the discovery of multiple metates which were used by the Native Americans to grind corn. A small fragment of what was likely a metate along with a small piece of chert were

discovered in December 2023 by Jimmy Barrera on the Finca de Caza property approximately 400 yards west of the cistern.

Due to the limited artifacts identified in this area, knowledge of prehistoric occupation is based on greater study within the general area. It is known that during the time just before European exploration, bands of the Wichita hunted and farmed in this region. In *The Indian Texans*, author James M. Smallwood states

The Wichitas were active traders of long bows made of Bois de Arc wood, necklaces of elk teeth, tobacco, corn and beans. The Wichitas traded their surplus crops for Comanche horses and buffalo meat and hides. Then they traded some of the horses for French guns and ammunition and Caddo pottery [Smallwood 2004:67].

He goes on to explain that the Wichita were kinsmen of the Caddo and that they shared many of their farming techniques and ceremonies. They built domed lodges 15-30 feet in diameter, as well as arbors for protection from the summer sun. In addition to corn, they grew pumpkins, beans, squash, watermelons, and they planted plum trees. They moved west annually for buffalo hunts, and then returned to their homes in the east (Smallwood 2004:68). Due to the harsh environment near Finca de Caza, it is likely that the sites in this area were used during the annual buffalo hunts.

Smallwood states that Wichita bands included members of other tribes such as the Tawakonis, Taovayas, the Iscanis and the Toweashes. He also mentions that

In 1758 the Wichitas temporarily united with the Comanches, Caddos, and Tonkawas against the Spanish and the raiding Lipan Apaches. A large force of 2,000 warriors with French guns appeared at the San Sabá mission [Smallwood 2004:69].

Early Historic Period

In response to the raid mentioned above where the combined native force killed as many as forty Lipan Apache and Spaniards before looting and burning the mission, in 1759, Col. Diego Ortiz Parrilla, who was the commander of the San Sabá presidio, located a few miles west of the mission, who for disputed reasons did not assist the mission the previous year during the raid, organized a party to retaliate. A group of approximately 600 men, made up mostly of Spaniards and Lipan Apaches headed north in search of the Wichita and others responsible for what they understood as an atrocity the previous year (Smallwood 2004:69-70).

This counter raid is important to our area of focus, primarily because it was likely this force that brought the first Europeans through the area on their way north to the Wichita Twin Villages, incorrectly named by later Texans as “Spanish Fort.” Inside this village where the French flag was waving in the breeze, were Wichita and Comanche as well as Taovayas and Frenchmen, all ready to fight, and after a four-hour conflict, the Spanish were forced to turn and head back south, once again possibly through this area (Smallwood 2004:70).

Following this, the next possible European visit to this area was probably in 1837 following the skirmish of “Stone Houses”, a conflict between 18 Texas Rangers pursuing an estimated 150 Kichai with horses stolen from homes just north of Austin. (Loftin 2024). The Rangers were far outnumbered, and after seeking cover in a ravine, escaped through a smoky fire started by the Kichai. Having given up their horses when seeking cover in the ravine, the surviving Rangers were forced to walk back to settlements in what is now East Texas (Moore 2002:267-273). As this battle took place just south of the upper part of the West Fork of the Trinity River, it is likely that their path followed the south side of the West Fork of the Trinity River, which would have brought them through the area of Finca de Caza.

The next known visit Texans made to the area occurred in 1841, when the Republic of Texas organized a party of over 300 men with the goal of traveling north and then west to Santa Fe, now New Mexico, with the goal of encouraging its citizens to defy Mexican rule and join Texas in their republic. According to a map included in the book *The Texan-Santa Fé Pioneers*, by Noel M. Loomis, the expedition moved north up the Brazos River until crossing near what is now the dam to Lake Granbury. In his book, Loomis quotes Kendall’s (one of the participants) journals, “We had been cutting away trees,” says Kendall, “crossing deep ravines and gullies, turning and twisting 15 or 20 miles to gain 5 [miles]” (Loomis 1958:37) giving us an idea of the thickness of vegetation and the uneven terrain of the Western Cross Timbers, much as it remains today. He also describes the abundance of game; bears, deer, and even some buffalo; as well as wild honey, which helped keep the expedition’s spirits up. They found a deserted Native village where they camped on the Trinity River on July 23. Had they known better, moving their route west only a few miles would have afforded much easier travel. Loomis adds, “They had spent seven arduous days in the Cross Timbers and had traveled fifty miles; they had had a full-time detail of twenty-four men engaged in cutting a path” (Loomis 1958: 42-44). In any case, their route generally followed the course of the West Fork of the Trinity River bringing them through the area of Finca de Caza.

One member of the expedition, Col. W.H. Hunt, a veteran of the Texas Revolution, became one of the first Anglo settlers in the area now covered by Lake Bridgeport in far western Wise County approximately six miles east of Finca de Caza. His place is described as follows:

Hunt’s Creek is a tributary of the West Fork of the Trinity River and the Cactus Hill home was established on it in the vicinity of the point where the Decatur and Jacksboro road finds a crossing” [Cates 1907:39].

Col. Hunt is significant in the history of our homestead (assuming it was the short-term stage stop for the Butterfield), as Col. Hunt was the man primarily responsible for building the bridge over the Trinity near present-day Bridgeport, and then convincing the Butterfield company to reroute their stages through Decatur in route to Jacksboro, crossing Beans Creek somewhere in the vicinity of Finca de Caza. For a time, Col. Hunt was the largest landowner in Wise County and some say in all of Texas. His home near the junction of Hunt's Creek and the West Fork of the Trinity would have been the last structure

passed by westward-bound stages before reaching the stage stop in the area of present day Wizard Wells (Ely 2016:72).

Timeline

The following timeline includes the sequence of known historical events occurring at the site as well as in the surrounding area in an attempt to illustrate the dynamics faced by the original homesteaders at this site. The reader may choose to refer to this timeline while reading the following history of this property to assist in understanding the events experienced by 19th century homesteaders.

Table 1. Timeline of Finca de Caza in Jack County

Date	Finca Site	Jack County
October 29, 1836	Henry Howes served as a private in Company "A", 2nd Regiment of Calvary, of the Regular Texas Army, commanded by Lt. Col. John Sequin.	
1855		First Anglo settlers in Jack County
1856		First settlement, Keechi, in the southern part of the county
August 27, 1856		Jack County formed; the State legislature approved the establishment of the county
1859	H. L. Howes listed on Jack County Property Tax roll as having paid tax on land valued at \$500; this property is not described.	
February 1, 1860	Fannin Script Application for Patent filed by H. L. Howes for 160 acres on the current site of Finca de Caza. Survey was filed July 3, 1860. This application was later forfeited.	
1860	H. L. Howes listed in the 1860 census as age 51, born in Maryland, carpenter, married to Nancy 46, born in Tennessee, and son Tyson 17, born in Mississippi. Dwelling #550. Also listed on the 1860 census is Joseph B. Earhart (owner of stage stop north of the river, with Isaac Knight) 35 year old male from New Hampshire, Stage Conductor, listed as a dependent.	
August 1860		Butterfield Overland stage route shifted southward to access the new bridge across the West Fork of the Trinity River near present day Bridgeport. Stage stop shifted to the south of the river as well, to a location near present day Wizard Wells/Beans Creek.

During 1860

The following were killed by Native Americans in Jack County in 1860: Two Lewis brothers, near Ham's stage stand 14 miles west of Jacksboro; Mr. White near Dillingham Prairie; young Chapman near Burton Spring while hunting deer; Mr. John Reasoner, near his home on Keechi Creek; Mr. Brown was killed by the same group of Native Americans who continued into Palo Pinto County where they killed Mrs. Sherman.

<i>November 27, 1860</i>	Mrs. Martha Sherman killed near Staggs Prairie in Palo Pinto, County in a raid that began in Jack County. In all, seven people were killed and two young girls captured in this raid which led to a call to arms by local men in order to retaliate against these Native Americans.	
<i>November-December 1860</i>	A ranger led response to the Native American raid led by Chief Peta Nocona. This group was led by Ranger Captain Sul Ross and assisted by 20 soldiers from Company H, Second Calvary based at Camp Cooper. This raid would become famous despite the fact that the majority of Native Americans killed were women, children and old men. Only two fighting-age men, one possibly being Comanche Chief Peta Nocona, were killed. However, the former white captive and now wife of Chief Nocona, Cynthia Ann Parker, was re-captured, and this brought much fame to this raid and to Sul Ross who would later become governor of Texas.	
<i>1860</i>	First newspaper, "Whiteman" advocated the Southern cause	
<i>1860</i>	Census approximately 1,000 residents	
<i>March 1861</i>	Butterfield Overland stage moves operations out of Texas due to the secession of Texas from the U.S.	
<i>1861</i>	County voted 76 to 14 against secession	
<i>1867</i>	Fort Richardson established; completed in 1869	
<i>November 1869</i>	Lorenzo "Head" Riley killed by Native Americans a short distance from the house where he lived on Beans Creek in Jack County, and about twelve miles east of Jacksboro. He was about 21 years old and unmarried.	
<i>1870</i>	Census down to 694 residents	
<i>May 18, 1871</i>	Warren Wagontrain Raid, also known as the Salt Creek Massacre, in western Jack County led to first trial of Native Americans held in Jack County	
<i>1878</i>	Fort Richardson abandoned	
<i>1878</i>	S. C. Lewis moves onto this property and files for Patent and has property surveyed.	
<i>August 12, 1878</i>	D. W. Sanders grantee for this property Abstract #1186, File # 001884	
<i>1880</i>	S. C. Lewis listed in the 1880 census at 44 y/o female from Missouri with three dependents; Fanny H. age 13, born in Missouri; John W., age 11, born in Missouri, (there is a John William Martin Lewis, born 11/21/1868, buried 6/15/1945 in the Wizard Wells cemetery); and J.A. Dudley, age 18, born in Tennessee.	Census indicated 6,629 residents
<i>1890</i>	Census indicated 9,740 residents	

Early Texian/American Settlement of Jack County

The book, *Ninety-Four Years in Jack County: 1854-1948*, begins with a description of the legal basis for Anglo settlement of the portion of Texas now described as Jack County,

Congress passed an act which became a law in February, 1841, authorizing the President of the Republic of Texas, under certain conditions, to enter into a contract with individual parties for the purpose of colonizing the vacant domain between the settled regions and the Indian lands on the Western Frontier [Huckabay 1979 (1949):3].

It continues:

In pursuance of this act of Congress, President Lamar entered into a contract, August 30, 1841, with W. S. Peters, D. S. Carroll, and others for the introduction of six hundred families into Texas within three years thereafter [Huckabay 1979 (1949):3].

It goes on to state that the colony was named after Peters, and that the current area of Jack County was included as a part of this Peters Colony. From 1841 to 1852, the majority of settlement in this colony was within the eastern portion; however, as it began to become “thickly settled”, and some started to push westward, even into this frontier district, it pressured Congress to pass the Homestead Law of 1854, which declared that all unsettled and unimproved land be part of the public domain and again open for settlement (Huckabay 1979 [1949]:3-4).

The first areas settled in response to this act were present day Wise, Tarrant, Palo Pinto, and Parker Counties, and within two years the first permanent settlers began to reach into the territory that became Jack County. Again, in *Ninety-Four Years in Jack County: 1854-1948*, it states that

It was in the fall of 1854 that the first permanent settlers reached this section...no permanent homes were established until 1854 and they were made in the Salt Hill Community [now Barton Chapel Community] [Huckabay 1979(1949):4].

Among other early settlers who moved to Jack County, Huckabay states that in 1856 J. B. Earhart settled in the eastern part of the county and adds that “The first stop made east of Jacksboro by the Butterfield stagecoach was at Earhart” (Huckabay 1979 [1949]:4-5). J.B. Earhart’s homestead was just north of the West Fork of the Trinity, about six and a half miles north of Finca de Caza (Figure 8).

The Handbook of Texas Online states that on August 27, 1856, the State legislature approved the establishment of Jack County, named for William H. and Patrick C. Jack, participants in the Texas Revolution (McDaniel 2021 [1952]). It also states that

The Butterfield (or Southern) Overland Mail, which operated from September 15, 1858, until March 1, 1861, was a semiweekly mail and passenger stage service from St. Louis, Missouri, and Memphis, Tennessee, across northern Texas to San Francisco, California....Stage service on the southern route was terminated in March 1861, when an agreement was made to modify the contract and move the route northward out of Texas [Richardson 1976 (1994)].

The unstated reason for this move was the secession of Texas from the United States at the beginning of the American Civil War.

The majority of Jack County is too dry, with too little ground water for successful farming; however, it proved to be a cowman’s paradise. At the time of the first election, held in 1857, the county had a population of only two hundred inhabitants. By 1860, the population had increased to 950 white people and fifty slaves (Huckabay 1979 [1949]:18).

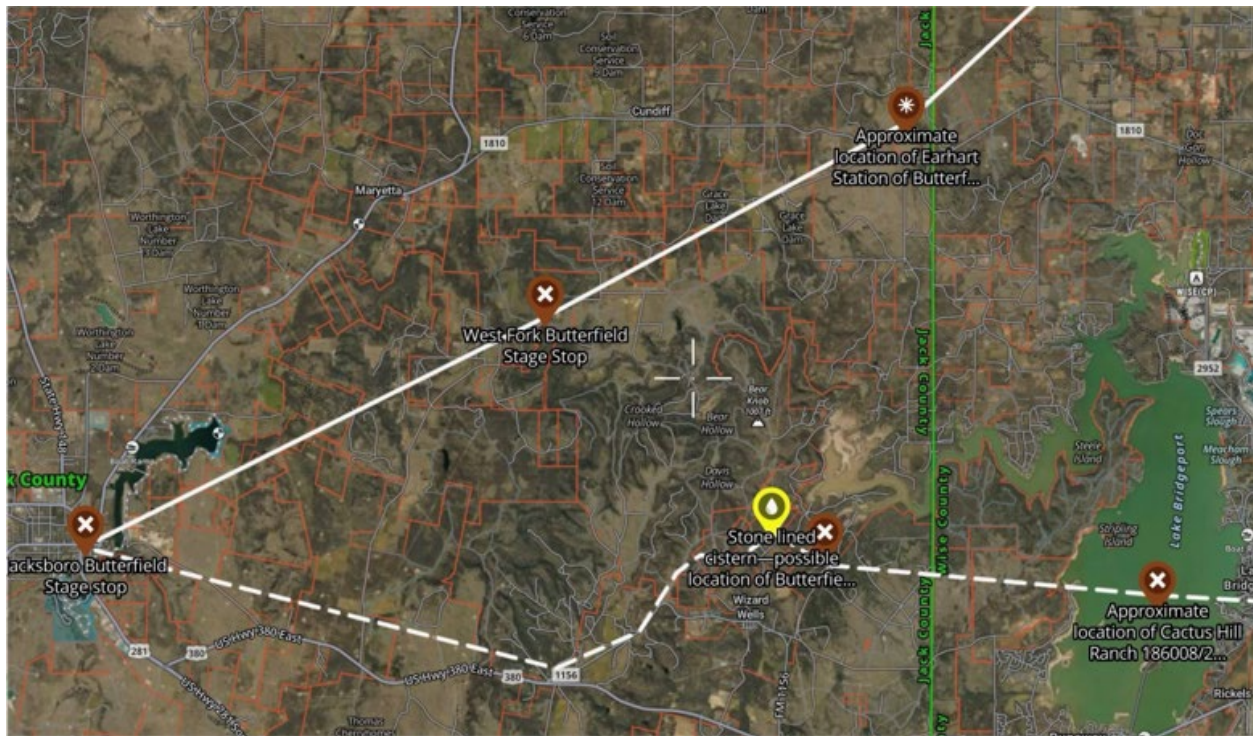


Figure 8. Modern satellite image map showing the location of the homestead, the approximate Butterfield stage routes, and other points described in this article. The background is courtesy of onXmaps.com.

The Butterfield Overland Mail

Before further exploring the area's history, it will be helpful to explore the history of the Butterfield Overland Mail, better known as the Butterfield Stage. The U.S. Congress declared the Butterfield a National Historic Trail in 2023, and describe the stage as follows:

In 1857, Congress awarded businessman and transportation entrepreneur John Butterfield a contract to establish an overland mail route between the eastern United States and growing settler populations in the Far West. What became known as the Butterfield Overland Trail began from two eastern termini on the Mississippi River at St. Louis, Missouri, and Memphis, Tennessee. The trail followed a southerly course through Missouri, Arkansas, Texas, New Mexico, and Arizona before heading north through California to its western terminus in San Francisco. Its arcing sweep across the southern rim of the country gave it another name: the Oxbow Route. Its

southerly aspect allowed for year-round service.

Starting in 1858, Butterfield stagecoaches left twice a week carrying passengers, freight, and mail. Averaging around 100 miles per day, drivers were able to reach San Francisco in 25 days or less. Butterfield Overland service lasted less than three years before it was disrupted by the Civil War and ultimately replaced by telegraph lines and more direct routes farther north.

The Butterfield Overland Mail tied the American West more closely to the rest of the US. Previously, mail and travel to and from the Pacific Coast relied on twice-monthly service via a circuitous route across the Isthmus of Panama. While the Butterfield Overland lasted only until 1861, the operation and the trail it forged played a vital role in shaping and connecting the young United States in a time of territorial expansion and sectional tension [NPS 2024].

Dr. Glen Ely, in his book mentioned above, describes a route change through portions of Jack and Wise counties, which bypassed the Earhart stage stop mentioned earlier. In order to take advantage of the new bridge built by businessmen from Decatur, the county seat of Wise County, in order to increase commerce in their community by having the stage route include a stop in their county seat.

From August 1860-March 1861, Butterfield stagecoaches crossed the toll bridge at the West Fork of the Trinity and steered due west to Cactus Hill, the home of Colonel Hunt [the owner of the new toll bridge from which the later community of Bridgeport would be named].

Today, Cactus Hill lies submerged beneath Lake Bridgeport; its location is a short distance NE of present-day Horse Island. On the west side of the lake, there is a trace of the old Overland Trail that passes just south of McDaniel Cemetery and runs up Jim Ned Hill to Wizard Wells, just west of the Jack County line. From there, the mail route continued on to Jacksboro, where it returned to the original Butterfield itinerary [Ely 2016:72].

The route change, mentioned above as being led by Col. Hunt, was organized by the businessmen of Decatur, a newly settled but growing commercial center, the seat of Wise County government, and an area originally bypassed by the Butterfield, as the route established by Randolph B. Marcy during his explorations in 1849. The route shift that took some time to gain approval, finally took place in August 1860 and only operated for a few months.

Though the official route of the Butterfield did not move north until March 1, 1861, several issues including expectations of the coming secession caused parts of the route to stop running for periods of time. Documentation of actual operations in this portion of Texas has not been located, if it exists at all. What this

means for further research into the possibility of this site having served as the stage stop for this area is that there was less time or opportunity for there to have been artifacts lost or discarded that might lead us to confirm whether or not this was the stage stop. One of the Standefers' objectives for this project is an attempt to determine whether or not this homestead might have served as the Butterfield Stage stop during its final seven months of operation. Thus far, their search of historical records has failed to provide any conclusive evidence.

One approach that has thus far also proved unsuccessful is an attempt to identify another mid-19th-century site in this area that might alternatively have served as the stage stop. A search of original patentees in this area appears to indicate that most were investors rather than settlers. It is likely that most area settlers purchased their land from one of the investors, making it difficult to identify the location of any possible settlers in the area through the use of land records. Records of this period are sparse due to the short time the county had been in existence and the fact that shortly after the county was formed, Texas seceded from the U.S., and the Civil War period brought chaos to this region of Texas. The Standefers' hope is that the discovery of one or more artifacts that might reveal the site's use as a stage stop, or alternatively, that Butterfield payroll records may be located, possibly by NPS researchers, possibly linking Henry L. Howes (the individual who applied for the patent in this location and was apparently living on this property in 1859 and 1860) to the Butterfield Overland Stage as a recipient of payment for the services he provided to the Stage, if this site did indeed serve as a stop for the Butterfield.

Through meetings both in person and via Zoom, Mr. Standefer has shared the information he has compiled with NPS employees working in the office dedicated to documenting as accurately as possible the

route of the Butterfield. The lead historian for this project shared that the files of former Butterfield employees are currently held by the Wells Fargo Company, and the NPS is attempting to gain access to them (Nicholas Myers [National Trails Intermountain Region Historian, NPS] personal communication, 13 Dec 2023). Should this be achieved, the chances of proving through documentation whether or not the Finca de Caza site served as a stage stop are much greater.

One other area for future research is the surveyor notes from the Henry L. Howes patent and from the area surrounding the current village of Wizard Wells. It is possible that one or more of these may mention the former stage route; however, the portions of those notes accessed to this point by Mr. Standefer have failed to provide any helpful information.

Native American/Texan Early Relations

There is presently a gravel county road leading east out of the village of Wizard Wells that some believe follows the route of the Butterfield Stage, though this has not been established through either historical records or archeological research. The road travels up a gradual grade, climbing a hill just east of Bridgeport Lake before cresting and then descending a steep grade toward the lake. Both the road and the hill it summits are named Jim Ned, apparently after a Delaware Chief who was living in the area with a small band of other Delawares who interacted peacefully with the early American settlers. In the book *Pioneer History of Wise County*, the tribe was said to contain “65 men, women and children, and was presided over by two chiefs; an elderly one named Jim Ned, and a younger one named Tom Williams” (Cates 2015 [1907]:51). They lived along the West Fork of the Trinity River for several years, moving gradually westward as more immigrants entered, until finally being removed to the reservation near present day Graham, Texas in 1854, in order

to secure them against the murderous designs of the wild tribes, whose enmity had been aroused because of the Delaware's' peaceable relations to the whites. Finally, they were caught unprotected by an atrocious band of Comanches and exterminated [Cates, 2015 (1907):51].

Apparently, Jim Ned was actively involved in relations with various groups of American settlers, perhaps this was a survival skill learned through generations of his people being driven west by a continuing stream of American and European immigrants. As the name of the tribe suggests, their pre-European contact home had been in the area of the current state of Delaware along the Atlantic Coast.

One of the more famous American explorers of this area, Randolph Marcy, in his book *Thirty Years of Army Life on the Border*, has this to say about the Delaware tribe:

When William Penn held his council with the Delawares upon the ground where the city of Philadelphia now stands, they were as peaceful and unwarlike in their habits as the Quakers themselves [Marcy 2009 (1866):78].

Later, Col. Marcy dedicated an entire section of his book to Jim Ned.

Historic Native American/European and Native American/Native American interactions are a very complex, fluid, and quite often violent time in human history. Many of the Native Americans, who prior to the introduction of European disease that often caused a death rate as high as 80%, had established complex political alliances and trade networks that by this time, had lost much of their way of life and were simply struggling to survive in whatever way they found possible.

An example of the desperate situation that most Native Americans of that time found themselves is a statement found in a

biography titled *Robert Simpson Neighbors and the Texas Frontier 1836-1859*, by Kenneth Franklin Neighbours:

Jose 'Maria, Anadarko chief and head chief of the small tribes, indicated that his people wished to be located on the Brazos near where they were below Fort Belknap for protection. Heretofore, Jose 'Maria said, they had been robbed of everything by the plains Indians and at times by the whites. The whites did, however, leave enough for the Indians to subsist on. If they must die at the hands of either, they preferred to enter the happy hunting grounds with full bellies... [Neighbours, 1975,133].

Robert Neighbors was an early explorer, surveyor, ranger, legislator and finally Indian Agent in Texas, who struggled to find and maintain some sort of justice among Native Americans, Texans, Americans, and the U.S. military during this transitional time in Texas history. He was ultimately murdered in Fort Belknap in 1859, at the hands of a Texan who represented a large portion of the American immigrants to the area of North Texas.

His murder is a tragic example of the many injustices of the time; injustices that included murders of members of all peoples of the area: Native American, American, and Mexican men, women and children. The period of time of our focus on the Butterfield Stage, the late 1850s and early 1860s, was, in Jack County, one of the most violent. Some of this violence, if not directly related to Native Americans living on the two reservations created in 1854 just to the west of Jack County, was certainly blamed on them by their enemies.

In the book *Jeff Davis's Own: Cavalry, Comanches, and the Battle for the Texas Frontier*, by James R. Arnold, a 1859 Comanche raid into Jack County is described. A settler named William Cameron, his wife, baby and his teenage son, as well as a neighbor Mr. Mason and his wife and child were killed. Upon investigation, it was learned

that Mr. Cameron had \$1,200 in his home that was missing. As money was seldom a motive for Indian raids, it was suspected that a neighbor with knowledge of the money had persuaded some Comanche to raid (Arnold 2000 [2007]:253). As quoted in the book described above,

An experienced local rancher recalled, 'Since this was the first bad Indian murder that had occurred on that frontier for many years, it created an unusual excitement because those settlers were not originally frontier people. They were then not accustomed to such horrible occurrences [Arnold 2000 (2007):254].

This began a series of local movements and assaults on the local reservations that ultimately led to their being moved out of Texas into what was then Indian Territory, now Oklahoma.

Another raid one year later thought to have been led by Comanche Chief Peta Nocona is of particular significance to this study. The description of this raid given in the book *Ninety-Four Years in Jack County: 1854-1948* is confusing in the exact number of deaths; however, later in the book is a copy of a letter from Robert Bean, Chief Justice of Jack County addressed to Mr. Sam Houston, Governor of the State of Texas. His description is likewise somewhat confusing; however, he includes a reference to a wagon master shot through the leg near Beans Creek. Additionally, the book, *The West Texas Frontier or a Descriptive History of Early Times in Western Texas, Volume 2*, by Joseph Carroll McConnell, describes six deaths in Jack County, both north and south of Finca de Caza, as well as another well documented death of Mrs. Martha Sherman, killed just west of Jack County in Palo Pinto County. The response to this raid was led by Ranger Captain and later Texas Governor, Sul Ross. These rangers, assisted by 20 soldiers from Company H, Second Cavalry based at Camp Cooper trailed, and then attacked a camp of

mostly Comanche women and children, that included Chief Nocona, who was killed, and his wife, Cynthia Ann Parker, a previously captured girl, whose return became famous throughout the region. Later, Nocona's son, Quannah Parker, would insist his father was not killed in this raid (McConnell 1939:273, 340, 341, 348, 349).

This raid is significant to our research as it led to the movement of some settlers back east to avoid the danger. This fact is supported by the decrease in the population recorded in U.S. censuses from 950 in 1860 to 694 in 1870. (TXGenWeb Project 2024a). This fear of Native American attack is one possible reason that Mr. Howes and his family (the first settlers on what is now Finca de Caza) moved from the county sometime before the 1870 census. A second possibility for their departure is that Mr. Howes was working for the Butterfield, and once the Stage Route was moved out of Texas, he and his family moved north with the stage. A third possibility is that the loss of income from his stage job, assuming that he was indeed running a stage station at this site, caused them to move back east in search of other income. A fourth possibility is that, like others in the area, they may have moved north out of Texas in order to remain a part of the United States following session. A fifth possibility is that Mr. Howes was required (or volunteered) to join the Army of the Confederacy and that his wife and child moved elsewhere. Our struggle to solve this mystery is one of the primary reasons for understanding the history of this area at this time. Unfortunately, at this time, no further record of Mr. Howes has been located, though his wife is found living with her daughter in Weatherford, just southeast of this homestead in the 1880 census. This could mean that Henry was killed in one of the subsequent Comanche or Kiowa raids of the area, or killed in the Civil War, but without data this question remains a speculation and their reason(s) for abandoning their homestead remains a mystery.

In Joseph Carroll McConnell's Texas history book mentioned above, he describes the death of 21-year-old Lorenzo, also known as "Head," Riley, who was believed to have been killed by Native Americans a short distance from his home on Beans Creek about 12 miles east of Jacksboro in 1869 (McConnell 1939:663). This is one of few mentions found of families living along Beans Creek prior to the mid-1870s. As the land along the creek is superior for farming purposes to other land in the area, it is highly likely other families were living in the area of Finca de Caza as early as 1859; however, at this time none have been identified.

The violence and lack of justice became a consistent expectation of life in North Texas throughout the years of the Civil War and into the reconstruction years. In *Charles Goodnight: Cowman and Plainsman*, author J. Evetts Haley describes Goodnight's reaction in 1864 when he returned home in southern Jack County from his time serving in the ranger service as follows:

As he viewed the sorry plight of the country and his own affairs, he decided to consult his old friend Major George B. Erath... He told him [Erath] that while he [Goodnight] had been away carrying a gun for his country, thieves were marking his yearlings and stealing his cattle, so that now most of his stock was in the hands of his immediate neighbors [Haley 1936:102].

Goodnight was ready to move out of Texas; however, on Erath's recommendation, that "it would be better to hunt a market for his cattle than a home for them" he chose not to move. It was this decision that ultimately led to the now famous Goodnight Loving Cattle Trail that began just west of Jack County and followed the former Butterfield Stage route west until it intersected the Pecos River, and then followed the river north into New Mexico and later into Colorado and Wyoming.

DISCUSSION OF SITE 41 JA70

The Finca de Caza site appears to be the location of an 1860-1861 stagecoach stop for the Butterfield Overland Mail route. The site consists of three deteriorated sandstone walls, one well-cut sandstone cistern, a level area that was likely a corral, and an artifact scatter. Archival research indicates this would be the likely location for a stage stop along the Butterfield Overland Trail. The precise location of a stage stop sometimes referred to as the "Wizard Wells" stage stop has been lost to time, but Finca de Caza might be that stop. Though sometimes referred to as the "Wizard Wells" stage stop, the community of Wizard Wells did not exist ca. 1860-1861, so that is unlikely its original name. This stage stop would only have been used for about seven months since the stage route in this area was moved over time (Barrera et al. 2024:4).

Artifacts collected by the landowners that might date to the stagecoach period include a mule shoe, cast iron fragments, ceramics (e.g. crockery), and bottle-glass fragments (e.g., aqua glass). The recorders observed artifacts concentrated in the western portion of the site that appeared to date from the late 19th through early to mid-20th centuries. Based on archival research performed by the landowners and the artifacts observed, the site was a homestead site during this time period (Barrera et al 2024:4).

It is likely that the Finca de Caza site contains at least two distinct components: a mid-19th - century stagecoach stop and a late 19th- to early 20th century homestead. The features at the site are probably related to the stagecoach stop and could have later been incorporated into residential use. The site likely has buried deposits (and possibly buried features) concentrated in the western part of the site where the soils appear to be deepest, along the western wall. Metal detecting reconnaissance was performed (without excavating or collecting), which indicated that there are buried deposits both in the western section of the site and in the level area north of the

cistern. The metal detecting reconnaissance was used to help determine what kind of metal objects were below the surface (e.g., iron vs other metals). The detectorist (Bret Williamson) was able to coarsely state that the western portion of the site has materials that are not iron, while in the level area of the site (and north of the cistern), the buried materials appear to be iron. This was based on the experience of the detectorist and the reading of the instrument for each hit, not on excavations or subsurface identification. This site is likely significant for its probable association with the Butterfield Overland Trail as a previously unrecorded stage stop. In summary, the site has integrity in terms of features and appears to have some subsurface integrity based on general observations of deeper soils in the west, artifacts concentrated in the west, and metal detector evidence metal below the surface in multiple areas. (Barrera et al 2024:4-5).

Location

The homestead and possible stage stop located on the Finca de Caza property, is located in the far eastern portion of Jack County, Texas, approximately one mile south of the West Fork of the Trinity River and approximately one-half mile west of Beans Creek. This is the far western portion of what is described as the Cross Timbers; more specifically the Western or Upper Cross Timbers. The location of the historic homestead is marked in red on Figure 9. On Figure 8, the approximate locations for known Butterfield Stage stops are marked in brown; the historic homestead is marked in yellow; and the solid white line is the approximate route of the Butterfield Overland Stage before making the route change in the fall of 1860. The dashed white line is the approximate route after the shift to the south. The two brown markers along the dashed white line are from left to right: the location of a limestone ledge that creates a hard bottom along Beans Creek that the author believes may have served as a crossing for the stage. The second further to the right marks the

approximate location of Cactus Hill Ranch, a spot the stage is said to have passed nearby

following the route shift to the south.



Figure 9. The red block on this map indicates the location of Finca de Caza (U.S. Geological Survey 1960).

Artifactual Materials Observed

Besides the sandstone features described on the site form, the recorders observed scattered artifacts primarily in the western portion of the site. Approximately 100 artifacts total were observed and these include: ceramics (crookery, whiteware, blue willow transferware), bottle glass (cobalt, aqua, snuff bottle fragments, milk glass, clear; some fully machine-made bottles and fragment), metal (enameled wash basin, auto body part, buggy axle, mule shoe, metal buckets/containers), bricks (four red machine-made bricks; no makers marks). In general, the artifacts represent late-19th to early-20th century activities (indicating a residential or possible dump site). (Barrera et al. 2024:3)

The photographs below (Figures 10-19) are artifacts found on or near the surface by the landowners, or others, in the immediate area surrounding the stone-lined cistern at the homestead. During the first years of ownership, the owners searched the area randomly using a 1970s era metal detector

and uncovered a horse or mule shoe and other various metal objects shown below. Since that time, based on guidance from members of the North Texas Archeological Society, they have avoided digging to collect artifacts in order to preserve the area for future study.



Figure 10. Ceramic artifacts collected from the surface surrounding the historic homestead.



Figure 11. Various pieces of crockery collected from the surface surrounding the historic homestead.



Figure 12. Miscellaneous artifacts collected from the surface surrounding the historic homestead.



Figure 13. Various bottle and glassware artifacts collected from the surface surrounding the historic homestead.



Figure 14. Bottles collected from the surface surrounding the historic homestead.



Figure 15. Metal scraps collected from the surface surrounding the historic homestead.



Figure 16. A horse or mule shoe collected just below the surface near the historic homestead.



Figure 17. Various metal scraps found near the surface surrounding the historic homestead.



Figure 18. Artifact collected on the surface surrounding the historic homestead.



Figure 19. The front axle from a horse-drawn buggy, found in the brush approximately 60 feet northeast of the stone-lined cistern.

FINCA DE CAZA HISTORY

H. L. Howes

The earliest record located related to Finca de Caza is a property tax roll from the Jack County Courthouse that indicates H. L. Howes paid tax on land valued at \$500, though the exact location of this land is not stated. On February 1, 1860, a Fannin Script Application for Patent was filed by H. L. Howes for 160 acres in Jack County. A survey for this land was filed on July 3, 1860 and this description indicated that this 160 acres included the 123 acres now known as Finca de Caza (Figure 20). Mr. Howes received this land as reward for his service as a private in Company A, 2nd Regiment of Cavalry of the Regular Texas

Army commanded by Lt. Col. John [Juan] Seguin (Figure 21). This application was later forfeited (Figure 20).

H. L. Howes is listed in the 1860 census as 51 years of age, born in Maryland, a carpenter, married to Nancy, age 46, born in Tennessee, with his son (possibly a recording error that should be “F” or “daughter” as Susan is found in the 1880 census living in Weatherford with her husband, daughter and mother), Susan, age 17, born in Mississippi, living in dwelling #550 (Figure 22). His land was recorded as having a value of \$500. No other record of Mr. Howes or his family has been located.

The State of Texas on this 28th day of May A.D.,
 County of Jack 1860 personally Come before me
 J. Jeff. Reagan Clerk of the County
 Court of Jack County H. L. Howes Applicant
 and N. C. Grinnett and William Whitehurst
 two disinterested and Respectable Witnesses and
 to me well Known and after all being sworn
 in due form of Law say upon oath That said
 applicant is bonafide Settled and making
 improvements upon Vacant and unappro-
 priated public domain the Sale of which
 is Contemplated in the first Section of an
 immemorial Act of the Legislature
 approved February 1st A.D., 1860 and
 that he has not previously had the
 benefit of said Section
 Witnesses { H. L. Howes
 N. C. Grinnett & { Applicant
 William Whitehurst }

To certify all of which I have hereunto
 set my hand and Official Seal at
 Office in the Town of Jackson
 date above written
 J. Jeff. Reagan Clerk C. C. J. C.
 By W. B. Dickenson
 Deputy

Figure 20. H.L. Howes land grant application (TXGLO 2024a).

His name is not found in the 1861 vote for or against secession, where Jack County voted 76 to 14 against secession; nor is he found on any of the muster roles from Jack County for service in either the Ranger Service or the Confederate Army during the Civil War.

Nancy How[e]s, age 35, born in Tennessee, is found on the 1850 census as living in Antoine

Township, Clark, Arkansas, with husband Henry, age 34, carpenter; daughter Susan, age 7; and daughter Minerva J. How[e]s, age 4 (FamilySearch 2024a).

There is also a Nancy N. Howes, age 63 listed in the 1880 census as living in the home of her son-in-law, W.A. Johnson; daughter Susan R. Johnson; granddaughter S.P. Johnson;

grandson George Johnson; grandson J.E. Johnson; granddaughter A. H. Johnson; and granddaughter(?) Calvin(?) Johnson in Weatherford, Texas (FamilySearch 2024b).

S.C. (Susan Catherine) Lewis

S.C. Lewis, the second person to apply for patent on the land now known as Finca de Caza, on January 5th 1878, is shown as the

patentee for the 160 acres previously included in what had been Mr. Howes application, Abstract 1186, file number 001884 (Figure 23).

This patent was for the land shown in (Figure 24), a portion of the 1925 Jack County map with the area patented by D.W. Sanders highlighted.

No. 135

Muster roll of Company "B" of 5th Regiment of Cavalry of the Regular Army of Texas, commanded by Lt. Col. John S. Seguin, from its commencement to the 31st of October, 1836.

Serial	Name	Rank	Remarks
	None	Captain	
	None	1 st Lt.	
	None	2 ^d	
1	Joseph B. Stoff	1 st Lieut.	Promoted to 1 st Lieut. 25 th Oct.
2	Christopher Wallin	2 ^d	" " " "
3	John H. Wallin	3 ^d	" " " "
4	William Johnston	1 st Lieut.	" " " "
5	Andrew S. Cortes	2 ^d	" " " "
6	John Adams	3 ^d	" " " "
7	William Sweeney	2 ^d	" " " "
8	Samuel S. Arley	Private	" " " "
9	Charles English	"	" " " "
10	James Edwards	"	" " " "
11	John W. Woodcock	"	" " " "
12	Solomon W. Bates	"	" " " "
13	John Calhoun	"	" " " "
14	Charles Calhoun	"	" " " "
15	Abner C. Carter	"	" " " "
16	John Connors	"	" " " "
17	James Cooper	"	" " " "
18	David H. Cate	"	" " " "
19	Richard Cooper	"	" " " "
20	John Corney	"	" " " "
21	Edward Fitzgerald	"	" " " "
22	Henry Higgins	"	" " " "
23	Andrew H. Hatcher	"	" " " "
24	Peter Hays	"	" " " "
25	Richard Hillman	"	" " " "
26	James H. Hillman	"	" " " "
27	Thomas H. Hatcher	"	" " " "
28	Henry Hays	"	" " " "
29	Charles B. Hays	"	" " " "
30	Samuel Kelly	"	" " " "
31	George Luff	"	" " " "
32	James Mullis	"	" " " "
33	James M. Smith	"	" " " "
34	George M. Smith	"	" " " "
35	Robert J. Smith	"	" " " "
36	William Moore	"	" " " "
37	David Anderson	"	" " " "
38	Thomas Pinn	"	" " " "
39	William Pinn	"	" " " "
40	John Pinn	"	" " " "

(Contd. on p. 2)

Figure 21. Army Muster from 1836 documenting that Henry Howes served in John [Juan] Seguin's regiment of Texas troops making him eligible for the land grant (TXGLO 2024b).

Page No. 49

SCHEDULE 1—Free Inhabitants in _____ in the County of Jack State of Texas enumerated by me, on the 12 day of July 1880. William A. Marshall

Post Office Antelope

1	2	3	4			7	8		10	11	12	13	14
			5	6	9								
		The name of every person whose usual place of abode on the first day of June, 1880, was in this family.	Age	Sex	Color	Profession, Occupation, or Trade of each person, male and female, over 15 years of age.	Value of Real Estate.	Value of Personal Estate.	Place of Birth, Naming the State, Territory, or Country.	Married within Year	Attended School within the Year	Can read and write the English language	Whether deaf and dumb, blind, insane, idiotic, pauper, or convict.
1	<u>Wm H L Howes</u>	<u>51 M</u>				<u>Carpenter</u>	<u>550</u>	<u>300</u>	<u>Maryland</u>				
2	<u>Raney</u>	<u>16 M</u>							<u>Tennessee</u>				
3	<u>Lewis</u>	<u>17 M</u>							<u>Mississippi</u>				

Figure 22. The 1860 Jack County census that includes the Howes family (TXGenWeb Project 2024a).

THE STATE OF TEXAS, }
County of Jack. }

J. W. Childers, J. P. & Ex. of
Before me, Notary Public

in and for Jack County Texas, this day came and personally appeared Mrs. S. C. Lewis a resident citizen of said county, who being by me duly sworn declares that he is a bona fide settler upon 160 acres of vacant public land, situated in said county, and surveyed for D. W. Sanders on the 5th day of January 1878 by J. E. Hane, Dep. X Surveyor of said county, that the Sd Lewis and his assignor D. W. Sanders have in good faith resided upon, occupied and improved the same as a homestead for the period of three consecutive years, beginning on the 5th day of January 1878 That he is the head of a family and that he makes this affidavit for the purpose of obtaining a title to the same for a homestead, and also at the same time came and personally appeared H. M. Sanders and H. B. Lillard two credible resident citizens of said county to me well known, who being duly sworn depose and say that Mrs. S. C. Lewis and her assignor the persons first above named in this affidavit have actually settled upon and cultivated as a homestead the lands surveyed for him on the 5th day of January 1878 by the Surveyor aforesaid for the period of three years, and that they nor either of them have any interest in said lands.

Sworn to and subscribed before me, and I hereby certify that H. M. Sanders and H. B. Lillard are credible trustworthy citizens of said county. In testimony whereof I hereunto set my hand and affix my official seal this 27 day of July 1880

J. W. Childers, J. P.
Notary Public Jack County Texas.

than the above

Figure 23. One page of the patent application of S. C. Lewis for 160 acres in Jack County, purchased from S.C. Lewis in 1878 (TXGLO 2024c).

John William Martin Lewis

The 1880 census indicated that 7,435 residents were in Jack County, a significant increase from the 694 in 1870 (TXGenWeb Project 2024b).

A road map of Jack County from 1936 (Figure 26) indicates a house in the location of the cistern on Finca de Caza. It is likely that this marks the home of John Lewis, the son of S. C. Lewis. This fact supports the author's belief that this home may have remained occupied by John Lewis late into the twentieth century, possibly until he moved into a rented home in Wizard Wells as indicated by the 1930 census.

The 1900 Jack County census includes John Lewis, 29, head of household, born in Texas, father born in Tennessee, mother born in Missouri; Ida M., 26, wife, born in Texas, father born in Texas, mother born in Texas;

Maude E., 8, daughter, born in Texas; and Roy, 4, son, born in Texas; all still living in Jack County. (TXGenWeb Project 2024d).

The 1910 census shows John W. Lewis, age 41, head of household; Ida M., age 37, wife; Maudie E. age 18, daughter; and Roy R., age 14, son continuing to reside in Jack County (TXGenWeb Project, 2024e).

In the 1920 census, John W. Lewis and family include a new daughter-in-law and grandchildren residing in Jack County. Lewis is shown as age 50, head of household; Ida M., age 47, wife; Roy R., age 24, son, Mary G., age 22, daughter-in-law; Aubrey L., age 3, grandson; and Audie M., age 1, granddaughter. Roy R. is included in the list of names from Wizard Wells D Precinct No. 11 of young men who registered to serve in WWI. (TXGenWeb Project, 2024f).

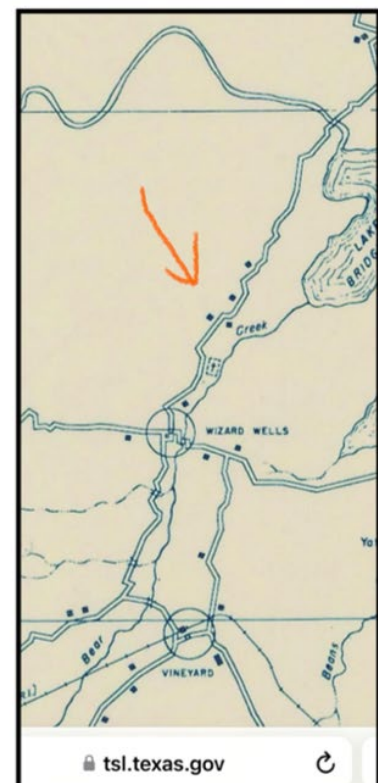
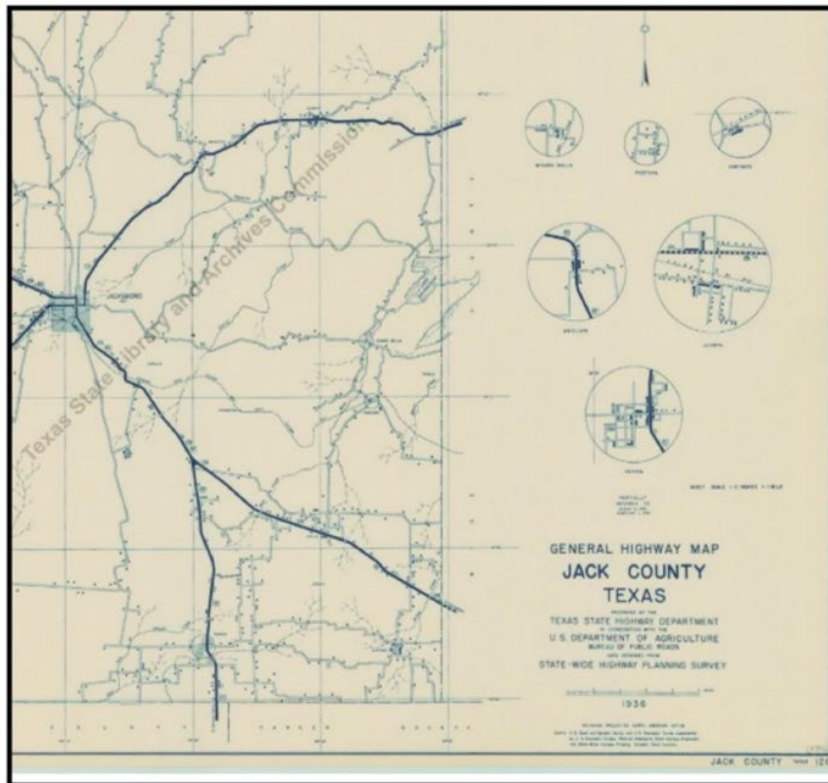


Figure 26. This road map of Jack County from 1936 indicates the presence of a structure in the location of the homestead that is the subject of this article (Texas State Library and Archives Commission 2024).

Then in the 1930 census, John W. Lewis is 62, his wife Ida is age 57, and it is notable that they are shown renting their home in Wizard Wells with no dependents. This could indicate that they sold the Finca de Caza land, or that they simply moved into Wizard Wells and still own the land (TXGenWeb Project, 2024g). John's middle initial is listed as K. rather than W. This must have been a recording error as the other information appears to be consistent with previous entries.

The 1940 census lists John W. Lewis as widowed, 71 and renting his home (TXGenWeb Project 2024h).

Ida M. (Mae) Lewis is buried in the Wizard Wells cemetery. On the headstone, her birth is listed as August 3, 1872, death as July 17, 1935, and she is noted to be the wife of J. W. Lewis (Figure 27).

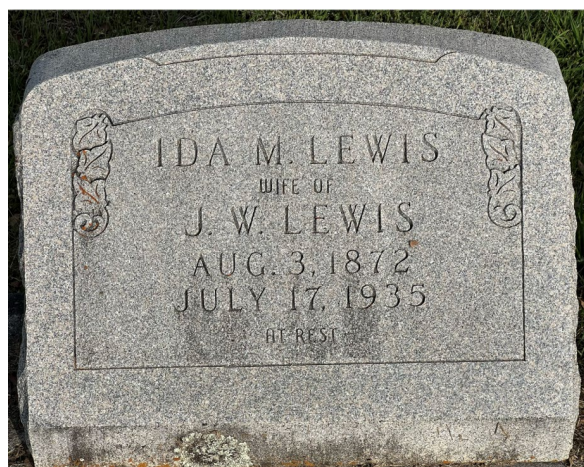


Figure 27. Ida Lewis's headstone in the Wizard Wells cemetery, less than one mile from Finca de Caza.

J. W. [John] William Martin "Bill" Lewis husband of Ida M. (son of George Mathis Lewis and Susan Catherine) is buried in the Wizard Wells cemetery which is less than one mile from Finca de Caza. The headstone shows him as having been born November 21, 1868 and died June 15, 1945 (Figure 28). The Wizard Wells Cemetery information online states that J. W. Lewis is the son of George

Mathis Lewis and Susan Catherine (TXGenWeb Project, 2024i).

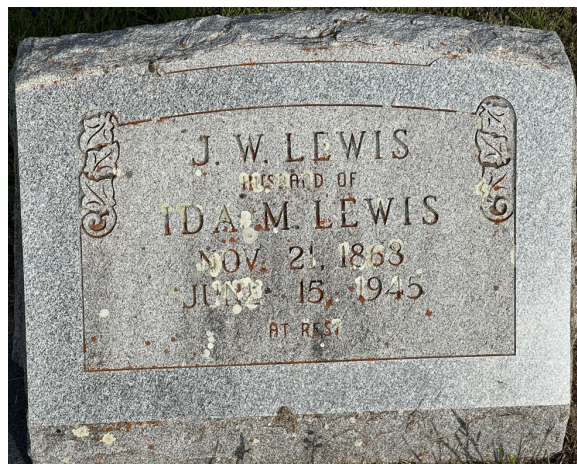


Figure 28. J. W. Lewis' headstone in the Wizard Wells cemetery, less than one mile from Finca de Caza.

George Washington Bean

At some point in the mid-20th century, the George Washington Bean family became owners of the 123-acre Finca de Caza property plus another 80 acres (most likely the two 40 acre plots across Green Elm Road from the 123-acre plot). Ben Rankin sold 160 acres to G.W. and Virgie Bean, Abstract 1186, D.W. Sanders survey (Jack County Courthouse, Jacksboro, Texas 1951: Deed Book 157:529).

The Bean family is first found listed in the 1940 census as: George W. Bean, age 34; wife Virgie, age 32; daughters Edith L., age 12; Geneva R., age 8; Georgia R., age 6; Gracie M., age 5; and George V., age 2; all born in Texas. (TXGenWeb Project, 2024g).

In the Wizard Wells cemetery is found a headstone for George Washington and Virgie Alice Bean. According to the headstone, George was born January 18, 1906 and passed away on December 28, 1988. Virgie was born March 28, 1907 and died August 30, 1989. On the opposite side of this headstone the names of their children are listed as follows: Edith Louise Jones, Geneva Rue Hughes, Georgia Rose Brewer, Gracie May Wilson, George

Virgle “Buddy” Bean, and Christine Cantrell. (TXGenWeb Project, 2024i)

It is assumed by the Standefers that the abandoned partial stone house across the road from the gate to Finca de Caza was the G. W. Bean home. The Bean family owned the 240 acres there until the death of George and Virgie when each of six daughters inherited 40 acres. (Jack County Courthouse, Jacksboro, Texas 1991: Deed Book 668:161)

The Standefers’ current thinking is that the existing cistern at site 41JA70 was associated with the home of Mrs. S. C. Lewis and later her son, John W. Lewis, as there was most likely a structure at this location that had been abandoned or sold by the Howes when they departed the area. This seems even more likely with Mrs. Lewis moving here with three children and probably without the resources necessary for building a newer structure. This assumption is supported by a Jack County roadmap from 1936, which indicates a house in this location. Later maps from the 1940s do not show a house in this location making it likely that the original structure either burned or was torn down sometime in the late 1930s or early 1940s.

SUMMARY AND CONCLUSIONS

Archival documents, historical sources, and the recovered cultural remains of Finca de Caza reveal that the property was first occupied in the mid-19th century and its first homesteader, Henry L. Howes, was a veteran

of the Texas War of Independence. The property was continually occupied and farmed through the early 1940s. Detailed study of the history of this site, the history of the Butterfield Overland Mail route, and the artifacts thus far revealed point to Finca de Caza being a mid-19th century homestead but offer no specific evidence of this being a Butterfield Overland Mail stop. The legal documents, along with the 19th century artifacts, do introduce us to the original owner, Henry L. Howes, but evidence connecting him with the Butterfield remains elusive.

The author finds several geographic factors that favor this site as having been used for the Butterfield stage stop. To begin, in Dr. Ely’s book, he states that coming from the east, the Butterfield route exited what is now Lake Bridgeport “just south of McDaniel Cemetery and runs up Jim Ned Hill to Wizard Wells...” (Ely 2016:72). It is easy to assume the mail route followed the current path of Jim Ned Road, however, keeping in mind that the village of Vineyard, whose name was later changed to Wizard Wells, was not formed until years later, the current partially paved road, when traveled east to west, climbs Jim Ned Hill through a cut in the rock bluff made using heavy equipment at an even later date as illustrated in (Figure 29). It is more likely the stage route climbed this ridge by taking advantage of natural features, perhaps following the current path of the drive into the Sid Richardson Scout Ranch which borders Jim Ned Road to the north.



Figure 29. Looking east from the crest of Jim Ned hill back toward Lake Bridgeport in the area the Butterfield trail traveled. Note the steep descent of the paved road and the gentler slope to the left of the photo which is the area the road into the Boy Scout Ranch travels and more likely the path used by the Butterfield.

Once the route reaches the plateau at the top of Jim Ned hill, looking west there is a broad plain that slopes gently toward the Beans Creek valley (Figure 30). The route from this point would need to turn toward the south and follow this ridge in order to intersect the current path of Jim Ned Road. Alternatively, the logical path of the stage would be to head as directly as possible toward the next geographical feature this author believes defines the historic route. This second feature is marked on Figure 8 with a brown marker with a white “X” just southeast of the yellow marker with the white water drop that marks the site of the cistern on Finca de Caza. This feature, a limestone ledge, is currently used by the landowners as a hard bottom crossing of Beans Creek. Historically, it was a hard

bottomed spot on this creek that would have assured firm crossing of the creek in all weather. The alternatives to using this crossing at the time would have included a bridge across the creek, or a simple low water crossing. A low water crossing would have required a cut into the steep bank of Beans Creek, that is approximately ten feet in height along this area, and then would lead to a mud or clay bottom that would have been difficult to cross in a stage during wet weather. Keeping in mind that as far as the historical records indicate, there were no other homesteads in this immediate area at this time, so taking advantage of this available hard bottom crossing seems likely. Additionally, images available on Google Maps dating to the early 2000’s show only two

cuts into the bank of Beans creek that could indicate a low water crossing, and those are also north of present day Wizard Wells. The creek bank along the current road that joins Jim Ned Road just before entering Wizard Wells show no sign of a cut into the bank that would have been necessary for a low water crossing in that area.

A third geographic advantage to the route passing through this area, just north of Wizard Wells, is the significant stone ridge to the west of this area, a 200 foot sandstone ridge that runs basically north and south paralleling Beans Creek. The two modern roads that climb this ridge, one, the old road out of Wizard Wells, FM1156 ; and the other US 380, the current highway between Bridgeport and Jacksboro; both required extensive excavation

into this ridge to create a road grade gradual enough for use. At the time of the Butterfield, extensive excavation was essentially impossible. Had the route actually traveled through Finca de Caza, rather than present day Wizard Wells, it could have taken advantage of two separate natural paths up the ridge, both currently used as ranch roads, which follow drainages in a curving path to the top that would have required little or no excavation. The photograph is taken from the slope of Jim Ned hill looking west over Beans Creek toward the homestead illustrates both the gentle slop and open plain as one travels west from the summit of Jim Ned hill as well as the steep ridge running north to south (right to left) just behind (west of) the homestead.



Figure 30. A view looking west from the western slope of Jim Ned hill toward the homestead and steep ridge further west.

A fourth factor that the owners feel support 41JA70 having served as this stage stop is the location selected by Mr. Howes for his land grant. At the time of his application, the majority of the land in the area was unclaimed. Had he been interested in farming his land, available portions along the banks of Beans Creek would have been a much better choice than the land he selected, much of which is a rocky, sandstone and clay ridge. Additionally, on the 1860 census, (Figure 22), Mr. Howes' occupation shown is carpenter. As there was not yet a town growing in this area, it is unlikely he moved here to work as a carpenter. If not a carpenter, nor a farmer, perhaps his reason for moving to this location was to earn a living from the Butterfield? It is even possible businessmen in Decatur recruited him for this job to ensure the Butterfield would agree to the route change.

Finally, there is one comment found in the literature that supports the stage stop having been located somewhere north of Wizard Wells. This is found in the book *900 Miles on the Butterfield Trail*, by A.C. Greene, where he states, "The 1860 stage route ran slightly north of Wizard Wells" (1994:144) There is no explanation or justification associated with this comment which leaves this author puzzled and uncertain as to the value of this statement.

Looking forward, there has been some interest in further archeological investigation of the site as well as ongoing historical research, both by the Standefers and the NPS. Perhaps one of these efforts will provide evidence establishing this as a known stage stop. Failing that, the Standefers are interested in learning more about the previous owners, the Howes, Lewis, and Beans families, whose combined residence of almost 120 years on this property offers countless unanswered questions and ensures their continuing research.

ACKNOWLEDGEMENTS

A special thanks goes to Jimmy Barrera for his encouragement, instruction, assistance, guidance, editing, and enthusiasm for the subject that not only made this article possible; but, without his suggesting I consider compiling this information into an article it is likely it would not have happened. Additionally, in this article I have taken advantage of his archeological expertise in using almost unedited sections from the site form he edited and submitted for the site recording with the assistance of NTAS volunteers Royce Baker, Glenn Butler, David Goss, Stephanie Hastings, Dixie Hoover, Steve Lowe, Rio McGowan, Jocelyne Swayze, Art Tawater, and Bret Williamson.

Another special thanks goes to James Everett, who graciously, and under a deadline, made significant editing suggestions of style and grammar, work that helped mask this author's lack of knowledge and experience writing scientific articles.

Likewise, special thanks go to the members, and especially the leadership of the North Texas Archeological Society for their passion for discovery, their instruction in the science of archeology, and their assistance in this project. Their energy and knowledge continue to present new opportunities for learning and growth for Cyndi and me during this season of our lives.

REFERENCES CITED

- Arnold, James R.
2007 [2000] Jeff Davis's Own: Cavalry, Comanches, and the Battle for the Texas Frontier. Castle Books, Edison, New Jersey.
- Barrera, Jimmy, Royce Baker, Glenn Butler, David Goss, Stephanie Hastings, Dixie Hoover, Rio McGowan, Cyndi Standefer, Tommy Standefer, Jocelyne Swayze, and Bret Williamson
2024 State of Texas, Archeological Site Form, 41JA70. Electronic document, <https://atlas.thc.texas.gov/>, accessed 2024.

- Cates, Cliff D.
2015 [1907] *Pioneer History of Wise County: From Red Men to Railroads, Twenty Years of Intrepid History*. Compiled under the auspices of the Wise County Old Settlers ' Association, Decatur, Texas. Forgotten Books, London.
- Ely, Glen Sample
2016 *The Texas Frontier and the Butterfield Overland Mail, 1858-1861*. University of Oklahoma Press, Norman.
- FamilySearch
2024a 1850 United States Census, entry for Entry for Henry Hows and Nancy Hows. Electronic document, <https://www.familysearch.org/ark:/61903/1:1:M67H-TPW>, accessed 2024.
- 2024b 1880 United States Census, entry for W. A. Johnson and Susan R. Johnson. Electronic document, <https://www.familysearch.org/ark:/61903/1:1:MFJ7-BQC>, accessed 2024.
- 2024c 1870 United States Census, entry for G. Lankford. Electronic document, <https://www.familysearch.org/ark:/61903/1:1:MXGP-LT2>, accessed 2024.
- Greene, A.C.
1994 *900 Miles on the Butterfield Trail*. University of North Texas Press, Denton.
- Haley, J. Evetts
1949 [1936] *Charles Goodnight, Cowman and Plainsman*. University of Oklahoma Press, Norman.
- Huckabay, Ida Lasater
1979 [1949] *Ninety-Four Years in Jack County: 1854-1948*. Texian Press, Waco, Texas.
- Loftin, Jack O.
2024 Stone Houses, Battle of. In *Handbook of Texas Online*. Electronic document, <https://www.tshaonline.org/handbook/entries/stone-houses-battle-of>, accessed August 28, 2024.
- Loomis, Noel M.
1958 *The Texan-Santa Fé Pioneers*. University of Oklahoma Press, Norman.
- Marcy, Randolph Barnes.
2009 [1866] *Thirty Years of Army Life on the Border*. Applewood Books, Bedford, Massachusetts.
- McConnell, Joseph Carroll
1939 *The West Texas Frontier or a Descriptive History of Early Times in Western Texas*, Volume 2. Texas Legal Bank & Book Company, Palo Pinto, Texas.
- McDaniel, Robert Wayne
2021 [1952] Jack County. In *Handbook of Texas Online*. Electronic document, <https://www.tshaonline.org/handbook/entries/jack-county>, accessed August 29, 2024.
- Moore, Stephen L.
2002 *Savage Frontier, Volume I (1835-1837): Rangers, Riflemen, and Indian Wars in Texas*. University of North Texas Press, Denton, Texas.
- National Park Service (NPS)
2024 Butterfield Overland. Electronic document, <https://www.nps.gov/buov/learn/historyculture/index.htm>, accessed August 28, 2024.
- Neighbours, Kenneth Franklin
1975 *Robert Simpson Neighbors and The Texas Frontier, 1836-1859*. Texian Press, Waco, Texas.
- Richardson, Rupert N.
1994 [1976] Butterfield Overland Mail. In *Handbook of Texas Online*. Electronic document, <https://www.tshaonline.org/handbook/entries/butterfield-overland-mail>, accessed August 28, 2024.
- Smallwood, James M.
2004 *The Indian Texans*. Texas A&M University Press, College Station, Texas.
- The Texas General Land Office (TXGLO)
1886 Map of Jack County. Electronic document, <https://texashistory.unt.edu/ark:/67531/me1apth88682/>, accessed 2024.
- 1925 Jack County Map. Electronic document, <https://texashistory.unt.edu/ark:/67531/me1apth232006/?q=jack%20county%20maps>, accessed 2024.
- 2024a H. L. Howes Land Grant Application, https://cdn.glo.texas.gov/ncu/SCANDOCS/archives_webfiles/arcmaps/webfiles/landgrants/PDFs/2/1/1/211076.pdf, accessed 2024.
- 2024b 1836 Army Muster, http://cdn.glo.texas.gov/ncu/SCANDOCS/archives_webfiles/arcmaps/webfiles/landgrants/PDFs/3/1/9/319742_127.pdf, accessed 2024.
- 2024c S. C. Lewis Land Grant Application, https://cdn.glo.texas.gov/ncu/SCANDOCS/archives_webfiles/arcmaps/webfiles/landgrants/PDFs/2/1/3/213728.pdf, accessed 2024.

TXGenWeb Project

- 2024a Jack County, Texas 1860 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1860.htm>, accessed August 31, 2024.
- 2024b All Jack County, Texas Cemeteries Headstone Pictures and Information. Electronic document,
<https://jackcountytexas.info/Cemeteries/h-l.htm>, accessed August 31, 2024.
- 2024c Jack County, Texas 1880 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1880.htm>, accessed August 31, 2024.
- 2024d Jack County, Texas 1900 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1900.htm>, accessed August 31, 2024.
- 2024e Jack County, Texas 1910 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1910.htm>, accessed August 31, 2024.
- 2024f Jack County, Texas 1920 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1920.htm>, accessed August 31, 2024.
- 2024g Jack County, Texas 1940 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1940.htm>, accessed August 31, 2024.
- 2024h Jack County, Texas 1930 Census. Electronic document,
<https://jackcountytexas.info/Misc/census1930.htm>, accessed August 31, 2024.
- 2024i All Jack County, Texas Cemeteries Headstone Pictures and Information. Electronic document,
<https://jackcountytexas.info/Cemeteries/a-c.htm>, accessed August 31, 2024.
- Texas State Library and Archives Commission
2024 1936 General Highway Map of Jack County, Texas. Electronic document,
https://www.tsl.texas.gov/apps/arc/maps/storage/texas_media/imgs/map04902.jpg, accessed 2024.
- U.S. Geological Survey
1960 Wizard Wells, TX. 7.5' topographic map.

HISTORIC RAILROAD GRAFFITI

James E. Barrera¹

¹ Federal Railroad Administration

There are moments when the senses are jarred from an experience. Seeing historic railroad graffiti (Figure 1) while visiting world class precontact rock art in the Lower Pecos Canyonlands stunned this archeologist about 25 years ago. Not clear to the author at the time was the significance graffiti can provide as a record that otherwise might not exist about individuals and groups.

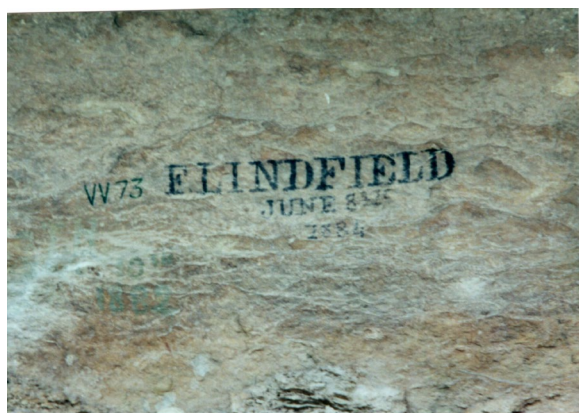


Figure 1: Fate Bell Shelter (41VV73) historic railroad graffiti.

Fast forward a few years and historic railroad graffiti continues to arise on other research endeavors like railroad ovens renewing interest in this resource. Understanding the historic context associated with graffiti can help identify significance associated with individuals, groups, activities, time periods, and more. This study is certainly not exhaustive on known sites and literature containing historic railroad graffiti. The goal is to introduce this resource type as a consideration to investigate with more detail for future studies. Future research into this topic using various analytical tools like spatial analysis, pigment and carving analysis, more detailed temporal analysis, and a larger geographic data set are recognized as needed and warranted for historic railroad graffiti.

RESEARCH AREA

The data for this research area is focused on Val Verde County, Texas, with a single example from Otero County, New Mexico. While researching the topic of historic railroad graffiti, it became clear that distinguishing graffiti directly associated with railroad activity versus non-railroad activity is quite difficult. The Val Verde County area contains a rare landscape of history and archeology related to railroad activity. The research area is primarily confined to graffiti examples from archeological sites located along a segment of the Southern Transcontinental Railroad constructed along the Rio Grande River in the Lower Pecos Canyonlands of Val Verde County, Texas. The additional example from Otero County, New Mexico, is located at Alamo Mountain near a historic stagecoach station along the Butterfield Overland Trail.

HISTORIC CONTEXT

This article focuses on historic railroad graffiti related to a specific time period (ca. 1881-1892) associated with the construction and operation of the Southern Transcontinental Railroad through a portion of Val Verde County, Texas. The lines built by the Southern Pacific Railroad (Southern Pacific) and Galveston, Harrisburg & San Antonio Railway (G.H.&S.A.) were linked in Val Verde County marking the completion of the Southern Transcontinental Railroad in 1883 (Figure 2). Due to the rugged nature of the Lower Pecos Canyonlands an approximate 40-mile segment of the Southern Transcontinental Railroad took more time, laborers, and money to construct than any other segment between the terminals at San Francisco and New Orleans. Within Texas thousands of laborers (over 10,000 men at certain times) were concentrated in camps, work areas, and throughout the final miles of the Southern

Transcontinental Railroad during the period of construction from 1881-1883 (Briggs 1974). Subsequently the railroad operated through most of this segment until 1892 at which time the Pecos High Bridge (Figure 3), also known as the Pecos Viaduct, was constructed to shorten the line and speed up traffic. This resulted in moving the railroad miles away from the original line with multiple train stations and other railroad infrastructure abandoned along the original line after 1892. Railroad activity involving thousands of laborers and an unknown number of rail passengers along the original line between 1881 and 1892 resulted in historic railroad graffiti recorded at numerous archeological sites across the landscape.

Detailed histories have been written about the Southern Pacific and G.H.&S.A. construction of the Southern Transcontinental Railroad through Val Verde County (Briggs 1974; Dolman 1995). These histories are full of wonderful information and provide excellent context for the dangerous conditions and rapid rate of construction that was demanded by these railroad companies. Most of the information for these historic backgrounds come from contemporary newspaper articles since much of the record like labor roles and other records of individuals were misplaced or destroyed (Briggs 1974) or are a product of the remoteness and lack of permanent settlements

at the time of construction and have not been located through the prior historical investigations. The history of planning, construction, daily life, and operations of the Southern Transcontinental Railroad is beyond the scope of this article. However, one specific detail worth mention is the most well-known and famous character associated with not only the Lower Pecos Canyonlands but also with the construction of this railroad, Old Roy, better known as Judge Roy Bean the “Law West of the Pecos.” In 1882 Roy Bean was appointed Justice of the Peace for the area that encompasses this study in direct response to the need for law and order based on the continual chaos reported from the railroad labor camps (Skiles 1996).

The history of the Butterfield Overland Trail for passenger and mail service from St. Louis to San Francisco is another storied history of transportation involving dashes between stage stations and water stops, frequently outside protection of the military frontier. The Ojos de los Alamos Station (1858-1861) was a stage station in Otero County, New Mexico along the border with Texas located between the Guadalupe Mountains to the east and El Paso to the west. For a detailed history on this station and the Butterfield Overland Trail refer to Conkling and Conkling (1947), Ely (2016), and Ormsby (2007).

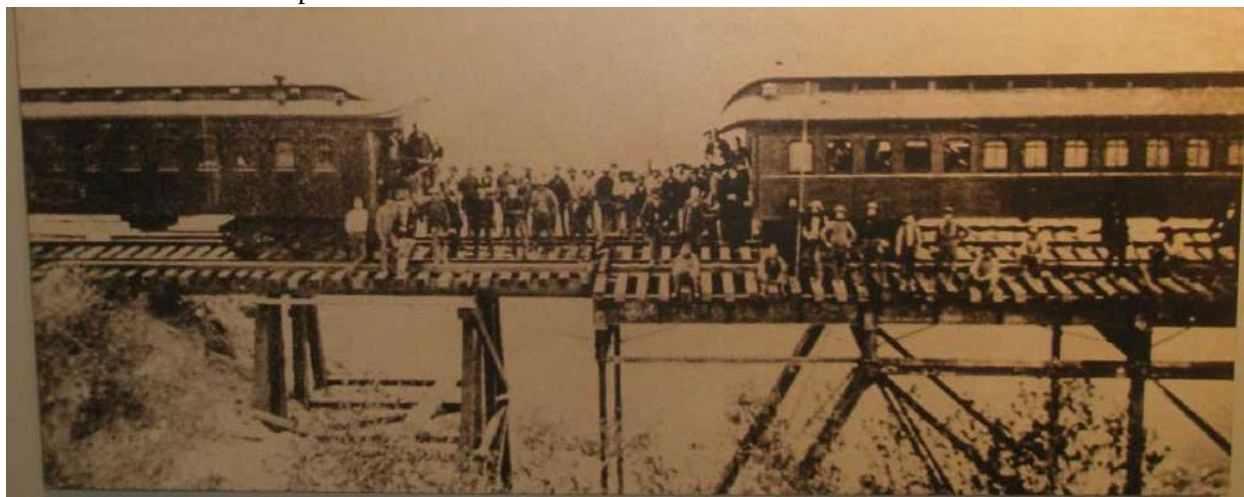


Figure 2: 1883 Silver Spike Ceremony joining the Southern Transcontinental Railroad built by the Southern Pacific and G.H.&S.A. Location near Langtry, Texas (Rich 2010).



Figure 3: 1892 Pecos High Bridge (aka Pecos Viaduct). Highest in U.S. and third highest bridge in the world at the time (Rich 2010).

ARCHEOLOGICAL GRAFFITI

The significance of graffiti can certainly be based on the style, form, and sociological aspects as modern examples support such as the locally significant “Be Someone” graffiti (created ca. 2012) on a railroad bridge near downtown Houston (Figure 4). The informational value of historic graffiti can be immense regarding groups, individuals, and more when the historic record and archeological record are utilized.

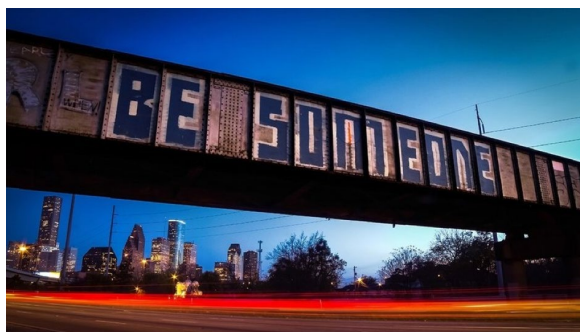


Figure 4: “Be Someone” graffiti on a rail bridge north of downtown Houston. Photo courtesy of the Bob Bullock Texas State History Museum, 2024.

Archeological studies on graffiti are not common but exist from around the world. Most available graffiti studies are on artistic style, form, or sociological aspects and not historical significance or chronologies in an archeological sense (Lovata and Olton 2015). Probably the most well-known graffiti in the archeological field consists of ancient Greek and Roman graffiti found at various ancient

Egyptian sites (Lovata and Olton 2015). In the New World archeological studies on graffiti are found on precontact contexts from Mesoamerica (McCurdy 2016; McCurdy et al. 2018; Nowakowski 2023) and South America (Roberts 2024). In Texas the archeological record on graffiti is scarce and generally limited to archeological site records (THC 2024) which tend to only mention the presence of graffiti as a minor comment. Archeological reports in Texas which mention graffiti mirror archeological site forms in that graffiti is typically a minor part of the overall report (Mezzel and Kilby 2024). The most thorough archeological graffiti study in Texas is focused on historic-age occurrences from numerous archeological sites within the Hueco Tanks State Park & Historic Site (Ribas-Normand 2017). The current contribution is intended to help demonstrate that graffiti in an archeological context can be a valuable research aspect, using historic railroad graffiti, which is generally lacking from the site and report record within the Texas region.

METHODS

The study area focused on the abandoned portion of the Southern Transcontinental Railroad within Val Verde County, Texas, and one additional resource example from Otero County, New Mexico. Within the study area, sites were selected if an archeological site record (NPS 1992; THC 2024) documented railroad graffiti at a site and contained a known date or estimated age. Historic railroad maps and other map sources were reviewed to identify the approximate locations of the abandoned railroad grade and associated features like abandoned train stations. These locations were compared to the archeological site locations with historic railroad graffiti and known or estimated ages to aid in determination affiliation between laborers and passengers.

Using the archeological record and imagery for sites, ages were identified or estimated for each site in the study area. The setting for

each site is recorded on the archeological site forms. Freehand drawing the painting versus the use of stencils was estimated from imagery and discussions with researchers familiar with some sites in the study area.

Imagery enhancement was applied to certain historic railroad graffiti images to enhance the image and provide better clarity on the graffiti not visible within the original image. The program used for this study is called DStretch (Harman 2024). This digital imaging tool was created to use on rock art and has found wide application across the field of archeology through use on enhancing soil profiles, plan views, archeological feature interpretation, historic structures, and more. Each image enhances differently using DStretch and a series of hues, contrasts, and other program attributes allow the user to identify the most suitable enhanced settings for each image.

RESULTS

The Val Verde County graffiti examples are associated with the Southern Transcontinental Railroad based on year and proximity to the abandoned railroad. Most of these examples were recorded by archeologists as a minor addition to archeological site records associated with rock shelters containing precontact rock art and other evidence of precontact occupation. Table 1 lists the sites discussed within this study and includes dates associated with railroad labor (1881-1883 & 1892) and railroad passengers (1884-1891) for Val Verde County. The table also lists comments which include some observations about freehand and stenciled graffiti which pertains to the drawn (e.g. charcoal) and painted graffiti. Interestingly the stenciled graffiti appears associated with both railroad labor (41VV1484; Figure 5) and railroad passengers (41VV73; Figure 1). It appears that the Val Verde County railroad graffiti is mostly associated with railroad labor, which makes sense as the passengers would have been concentrated near stops like train stations (e.g. near 41VV187). Within this study the sites nearest train stations are 41VV187

(located at Painted Cave Station) and 41VV1484 (250 meters from Painted Cave Station). The remaining Val Verde County sites in this study are over one kilometer from the nearest train station. The majority of the Val Verde County graffiti in this study being associated with labor is also further supported by the historic record of up to 10,000 laborers who spent an extended time across the Lower Pecos Canyonlands due to the labor intensive requirements of constructing the railroad through this region.



Figure 5: The Paint Gang site (41VV1484) showing graffiti that is likely associated with railroad labor (National Park Service [NPS] 1992).

The distinction between labor and passenger graffiti, while recognized as requiring further research and testing, and is largely based on the presence/absence of years to help identify association with periods of construction such as 1881-1883 and 1892 (labor years). Versus periods without construction, or at least without substantial construction like 1884-1891 (passenger years). With recognition that there would be overlap for the years 1883, the year the original construction completed with the start of passenger operations, and 1892, the year the Pecos High Bridge was constructed with passenger operations resuming along a different route. The Val Verde County sites in this study are all located along the original route except site 41VV134 which is located at the 1892 Pecos High Bridge.

Table 1: Archeological Sites Referenced in this Article
(Margaret Berrier, personal communication 2024; NPS 1992; THC 2024).

Trinomial (Site Name)	Age	Association	Setting	Comments
41VV7 (Fate Bell Shelter)	1882 & 1884	Labor (1882) and Passenger (1884)	Rock shelter	1882 freehand, 1884 stenciled. Painted names and dates.
41VV98 (Crazy Horse Canyon Cave)	1881-1892	Unknown	Rock shelter	All freehand. Painted names, captions, and figures.
41VV134 (Kirkland's Pecos River #14)	1892	Labor	Rock shelter	At the Pecos High Bridge. Drawn (pencil). No further detail from site form.
41VV187 (Parida Cave)	1883-1892	Passenger	Rock shelter	At the Painted Cave Station. Freehand and stenciled. Painted names, dates, and locations.
41VV226 (Seminole #1)	1881-1883	Labor	Rock shelter	Associated with gunpowder magazine for tunnel construction. All freehand. Drawn (charcoal) and painted names, figures, and horse race time(?).
41VV1215 (Southern Transcontinental Railroad Grade)	1881-1883	Labor	Bridge abutments and rail tunnel	Carved into tunnel entrance and bridge abutments. Freehand. Painted name, date, figure, and initials.
41VV1389 (Helter Shelter)	1881-1884	Labor and Passenger	Rock shelter	Initials and date.
41VV1484 (The Paint Gang)	1882	Labor	Rock shelter	Possibly associated with railroad painters; 250 meters from Painted Cave Station. Stenciled. Painted names.
41VV1537 (Shot 'n' a Beer)	1882	Labor	Rock shelter	Vivid paint at some graffiti panels; freehand. Painted name, initials, and date. One panel might contain Chinese characters.
LA108976 (Alamo Springs Station)	1906	Unknown	Boulder	Carved. Date and figure.

The DStretch digital imaging tool was applied to some of the graffiti images to better determine the age and affiliation for these resources. Site 41VV98 (Figure 6) is used as a great example of how DStretch can enhance an image to show details that might not otherwise be visible within the graffiti writing and drawing. The use of this digital imaging tool assisted in determining the year associated with some of the graffiti sites (Figure 7; 41VV73).

Sites 41VV73, 41VV93, 41VV134, 41VV187, 41VV226, 41VV1389, 41VV1484, and 41VV1537 are all rock shelters that contain railroad related graffiti (NPS 1992; THC 2024). Site 41VV1215 (NPS 1992; THC 2024),

the abandoned Southern Transcontinental Railroad grade, contains railroad graffiti on various structures constructed for the railroad. This includes graffiti on Tunnel No. 2 (Figure 8), and graffiti on two separate bridge foundations (Mezzell and Kilby 2024; NPS 1992). Besides the year as an indicator of labor or passenger association, the type of site and proximity to passenger stations is another line of evidence to support this distinction. Site 41VV187 (Figure 9) is located where a rail station, called Painted Cave Station, was in use 1883-1892. The graffiti at site 41VV187 contains elements indicating that this was created by passengers from the use of a business name ("H.B. Rising's Curiosity Store") and location ("Chicago, Ill") that

further support this distinction. Note the graffiti at 41VV187 appears to be a mixture of freehand and stenciled graffiti, which

indicates that these styles may not help in distinguishing labor vs passenger graffiti.



Figure 6: Crazy Horse Canyon Cave (41VV98) graffiti example showing the benefit of applying DStretch (right image is YBK). Images obtained from the Shumla Archaeological Research and Education Center Archive.



Figure 7: Fate Bell Shelter (41VV73) graffiti showing how DStretch (top right is LDS and bottom right is YBK) enhances imagery including information such as associated dates. Images obtained from the Shumla Archaeological Research and Education Center Archive.

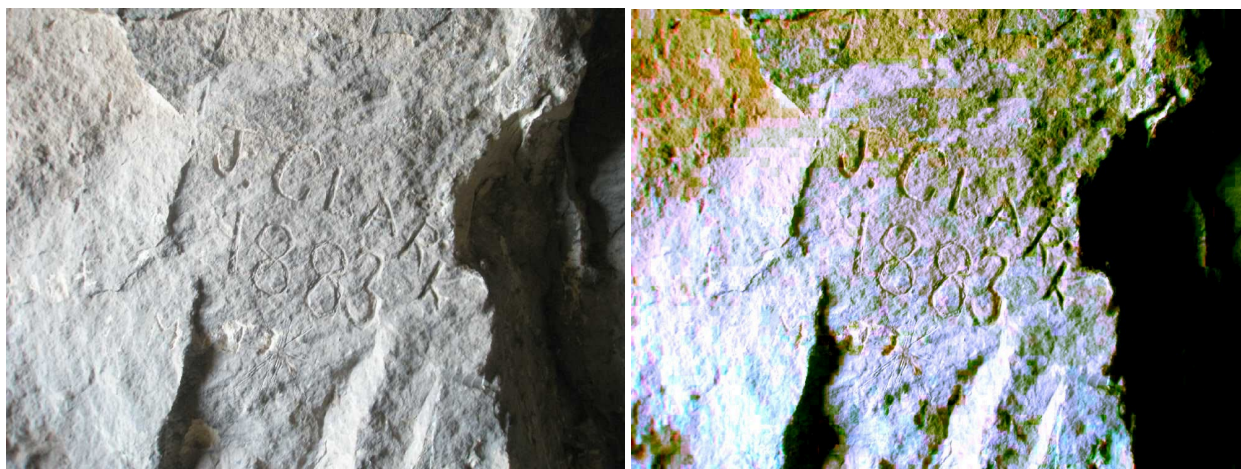


Figure 8: Southern Transcontinental Railroad Grade (41VV1215) graffiti example from Tunnel No. 2 (left from Rich 2010). Right image enhanced by the author via DStretch (YYE).



Figure 9: Parida Cave (41VV187) showing an excellent graffiti example attributed to historic railroad passengers who stopped at the nearby Painted Cave Station. Image obtained from the Shumla Archaeological Research and Education Center Archive and enhanced by the author via DStretch (YDT).

Another site example where the site's association with a railroad activity helps determine whether the graffiti is associated with labor or passenger is site 41VV226 (Figure 10). The archeological record associated with site 41VV226 includes the presence of a stacked limestone wall which enclosed a portion of this shelter. This limestone wall was built to utilize this site as a black powder magazine for the construction of the railroad. Black powder was used for the

blasting and construction of the tunnels and other areas along the 1881-1892 railroad line. The black powder magazine activity associated with site 41VV226 supports that railroad laborers would have occupied this rock shelter, therefore although a year was not clearly discernable, the graffiti at site 41VV226 was likely resultant from railroad labor. Finally, one more example of a labor-related site based on the year and associated railroad activity is site 41VV1537, which contains

vibrant graffiti associated with the year 1882 (Figure 11) adjacent to a bridge abutment and limestone quarry used for the railroad. Site 41VV1537 also appears to have Chinese characters drawn or painted onto the rock shelter wall recorded by the original archeological site recorders in 1993 (THC 2024); these characters were sketched by the original site recorders which this study was

not able to decipher. Thousands of Chinese laborers were involved in the construction of the Southern Transcontinental Railroad, reflected in the material remains of the archeological record and in the historical documents (Briggs 1974; Dolman 1995), it would not be surprising to find more graffiti evidence of Chinese laborers in Val Verde County.



Figure 10: Seminole #1 site (41VV226) with graffiti that is likely from railroad labor. Photogrammetry image obtained from the Shumla Archaeological Research and Education Center Archive and enhanced by the author via DStretch (YDT).



Figure 11: Shot 'n' a Beer site (41VV1537) with brilliant graffiti from railroad labor related to quarry and bridge activities (NPS 1992). Right image enhanced by the author via DStretch (YRD).

The final site example comes from Otero County, New Mexico, site LA108976 (Figure 12), which is located at Alamo Mountain near the location of the historic Ojos de los Alamos Station (1858-1861) associated with the Butterfield Overland Trail (Margaret Berrier personal communication 2024). The historic railroad graffiti from site LA108976 is fascinating and unique among the sites used within this study. The graffiti at site LA108976 shows a steam locomotive with what appear to be four rail cars behind. Discernable features include a tender (for fuel like coal), track, cab, the year 1906, a boiler, steam dome, sand

dome, chimney, wheels, and the cowcatcher on the front of the train. Because the various features drawn fit with the style and features found on trains around 1906, the year is accurate. While the example from Otero County, New Mexico, may not be directly associated with a historic railroad (the nearest rail line is near El Paso, 65 miles away), this is a great example of rail-related historic graffiti that can provide valuable information. Figure 13 is provided for comparison to show the features found on a 1906 Baldwin steam locomotive which was a common locomotive used at that time.

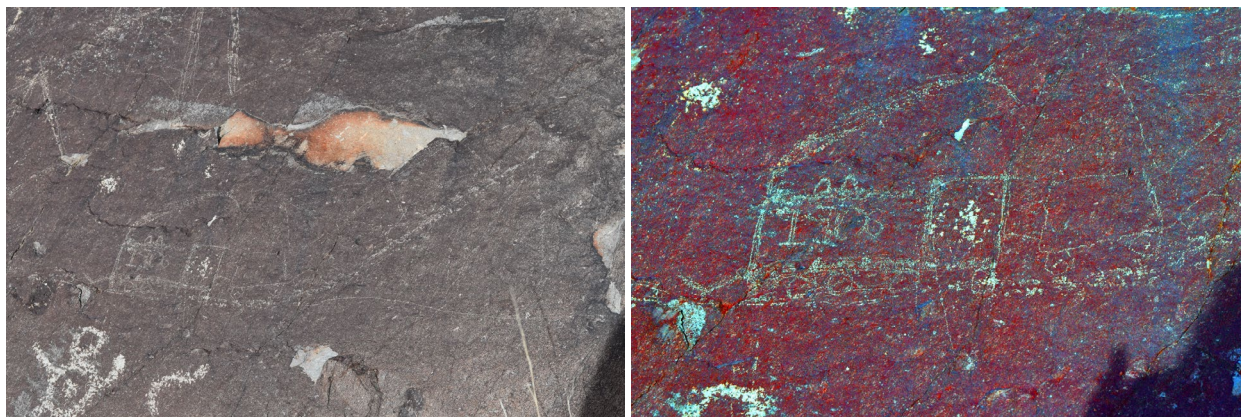


Figure 12: Ojos de los Alamos Station at Alamo Mountain (LA108976) showing the graffiti of a steam locomotive from 1906. Photos courtesy of Margaret Berrier. Right image enhanced by the author via DStretch (YRD).

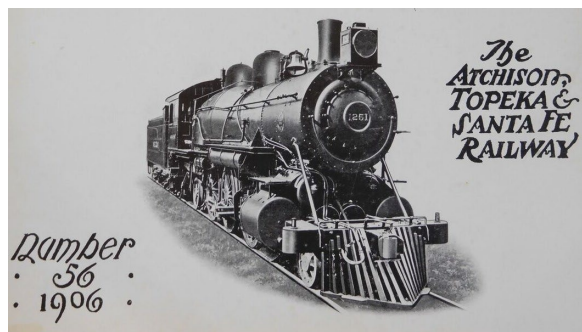


Figure 13: Example of common steam locomotive 1906 Baldwin (The Baldwin Locomotive Works 1962).

CONCLUSION

Reported here is an introduction on historic railroad graffiti as a resource to help provide valuable information on historic railroad and related activity. Sites associated with labor are distinguished by years and proximity to known railroad activity areas. Passenger sites are distinguished by years and proximity to known rail stations. The single site example from Otero County, New Mexico, appears to be an isolated occurrence of rail-related graffiti including a year and distinct features of steam locomotives common to that period. The application of DStretch is shown to enhance graffiti imagery and clarify valuable details like dates within certain sites. Future research incorporating in-depth archival research into individual names, groups, history of locations, and more would benefit and further this type of study. Future research

using various analytical tools like spatial analysis, pigment and carving analysis, detailed temporal analysis, and a larger geographic data set are recognized as needed and warranted for historic railroad graffiti. Additional analysis like photogrammetry and the application of detailed recording methods like The Shumla Method of Rock Art Documentation (Shumla Archaeological Research & Education Center 2024) would also likely benefit this research avenue. This report is provided for researchers to consider this resource in future studies including the potential significance of historic railroad graffiti.

ACKNOWLEDGMENTS

The research provided here could not have been possible without the assistance of many individuals and organizations. First and foremost, I must thank Jack Johnson of the Amistad National Recreation Area – National Park Service. Without Jack's kind and always helpful assistance I would not have had the bulk of the data used for this study. Thanks, Jack, for everything. Special thanks to the staff (former and current) at the Shumla Archaeological Research & Education Center (Shumla). Wow to the wow on Shumla's excellent imagery, which was kindly allowed for this article. Thank you to Margaret Berrier (aka Marglyph) for providing the image and details on site LA108976 in Otero County,

New Mexico. What an interesting site! Thanks to the Transportation Research Board's Committee on Historic and Archaeological Preservation in Transportation (AME60) for hosting the author and providing feedback during a presentation on this topic in July 2024. Thanks to the many individuals and organizations who provided references and access to files. Finally, thanks to all the folks who listened to pitiful graffiti rambles, circle spinning, and other confused zigzags when researching a topic like historic railroad graffiti without a real base or set of previous research questions to follow.

REFERENCES CITED

- The Baldwin Locomotive Works
1962 *The Baldwin Locomotive Works: The Atchison Topeka & Santa Fe Railway, Number 56, 1906.* The Baldwin Locomotive Works Press, Philadelphia.
- Briggs, Alton K.
1974 *The Archeology of 1882 Labor Camps on the Southern Pacific Railroad, Val Verde County, Texas.* Master's thesis, Department of Anthropology, University of Texas, Austin.
- Conkling, Roscoe P. and Margaret B. Conkling
1947 *The Butterfield Overland Mail 1857-1869: Its organization and operation over the Southern Route to 1861; subsequently over the Central Route to 1866; and under Wells Fargo and Company in 1869.* Volume III. The Arthur H. Clark Company, Glendale, California.
- Dolman, Wilson E.
1995 Appendix: The Railroad a Storyline for Seminole Canyon State Historical Park. In *41VV540: A Railroad Era Industrial Site in Seminole Canyon State Historical Park Val Verde County, Texas*, by Solveig A. Turpin, pp. 35-54. Texas Parks and Wildlife Department, Cultural Resource Program Report 95-1. Austin, Texas.
- Ely, Glen Sample
2016 *The Texas Frontier and the Butterfield Overland Mail, 1858-1861.* University of Oklahoma Press, Norman.
- Harman, Jon
2024 DStretch: Rock Art Digital Enhancement, DStretch is a plugin to ImageJ written by Jon Harman. <https://www.dstretch.com/>, accessed September 21, 2024.
- Lovata, Troy, and Elizabeth Olton (editors)
2015 *Understanding Graffiti: Multidisciplinary Studies from Prehistory to the Present.* Routledge Taylor & Francis Group, London and New York.
- McCurdy, Leah
2016 *Building Xunantunich: Public Building in an Ancient Maya Community.* PhD dissertation, Department of Anthropology, University of Texas, San Antonio.
- McCurdy, Leah, M. Kathryn Brown, and Neil Dixon
2018 Tagged Walls: The Discovery of Ancient Maya Graffiti at El Castillo, Xunantunich. *Research Reports in Belizean Archaeology* 15: 181-193.
- Mezzell, Madelyn and J. David Kilby
2024 *The Archaeology of the Southern Pacific Railroad in the Vicinity of Eagle Nest Canyon, Texas.* In *The Archaeology of Eagle Nest Canyon, Texas: Papers in Honor of Jack and Wilmoth Skiles*, edited by Stephen L. Black, J. David Kilby, and Amanda M. Castañeda, pp. 441-456. Special Volume #6. Journal of Texas Archeology and History, Austin.
- Nowakowski, Lauren
2023 *Methodological Approaches to Recording Ancient Maya Incised Graffiti: A Case Study from Structure A-5-2nd at Xunantunich.* Master's thesis, Department of Anthropology, University of Texas, San Antonio.
- National Park Service (NPS)
1992 *Amistad National Recreation Area: Archeological Site Data Forms on file at Amistad National Recreation Area, Del Rio, Texas.*
- Ormsby, Waterman L.
2007 *The Butterfield Overland Mail: Only Through Passenger on the First Westbound Stage.* Edited by Lyle H. Wright and Josephine M. Bynum. Huntington Library Press, California.
- Ribas-Normand, Sebastian
2017 *The Historic Inscriptions of Hueco Tanks. In Recent Research in Jornada Mogollon Archaeology: Proceedings from the 19th Jornada Mogollon Conference*, edited by George O. Maloof and Jennifer McCollough. Published by the El Paso Museum of Archaeology.
- Rich, John
2010 *Rio Grande River – Railroad Tunnel.* The Houston Canoe Club (blog), March 27.

- https://thcc.clubexpress.com/content.aspx?page_id=22&club_id=496051&module_id=233137, accessed July 9, 2024.
- Roberts, Victoria L.
2024 Unexpected Finds: A Study of Incised Designs found in a D-shaped Temple Complex at Huaca del Loro, Nasca, Peru. Paper presented at the May 2024 monthly meeting of the North Texas Archeological Society, Fort Worth.
- Shumla Archaeological Research & Education Center
2024 The Shumla Method of Rock Art Documentation.
<https://shumla.org/research/the-shumla-method/>, accessed September 21, 2024.
- Skiles, Jack
1996 *Judge Roy Bean Country*. Texas Tech University Press, Lubbock.
- Texas Historical Commission (THC)
2024 Texas Archeological Sites Atlas.
<https://atlas.thc.texas.gov/>, accessed July 9, 2024.

KNOW MORE HARRINGTON DAIRIES EARLY TWENTIETH CENTURY SITES AT DFW AIRPORT

Becky Shelton¹ and Cody S. Davis²

1 Texas Historical Commission

2 AR Consultants, Inc.

Between April of 2007 and February of 2008, AR Consultants, Inc. (ARC) conducted an intensive pedestrian survey of 1,210-acres on Dallas-Fort Worth International Airport (DFW) property. The survey areas included pipeline corridors, freshwater laterals, access roads, pad sites, and frac ponds for oil and gas development (Shelton et al. 2008).

When we first visualized a survey on the property of one of the largest airports in the United States (nearly 18,000-acres), we envisioned a cleared landscape and well-maintained vegetation that surrounded the runways and airport facilities. However, the areas of the property being considered for oil and gas development were well out of the way of the flight paths, the buried fuel lines, and security routes. For safety purposes, the new development was as far from the active portions of the airport as it could be, but still within the boundaries of the airport property. Consequently, we conducted our survey in the heavily wooded sections of the airport that were overgrown with dense tree cover, greenbrier and various other invasive plants. Despite the challenging vegetation and dense overgrowth, we were able to record and revisit eight prehistoric sites and fifteen historic sites, which included one historic cemetery. Within the boundaries of two of the historic sites, we recorded the remnants of two early 20th century craft dairy operations (Figure 1). The archeological remains included foundations of milking parlors, barns, and various other outbuildings and cattle pens associated with the daily milking operations. A synopsis of the historic dairy farms is provided herein; for details on the entire investigation see the full report (Shelton et al. 2008).

HISTORIC CONTEXT

Rural Grapevine History within Dallas-Fort Worth International Airport Property

Before development of the DFW Airport property began in 1969, the land between present day State Highway (SH) 114 and SH 183 was primarily agricultural and had been in continuous use since the mid- to late-19th century. A composite image of Sam Street's Map of Tarrant County (1893) and the Sam Street's Map of Dallas County, Texas (1900) shows owners of parcels of land with their associated transportation routes occupied at the turn of the century (Figure 2). In addition to the name of the landowners and house locations, the composite map shows the locations of Big and Little Bear Creeks, the Dallas-Tarrant County line, and the location of the Estelle Post Office (PO). Several of the parcels southeast of Grapevine had remained within the same families since the Peters Colony original land grants.

Families such as the Minters, the Estills, the Lipscombs, the Triggs, and the Borahs were early settlers in the Grapevine rural area (Figure 3). The families that helped develop the community and established residences and structures, many of these remnants are now documented as historic sites on the airport property. Some of these families intermarried and this created stronger ties within this rural farming community. Many of these families worked together, established churches, dedicated cemeteries, and left behind a rich history.

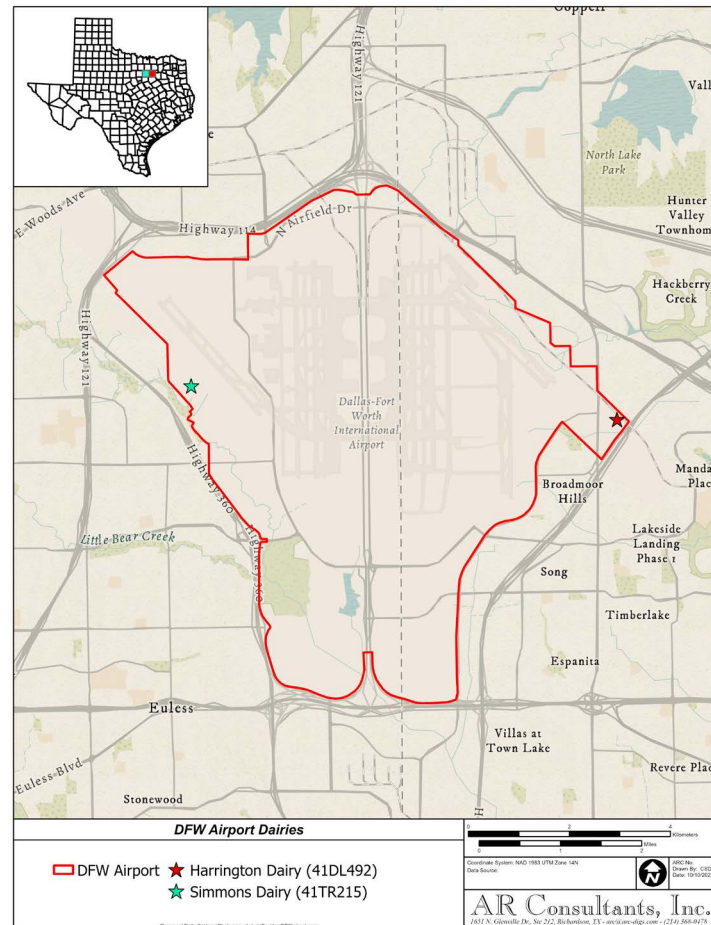


Figure1. Locations of Simmons and Harrington dairies in relation to DFW Airport.

The Borahs helped establish the community of Estelle, which was named after Jefferson Estill. The town was first settled in 1853 by Henry Burgoon, who was joined in 1855 by William (Lee) Borah Sr. who came from Bowling Green, Kentucky. Jefferson and his family came from Salem, Tennessee by wagon to Grapevine in 1855 (Young 2004:191). Burgoon and Borah, along with a few other families in the area, established Estelle Post Office in 1857 (Green 1995:6). Lee Borah also established a dairy on his property in 1857 (Rice 1989:50), and then a few years later joined a large group of men to fight in the Civil War (Rice 1989:19). The Estill family established a home and a farmstead, owned several different properties in this rural area, and were a prominent family at the turn of the century. The town of Estelle, originally Estill, was misspelled in Washington D.C. and

appears as “Estelle” on historic maps (Nall 2024). Estelle was originally part of a land grant given to J. M. Patterson by the commissioner of the Peters Colony in 1850 as recorded in Deed Volume M, pages 438 and 439 of the Dallas County Deed Records. According to Joseph Rice (1989:20), Estelle was situated northwest of Bear Creek and was a small farming and ranching community. Deed records show that the Borah family purchased several different nearby parcels of land and continuously farmed it until 1969 when the DFW Airport started to acquire the land.

With the understanding of the rich history of the region, specifically on DFW Airport property, we knew that there was a high potential for historic resources to be identified during survey and that additional research was needed before field investigations began.

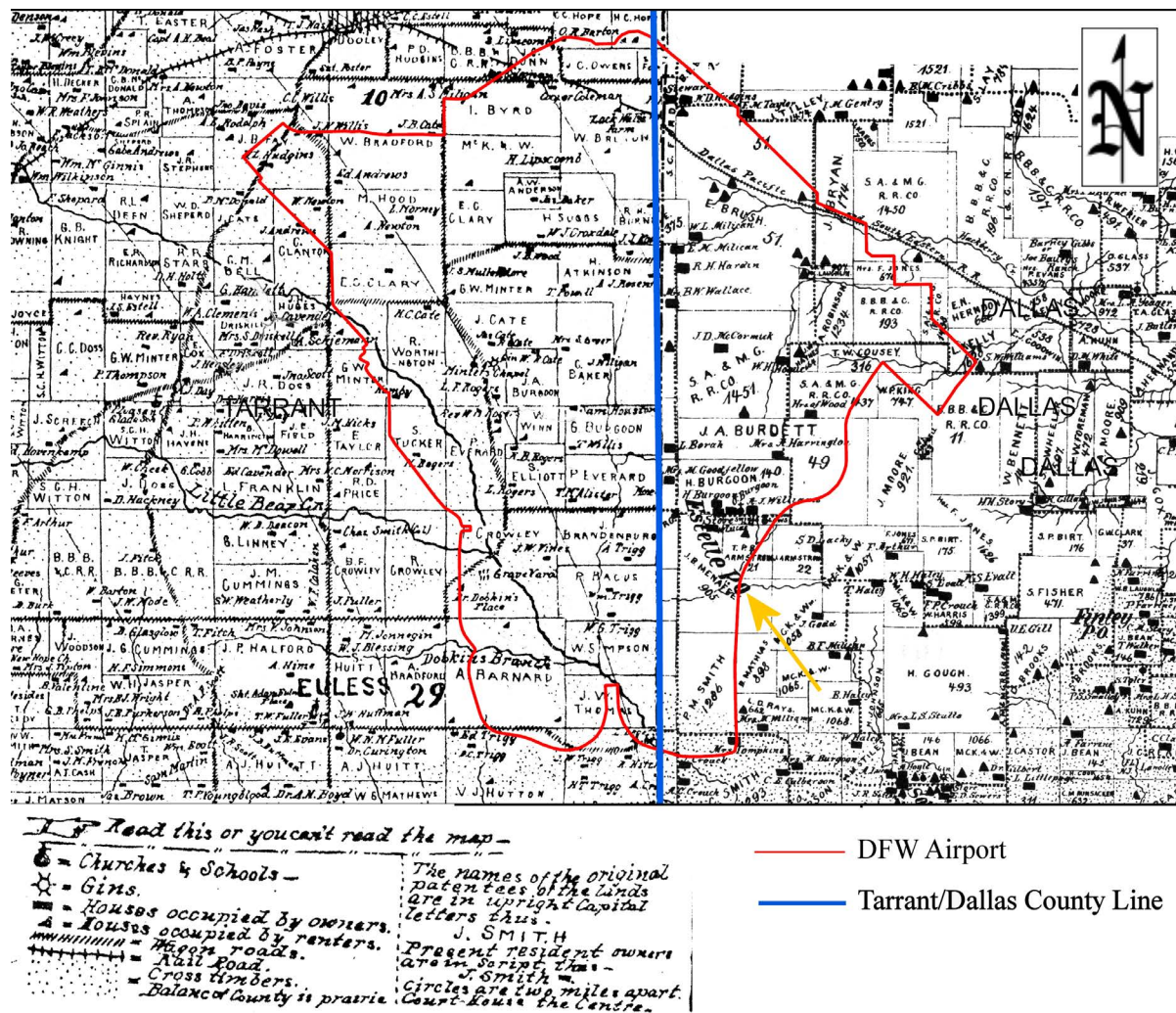


Figure 2. Combined image of the 1895 Sam Street's map of Tarrant County and the 1900 map of Dallas County with a yellow arrow showing the location of the Estelle Post Office (PO).

Simmons Dairy (41TR215)

Before the survey began, Stefan Hildebrand with DFW Airport conducted extensive historic map research and geospatial analysis to georeference the historic maps with the proposed oil and gas development on airport property. Hildebrand reported that several foundations were present in a proposed frack pond location for the project area on the western side of the airport (David Hennessey, personal communication 2007). Parcel maps from the 1960s indicated that the landowner in that portion of the project area, before airport ownership, was Hugh Simmons, who maintained a dairy on the property until 1964 (Young 2004). Earlier records showed that the

160-acre parcel, where the foundations were located, was originally purchased by Jefferson Estill in 1860s and he farmed it into the early 20th century (Klein et al. 1992:7). County records show that in 1911 the 160 acres was sold by C.C. Estill, Ellen Estill, J.S. Lipscomb, and W.E. Lipscomb (all descendants of the original Grapevine settlers) to an F.S. Brownlee (Tarrant County Deeds Book 402:504-505). Later, the county records show that the same 160 acres, which included portions of the E.C. Clary, R. Worthington, and W. Minter Surveys, was owned by A.C. Rick from 1911 to 1918, when it was then purchased by Clarence Cockrell (Tarrant County Deeds Book 580:262).

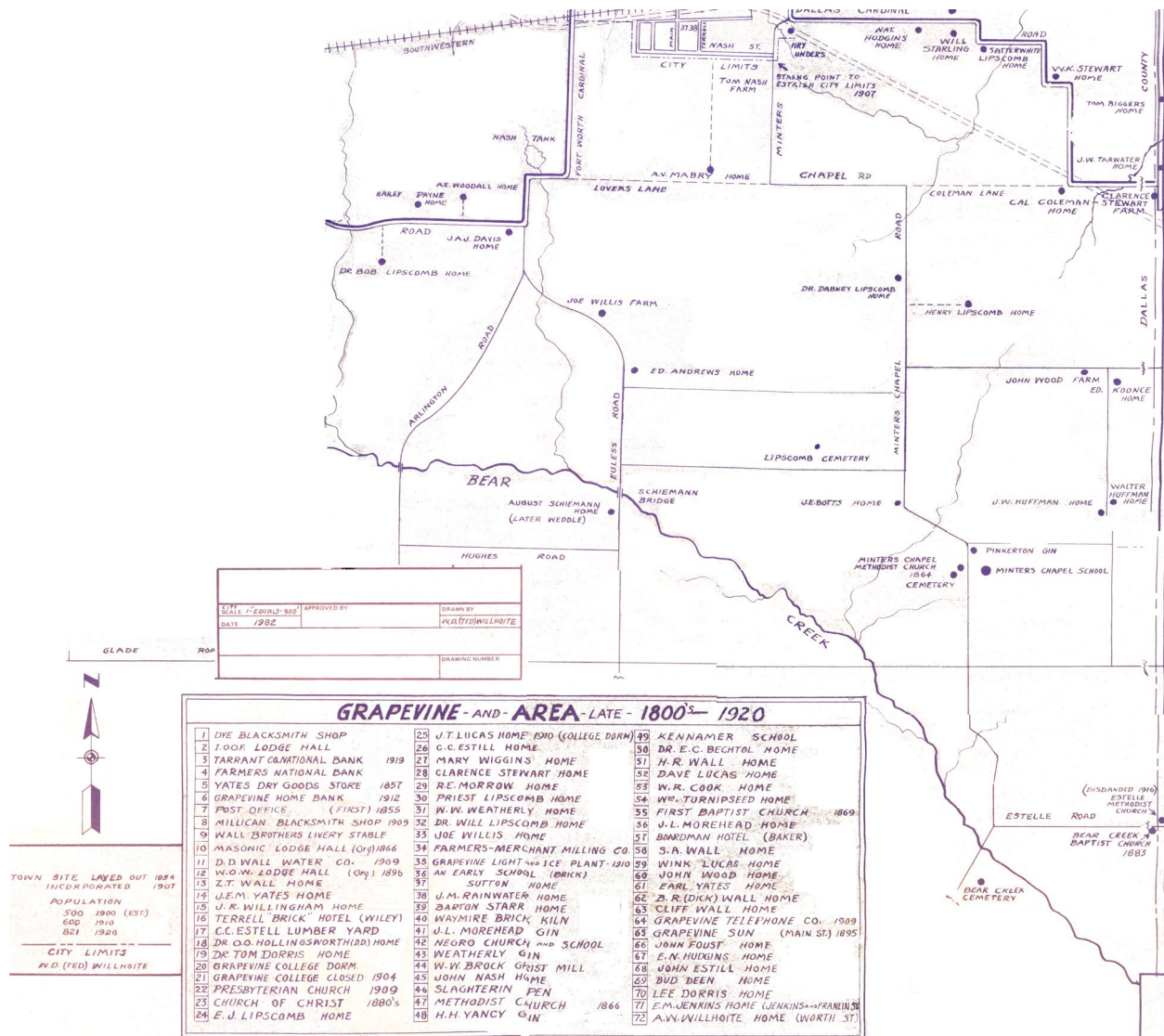


Figure 3. A section of the 1920s Grapevine Road Map in Tarrant County shows Bear Creek and the western portion of DFW property.

Cockrell owned the land from 1918 to 1946 (Tarrant County Deeds book 580:262). The tax assessor abstract lists seven buildings which were constructed between 1910 and 1933: three barns, a shed, two silos, and a cottage (Tarrant County Tax Assessor Abstract 323). Records on file with the Grapevine Historical Society confirm that the buildings were used for the operation of a dairy (2005:148).

In 1947, Hugh Simmons and Mary Virginia Simmons purchased the 160 acres from the Cockrell estate and continued the dairy operations at that location (Tarrant County

Deeds Book 1967:349; Young 2004:340). The Simmons family operated the dairy from 1947 to 1964 (Young 2004:340). In 1964, they sold all the milking cows and raised cattle as livestock (Klien et al. 1992:21). Their property was condemned in 1969 and eventually purchased in 1972 by the City of Fort Worth for airport development (Tarrant County Deeds Book 5350:677).

Since the acquisition of the land by DFW in the 1970s, most of the superstructures of all buildings were removed, leaving only the foundations and other structural debris behind. Despite the information provided

from the archival records, our initial surveys encountered very few visible remains of the dairy structures. However, Alan Skinner was determined to explore the historic dairy complex thoroughly, and over a series of field visits, he brought in chainsaws, string trimmers, and other landscaping equipment to clear the dense vegetation from the foundations that we had initially identified. During ARC's investigations, twelve features

(A-L) associated with the dairy were recorded (Figure 4). Features A-I were the foundations and concrete pads associated with the dairy complex. Feature L was a foundation of a tenant house located near the dairy. Despite intensive shovel testing around the foundations, limited cultural material was recovered and was primarily concentrated around the foundations or on the surface of the foundations.

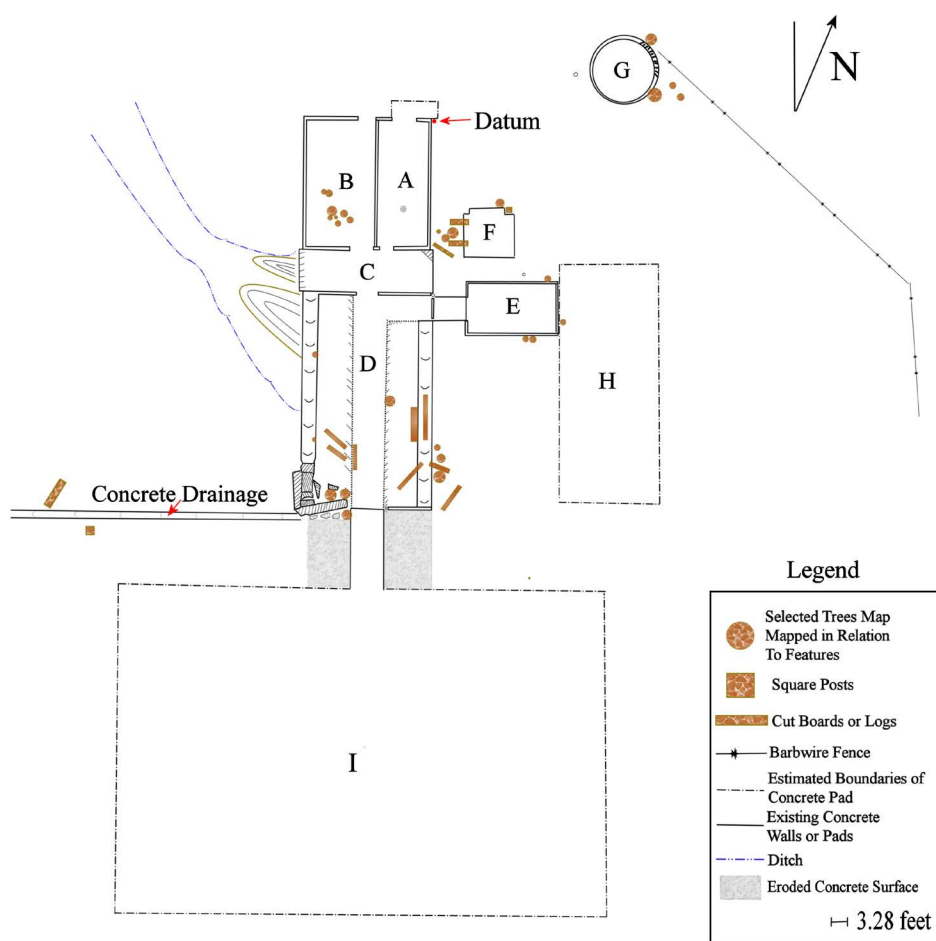


Figure 4. Plan view map of Simmons Dairy complex. Letters A – I designate dairy complex features described in the text.

Features A and B were poured concrete foundations of two rooms that shared a central wall (Figure 5). The floor sloped gently downwards to a metal drain. The smaller, connected room (Feature A) was likely the washing room for equipment such as the churns and pails, as it had a tear-drop shaped

erosion pattern from the north doorway that widened toward the drain (Walston 1944:28). At the northeast corner outside the wall of Feature A there was a scatter of wire, bent metal rods, a metal pipe, several two-by-four boards and a blue and white metal enamel pail.

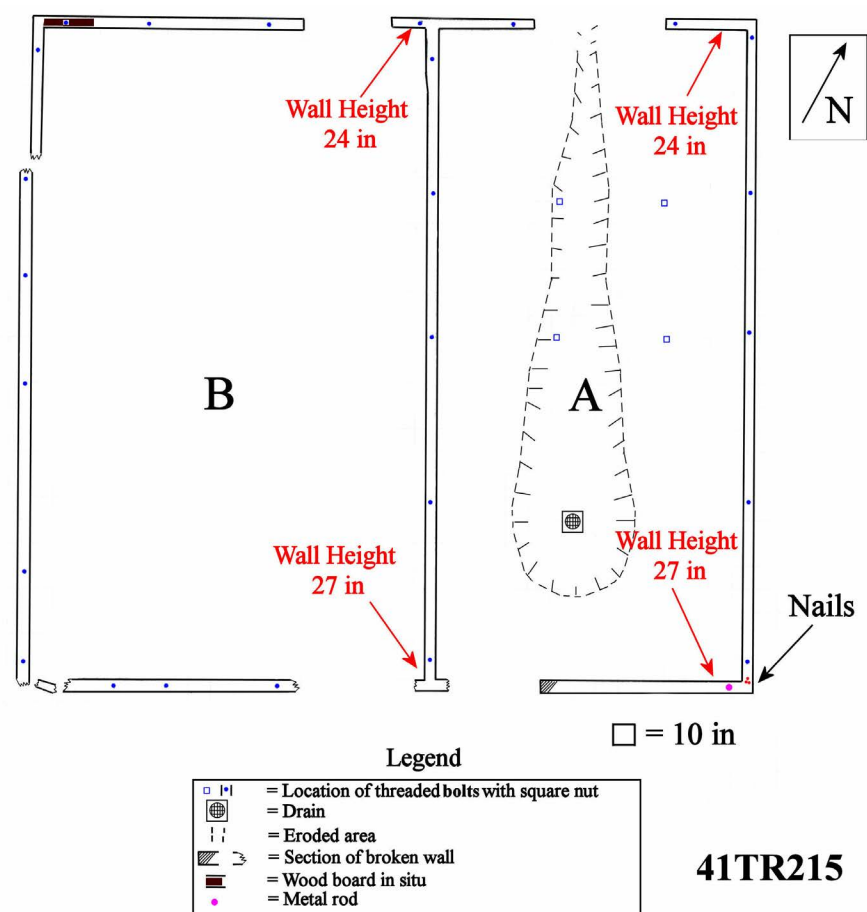


Figure 5. Plan view of Features A and B at Simmons Dairy.

Features C and D were assigned to the foundation and associated connective walkway of the milking parlor (Figure 6). Without the extensive vegetation clearing that Alan had conducted, the detailed features of the milking parlor would not have been exposed. Feature D had three entries/exits and connected to room features A and B by a concrete pad (Feature C). Two parallel feed troughs lined the exterior walls. Troughs typically have deep channels in the center to hold the feed (Harper 2001:12), but the ones at Simmons had been filled with concrete. The parlor floor (Feature D) was gently sloped to facilitate cleaning (Figure 7). Good drainage was essential to keeping the milking parlors clean (Harper 2001:260). The floor in front of the feeding troughs was recessed and sloped downward to the center walkway, which was elevated to keep the pathway clean from waste. Artifacts on the surface of the milking

parlor, and adjacent to the foundation were a set of fence menders, a circular metal ring, wire nails, weathered cut boards that had barb or square cut nails, and round cut logs with hinges. In addition, there was a heavy concentration of broken fiberglass wall and ceiling panels over the floor. To the exterior of the features, a concrete drain channel ran over 60 ft to the west of the milking parlor and widened toward the end of the channel. At the end, there were broken sections of concrete pipe.

Feature E was a concrete foundation with coarse aggregate located to the northeast of the milking parlor. There was a dense scatter of clear window glass on the floor and outside the entryway, and there were wire nails and green and brown glass shards on the floor. It was most likely the foundation of a storage building.

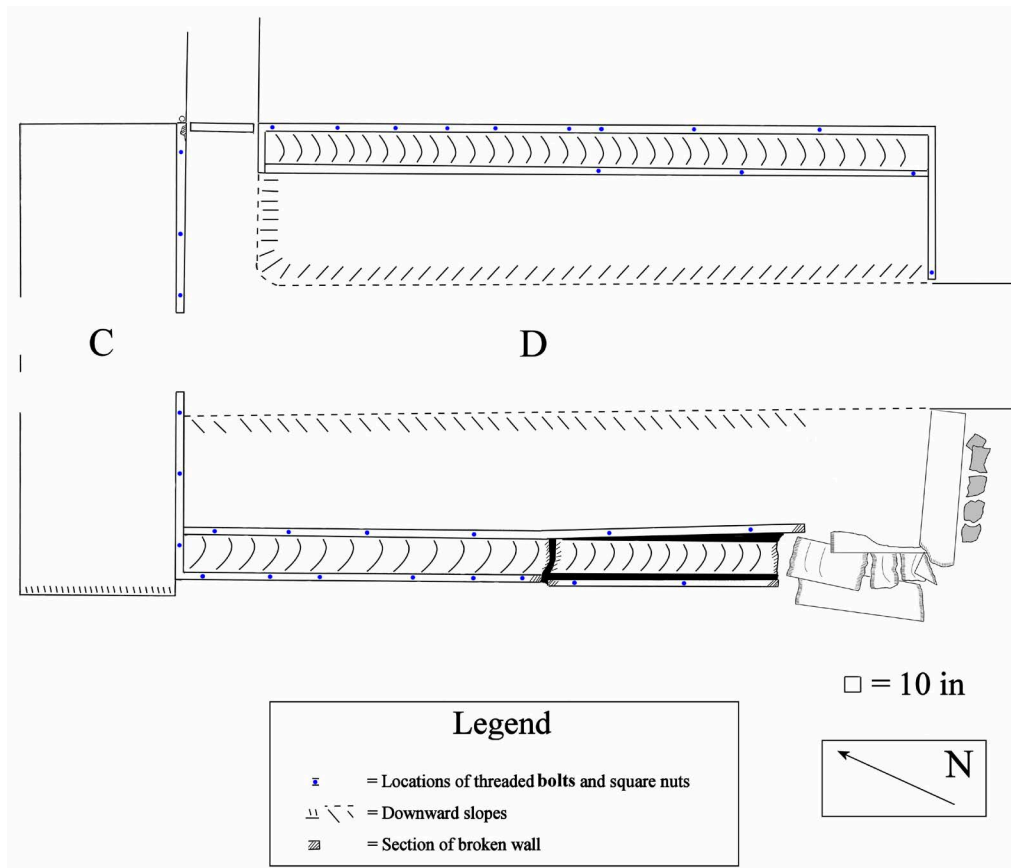


Figure 6. Plan view of the milking parlor at Simmons Dairy.

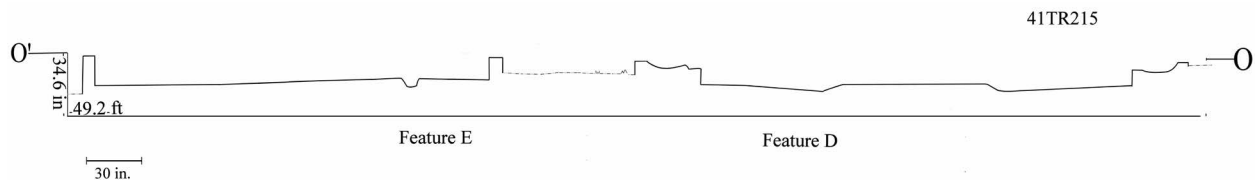


Figure 7. Profile view of the Simmons Dairy milking parlor.

Feature F was a concrete pad to the north of Feature E. There are four parallel impressions in the concrete with several bolts in the concrete, which was evidence that a large piece of machinery was once mounted to the floor.

Approximately 10 meters northeast of Feature A was Feature G, a round silo foundation. The floor and the interior walls appear to have been resurfaced with concrete and tar paper. Silos were sometimes lined with tar paper, or something similar, to prevent leaking of the silage and to keep the grain from drying out

(Harper 2001:151-2). Artifacts on the foundation included a round decorative pearlescent glass lid and green, clear, and brown glass shards.

Additional concrete pads, Features H and I, were located near the milking parlor. These foundations were overgrown with vegetation and identified with the use of a metal rod as a probe. Feature H is east-southeast of Feature F and had large aggregate concrete and was heavily eroded. Feature I is south of milking parlor and is connected to it by a concrete

sidewalk. This pad may have been the foundation of a holding area for the cows.

Feature L, 50 meters to the west, was a foundation to a tenant house associated with the dairy, which correlates to a structure identified on the 1959 USGS map in the study area. There were concrete lined septic tanks to the north, and a scatter of Ferris bricks was also nearby. Other cultural material nearby included a pile of four-by-four fence posts and metal pipes.

DISCUSSION OF THE SIMMONS DAIRY

Records show that the Simmons Dairy operated from 1947 to 1964, then from 1964 to 1969 livestock were maintained on the property. The size of the dairy complex, specifically the milking parlor, suggests that the Simmons Dairy was a small craft farm (Harper 2001) that maintained approximately 50 or fewer milk cattle during the dairy operations. Craft farms with smaller herds of milking cows are generally 160 acres (Harper 2001:88), and that acreage correlates with the parcel Hugh Simmons had for the dairy. Since the super-structures of the buildings were no longer present, the primary purpose of the survey was to identify the remains of the dairy complex, as well as the extent of the features associated with the dairy operations.

Harrington Dairy (41DL492)

Archival research was performed at the Dallas County Courthouse and the Irving Archives, located at the Irving Public Library. The archival research included a review of historic maps of the area, in addition to books and written family histories pertaining to the local history of the town of Estelle. This research determined that the construction of the Harrington Dairy occurred during the early 20th century. An interview with Ryan W. Harrington's granddaughter Jamie Harrington Appleton was conducted after the fieldwork was completed. Appleton provided first-hand details of the history of the dairy. The Harrington families were prominent

landowners and an integral part of the Estelle community from the late-19th century into the late-20th century (Irving Genealogical Society 1996; Stanton 2003:10).

The Harrington Dairy is located on the eastern side of DFW Airport, on a portion of the W.P. King Survey, Abstract 745, which encompasses a 320-acre parcel. This land is east of the 660-acre tract owned by the senior Bryant Harrington. Within Abstract 745, 146 acres were purchased by Ryan Washington (R.W.) Harrington (son of Ryan Harrington) in 1910 (Dallas County Deeds Book 541:10). The previous owner, S. A. Woods, had purchased a total of 291 acres, which included the 146-acre Harrington parcel, from John Murphy in 1881 (Dallas County Deeds Book 52:193).

Soon after R.W. Harrington purchased the land, Mary Harrington Minor, granddaughter, noted that he moved his family from Pleasant Glade to the new farm in 1911 and hauled the wood for the "house, buggy shed, smoke house, and cow shed in a wagon" from Grapevine in December (Young 2004:219). R.W. Harrington was married to Lulu Emaline Glasgow and they had four children: William Oran, Ryan Dorris, T. Jeff, and Mary Mavis. R.W. Harrington ran the farm and the dairy until his death in 1934. Portions of the property were purchased by Myrtle Harrington and Ryan W.'s son William Oran Harrington in 1964 and 1966 respectively (Dallas County Deeds Books 289:1083; 873:167). William Oran took over the operation of the dairy after his father passed away (Jamie Harrington Appleton, personal communication 2008). The property was bought for the development of DFW Airport in 1972 (Dallas County Deeds Books 72043:847).

As with Simmons Dairy, if it had not been for the extensive effort of Alan and his ability to hand clear vegetation and overgrowth from these sites, we would have likely had a much different picture. The primary area was a foundation (Fdn. 1), which was the milking

parlor. It appears that portions of the slab were poured at different times based on variations in the concrete (Figure 8). The floors, the side curbs holding the remains of bois d'arc and cedar posts, the elevated walkway, and the drain system are shown in Figure 9. The concrete included large, varied aggregate of local gravels such as sandstone and quartzite and is consistent with the early 20th century concrete recorded at the Simmons Dairy (41TR215) on the western side of DFW airport property. The coarse, large aggregate prevented the cows from slipping on the sometimes wet concrete floors (Blake Boyd, personal communication 2008). Cedar and bois d'arc posts lined the exterior boundaries

of the parlor, and multiple cedar posts remain standing (Figures 10 and 11). The milking parlor was divided into multiple areas (A-I) some of which were once closed in. On the eastern side of the parlor there are three small rooms (A-C). Room A may have functioned as a storage room, while Room B appeared to be a hallway from the east into the parlor, and Room C contained a drain in the center. On the south side of Room C were what appear to be the remains of a garage or a loading area. A severely corroded 1970 Texas license plate along with glass bottles, bricks, an electrical cover, wire trays, metal cans, wire nails, and wooden planks littered the surfaces of these rooms.

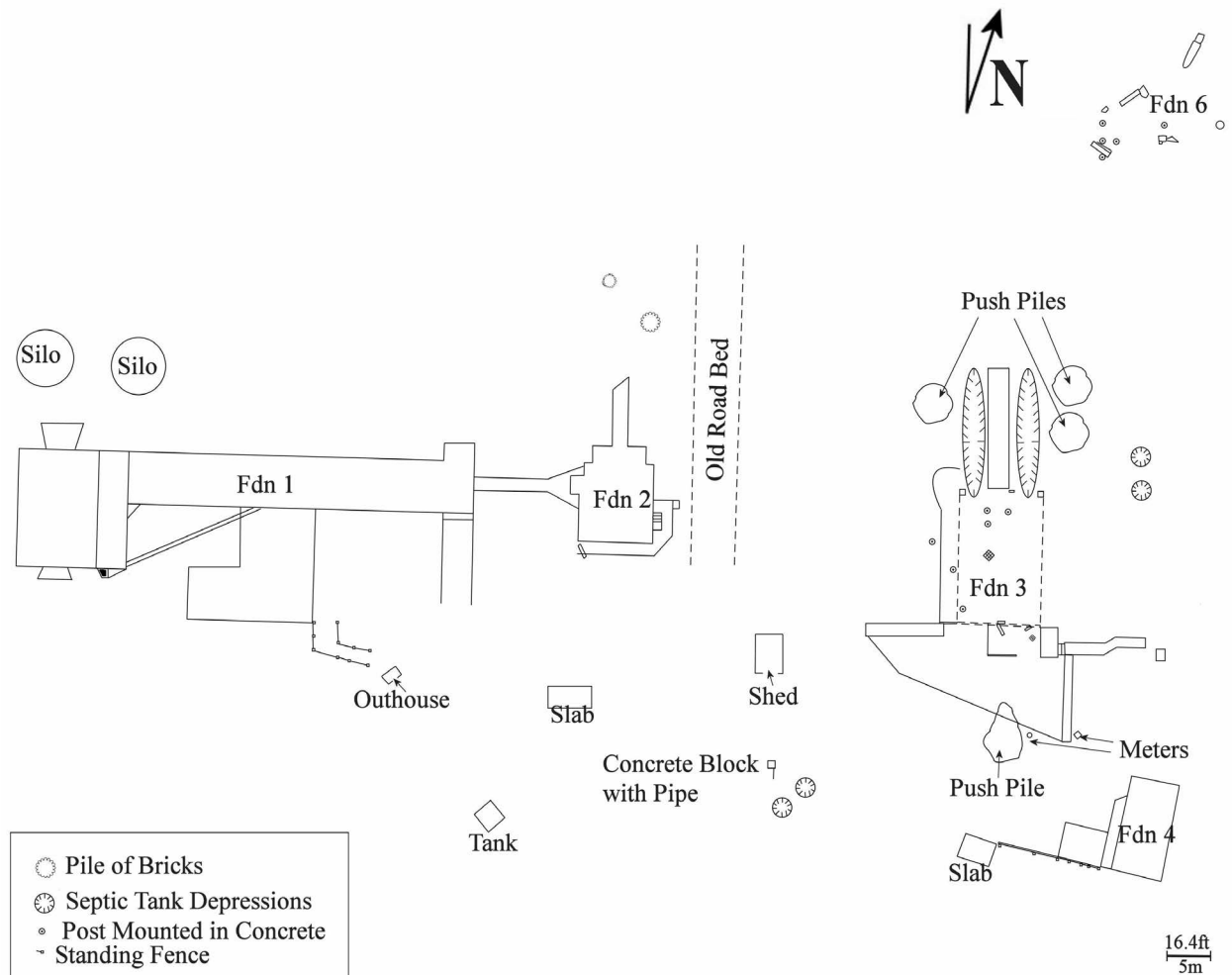


Figure 8. Plan view map of Harrington Dairy complex. Foundations (Fdn) and designated dairy complex features described in the text.

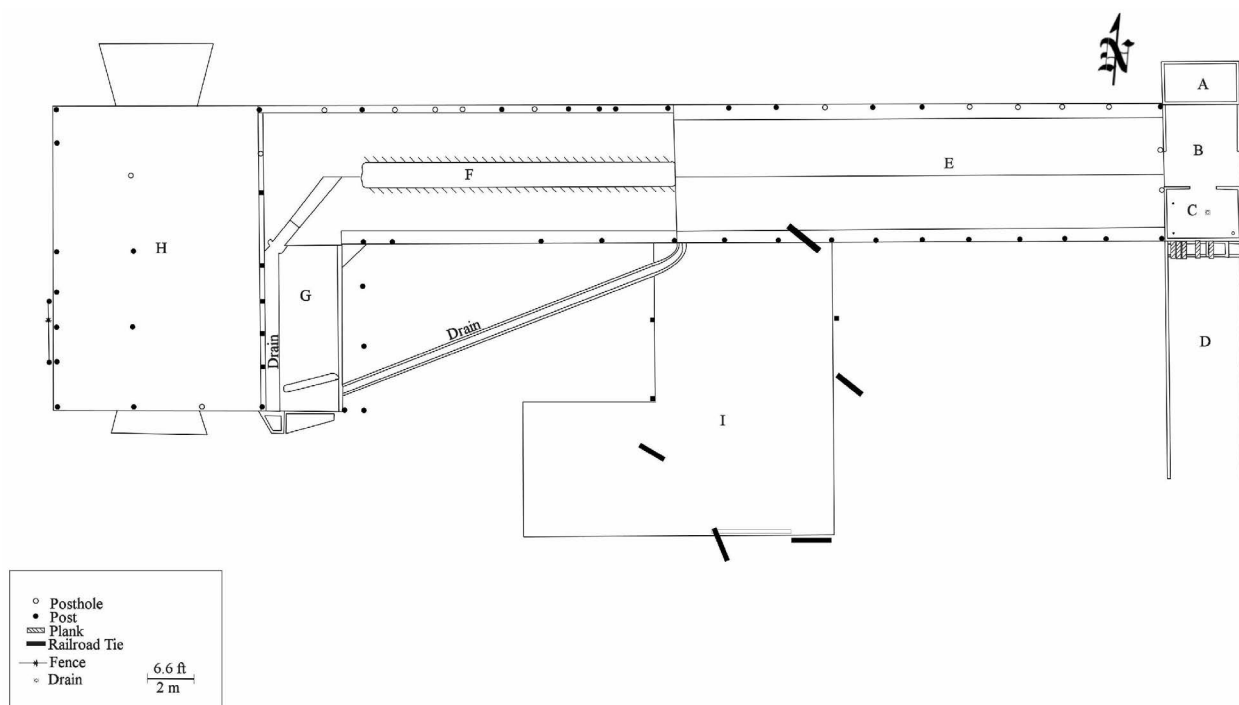


Figure 9. Plan view of the milking parlor at Harrington Dairy.



Figure 10. Milking parlor, view facing west from rooms A and B. Pour line of slabs is visible in center of foundation, while standing cedar post are seen in the background.



Figure 11. Milking parlor, view facing east. The elevated walkway is seen in the center of the foundation, and the curb that held the post is seen to the left.

To the west, the main room of the parlor (Areas E and F) is evenly divided, with the elevated walkway for the cattle in Area F. Cedar posts on the north and south side of Area E appear to have supported gates, as the remains of hinges were on several of the posts. Feeding troughs or bins most likely lined the north and south walls, and there is evidence of dividing posts having been sunk into the concrete along the north and south walls. The concrete slab slopes gently east to west, and Area G of the parlor contained a sunken drain which led to a concrete trap on the south end of the walkway. A secondary, elevated drain traveled from the south entry gate of Area E and connected to the south end of the walkway (Area G). To the west was an elevated concrete slab (Area H), which contained sunken bois d'arc posts. This area was a hay

barn. Two polygon slabs were at the north and south ends, which are unusual shapes for access walkways. To the south of the central area of the parlor was a fenced in concrete slab (Area I) which had multiple railway ties and cedar posts still standing

Two collapsed silos were five meters to the northwest of the parlor. The silos were constructed of preformed, concrete blocks once bound with large steel bands. To the south of the parlor was the standing remains of a wooden "chute" which was most likely used to corral the dairy cattle to or from the parlor. Just south of this chute is a standing outhouse. The board and batten outhouse was constructed with wire nails and had a pitched sheet metal roof, a concrete slab floor, and steel pipe for ventilation that ran from floor to ceiling inside the outhouse. The concrete floor

had the remains of tar paper lining, and below the surface there were the remains of a broken seat. To the right of the collapsed concrete basin, calculations were written on the wood plank walls.

To the east of the parlor, connected by a concrete walkway, was the foundation of a tenant house (Fdn. 2). The remains of a linoleum tile floor, bathtub porcelain, bricks stamped with "Whiteselle Cherry Reds Corsicana," and the remnants of a metal trellis on the west entry near the sidewalk was all the cultural material that remained and is consistent with a residence. Lead and copper pipes were in the southwest corner of the slab and a concrete border was on the south side of the foundation.

Further east of Fdn. 2 were three additional foundations (Fdn. 3, 4 and 6). The structural evidence was limited, and it was through the interview with Jamie Harrington Appleton that the types of structures that once stood here were identified. Foundation 3 is the foundation to the Harrington family house and had large aggregate in the concrete like that in the foundation of the milking parlor. Appleton recalls the house as being a two-story clapboard house with seven bedrooms. Appleton also recalls that the house may have been constructed as early as 1903, which would have been when her great-uncle S. A. Wood owned the property. Her grandmother, Lulu Harrington, lived in this house until the 1970s when the airport purchased the property and relocated the house further southeast to another parcel owned by the Harringtons (Jamie Harrington Appleton, personal communication 2008). Besides the partial foundation concrete borders, there was a base to a brick chimney, sheet metal, metal conduit, metal pipes, and insulation on the surface. Additional artifacts on the surface included brown glass bottles and several types of bricks stamped "Whiteselle Cherry Reds Corsicana," "Globe," or with a star. These brands of bricks were manufactured in the 20th century (Gurcke 1989). Concrete borders

surrounded the south and west side of the foundation, and these were possibly outlined beds or gardens.

A cellar was once located south of the main house in the yard (Jamie Harrington Appleton, personal communication 2008). No evidence of the cellar was located during the survey, and it was most likely destroyed by bulldozing that occurred in the 1970s. Connected by a walkway to the south of Fdn. 3 was the foundation to a 3-4 car garage (Fdn. 4). The overall dimensions of the slab were 40 ft 4 in by 20 ft. The southern boundary was bordered with a barbed wire fence with a once gated opening.

Northeast of Fdn. 3 were several upturned concrete slabs with bricks still attached. In addition, there were five bois d'arc posts sunk into concrete, and a concrete-lined septic tank. This is all that remained of the tenant house (Fdn. 6) that once stood at this location.

Between Fdn. 2 and 3 stood a board and batten wooden shed. Wire nails were used in the construction of the shed, and the roof shingles were painted green at one time. Wooden shelves lined the interior of the shed and the floor was a concrete slab. No door remained and there were no windows. Downslope to the south of the shed the ground was littered with modern trash, sheet metal, metal conduit, metal cans, carpet, metal pipes, plastic 5-gallon paint buckets, ceramic tiles, clear and brown glass bottles and jars, bricks, baling wire, and cinderblocks. A square concrete block with electrical housing and multiple pipes was also to the south of the shed, as well as a septic tank.

To the south of the parlor were the remains of what Appleton identified as the location of the grain storage barn. The remains of this barn included eight rows of bois d'arc posts sunk into concrete bases and scattered sheet metal. The floor was not solid but appears to have been elevated to keep material such as hay or feed dry.

Approximately 300 feet west northwest of the parlor was a large, rectangular concrete watering tank. Several bales of barbed wire and baling wire were inside the tank, while metal pipes lay outside of the tank.

DISCUSSION OF THE HARRINGTON DAIRY

Archival research in conjunction with oral history emphasized the importance of the Harrington family who were prominent landowners and members of the Estelle community in the 19th and 20th centuries. Jamie Harrington Appleton spent a good part of her childhood on her grandparents' property where the dairy once stood. She remembers fondly riding horses to and from her family's farm to visit her grandmother and playing in the empty barns and milking parlor.

Limited physical evidence remains today of the Estelle community and the surrounding farmsteads. This physical evidence includes the Harrington Cemetery, located at the intersection of Valley View and Walnut Hill Lane, the foundation to the Estelle school and Masonic Lodge which is adjacent to the cemetery, and the foundations of the Harrington dairy complex. The Harrington Dairy was built by Ryan W. Harrington and operated for many years after he passed away. At the dairy several hundred head of cattle were milked, and at one time the dairy was a supplier to the Borden Milk company. The milking parlor was constructed of local material as seen in the bois d'arc and cedar posts that once lined the parlor walls. The dairy was self-sufficient, and the Harrington's grew their feed and hay, which was stored on the property (Jamie Harrington Appleton, personal communication 2008).

During the period when the dairy was active, the Harringtons employed up to 20 employees and during the week, Lulu Harrington did all the cooking for the employees. Several of the employee families lived in the three tenant houses at the dairy. The Minor family lived in the tenant house closest to Valley View Lane,

and their oldest son married Mary Harrington who is Jamie Harrington Appleton's aunt.

CRAFT DAIRIES IN TEXAS

From 1928 through 1939, the dairy industry began to rapidly grow in portions of Northeastern and North Central Texas (Hatcher 1944:55). Several factors played into movement from farming, especially cotton farming, to running a dairy. One major reason was the appearance of the boll weevil in Texas in the late 1800s devastating cotton crops pushing farmers to look to alternate farming practices (Hatcher 1944:57). Still, dairy farming did not immediately jump to fill the gap; it was not until other factors were recognized in the early 20th century that it gained widespread practice. For example, the spread of resistant grasses like Bermuda and Johnson made maintaining pasturelands much easier. In addition, the gradual elimination of Texas-fever ticks made it easier to maintain larger herds of cattle. The Texas climate was also very conducive to dairy farming because of the long growing season and mild climate, which made year-round profits for these farmers (Hatcher 1944:60). The mild year-round temperatures allowed for lower cost construction of dairy buildings making it more practical and easier to switch to dairy farming (Hatcher 1944:60). It was also during the early part of the century that the use of silos and bunkers for storing feed came into play, allowing more nutritious feed to be available to the herds year-round (Jager 2004:115-120). Hatcher explains that Neasham estimated that "a ton of butter worth \$1,000 takes only 70 cents worth of fertility from the soil, while the sale of feeds which would produce it would take \$400 worth" making it much more profitable to run a dairy farm than to continue crop farming (Hatcher 1944:62). The wide diversity of products that can be derived from this one product, milk, gave the farms a much wider market to sell to and a larger increase in profits. This year-round monetary gain leads to a higher standard of living for dairy farmers during this time and the introduction of more modern

and industrial equipment on these farms. The increase also allowed children to go to school instead of working on the farm, because tenant farmers and hired laborers were being used more because of the increase in machinery in the dairy process (Hatcher 1944: 61).

The 1945-1946 Texas Almanac shows that by 1930 there were 1,202,000 milk cattle in the state (214). That number steadily increased until it peaked in 1945 at 1,594,000 and slowly started decreasing through the 1950s and 1960s (The Dallas Morning News 1963:376). This was largely due to the war, which caused large herds to be dispersed and to the increased cost of labor and feed. The Texas Dairy industry was reduced even more from 1950 to 1956 because of a drought restricting the supply of feed. The 1960s are marked by fewer farms and larger herds being “fed, managed, and milked scientifically, and which wholesale only whole milk” (The Dallas Morning News 1963:376). Texas Counties leading in dairy production were centered around urban areas, and in the North Texas milk market, Tarrant counties was one of the largest producers according to the 1960 census figure for dairy sales (The Dallas Morning News 1963:376). In 1934, 10,237,841 gallons of milk were produced in Tarrant County and that number increased to 11,494,283 gallons in 1939. This number steadily rose to 12, 969,477 gallons in 1944 and held steady until the 1950’s when the number of milk cows and milk produced begins gradually to decline. While the Harrington Dairy is listed in Dallas County, the Texas Almanac statistics on the dairy industry for Dallas County are not as robust as Tarrant County, where Simmons Dairy was located. However, Tarrant County was one of the leading sellers in the state and Dallas is listed as one of the leading dairy producers in the state, therefore the Harrington Dairy’s proximity to the western county line makes the Tarrant County statistics applicable to this study. By the 1960s the number of milk cows had dropped to the lowest point of the

century, even though the production per cow had increased, the number of dairy products had decreased by almost half of what it was in the 1940s. The 1960s also marked a decrease in the diverse dairy products, like cheese, cream, and butter, to the sale of only whole milk to larger plants and dealers (The Dallas Morning News 1963:376).

CONCLUSIONS

Surveys at DFW airport provided a great opportunity to document the Simmons and Harrington dairy operations. Although the super structures had been removed, the remnants of the specialized milking parlor foundations and other ancillary features provided sufficient information to map and thoroughly document the sites. However, it was Alan Skinner’s persistence and curiosity, his suburb landscaping skills, along with his encouragement for us to conduct detailed archival research and interviews that captured the history and construction details of these dairy operations. Within each dairy complex, there were milking parlors, one or more silos, cattle holding pens with cleaning rooms, and milk storage areas. While these sites were unique to the study area, small craft dairies were common across the rural landscape of Texas until the 1960s; therefore, they were not considered to be locally or regionally significant. Due to the overall poor preservation of the 20th century dairy complexes, neither site was determined as eligible for listing on the NRHP or as SALs. Consequently, the primary contribution to the archeological record from these studies is found in the extensive photo documentation of the features and foundations, as well as the detailed site maps that show the layout of the dairy operations. Ultimately, we hope that the detailed illustrations of the plan and profile depictions of the milking parlors and other foundations provide a clear guide for future researchers in identifying these types of historic sites.

ACKNOWLEDGMENTS

If you are one of the many archeologists who have had the opportunity to work with Dr. Alan Skinner, you have experienced his innate curiosity and enthusiasm for the natural world. While many archeologists love to encounter the unique or rare artifacts, or the out of the ordinary site, Dr. Skinner has impressed upon us that there is much to be learned by investigating archeological sites that represent the traditional lifeways of 19th and 20th century rural America. Alan has always said to those working at ARC, that “pros dig deeper,”; he asks, “why is this site here and what is its relationship to water, food, shelter, and natural resources,” and always emphasized that “our reports should be long enough to cover the subject, but short enough to be interesting.” Finally, he would say, “No Harrington Dairies” meaning when it comes to historic sites, be careful not to overlook what might be hidden beneath the vegetation or assume there is nothing interesting in some old concrete pads.

REFERENCES CITED

- The Dallas Morning News
1945 The Texas Almanac and State Industrial Guide, 1945-1946. Electronic document, <https://texashistory.unt.edu/ark:/67531/me1apth117166/>, accessed October 10, 2024.
- 1963 The Texas Almanac and State Industrial Guide, 1964-1965. Electronic document, <https://texashistory.unt.edu/ark:/67531/me1apth113807/>, accessed October 10, 2024.
- Green, George N.
1995 Hurst, Eulless, and Bedford: Heart of the Metroplex, An Illustrated History. Eakin Press, Austin.
- Grapevine Historical Society
2005 Grapevines Most Unforgettable Characters. Grapevine Historical Society, Walsworth Publishing Co., Grapevine.
- Gurcke, Karl
1987 Bricks and Brickmaking: A Handbook for Historical Archeology. University of Idaho Press, Moscow.
- Harper, Douglas
2001 Changing Works: Visions of Lost Agriculture. Chicago, University of Chicago Press.
- Hatcher, Halene
1944 Dairying in the South. *Economic Geography* 29:54-64.
- Jaeger, Ronald
2004 The Fate of Family Farming: Variations on an American Idea. University Press of New England, Hanover.
- Klein, Terry H., Suzanne Pickens, Loretta Lautzenheiser, and Brooks B. Ellwood
1992 Phase II Archeological Testing Estill Farmstead, Site 41TR126 Runway 16/34 West Dallas/Fort Worth International Airport Tarrant County, Texas. Greiner, Inc., Fort Worth.
- Irving Genealogical Society
1996 Cemetery Records of Irving, Texas. Irving Genealogical Society.
- Nall, Matthew Hayes
2024 Estelle, TX In Handbook of Texas Online. Electronic document, <https://www.tshaonline.org/handbook/entries/estelle-tx>, accessed August 26, 2024.
- Rice, Joseph
1989 Irving: A Texas Odyssey. Windsor Publications, Inc. Chatsworth, California.
- Shelton, Rebecca, Cody S. Davis, and S. Alan Skinner
2008 An Archeological Survey for Chesapeake Energy Corporation at DFW International Airport, Dallas and Tarrant Counties. Cultural Resources Report 2008-25, AR Consultants, Inc., Dallas.
- Stanton, Norma
2003 Irving, Texas: From Rails to Wings 1903-2003. The Donning Company Publishers, Virginia Beach.
- Walston, H.D.
1944 Buildings for Dairy Life. *Country Life* 28-29.
- Young, Charles H. (editor)
2004 Grapevine Area History. Grapevine Historical Society.