Following The Comanche And Butterfield Trail From Space

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The Great Comanche Trail was the accumulation of 90 years of running well over a million horses from Mexico up to the Texas Panhandle and Oklahoma territory. Although we know the general route of the trail there is currently only one place where the land scar is still visible and that is between Horsehead Crossing on the Pecos River and Comanche Spring, Fort Stockton, Texas. This section has been only lightly affected by modern ranching, farming, oil drilling, and urbanization. The trail is so prominent that to this day if you know how to look for it you can see it in satellite imagery. The trail was so prominent that it also became the main wagon and stagecoach road to Fort Stockton. This study not only examines the imagery but includes original documents and maps as well as on-ground reconnaissance of the wagon road and the Butterfield Swing Station just off the wagon road on the way to Fort Stockton.

Comanche Trail (Texas Beyond History)

History

To understand how the Comanche Trail came to be a brief history is required. The Comanche first moved into the plains of northern Texas around 1720 after acquiring herds of horses from the Utes, as well as their own raiding of the Spanish territory of New Mexico. Their herds grew and the raids continued, making the horses their main commodity in trading with other Indian nations and the French to the east. Soon the raids reached into what is now central and southern Texas, then also controlled by the Spanish.

The Comanche nation grew with more and more raids until they were rich with horses. This and their buffalo hunting prowess from horseback were their main commodity for trading for supplies and guns to the north, west, and east of their controlled territory in northern Texas and western Oklahoma. However, in 1781 a wave of smallpox decimated the Comanche nation, losing half their population in one year. With this, they decided to make peace with the Spanish. A treaty was signed in 1785 and 1786, the different dates being the eastern and western band's agreements.

With this treaty, the Comanche agreed to stop their raiding and ally with the Spanish in their war against the Apache. The Spanish agreed to trade goods to the Comanche and also provide them with horses as a form of

tribute. Trade instead of raids continued until the defeat of the Spanish by Mexico in 1821. At that point the Mexican government, being poor from the effects of the war, decided not to honor the former Spanish treaty. [1] The Comanche did not understand this and considered it a betrayal since much of their former trading was with both Mexicans and Spanish that occupied the same territory. Thus, the raids resumed in full force and this time they went all the way into Mexico, using the trail that had previously been used for trading, making it now the Comanche War Trail. This trail continued to be used for the next 50 years, making the entire period of use around 90 years. Some of the other important dates during this period are as follows.

Early 1700s – Ute & Shoshone ally to raid Spanish New Mexico for their horses

- Spanish give the Shoshone the name "Comanches"… the Ute word for "enemy."

Mid 1700s – Comanche move to plains to sustain horse herds and hunt bison

- To monopolize horse and bison trade – Comanches went to war against the main competitor - Apache

- Continued raids for horses into New Mexico

1781 – Smallpox killed half the Comanche population – made peace with the Spanish for trade

Early 1800s – Mexico wins independence, and makes a treaty with Comanche, but does not live up to it. Americans rush into Texas

- Comanche commence raids into Mexico and Texas1840 - Ambush of Comanche chiefs in San Antonio during treaty negotiations set off a bloody war with Texas

- Comanche raids became larger, more deadly, and penetrated deeply into Texas and Mexico

1846 - Forty-four raids of 200 - 400 warriors each sent into Mexico

- 2,649 dead and 852 captives (580 were redeemed)

- By one estimate one million horses were stolen over eight years [2]

1848 - End of Mexican-American War

- Treaty pledged U.S. to patrol border to protect Mexico from raids

- Promised to return captives, and goods to Mexico when obtained through interdiction efforts

- Raids continued deeper into Mexico, all the way to horse-rich Durango

1849 - Cholera epidemic devastates Comanche Nation

1850 - Severe drought impacts buffalo herds

Late 1850s – 1861 - Military campaigns/forts create a line of defense across Texas

- Raids continue but reduced

1861 – 1865 - Civil War reduces Texas defensive line – Comanche raids increase

1866 – 1870 - Military returns to Texas, reoccupies defensive line, and begins a campaign of offense

1870 - Last raid into Mexico by Comanche

1875 - Red River Wars bring an end and surrender by Comanche/Kiowa

Satellite Imagery Interpretation of Historic Trails

Satellite imagery is a fairly new tool in the archeology tool set. This is now well known in the professional archeological community, but it is also available to avocational archeologists and trail followers. The reason an historic trail can be traced through satellite imagery is that satellite images can show slight differences in the vegetation caused by the years of constant use of the trail and then allowing the vegetation to grow back after the abandoning of the trail. The vegetation will generally grow back slightly different than the surrounding area due to the trail having become a depression which later attracts more soil and water runoff from rains. Bushes and grass tend to grow slightly healthier in the depressions. In most areas, it can be so slight that casual observation on the ground or even from an aircraft cannot detect it. However, using satellite imagery, especially with multiple images of the same location using Google Earth's 'Historical Imagery' tool, a trained eye can find the trace of these vegetation changes in long wagon trail lines, and in this case the animal trails, across the terrain.

Using satellite imagery from an extreme oblique angle, which is what Google Earth allows, can reveal the slight difference in a much more striking contrast and you can see the trail as it snakes across the countryside. However, another extremely important feature in Google Earth that is needed to follow the more difficult stretches of the trail is the historical imagery capability. When looking at a location with the historical imagery capability set to on, you can move through the many years of images, looking at the same piece of earth from the exact same angle and find the one that will show the trace best for that piece of earth. Often the images are in different seasons, helping or hurting the visibility. I try to angle it out and go pretty far out so I get a long-distance look. That is usually where I can see the faint trails best. The old trails tend to not follow existing boundaries or roads. When you see a faint trail crossing multiple properties, but in no logical relationship to modern boundaries it is a good bet if is it an old trail. They always followed the easiest terrain possible - no steep cuts or hills. If they had to go down a cut they would always find the easiest way possible. You have to look at the trails from all different angles to pick them out piece by piece. Sometimes I go backward as if I'm looking out the back of an airplane and sometimes I go forward as if I'm looking out the front. I've even followed the trail sideways. It all depends and it's a lot of trial and error. The final trick is to be able to move the image forward and backward or side-to-side. For some reason, this allows your eyes to pick up the hard-to-find trace line where they could not in a still picture. I've found that the best elevation to be at is around 3,000 feet. I connect the pieces together using the Google Earth line drawing measuring tool to put a line down on top of it and then I begin with the next piece from the end of the line. Most of the time the trail is darker rather than lighter. Sometimes it looks like a bunch of bushes in a row and sometimes it is just some dark splotching that ends up looking like a faint line.

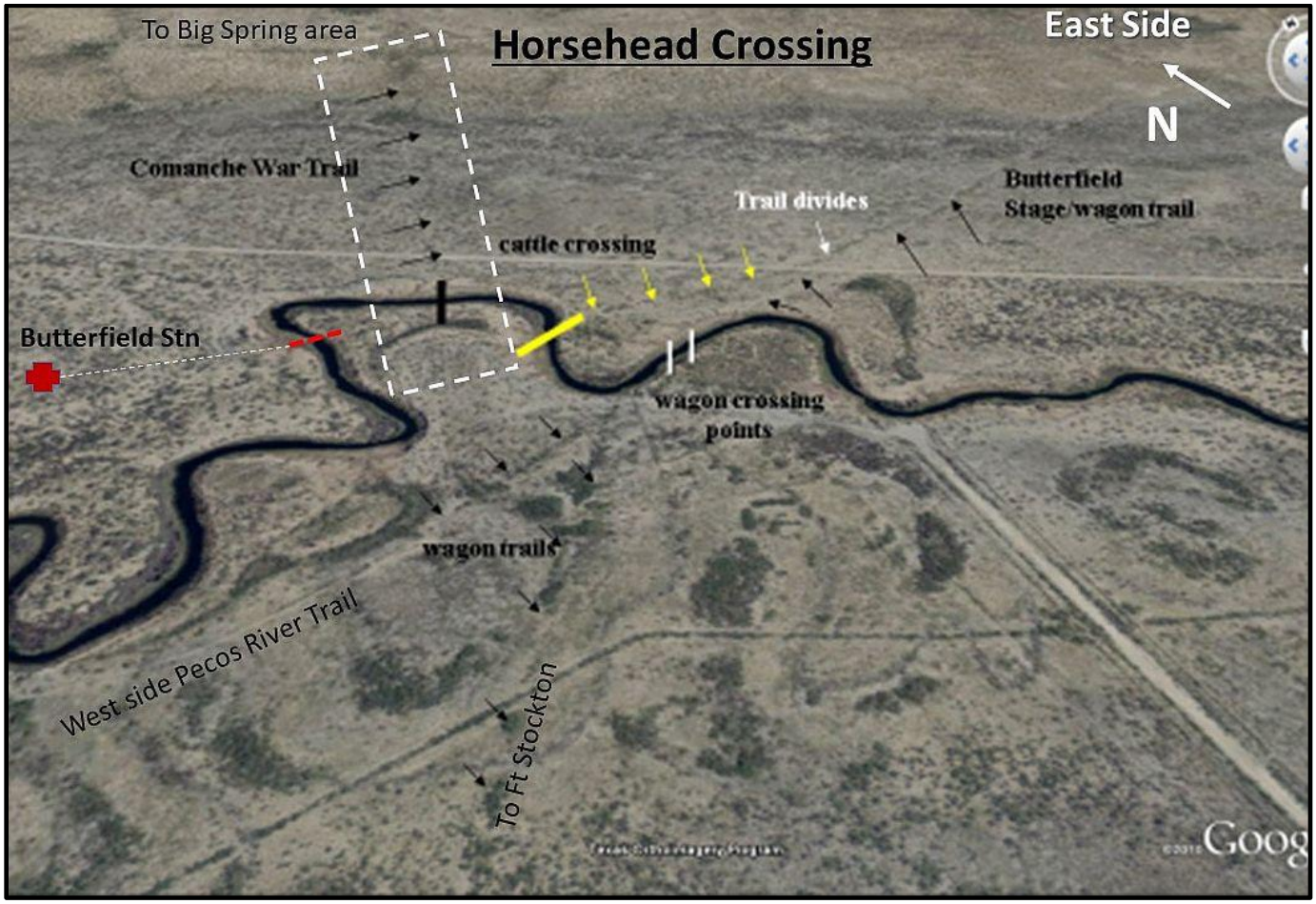
The key to following historic trails through Google Earth is you must know a starting and ending point. And, of course, the final validation of the trail needs to be on the ground at critical points along the way. In the case of a stagecoach road, the obvious place is the station. In the case of this section of the Comanche Trail, it is very specific. We know it ran from Horsehead Crossing on the Pecos River to Comanche Spring, now Fort Stockton, Texas. And we know the stagecoach road appeared to follow it on its way to Camp Stockton, later to become Fort Stockton.

Comanche Trail Crossing of the Pecos

Horsehead Crossing was actually four different crossing points. Those four were the generally known wagon crossing point, a separate cattle crossing, the Comanche crossing, and the stagecoach skiff crossing point. These four crossing points were stretched over 350 yards and two bends of the river. The Comanche

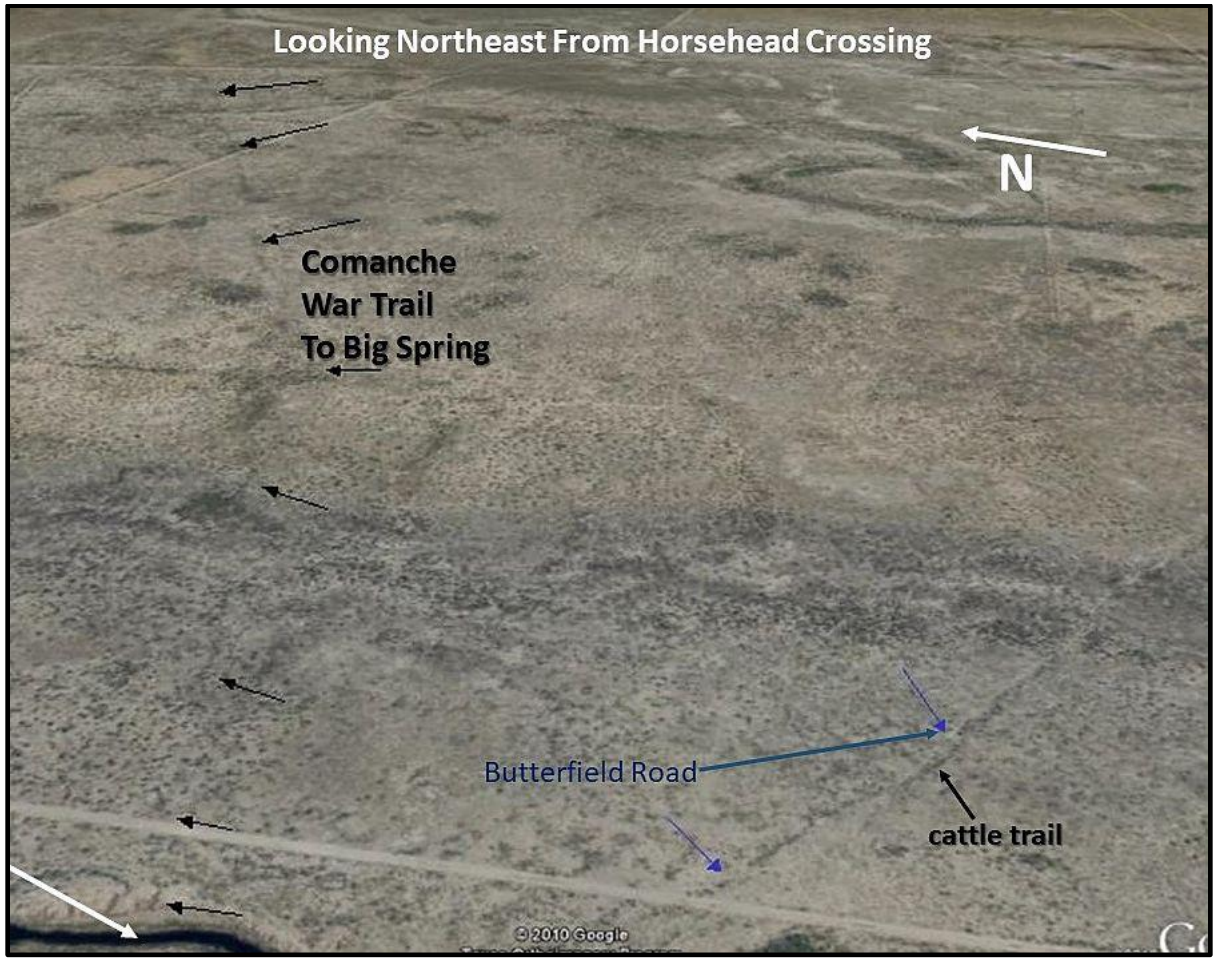
Trail crossing was a logical crossing point for heading north to Big Spring, whereas the stagecoach and cattle drive trails came from the east to follow the Middle Concho River. The stagecoach crossing was a straight stretch just around the bend from the Comanche Trail crossing. This is the farthest point from the main wagon crossing and in a different bend of the river. The Comanche Trail heading north is fainter than in the section to the southwest, but a faint trail can still be seen from above.

A first-hand historical account validates this Comanche Trail water crossing point in an unexpected way. The year was 1859 and the Butterfield Overland Mail route had been changed from continuing up the Pecos River and crossing the Guadalupe Mountains to a new route down to Camp Stockton and on to Fort Davis and El Paso through a southern route. A westbound passenger noted after leaving from the west side of the river on the way to Camp Stockton the coach crossed "eight beaten paths, side by side [which] indicated the frequency of their bloody raids into northern Mexico for cattle, horses, and children." [3]



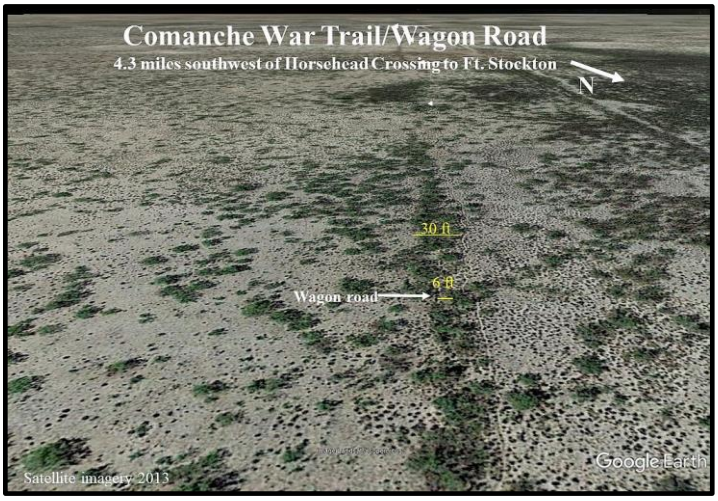
Horsehead Crossing looking northeast

It turns out through Google Earth analysis of both trails the crossing point mentioned by the passenger can be found. Although the stagecoach/wagon road becomes one with the Comanche Trail just a little further to the west, the two trails diverged to their separate crossing points, making an X just before each reached the water line.



Horsehead Crossing looking northeast

As you can see in the image above the wagon road and the Comanche Trail merge into one soon after leaving Horsehead Crossing. The wagon road runs right down the middle of the Indian trail all the way to Fort Stockton. At the time I'm sure there was no brush growing up as it is today and it was the easiest ready-made road for the stagecoach and wagons. The road makes a straight line to a low plateau seven miles from the river. Although the wagon road is only about eight feet wide the brush scar averages 40 feet wide to the plateau.

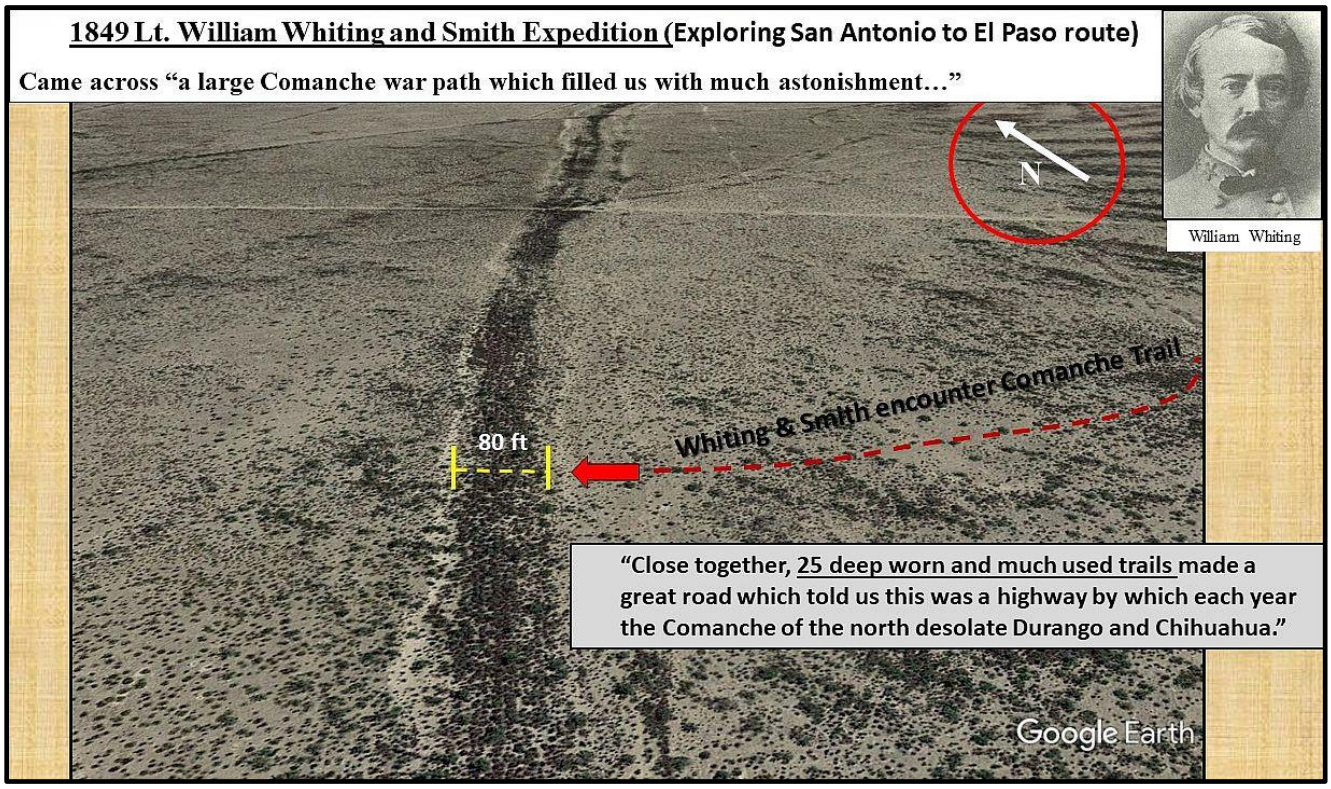


Trail leading away from Horsehead Crossing to the southwest

Comanche Trail/Wagon Road To Comanche Spring/Fort Stockton

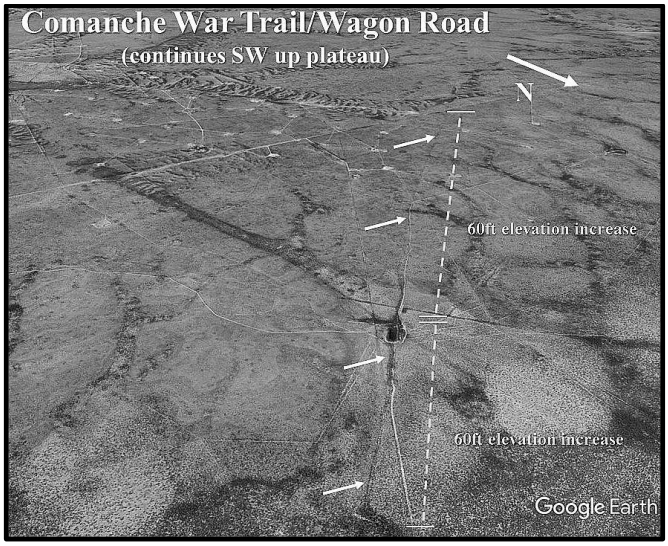
Earlier, in 1849 when the area was first being explored for a route from San Antonio to El Paso by the Lieutenant William Whiting And Smith Expedition they came across the Comanche Trail while following the Pecos River on the west side. Their journal states they came across "a large Comanche war path which filled us with much astonishment. Close together, 25 deep worn, and much-used trails made a great road which told us this was a highway by which each year the Comanche of the north desolate Durango and Chihuahua." [4]

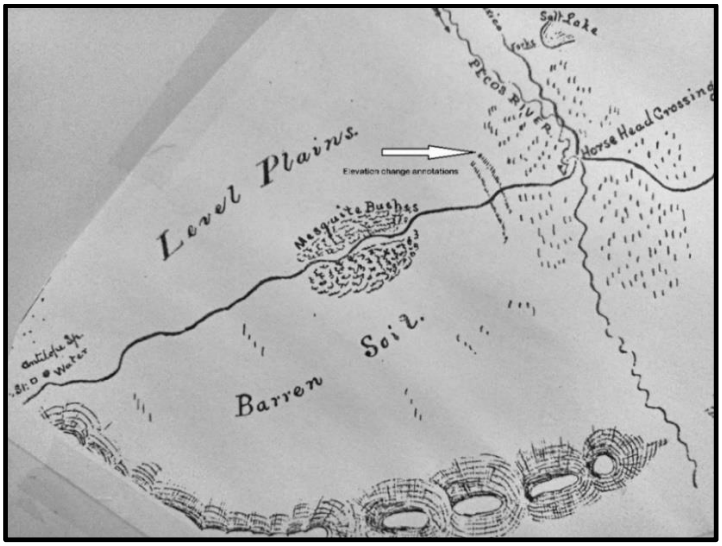
By following their general path before coming across the trail, which was provided in some detail, it appears the party was already up on the plateau where the Comanche Trail is the widest when they came across it. This would explain their description of 25 deep-worn trails. [5] It also states they traveled on the trail for five miles to camp at Antelope Spring, which was the spring close to the later stagecoach station, addressed further on in this report. That again verifies the location of their intersecting the Comanche Trail up on the plateau and at its widest point. From Antelope Spring they followed the trail to what they described as southwest to a high table ridge which is now known as the southern point of 7-Mile Mesa, just before you enter Fort Stockton.



Whiting/Smith encounter location with Comanche Trail)

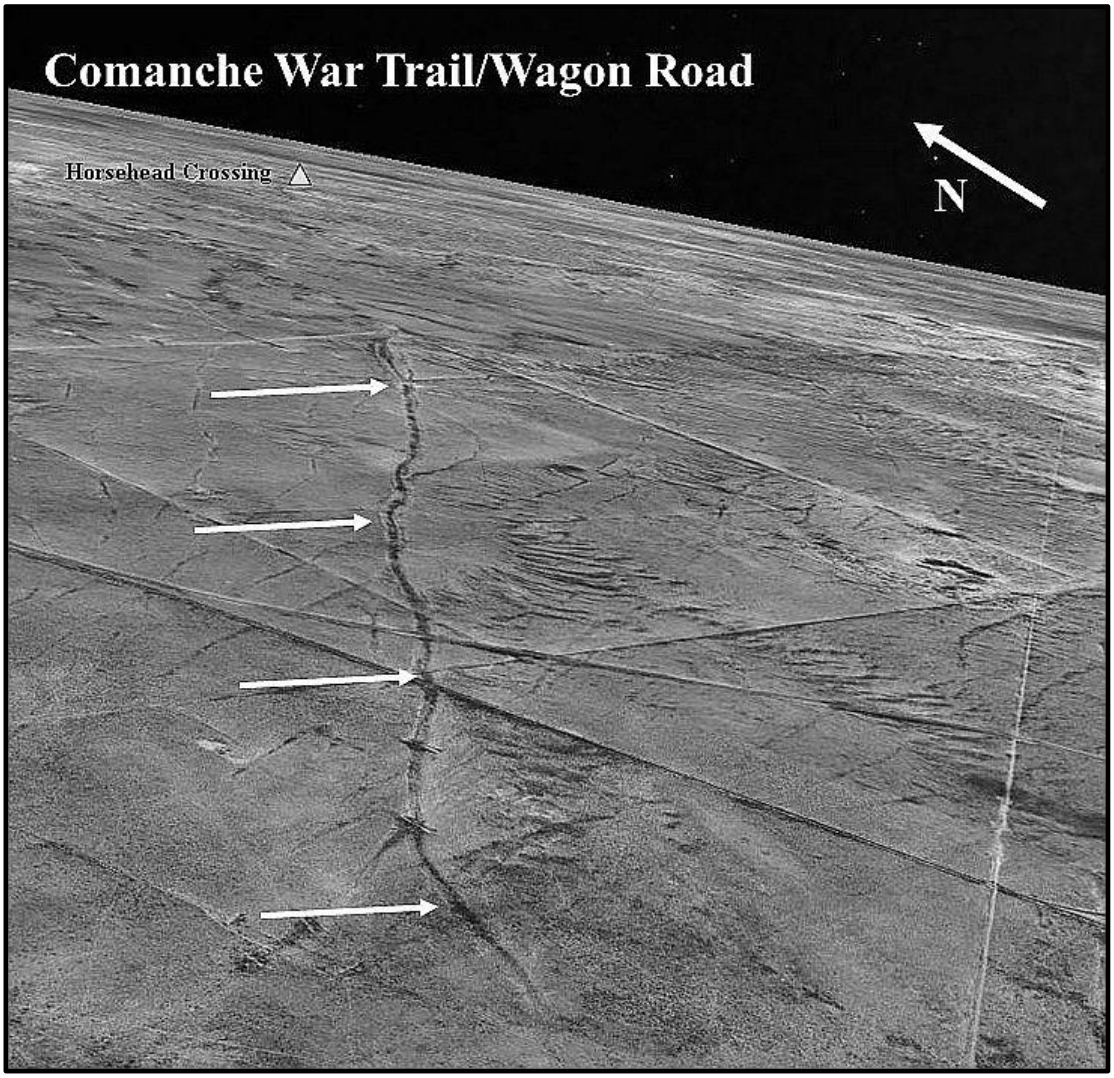
As the trail comes to the plateau seven miles from Horsehead Crossing it climbs a draw leading up to the flat. It makes two elevation changes of 60 feet each. This is the second piece of information that validates this as being a trail and wagon road. In 1867 Brevet Lieutenant Colonel E. J. Strang conducted a large unit march from Fort Stockton to Fort Chadbourne, making a detailed topographical map along the way. He used the main wagon road and as he came off the plateau heading to Horsehead Crossing his topographer annotated two elevation changes on his map that matched the ones seen on Google Earth.





60-foot elevation changes leading up to plateau **LTC Strang map with elevation change annotations**

After the trail moves to the plateau proper it becomes apparent from above. The trail becomes wider and the after-growth brush is thicker. The width ranges from 80 to 130 feet in this area and the scar is very distinct. In a close-up view, you can also see the wagon road continuing down the middle of it.



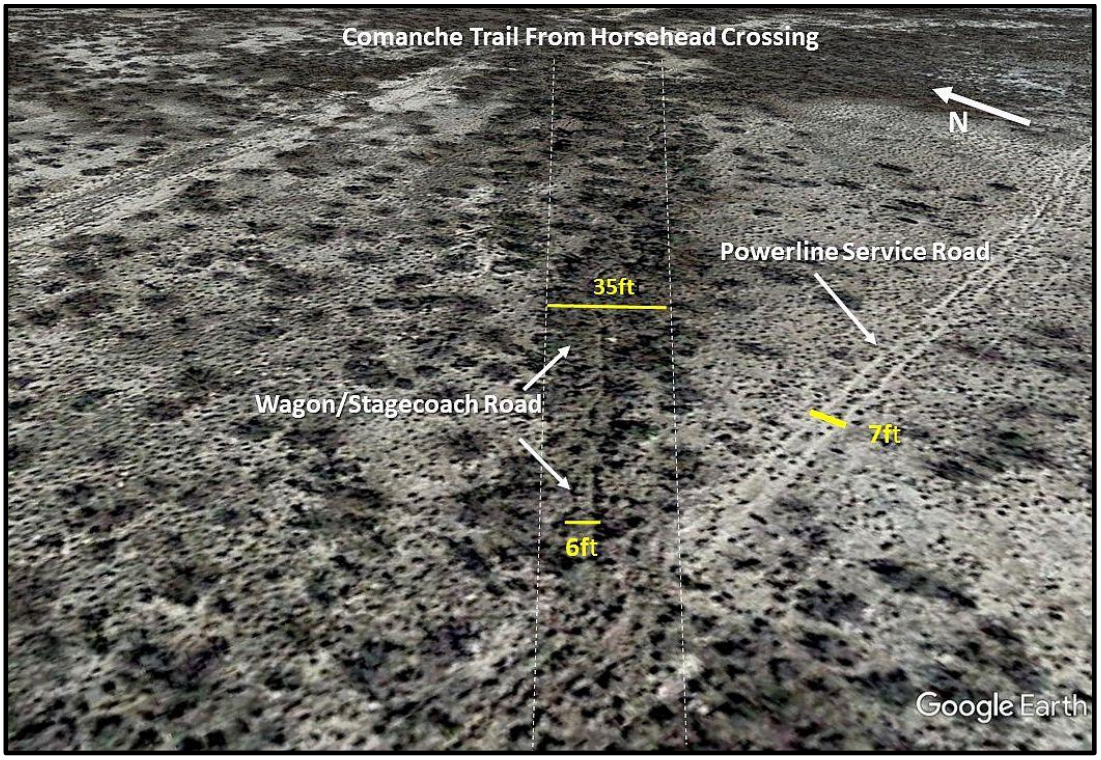
Comanche Trail looking northeast back to Horsehead Crossing

As stated previously, one of the most important factors in validating a potential trail/wagon road is whether a stagecoach station can be verified along the route. And in this case, there was a stagecoach station located just off the main road running down the middle of the Comanche Trail. The station was addressed in Glen Ely's book on the Butterfield Overland Mail. [6] By some accounts, the station was either called Camp Pleasant or Antelope Spring Station. There is little documentation on this station since it was built so late in the period of the Butterfield Overland Mail operation due to the change of route in mid-1859 and the abandonment of the entire operation at the beginning of the Civil War in 1861. The station was needed because there was nothing on the west side of the Pecos at their turn-around point. Thus, the mule team was required to make a round trip. This was done in the middle of the night and very likely at a walking pace. The station was 23 miles from Horsehead Crossing, making this a 46-mile round trip with a long rest in the middle. This is doable for a mule team, but adding another 22 miles to make it to Camp Stockton Station was beyond the expectation of a mule team, easy pace or not.

We were lucky to also visit the station site with the landowner and verified it was very much the proper construct and layout of a typical Butterfield Stage Station. It was constructed much like the station at Fort Chadbourne, which we worked on the excavation in 2008. [7] It was the same length, 81.3 feet, but 5 feet narrower, at 18.6 feet. This is much larger than a stone-built homestead dog trot style building. Although only the base of the walls remain, a large pile of wall stones was piled some 300 feet away and then abandoned at some time in the past.

In addition to inspecting the stagecoach site, we walked the wagon road, finding it with the proper wagon rut depressions and wagon width. This road was used up to the early 1900s and we found period tins and bottle trash from that era alongside the road. It was also very apparent the soil in this area is a very fine sand just beneath the surface. This is probably another reason the trail is more defined than other regions.

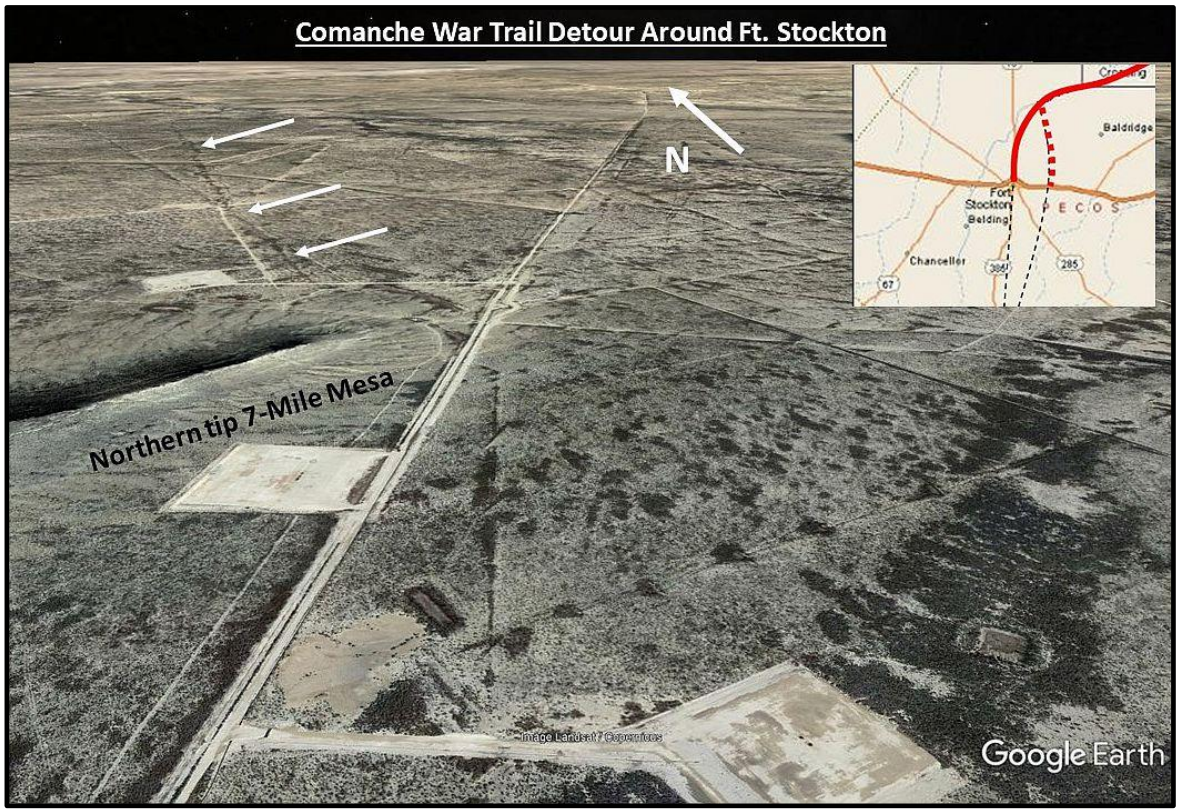
A close-up of the wagon road within the Comanche Trail can be seen in satellite imagery near the stagecoach station. A modern powerline road crosses this area, giving a good comparison of dimensions. The wheel tracks are 6 feet wide and rutted from the narrow, wooden wheels.



Wagon road within Comanche Trail after-growth brush

One interesting fact has come out of this imagery analysis. The trail is so wide and deep in many places that modern ranchers have built earthen dams across the trail to capture any rainwater that might accumulate from storms. In some locations, they are set as close as every 300 feet and in others as far apart as 700 feet. It also appears these earthen water containment dams were copied to other man-made modern ditches and roads, as can be seen here on the right side of the image.

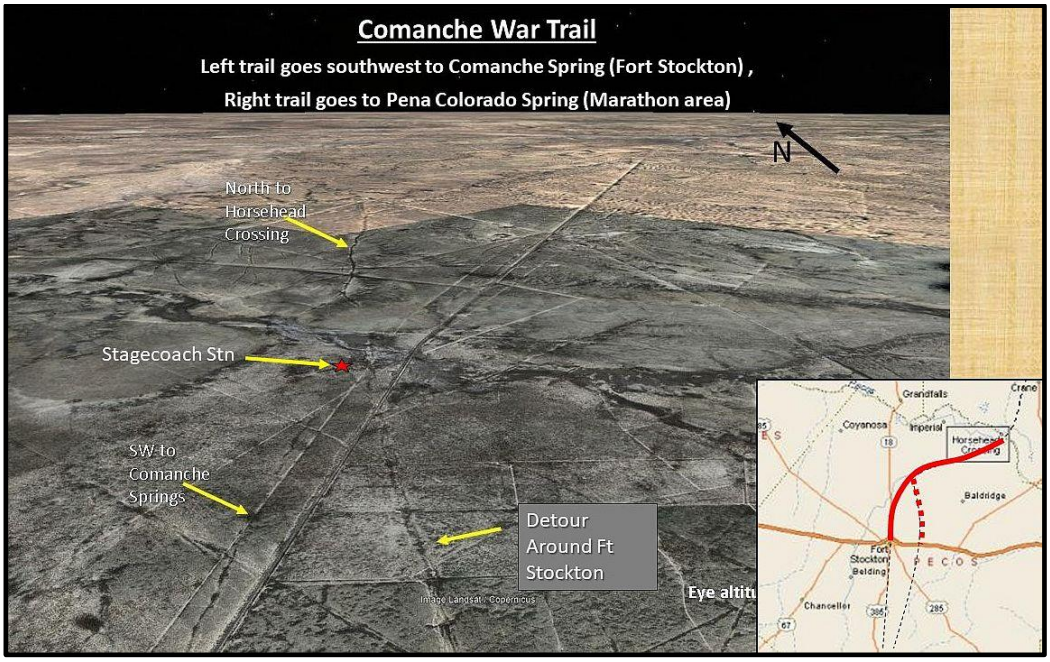
From the stage station area, the Comanche Trail/wagon road continues to Fort Stockton, winding around the southern tip of 7-Mile Mesa, just as reported by Lt William Whiting in his 1849 expedition.



Comanche Trail/Wagon Road Passing 7-Mile Mesa

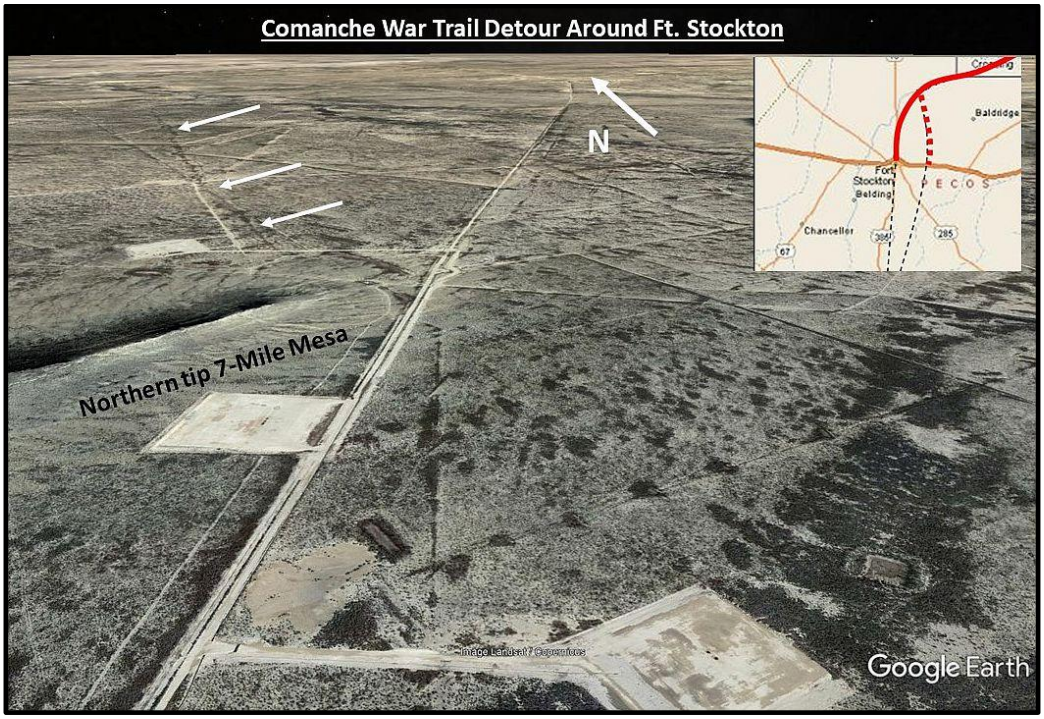
A Detour Trail

Although ranchers have taken on the idea of copying the ditching and earthen containment dams throughout the area, there is one particular trail of interest that comes off the main Comanche Trail close to where the stage station sits. This appears to be a detour trail to go around Fort Stockton and 7-Mile Mesa. It differs from the other modern ranch ditching in that is not a perfectly straight line, much like the main trail. I believe this was the detour the Comanche took to get around Camp Stockton which was built in 1859 to protect stagecoach passengers and travelers through the area.

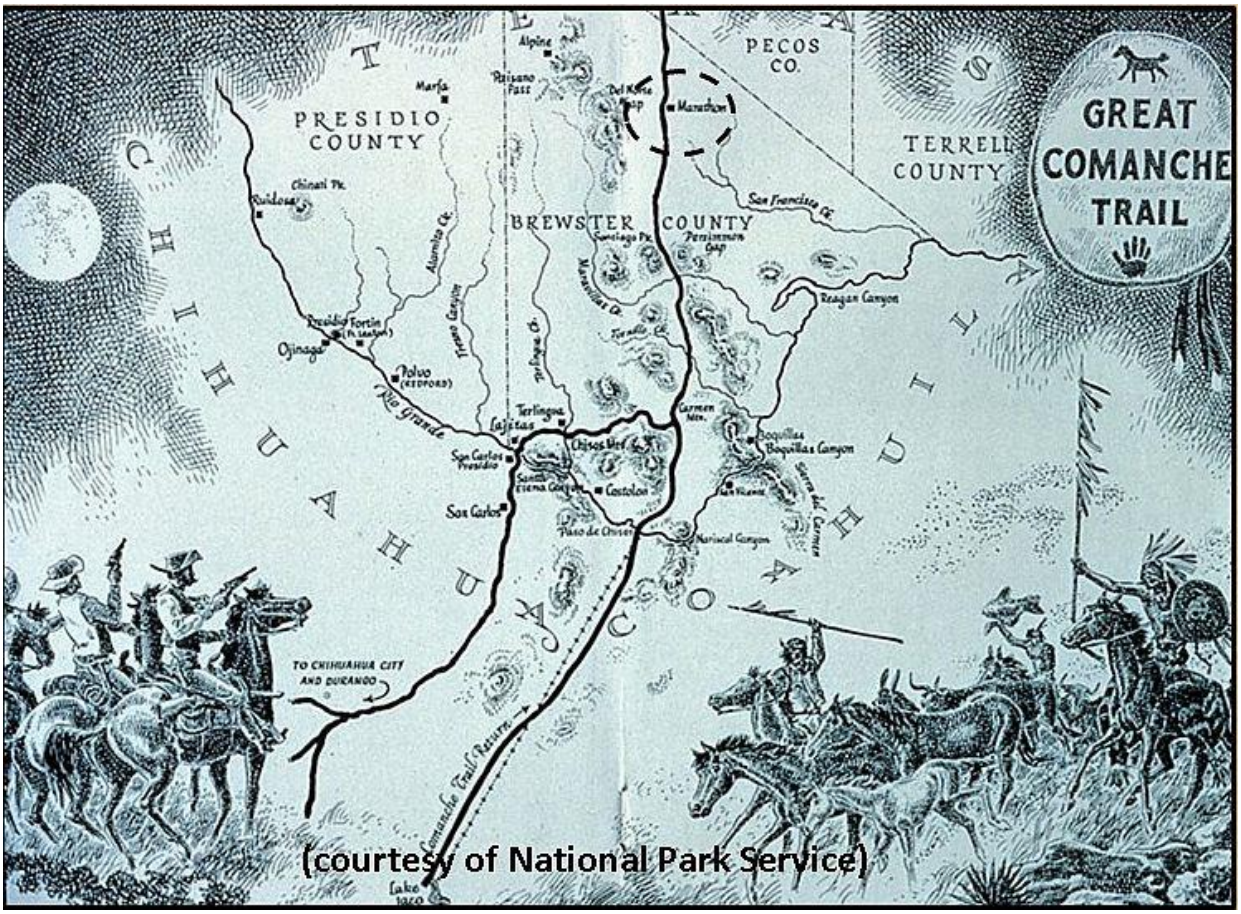


Comanche Trail Splits

Whether going through Comanche Spring or around the other side of 7-Mile Mesa the route would end up taking the Comanche War Parties to a spring south of today's Marathon, Texas, called Pena Colorado Spring. [8] It was turned into Camp Pena Colorado, a military outpost from 1879 – 1893, and is currently named Post Park. [9] A look at the northern tip of 7-Mile Mesa shows the trail leading right to it. The likely last faint line of the trail appears just around the top of the northern tip of 7-Mile Mesa, disappearing just before reaching Interstate 10. Using a straight line projection to Pena Colorado Springs it shows to be heading in the proper direction. The line to the right in this image is man-made ditching, traveling in a perfect straight line for 14 miles, and appears to be adjusted just as it reaches I-10, eliminating it as a possibility.



Secondary Trail To Northern Tip Of 7-Mile Mesa



Comanche Trail Passes through Marathon Area

Conclusion

The Comanche Nation depended on a rich supply of horses as their main commodity of trade. Those horses also gave them the ability to successfully hunt the buffalo, their main source of food, clothing and tools. And the buffalo was their second main source of trade goods. But their horse herds needed constant replenishment beyond the natural breeding process. When Mexico chose not to extend the previous treaty between the Spanish and Comanche it was deemed a betrayal by the Comanche, allowing for an all-out declaration of war. And warfare for the Comanche meant to them anything and everything was legitimate. Horses were needed. Women and children were needed to replace the losses of the great smallpox epidemic. To them this was an absolute need for survival and the stolen horse herds continued to be run up the trail for the next 50 years and for a total of around 90 years.

A total of over a million horses - possibly even double that number - were herded over this same trail year after year. By running the horses off to the side of each previous trail created a wider and wider swath. As the need came for a good wagon road from Horsehead Crossing to the newly created Camp Stockton, and later Fort Stockton, with its growing town the already made trail was the easiest and straightest route. This wagon road becoming a major roadway and connection, which probably helped to keep this trail from being modified by ranchers until early in the 1900s. Finally, the bioturbation [10] into the this soft, sandy soil from over a million horses created a wide trail that can still be seen as a scar across the land and shows up easily with our current technology in space-based imagery.

ENDNOTES

[1] Ralph A. Smith, "The Comanches' Foreign War." Great Plains Journal. Vol. 24–25, 1985–1986, 21.

Pekka Hamalainan, "The Comanche Empire", Yale University. 2008, 210-211.

[2] Lynn Burnett, "The Comanche Empire and the Destruction of Northern Mexico" http:// CrossCulturalSolidarity.com/the-comanche-empire-and-the-destruction-of-northern-mexico/

[3] Patrick Dearen, "Crossing Rio Pecos" Texas Christian University Press, 1996, 44.

[4] Clayton Williams, "Never Again, Volume 3" Naylor Company, 1969, 9

[5] After camping on the Pecos River they headed a little south of west, passing Livingston Mesa, which is 6 – 8 miles west of the Pecos River and south of Highway 67. Using a straight line from an area between the river and mesa it takes them up on the plateau and intersects the Comanche War Trail at its widest point.

[6] Glen Ely, "The Texas Frontier and the Butterfield Overland Mail, 1858–1861" University of Oklahoma Press, 2016, 274-276, 288-289.

[7] Larry Riemenschneider, "ARCHEOLOGICAL INVESTIGATIONS FORT CHADBOURNE (41CK129) BUTTERFIELD OVERLAND STAGE STATION, COKE COUNTY, TEXAS, 2008 (Can be found in Fort Chadbourne Archives or Tom Green County Library)

[8] Gunar Brune, "Springs Of Texas" Texas A&M University Press, 2002, p.89 [Also called Rainbow Cliff Springs]

[9] Camp Peña Colorado, Texas State Historical Association, Handbook Of Texas (Online) https://www.tshaonline.org/handbook/entries/camp-pena-colorado

[10] Bioturbation is the biogenic transport of sediment particles and pore water which destroys sediment stratigraphy, alters chemical profiles, changes rates of chemical reactions and sediment-water exchange, and modifies sediment physical properties such as grain size, porosity, and permeability. https://www.sciencedirect.com/topics/earth-and-planetary-sciences/bioturbation