An Application for an Official Texas Historical Subject Marker¹ Chambers County Brick and Charcoal Yards

Chambers County, Texas Chuck Chandler²

I. CONTEXT

Bricks are among the oldest known construction materials. The earliest sunbaked bricks were made in Mesopotamia around 7000 BC and fired bricks appeared about 3500 BC.³ The Romans spread brick making throughout Europe and the English colonists brought the craft to North America. The earliest known bricks in North America were made in Jamestown about 1608,^a right after the settlement was established.⁴ Native Americans had been making, firing, and using ceramic pottery at several sites along Cedar Bayou as well as other nearby creeks that fed into Galveston Bay as early as AD 100.⁵

Besides resistance to decomposition, a major advantage to masonry construction is fire resistance. A series of fires in Galveston from the 1850s through the 1880s prompted that city to enact ever more stringent building codes in the business district. This area included the Strand, Mechanic and Market Streets in Galveston's Historic District where the building code required fireproof construction.^b These frequent fires along with new construction created an almost unending market for bricks to replace burnt buildings. This all goes to show that the businessmen of Galveston were desperate to find a cheap local source of fire resistant building materials.

Clay is a required component of brick and since Galveston is situated on a sandbar with virtually no clay other than a small amount which existed along McKinney's and Offatt's Bayou^c and no forests to provide cord wood for fueling the kilns. Therefore, bricks had to be brought in

^a Although most of the earliest buildings in James Fort were post-in-ground structures, a <u>limited number of bricks</u> were used in cellars and chimneys. By 1608, they were made of the locally abundant clay at Jamestown.

^b Through the years the fire code was upgraded and extended creating an ever increasing demand for building bricks. In 1855 Galveston required fireproof construction in the business district and subsequent laws extended and upgraded the fireproof building requirements, first by prohibiting new wooden buildings, then by prohibiting their relocation or repair. (<u>1858 Galveston building code</u>) (<u>1876 Galveston building code</u>)

^c The grade raising after the 1900 hurricane completely filled in McKinney's Bayou and any clay deposits which exited in the 19th century were covered by as much as ten feet of sand other than a small deposit at Offatt's Bayou.

from elsewhere,^a and importing bricks was expensive. Antebellum cargo shipments of brick into Galveston were reported as early as 1840 from Germany,⁶ New York,⁷ Liverpool,⁸ Louisiana,^b Pensacola,⁹ Boston,¹⁰ Brazos River,¹¹ and France.¹² But bricks from outside the immediate bay area were very expensive and the quantities advertised were nowhere near enough to construct a building.

In 1857 the Liberty [Texas] Gazette reported that bricks made at the two brickyards at Liberty¹³ were of as good quality as those made in Louisiana and could be landed at Galveston for \$18 per thousand.¹⁴ A March 1858 letter to a Galveston newspaper from N.C. Raymond¹⁵ of Austin suggested that bricks could be made from Galveston sand.¹⁶ He said that for the past two years he had been experimenting with a new material called "Lithocolia Concreta" but there is no evidence that it was used in any Galveston buildings. The lack of clay notwithstanding, in 1857,^c the brick makers Frank Brown & Henry Holmes^d made some "Island bricks"^e where they found some clay at a site about two miles west of Tremont Street at McKinney's Bayou.¹⁷ The Galveston Weekly News reported on the event writing that "Mr. Holmes expresses the opinion that they can improve still further in the Island brick; and thinks the next kiln will be of a better quality [suggesting that the first batch was poor quality]. He and his partner Mr. F. Brown have purchased ground with a view to make it a permanent business.^f The prospect now is that the

^a "The city being built on a white sharp sand island, the bricks are made some distance and are transported there by cars and schooners and command a price of ten dollars per M." <u>Official report of the Second Convention of the National Brick Manufacturers' Ass'n</u>, Oct 18-20, 1887, p77.

^b Brick for two new fire engine houses built in 1857 was made in Algiers, near New Orleans at a cost of \$14 per thousand . <u>Galveston News, June 9, 1857, p2</u>.

^c Brown & Holmes purchased 2 ½ acres on Lot 12 for their brickyard in 1857. Galveston County Deed Book M, p547, Deed of Trust, Brown & Holmes to Henry B. Andrews, December 22, 1857. https://www.mapsofthepast.com/galveston-tx-1869.html

^d Henry Holmes (b. ca 1833, NY) was enumerated as a Brick Mason in the <u>1860 Census, Galveston, p126</u> and was also Frank Brown's brother-in-law.

Frank Brown's wife, Virginia (b. ca 1841, NY), was Henry Holmes's sister, (<u>Texas, County Marriage Index, 1837-1977</u>). She was enumerated as a 9 year old living with her father and brother (age 16); both named Henry Holmes in the <u>1850 St Louis, Missouri Census, p705</u>. Henry first appears associated with Frank Brown in the aforementioned Deed of Trust in December 1857. The partnership may have begun at this time.

^e This brickyard has been attributed to James Moreau Brown, but all the evidence shows that it was actually Frank Brown who had the brickyard.

^f Galveston County Deed Book O, p458. Grove to Brown & Holmes, December 29, 1859. Lot 12, 2-1/2 Acres Release of Lien. Lot 12 was located on the Gulf, Colorado & Santa Fe Railroad between the city limits and Offatts Bayou. Island City Abstract And Loan Co. *Map of the county and city of Galveston, Texas*. Galveston, Tex.: Island City Abstract and Loan Co, 1891. Map. <u>https://www.loc.gov/item/2005625376/</u>

demand for brick in this city will require several millions annually and an increase from year to year."¹⁸ Their bricks were used to build a new cotton press in Galveston in 1859,^a and almost certainly^b the Galveston county jail,^c but after an escape attempt in 1866, it was reported that "The jail has been badly damaged and rendered quite insecure. ... and the brick walls have been torn to pieces. The building was made of Island brick which is almost as easily cut to pieces as adobies (sic)."¹⁹ Holmes may have kept the business going in some form after Frank Brown's death in 1867;²⁰ until at least 1874.^d

Another commodity crucial to Galveston's existence was firewood and charcoal. With no forests, all the fuel for heating and cooking had to be imported. The abundance of timber in Chambers County provided a ready supply with a convenient way, by boat, of getting the product to market.²¹ Brick making was a fairly seasonal operation, but cutting cordwood and making charcoal could be done at all times of the year. Brickmaking operations leave a mark on the land in the form of broken bricks, evidence of kilns, borrow pits where the clay was dug, and areas paved with several courses of bricks where they were loaded onto boats. Most of the brickyard owners as well as other individuals probably shipped cordwood and charcoal to Galveston but, with one notable exception, this cannot be proven. There are hundreds of mentions of firewood and charcoal in Galveston newspapers but, because it was such a common commodity, the source was seldom mentioned. Where cordwood was cut and loaded, there is no evidence of the operation and the same holds true with charcoal, except for one exception being the charcoal kilns at Old River.

^a In 1859 the Brown brothers built the "The Factors' Press" in Galveston, using 2 million Galveston brick, laid down in the course of two or three months (*Civilian and Gazette*, April 26, 1859, p1, c2).

^b It was a newsworthy item that Brown and Holmes were making Island bricks in 1858, implying that nobody else was making them..

^c "Outside of logs, driftwood and wreckage cast up by the sea, there was no material for man to build with. There was no clay, timber, or stone. In later years brick were made from some clay found down the island, but whilst they were used, they were so soft as to break easily. The old county jail was built from this brick, and the prisoners dug through the wall with their tableware." *The Early History of Galveston*. Dr. J.O. Dyer p17.

^d Galveston County Deed Book 12, p591. Oscar Farish to Frank Brown & Henry Holmes, July 28, 1874. This release of lien for the property purchased in 1857 was several years after Frank's death in 1867.

II. OVERVIEW

Fort Anahuac

The earliest known brickyard in Chambers County was set up to make bricks to build Fort Anahuac in 1830.^a This was not a commercial venture but would have been typical of the laborious brickmaking method that had been used for hundreds of years, called the "soft mud process." Slavery was prohibited in Mexico, so the initial runs of brick to build the fort were probably made by Mexican soldiers,²² and later, Texian prisoners who were forced into labor. According to N.D. Labadie's letter published in the 1859 Texas Almanac²³ "... he [the German] was soon taken prisoner with some ten or fifteen others, who were afterwards made to mould brick and tramp the clay for making them, as a punishment." Brick machines that would mix the clay and press it into molds became commonplace in the 1870s,^b but in the 1830s, it was all hand and foot labor. A place for a "borrow pit" was designated and filled with water. Then, people would stomp through the clay with their feet to break up clods and reduce the mixture to a workable, homogeneous mass with the consistency of stiff bread dough. Then the mass was brought to the molding table and the molder would pick off a double handful of clay about the size of a brick, lift it up, and slam it down into the mold. Experience told him how much clay to pick off and how hard to slam it to avoid additional handwork. Molds differed in size and capacity. A typical brick from Fort Anahuac measures 4 by 21/4 by 81/4 inches.²⁴ Brick molds had between one and three cavities per mold. After all the cavities were filled the molder would use a "striking stick," a small wooden board about 10" long to scrape the excess clay from the top of the mold. Then, "off bearers" took the filled molds to the "brick yard" and dumped the "green" bricks out to dry. They didn't stick to the mold because the clay had been previously covered with a light coat of sand to provide a non-stick surface, like a baker might sprinkle flour on a board before rolling dough. Depending on the weather it might take a couple of weeks before the bricks were dry enough to fire.

^a This yard was used only to make the bricks for the fort and associated buildings. <u>http://www.anahuactexasindependence.com/anahuacnational.htm</u>

Fort Anahuac and the Texas Revolution, The Texas Almanac

^b One of the early successful brick machines was made and patented by Alfred Hall. <u>US Patent No. 5,128, May 22, 1847</u>. Versions of his machine were copied by several different manufacturers. <u>*Galveston Weekly News*</u>, February 26, 1856, p2.

The fort was still under construction when Patrick Jack and William B. Travis of Alamo fame were taken prisoner. A different part of Labadie's letter states;²⁵ "As he was laying the foundation for a fort near Anahuac, a large brick-kiln had just been emptied, and all the masons and carpenters were forced to go down to put it up for a prison. In the course of a week the work was completed." A few days later there were 17 prisoners in the cell. Kilns back in the day, called scove kilns or clamps, were constructed of the bricks themselves and had no permanent shell or outer wall. After the rectangular base was built with tunnels, called eyes, running through the width of the kiln, used for adding wood, "green" bricks were stacked on their sides with a quarter inch or less between them to allow hot air flow to pass. There was no mortar used in stacking the kiln because space between the bricks was required to maintain circulation of the hot air. This stacking continued as high as the kiln required and the whole thing became an almost solid mass of bricks²⁶ that was then covered with a coat of insulating mud, leaving a vent hole at the top. The burn cycle took about two weeks, starting with low fire for a few days to force moisture from the bricks. Then the fire was increased and held for several days to "burn" or fire the bricks. After that the vent hole at the top of the kiln was closed and the kiln was allowed to slowly cool. When the cooling cycle was completed, the entire kiln was "emptied," or dismantled down to the base layer just above the eyes. This layer could then be reused for the next burn. Scove kilns had been in use for centuries and were still predominately used into the 1900s when newer designs that did have a permanent shell came into common use. In fact, the design is still used today in third-world countries as a cheap and convenient way to burn bricks. So, rather than Jack and Travis and the others being imprisoned inside the kiln, over the course of a week the masons and carpenters built a prison using the bricks that had just been burned.

Fort Anahuac was abandoned in 1832 and a number of archaeological studies have been made over the years, but the site of the kiln or kilns has not yet been found. The earth cover has been replaced each time to protect the site from vandalism.

Although there were no commercial brick yards in Chambers County at the time, the walls of Fort Anahuac were 3 feet thick and other brick structures also existed on the premises. That amounted to hundreds of thousands of bricks that, for a while, provided free bricks for the taking to anybody with the means to transport them.²⁷ One of the most well-known structures built at least partially with Fort Anahuac bricks is Ashton Villa in Galveston,²⁸ constructed in

1859.²⁹ It is said that James Moreau Brown imported bricks from Philadelphia to build his house with,^a but that claim does not stand up to scrutiny.^b Thomas Jefferson Chambers (1802-1865)

The Brown brothers were enumerated as Brick Makers in the <u>1850 Houston, Harris County Census, p19</u>. Frank (b ca 1820, VA) was working as a brick contractor in Galveston at least as early as 1853 (Galveston County Deed Book K, p263, Berlocher to Brown, Jun 25, 1853, Contract to build brick building on Berlocher property; also, Galveston County Deed Book K, p353, H. de St Cyr to Brown, Nov 24, 1853, Contract to build brick building) and was in partnership with John Brown, possibly his brother, (b ca 1807, VA). (Galveston County Deed Book G, p487, Galveston City Company to Franklin Brown, John Brown, & J&F Brown [DBA], May 2, 1857).

Frank Brown was enumerated as a Master Mason in the <u>1860 Galveston Census</u>, <u>p156</u>. That same year John Brown was enumerated as a Brick Mason. <u>1860 Galveston census</u>, <u>p110</u>. John Brown's name will appear later in this narrative in association with brick yards at Turtle Bayou, Chambersea, and Double Bayou in Chambers County, all located within a short boat ride of each other.

Frank died in 1867 (Flake's Bulletin, May 3, 1867, p4) but John Brown continued in the trade, enumerated as a Brick Maker in the 1870 Galveston County census. <u>1870 Census, Galveston County, Ward 2, p95</u>. Even though he was a brick maker, he still acquired additional bricks as needed for his projects. In 1869 he purchased 426,000 brick @ \$16.00 per thousand from Hugh Pritchard to use in building E.L. Gifford's store with the calculated amount of brick being 22 brick to the cubic foot for the two-story building. (Galveston County Deed Book 1, p38. Feb 9 1869).

Although James Moreau Brown is said to have owned a brickyard on Carpenters Bayou; there is no record of him owning any property at all in Harris County. (Harris County General Index to Deeds Grantee Book 3, Bo-By, 1836-1903, pp117-122). However, another Galveston brick maker, James H. Manley, did own two tracts in the Harris & Carpenter League in Harris County, and it is almost certain that John and Frank Brown had a hand in running these yards. <u>1855 Galveston County Tax Assessment Rendered by Citizens Thereof Situated in Other Counties. pB27</u>.

James Moreau Brown did own an enslaved man named Alek who was described in the bill of sale as a brick mason. (Galveston County Deed Book L, p430, Daniel Atcheson to James M Brown, November 14, 1855). It seems likely that he hired Alek out to work for Hugh Pritchard and John and Frank Brown although no record has been found of such an agreement.

The construction of just the house at Ashton Villa required more than <u>250,000 bricks</u> (175 courses, or about 45 feet high; original build perimeter is about 230 feet; the walls are claimed to be 13 inches thick; and it took 22 bricks to make a cubic foot [Galveston County Deed Book 1, p38. Feb 9, 1869]). The detached two-story kitchen and two-story stable added <u>another 100,000 bricks</u> or so (those buildings have been demolished but, according to the 1889 Sanborn map, was about 320 feet perimeter). The absence of bricks for the windows and doors is offset

^a <u>The Galveston That Was</u>, Howard Barnstone, 1966, page 56 contains an undocumented statement, repeated in the Ashton Villa National Register nomination, that the brick, wood, and plaster was brought from Philadelphia by schooner, but this seems to be incorrect. In <u>A History of Ashton Villa</u>, Kenneth Hafertepe, TSHA, 1991, Hafertepe casts doubt on a number of claims concerning Brown's involvement in the brick business and construction of Ashton Villa.

^b The National Register narrative stated that James Moreau Brown was a master brick mason, but his obituary states only that he had completed an apprenticeship in New York before coming to Texas. <u>Galveston Daily News</u>, <u>December 26, 1895, p8</u>. His obituary seems to have confused him with a pair of Galveston brick maker brothers, John and Frank Brown, who were active in Galveston from 1853 into the 1870s. The obituary says that he built the old jail, a job that was actually done by the Brown brothers, using bricks that they made on the Island. By the time Ashton Villa was built, J.M. Brown was involved in his business pursuits and, other than designing the house, would have had little time for its actual construction. The actual construction was probably done by Hugh Pritchard, a prolific Galveston brick maker and contractor. After the house was completed, Pritchard purchased Brown's former home (Galveston County Deed Record Vol P, p217, J.M. Brown to Hugh Pritchard, March 12, 1861). There has been nothing found in contemporary Galveston newspapers associating James Moreau Brown with brick masonry.

had built his house, Chambersea, just a short distance from Fort Anahuac in 1845³⁰ and he occupied the house until his death in 1865. A note written in 1955 by Katherine Sturgis Evans (1874-1958), a granddaughter of Chambers, repeats a family story that bricks from the fort and associated buildings, as well as from a house on Chambers' own property called the "Spanish House" were used to build several structures in Galveston, including "the old Jim Brown house" or Ashton Villa.^a She would have heard the story from her mother, Katherine Chambers Sturgis³¹ (1852-1836) who was alive when Ashton Villa was built. The bricks also bear a striking resemblance to bricks made at John Carman's yard at Old River.

Between 1857 and 1875 there were at least four brick yards around Trinity Bay and another four yards on the Chambers County side of Cedar Bayou making bricks for the Galveston market. An entry in Wright Smith Andrews' diary states³²

August 29, 1863 - I fully expected to have been some miles on my way to Double Bayou by this time. ... All well except Mr. Edgar, who had returned from a trip to Liberty, looked

Much older <u>brick buildings in Philadelphia</u> don't show the imperfections, irregularities, and spalling, evident in close-up inspection of Ashton Villa bricks.

by not including into the calculation the bricked basement that was filled in when the island was raised after the 1900 hurricane. That number of bricks has a volume of about 16,000 cubic feet. At 4½ pounds per brick, it equates to almost 800 tons. This is well above the capacity of most seagoing vessels even as late as 1877 although multiple shipments were not impossible. <u>Annual list of merchant vessels of the United States 10th (1877-1878)</u>. The iron work definitely came from Philadelphia and the plaster in powdered form was imported, but wood and bricks were readily available locally and the notion that they were imported from Philadelphia, to quote Ken Hafertepe, "The assertion has the glow of romantic embellishment about it."

In 1860, J.M. Brown placed a newspaper advertisement to sell 35,000 Philadelphia bricks (<u>The Civilian and Gazette. Weekly, October 23, 1860, p3, c7</u>) but it is doubtful that they were actually made there. Philadelphia had been a center for brick making since Colonial days and the name had become a generic term for high-quality bricks (<u>Introduction to early American masonry, stone, brick, mortar, and plaster, 1973, Harley McKee, Columbia University, p46</u>). Over the years, many brick makers not from Philadelphia had adopted the term, and it had become so prevalent that the Peerless Brick Company of Philadelphia put a notice in their catalog warning that contractors were using their name but not using their bricks (<u>Peerless Brick Company catalog, 1890, p23</u>). The Greg Brick Machine Company of Chicago was selling a machine advertised for making "Philadelphia pressed brick" all over the country (<u>Brick, Tile & Metal Review, December, 1883, p11</u>) and R.M. Johnson's patented "Philadelphia Pressed Brick Machine" was for sale in Houston (<u>Brick, Tile & Metal Review, June, 1882, p10</u>). Brown used the term as a selling point to dispose of the leftover bricks from the construction of Ashton Villa. He had a hardware store, but this is his only known advertisement for bricks.

^a When Katherine Sturgis Evans wrote the note in 1955, Ashton Villa no longer carried that name. The El Mina Shrine Temple purchased the building in 1927 and, from that time until the city of Galveston purchased it in 1970 to lease to the Galveston Historical Foundation, the name Ashton Villa is absent from the newspapers and the previous names of the owners had faded from general public memory. Only people with a personal knowledge of the building would have called it "Jim Brown's house." As a debutant member of Galveston's high society (<u>Evening Tribune, August 31, 1889, p4</u>), she certainly knew the family and may have attended events at the house.

as well as could be expected. On Tuesday went to Mr. Bob White's to see the brick kiln and bring Mr. Brown home, stayed till Wednesday, on Saturday rode over to Chambusia (sic) with Frank Brown to see about making a kiln of brick for the Gen'l and from there to Judge Chambers about conscript business.³³

Thomas H. Edgar's trip to Liberty may have concerned the brick business where, in 1857, there were two brick yards in operation.³⁴ Galveston newspapers reported him making several trips to Liberty around this time. His sister, Fannie Andrews, was married to Chambers County rancher Wright Smith Andrews. She purchased property on Goose Creek³⁵ where Thomas Edgar had a brickyard until it was destroyed in the 1875 hurricane.³⁶

A 19th Century Brick Kiln on Cedar Bayou³⁷

In October 2020, I studied an extant kiln on Cedar Bayou³⁸ on land that had been owned by brick maker James Casey in the 19th century. Most of the kiln has been covered by alluvium with only the tops of the eyes exposed and a few feet of the kiln showing on the corner closest to the bayou. The kiln is mostly overgrown with vegetation and several trees had taken root on the top. The kiln, about 12-feet wide, was built directly on the bank of Cedar Bayou within a few feet from the water. The bricks forming the outside skin are stacked face-side-up in alternating courses of stretchers and headers³⁹ with no spacing and no mortar.⁴⁰ Bricks on the west end have been removed, leaving about 15 feet on the east end closest to the bayou and four tunnels running north and south. Excavation to determine the original length of the kiln was not done. There are three bricks, or about 24 inches, between the tunnels which are about 18 inches wide. The tunnels have been completely filled with silt deposits up to the top of the eyes. The doublecourse of bricks forming the arches of the eyes was laid with the headers, or ends, exposed. The tops of the arches are about 24 inches above ground level, with no indication of smoke residue above the arches. Many bricks have been removed from the top, leaving the highest remaining layers on the east end closest to the bayou. The bricks are unmarked, having five smooth sides and one face roughly scraped.

The proximity of the kiln to the water shows that bricks were unloaded from the kiln directly onto the transporting vessel, be it steamboat, schooner, or barge. The width of the kiln was limited by the firing process. Wood was shoved through the eyes into the tunnels from both sides throughout the several-day burn and, if the kiln were too wide, it would be more difficult to shove the wood all the way to the center of the kiln for even burning.⁴¹ A kiln with six tunnels

might yield about 25,000 bricks and more bricks would just require a longer kiln with more tunnels. The header-exposed brick pattern forming the eyes seems to be unusual. The absence of scorch marks and smoke from the wood fire above the eyes indicates that the kiln had originally been scoved, or coated with a layer of insulating mud that has been washed off by flood waters over the past century and a half. All the eyes had iron grates that may still be buried in the silt next to the eyes. The English bond pattern forming the outside skin of the kiln with no spacing was probably to strengthen the outside to prevent collapse of the kiln as the bricks shrunk during firing,^a as well as to help contain the heat. The appearance of the bricks with five smooth sides and one face roughly scraped is consistent with the known brick-making technology of the day.

Out of dozens of kilns originally used on Cedar Bayou from 1840 through 1957, this is the only known extant kiln and the depth of alluvium and the overgrowth of vegetation is what protected it from destruction and vandalism over the years. Although located in Harris County, this kiln is representative of the technology exclusively used on both sides of the bayou throughout the brick-making era. In later years, sheds were built over the kilns to protect them from the elements. Although kiln sizes varied, a 1963 photograph of John Kilgore standing in front of the last kiln on Cedar Bayou gives an indication of the relative size of an intact kiln.⁴²

Old River

John Carman was the first commercial brick maker on Old River. He moved here from Walker County in 1853 and bought 500 acres on the Chambers County side of Cedar Bayou in the Christian Smith land grant. He also owned 12 enslaved people and 6 horses. In 1854 he bought another 534 acres on Old River in the Robert Wiseman land grant. Brick machines were advertised in Galveston newspapers as early as 1854 and one had even been imported to Galveston in 1856,⁴³ but bricks in the South were still mostly made with slave labor, mixing the clay by foot and filling the molds by hand. As far as is known, until after 1870, brick making in this area was a completely manual operation, just as it had been at Fort Anahuac.^b

^a This excellent video of the brickmakers produced by Colonial Williamsburg shows the same English bond on the outside of the kiln supporting the extreme shrinkage of the bricks. <u>Meet the Brickmakers!</u>

^b In 1871, when brick machines were becoming popular, Hugh McNelly placed an advertisement in a Galveston newspaper challenging anyone in the United States to a contest for moulding brick by hand, for any amount of money. "Challenge," <u>Galveston Daily News, July 9, 1871, p4, c3</u>.

Carman began making bricks for the Galveston market in 1857⁴⁴ when the tax assessment shows that he owned 634 acres in the Robert Wiseman League on Old River and 300 acres in Christian Smith on Cedar Bayou. He still owned 12 enslaved people, and also 6 horses, 45 cattle and a sailing schooner. He was in business with M.A.K. Paine and by 1859 he owned two schooners, indicating a large production. Paine was not shown through 1859, but the 1860 assessment shows him with 200 acres in Wiseman and another 177 acres in Theodore Dorsett where he owned 15 people,⁴⁵ although the 1860 Slave census shows him with 20.⁴⁶ The 1863 Chambers County tax assessment showed that Carman owned 13 enslaved people (and no horses, cattle or sheep) and Paine owned 15 people (and 9 horses and 10 cattle). The brick business fell off during the Civil War and John Carman placed an ad in the Houston's Tri-Weekly Telegraph in May 1863 to sell his property⁴⁷ but the brick yard was in operation until at least 1865 when the tax assessment showed that Carman owned 16 enslaved people on the same 640 acres, and Paine owned another 14 people. The manager of the yard was Mr. Tharp, probably Elias Tharp who, by 1870, was a brick maker at Young's brick vard in Houston's Fourth Ward.⁴⁸ Antebellum bricks made in the South were typically larger than modern bricks by about a fifth in all dimensions^a although there was no standardization; even bricks from the same yard varied in size due to inconsistent shrinkage during drying and firing and difference between mold sizes. Most bricks found at this site were approximately 4-1/8" by 2-1/2" by more than 8" in length,⁴⁹ but other bricks found at the site are larger.

The end of the war brought an end to slavery, and also an end to Carman and Paine's brick business. The Chambers County courthouse burned down in 1876 so most deed records before that time were lost, but the 1866 tax assessment shows that Paine had left Chambers County and Carman was still living in in the county but with no land. Perhaps the buyer defaulted, because in January 1867, Carman sold 200 acres to Margaret Alford, the wife of Dr. James P. Alford.⁵⁰ He also sold 317 acres to Alford in a different transaction. Carman had left the county before the 1868 tax assessment but the yard continued in operation under a lease

^a "I know of no place where less than 8,000 bricks are produced every day. But at the south with slave labor, the brick being very large, and five brick made at each impression, instead of six of the smaller brick at the north it is necessary to add a third off bearer..." <u>The Cultivator. (1847). United States: New York State Agricultural</u> Society, p207.

arrangement, perhaps with Pierre Almeras. The 1872 tax assessment showed J.P. Alford with 517 acres in the Wiseman grant.

In June 1872, J.P. and Margaret Alford sold 100 acres to Pierre Almeras of Galveston, Lewis G. Guertin of Liberty, and Euclide Brisson of Chambers County.⁵¹ The bricks from this era measured about 3-7/8" x 2-1/4" x 8-1/2" and the finished appearance indicates that they had a press that equaled any yard on Cedar Bayou.⁵² The yard was advertised for sale in 1873 but didn't sell right away because, in 1875, Almeras gave Dr. Alford power of attorney over his interests including the authority to deliver and sell brick.⁵³ From 1878 through 1880, Emerie Rheaume owned a different 317-acre tract of the former Carman 640 acres. The 1880 census names four men who worked at the Old River brickyard. It probably went bankrupt that year because the 317-acre tract was sold to C.A. Stevens at Sherriff sale in 1880. Stevens was not a known brick maker, and Rheaume purchased another brickyard on the Chambers County side of Cedar Bayou in the 1890s where he made bricks.

The brick yard on Old River does not appear in any of the Industry and Manufacturing Schedules in the 1860, 1870, or 1880 censuses. Only those businesses making more than \$500 per year were listed, so either 1) the yard was too small, 2) not in operation when the census enumerator visited, or 3) the enumerator did not visit brick yards because they were all located in very secluded areas. Several other yards on Turtle Bayou, Double Bayou, Goose Creek, San Jacinto River and other areas around the bay weren't listed on the schedules either.

Notes on the Archaeological Survey

After the last Old River brick yard shut down, the site continued in use for making charcoal. The charcoal kilns were constructed with bricks from the brick yard, and bricks can still be found in the margins of the bayou after a north wind blows the water level down.⁵⁴

This site was first investigated and recorded by W. L. Fullen and Jean L. McGinty in 1978. At that time eight kilns and three burned areas were noted, as well as two possible borrow areas where clay was dug.⁵⁵ The site was registered with the Texas Archeological Research Laboratory in Austin.

The 1980 archaeological study identified a rectangular structure situated in the northwest section of the yard. This was the actual kiln, known as a scove kiln, which was used for firing bricks. After firing, bricks were loaded directly from the kiln to the boat. Bricks have been found in the margin of the bayou at this exact location, further proving the site of the kiln. The eight round structures⁵⁶ identified as "beehive kilns" in the 1978 study were not used for making bricks. Bricks required a lot of upfront work like seasoning, mixing and molding. They also required a large area to lay the "green bricks" out in the "brick yard" to dry before firing and the congested area around these kilns leave little room for all that activity. At 15,000 bricks a day it would take about 40 workdays to fill up just one kiln. It took another two weeks to burn the bricks, so even if they were for burning bricks, there wouldn't be a need for so many of them. The first "beehive kiln" to burn bricks wasn't used in this area until Ed Smith put in a downdraft kiln on Cedar Bayou in 1904.⁵⁷ This structure (there was only one) was noted by Baytown Civil Engineer Johnnie Busch while doing surveying work on the Annie Scott property in the 1950s.^a He commented that it looked like a brick igloo. This structure shows up on the 1944 Edgar Tobin and the 1916 USGS Survey. The 1978 archaeological study concludes with: "Unfortunately, very little is known about the brick-making industry in Texas, despite numerous historic references to kilns in operation."

The round structures at Old River were actually kilns used for making charcoal to ship to Galveston. Without forests on the island, all the fuel for heating and cooking had to be brought in, and charcoal and cord wood were major exports from Chambers County. Charcoal was particularly desirable because it burned without producing smoke, with more BTUs per pound. It could be made with or without a permanent kiln, but brick kilns like the ones at Old River provided more consistent carbonization resulting in a better product. The brick used in building the kilns would have been made there at the brick yard and, since brickmaking is a fairly seasonal activity, and charcoal burning is not, they could have made bricks and charcoal during the same period of time. These charcoal kilns indicate a high level of sophistication in the Old River charcoal industry. The three burned areas noted in the study could have been used for

^a Baytown Civil Engineer Johnnie Busch stated that while surveying Annie Scott's property on Cedar Bayou in 1956 he saw an igloo shaped brick structure near the bayou just west of the Needle Point. The location was where Ed Smith's brick yard had been located fifty years earlier and shows up on the 1920 USGS Cedar Bayou Quadrangle and the 1943 GLO Aerial Image.

making more charcoal than was possible just using the round kilns, or could have been used for making charcoal before the brick kilns were built.

According to a United Nations publication on the subject of charcoal burning, beehive kilns are optimally grouped in batteries of 7, 14, etc., (a multiple of 7). The kilns were used in rotation, with about a week needed to completely burn, cool, and unload a kiln. The kilns at the Old River site conform to this rotation almost perfectly, with eight kilns instead of seven. The following table shows the time needed for charcoal production.⁵⁸

Charcoal discharging and firewood charging	8 hours
Carbonization	96 hours
Cooling	88 hours
Total cycle:	192 hours or 8 days

There are similar charcoal kilns at Canyon Creek in southwest Montana.⁵⁹ Other surviving kilns are the Wildrose Kilns at Death Valley National Park,⁶⁰ the Kilns at Clark County, Nevada,⁶¹ Piedmont Charcoal Kilns in Wyoming,⁶² and the Birch Creek Charcoal Kilns in Idaho⁶³ and an internet search⁶⁴ shows many more, all laid out the same way.

Double Bayou

The brick yard at Double Bayou seems to have been run by Frank Brown of Galveston. He was brother to another Galveston builder and brick maker John Brown. Frank does not show up in the Chambers County tax records so he could have leased land and slave labor from Thomas H. Edgar, the son of Alexander Edgar and the first male white child born in Galveston.⁶⁵ Or he could have been burning bricks for Bob White. Before the end of the Civil war, all the local brick yards operated using slave labor and the enslaved people lived in brick cabins on or near the yards. In the post-war period, the cabins continued in use by the freedmen.

In his book *Home on the Double Bayou; Memories of an East Texas Ranch*,⁶⁶ Ralph Semmes Jackson (1909-1963) writes:

Within the confines of that geographical area known as Double Bayou the colored people outnumbered the white about five to one. With very few exceptions the colored folks all lived in a densely wooded area "across the bayou." No name other than "across the bayou" was used to designate this colored community.⁶⁷ Some of their small cabins were built along the road but most were situated back in the woods, each one sitting in its own clearing with room for a vegetable garden and grazing space for a few cows, horses,

pigs, and chickens. They shipped what produce they could spare by boat to Galveston, and the men and boys supplemented this meager income by working as cowhands on the surrounding ranches.

Hiram Mayes (1862-1944) was born and raised on Thomas Edgar's plantation^a "across the bayou" and was interviewed by the WPA as part of the Slave Narratives Project about 1937.⁶⁸ His father may have worked at the brick yard there. The following is extracted verbatim from the narrative:

He thinks he was born in 1862, a slave of Tom Edgar, who owned a plantation in Double Bayou, Texas. Hiram lives with two daughters in a rambling farmhouse near Beaumont, less than three miles from his birthplace on the old Edgar homestead near the Iron Bridge.^b For thirty years Hiram has served as Worshipful Master of the Masonic Lodge (Negro) in the vicinity. Native intelligence gleams in his deep-set eyes, but his speech shows that he received little schooling.

De colored folks all have little brick cabin quarters and they have a brickyard right near de place what a white man own and he make de bricks what they calls Cedar Bayou brick account of de mud being different. I's born in one them little brick houses.

Old man Tom Edgar was my master and de old sugar place was down below where Jackson' store sit and 'bout two mile from where I live now. Some [of] the brick from that house is still standing der in de woods.

[omitted]

After [we were] freed my papa move up de prairie a ways and hire out to ride de range. They done learned me to ride when I 'bout five, six year old and I rid with de old man. That ridin' business was jes' my job.

The possibility that Double Bayou was a commercial brick yard is alluded to by the words of Hiram Mayes, "... he make de bricks what they calls Cedar Bayou brick account of de mud being different." This hints that the brickyard was still in operation when the Cedar Bayou brick yards rose to prominence and they so-branded the bricks to compete with those from Cedar Bayou. Although Tom Edgar later ran a brick yard on Goose Creek, Mayes' statement; "they have a brickyard right near de place what a white man own" indicates that Edgar did not own the brick yard. The yard contributed little to the Galveston brick market and probably produced bricks for local use like chimneys and house footings. It probably shut down with the end of the

^a Thomas Edgar owned the land "across the bayou." The land where Hiram Mayes was born and raised is now owned by Anahuac ISD and evidence of the slave cabins may still exist.

^b This is the bridge over Double Bayou on FM-562 at the old Jackson Store.

Civil War as evidenced by Hiram Mayes' statement; "After [we were] freed my papa move up de prairie a ways and hire out to ride de range." Hundreds of Galveston newspaper articles from the 1860s into the 20th century reported on bricks from Cedar Bayou, but not a single article mentioning bricks from Double Bayou has been found,^a although they could have lumped all the bay area brickyards into a category they called "Cedar Bayou." The site of the kiln has not been found.^b Examination of the banks of Double Bayou by boat have yielded no evidence of bricks; however this is inconclusive because the banks fall directly into the water with no mud flat visible as is seen at Old River and Cedar Bayou.

Most slave quarters in the South were built of wood and rapidly deteriorated once they were no longer used and maintained, but the cabins at the Double Bayou yard were built of brick, made at the nearby yard. After the Civil War, many of the freedmen turned to employment on the Chambers County cattle ranches and this undoubtedly contributed to the demise of the brick yard. Over the years the roofs of these cabins caved in, the wood parts have long since rotted away, and the walls have collapsed. Much of the land was cleared sometime before 1930⁶⁹ and the bricks from the cabins were piled up out of the way somewhere on the property or, perhaps, removed for some other project. Thus far, no bricks have been found.

Turtle Bayou

The brick yard at Turtle Bayou mentioned in the Wright Smith Andrews diary remains an enigma. Careful scrutiny of the east bank of White's Bayou, a tributary of Turtle Bayou in the James B. White land grant, has shown no evidence of bricks, even at low water levels.^c There is a short stretch of Turtle Bayou where White's Park is located and, if the yard were located here, all evidence was wiped out when the boat ramp was built in 1967. The RV park across the bayou has a spoil area of broken modern bricks and tile that holds no historical value. White's Park is an area of much historical importance. The 1928 Corps of Engineers Anahuac Quadrangle map⁷⁰ shows a rope ferry and a store at that location and the Turtle Bayou Resolutions were drawn up

^a "Port Items - ... the new basin at the foot of Tremont Street is daily filled with small craft from the <u>upper bay</u>, which are engaged in transporting brick for the many new buildings now being erected in the city," <u>The</u> <u>Galveston Daily News</u>, June 17, 1874, p3.

^b The brick yard was not on Tom Edgar's property as evidenced by Hiram Mays' words. He identified Edgar by name but said only that the brick yard was on land that a white man owned.

^c Typically, sites where bricks were loaded onto boats are evidenced by bricks scattered onto the mud flats in the bayou and can be seen at low water level. See Appendix, Images 20 and 21.

there in 1832. Upstream from the park, the bayou enters into the Moses A. Carroll land grant and, although land may have been leased for a brick yard, no evidence has been found there either. If the kiln was burned for a specific project and not destined for commercial export (see Chambersia and McManus Kiln below), no evidence of loading areas would be expected. Mention of bricks from Turtle Bayou in Galveston newspapers has not been found.

But what Turtle Bayou lacked in brick making, it more than made up for by charcoal burning. While the charcoal yard at Old River was outfitted with permanent charcoal kilns built of brick, yards in other parts of the county operated in a different manner. Wood, either pine or hardwood, was cut into four foot lengths and stacked in the shape of a pyramid. Then the pyramid was covered with pine straw and finished with a heavy layer of dirt. The pit then was fired and, over the course of several days and nights watching to make sure the flames didn't break through, the moisture was cooked out of the wood leaving the charcoal ready to be cooled and bagged for shipment. A 10-cord kiln would, with a good burn, produce about 320 sacks of charcoal destined to cook with and heat the homes in Galveston. By the late 1890s, charcoal imports amounted to about 5,000 sacks a month going for 30 to 35 cents a sack, but during the heavy snow of 1896 went up to \$1.25 at the dock in Galveston⁷¹ and, during The Great War, a sack of charcoal could fetch \$1.75. A large fleet of sailing schooners was required to haul charcoal from Turtle Bayou, Wallisville, Double Bayou, and Anahuac to Galveston until 1929. That was when natural gas was piped to the island⁷² and, almost overnight, a whole industry just vanished.⁷³

Chambersea

In his diary on August 29, 1863, Wright Smith Andrews wrote, "... on Saturday rode over to Chambusia (sic) with Frank Brown to see about making a kiln of brick for the Gen'l," The wording suggests that this kiln was just a one-off operation. Before the use of machinery, it was easy to set up a temporary operation for the purpose of making bricks for use on-site, provided a source of clay and water was available. The use of homemade bricks burned at the site of an early dwelling have frequently been pointed to with curiosity by historians, but the oddity would have been for those bricks to have been manufactured at some other location. Bricks are heavy and expensive to transport and it was a simple matter and required no special equipment to mold bricks on site and fire them in a clamp kiln that was comprised solely of the bricks that were being fired.⁷⁴ The exact location of this kiln is unknown.

McManus Kiln

During July and August 1979, the Center for Archaeological Research, The University of Texas at San Antonio, conducted survey, testing, and historical research on lands to be included in the Wallisville Lake in Liberty and Chambers Counties, Texas. The existence of an unidentified "pile of bricks" some distance behind the J. D. McManus residence north of Lake Charlotte was called to the survey crew's attention by Dennis and David McManus. The remainder of this section is excerpted from that survey.⁷⁵

"The site consisted of a horseshoe-shaped mound of jumbled, broken bricks, slightly higher on the edges and lower in the center.^a The McManus family told of removing bricks from this pile for road building for a number of years. No one in the family had any idea where the bricks came from or why they were there.

"Careful observation of the mound revealed a row of stacked bricks which was cleaned off until it was possible to tell the alignment of the row. Another similar row could be seen, ca. 20 inches to the north of and parallel to the first row. The bricks measured a uniform 4" x 8-3/4" x 2-1/2"⁷⁶ and were poorly fired, breaking easily. Color ranged from a pinkish tan to dark gray. Five sides of each brick showed the striations and sharp edges of being pressed in a wooden mold; the sixth was roughly smoothed. There was no mortar between them. A two-foot wide trench was excavated north-south, perpendicular to these rows.⁷⁷

"As excavation progressed, an additional row of bricks was uncovered to the south which differed in pattern of arrangement. Further excavation revealed a line of unfired bricks along the south side of this row. A hand-forged nail was found against the base of the south row on the inside of the kiln. Outside, or south, of the unfired bricks was a mixture of crumbled and broken bricks mixed with soil; this deposit continued to the edge of the mound. No mortar was present in this row. The presence of the unburned brick on the outside of the row confirmed that this was a kiln, rather than merely a stockpile, since Martin says that local kilns were built of unburned

^a This resulted from the bricks in the center of the kiln shrinking more from the heat than those nearer the outside of the stack. See the Williamsburg kiln, Appendix, Image 8.

bricks and that the outside layer generally dried but did not burn.⁷⁸ A trench was then excavated to the east, perpendicular to the first trench, to look for remains of the east wall of the kiln. A machine-cut nail was found while excavating this trench. At the end of a row of stacked brick was found a single row which carried across the openings between the rows and formed a thin barrier or wall. On top of and to the east of this row were groups of bricks which appeared to be collapsed arches. However, the bricks were too jumbled and broken to attempt a reconstruction of this wall. The bottom layer of bricks rested on dark brown to black sand. Since the natural soil in the area is a tan sandy loam, it appears that the area was merely scraped level and the green bricks to be fired. From the configuration of the south wall brick pattern, it appears that the walls of the kiln began to arch inward from a point approximately two feet from the bottom of the outer wall. There were not enough courses of brick left on the south wall to determine the arc of the curve.

"Observations and Conclusions: This kiln closely resembles those described as in use on Cedar Bayou in the last half of the 19th century. However, its size (ca. 18 feet square with a capacity of perhaps 15,000 to 20,000 bricks) suggests that it was a small scale undertaking which could have been run by one family for its own use and that of its immediate neighbors. The average mid-19th-century farmhouse in the area had one or two chimneys and sat on brick piers, requiring perhaps a maximum of 5,000 bricks for its construction.

"It seems likely that the kiln was built by members of the Jones family sometime around 1852, since at that time they would have been building new homes on their recently acquired property. It would have been more economical to make brick on the place than to haul it in by boat from the kilns on Cedar Bayou.^a It seems certain that more unknown brick kilns were built and used for small non-commercial runs of brick in other parts of the county in the 1800s.

^a A brick yard was tried on Cedar Bayou about 1840 but the trade languished for about 20 years. The first known report of bricks from Cedar Bayou in Galveston newspapers was in 1860. <u>*Galveston Weekly News*</u>, <u>August 28</u>, <u>1860. p3</u>.

Cedar Bayou^a

As far as is known, bricks were first made on Cedar Bayou about 1840, but serious production did not begin until 1860 when James Chandler and Dr. Henry Parnell of Chambers County⁷⁹ offered 100,000 bricks for sale in the Galveston Weekly News with another kiln of 100,000 ready to be burnt.⁸⁰ The yard was about 10 miles up from the mouth of Cedar Bayou in the Christian Smith land grant.⁸¹ Chandler owned 12 acres in Harris County and 325 acres and twelve enslaved people in Chambers County but their timing wasn't great because when the Civil War began in 1861 building in Galveston ground to a halt and didn't pick back up until the war ended.

The end of slavery in 1865 forced the closure of some brick yards and the 1875 hurricane devastated property around the bay and along the San Jacinto River all the way to Houston. All the yards still in operation located on streams around Galveston and Trinity Bay and on Buffalo Bayou and the San Jacinto River were destroyed by the storm surge except for those several miles up Cedar Bayou. By the time the storm hit, the four brickyards of Thomas Wright, James Casey, Rosamond, Milam & Bro, and J.P. Davie on Cedar Bayou had already risen to prominence, mostly due to increased financial support from Galveston and the use of new machinery. In 1871 a Ferguson brick machine⁸² was put in service in Houston and Ferguson's agent, Mr. Willard, indicated that he was going to put more in service "near Goose Creek,^b opposite Morgan's Point, at the head of our bay."83 Wright, Davie, and Casey only had operations on the Harris County side of the bayou, but Rosamond, Milam & Bro had yards that extended for about three miles on both sides of Cedar Bayou. The Chambers County deed records show six tracts exceeding 650 acres purchased by the company from 1877 through 1883. They had a company town and a store, and when S.G. Rosamond died in 1883, open accounts worth more than \$13,000 were owed to the company store by more than two hundred people,⁸⁴ a greater number than actually lived in the Cedar Bayou community.

After Rosamond's death in 1885,⁸⁵ the company of Rosamond, Milam, & Bro. was dissolved and the tracts were sold off to several people who started their own brick yards.⁸⁶

^a For an in-depth study of the Cedar Bayou brick yards, see the <u>Brick Yards of Cedar Bayou</u>, by Chuck Chandler. Texas Historical Marker No. 23300.

^b Goose Creek stream is about three miles west of Cedar Bayou. "Ferguson's Patented Brick Machine," <u>The</u> <u>Galveston Daily News, Mar 16, 1871, p2</u>.

About nine miles from the mouth of the bayou, William Fayle had a yard across from the Methodist Church, where the NRG power plant is located today. After the breakup, R.A. Milam kept making bricks at the yard where Highway 146 crosses the bayou at mile eleven that the company had leased from Rachael McLean.⁸⁷ That property is known as Milam's Bend and, when the water is low, bricks can be found under the bridge on the Chambers County side. Further north, about twelve miles from the mouth was the yard operated by Ed Smith and Dan Coughlan. J.W. Magee had a yard at mile thirteen that he sold to Emeare Rheaume in 1893.⁸⁸ Rheaume kept it until he died in 1898 and then Barney Donnelly and Albert Morgan bought it⁸⁹ and made bricks until about 1909. At mile fourteen, Matthews & Bro were in business from 1886 to 1896. Up in the vicinity of Old Needlepoint Road at mile sixteen, C.F. Jennische⁹⁰ & Co operated a yard from 1881 until sometime after 1888. Donnelly and Morgan closed their yard about 1909 and Steve Fayle was still making bricks in 1910,⁹¹ but brick making in Chambers County had stopped by 1916.

Aztec Brick Yard

Throughout the 19th and the first half of the 20th century, area brick yards had all been situated on rivers, streams, or railroads. Besides the abundance of clay, the transportation arteries provided a way to get the product to market. That changed in 1957 when Highway 73 (later redesignated as Interstate 10) opened between the Trinity and San Jacinto rivers. Until then, the area had been heavily invested in rice farming and was untouched by industry, but the new highway provided a way to transport bricks.

After the last brick yard on Cedar Bayou closed, J.B. Cordell and his son Pancho opened the Aztec Brick Company in 1959 about three miles east of Cedar Bayou. He had bought property on the newly-constructed Interstate 10 in Chambers County where Gene's Power Sports is located today.⁹² The Cordell family had been in the brickmaking industry on the east side of Houston on Green's Bayou since 1927.⁹³ J.B. had bought some of his equipment from John Kilgore⁹⁴ and had four kilns⁹⁵ with a capacity of 40,000 bricks per day which were stamped AZTEC.⁹⁶ The lakes north of the highway were made by dredging mud for the bricks. The manufacturing process was called "dry press" and, rather than adding water, the clay was ground in a machine and deposited dry into the steel molds. Then it was pressed under extreme pressure and taken straight to the kiln. This was faster than the "soft mud" process and resulted in a better, more durable product. The Aztec property was sold in 1967⁹⁷ but the yard continued in operation until 1970.⁹⁸

Andy Cordell Brick Yard

J. B. sold some property on the east side of his plant to the Andy Cordell Brick Co in 1962.⁹⁹ Andy died in 1968¹⁰⁰ but his son built a plant there in 1969 and installed a downdraft "beehive" kiln. The plant closed in 1995¹⁰¹ but the kiln remained a landmark on Interstate 10. It was even used as a haunted house on Halloween.¹⁰² When Cutting Edge RV bought the property in 2012 they removed the kiln, but the drying shed is still standing. Lots of these bricks have been found in houses and businesses in the Baytown area and Chambers County.

Commercial brick yards in Chambers County operated over a 130-year span, producing building materials for Galveston and the local area until the introduction of cheaper brick finally drove them out of business.

III. SIGNIFICANCE

For almost a century, the natural resources of Chambers County provided Galveston with products that enabled life on the island to prosper. Several brick yards supplied building materials and the cordwood and charcoal yards from the forests of Chambers County provided the only means the island residents had to heat their homes and fire their ovens.

In the beginning, Galvestonians were not interested in brick buildings, but after a number of fires that destroyed parts of the city, they enacted fire codes that required non-combustible buildings in the business section. The first commercial brick yard in Chambers County started in 1857 when John Carman and his business partner, M.A.K. Paine, began making bricks at Old River. The thirty enslaved people they owned made bricks in the manner that had been used for thousands of years. They mixed the clay by treading it with bare feet and filling the molds by hand. After burning the bricks in a scove kiln, they loaded them into one of the two schooners owned by Carman and shipped the finished bricks to Galveston. The end of slavery caused the yard to fail, but by 1872, it was back in operation under Pierre Almeras. It was probably shut down in 1880, but the brick yards on Cedar Bayou continued until 1916. Other smaller yards at Turtle Bayou and Double Bayou also made bricks, probably for the local market.

Brick-making was a seasonal activity, but wood-cutting and charcoal-burning could be done throughout the year. After the Old River brick yard shut down, they began making charcoal there. It took a week to make charcoal and, with eight kilns, they could rotate through them successively. They also made charcoal at Turtle Bayou and Double Bayou. The process there was simple. They stacked the wood into a pyramid shape and covered it with dirt and straw and set a fire inside. They watched it closely to make sure the fire didn't break through and, over a week, the wood would smolder and char but not burn. Then they broke the stack down and bagged it for transport to Galveston. Charcoal-burning prospered until 1929 when natural gas was piped to Galveston and, almost overnight, an entire industry vanished.

IV. DOCUMENTATION

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Wright Smith Andrews Civil War Diary, Chambers County Museum at Wallisville.

<u>Here in the Brickyard</u>, Colonial Williamsburg. This video shows the steps in making the bricks. The process shown is exactly as it was in the days before the end of the Civil War before brick machines came into widespread use. Also, <u>Firing the Bricks at Colonial Williamsburg 11-20-14</u>.

Portal to Texas History. A gateway to rare, historical, and primary source materials from or about Texas. <u>https://texashistory.unt.edu/</u>

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<u>The Brick Yards on Cedar Bayou</u>, Chuck Chandler, Texas Historical Marker No. 23300. (downloads as pdf).

End Notes

¹ Sponsored by Chambers County Historical Commission

⁴ "Early Brickmaking in the Colonies" by N. R. Ewan. Camden County Historical Society.

- ⁶ The Civilian and Galveston Gazette, March 2, 1844, p3.
- ⁷ "Received per brig Galveston 15,000 Bricks." <u>Civilian and Galveston Gazette, November 4, 1840, p3, c1</u>.

The brig Galveston had arrived from New York. Civilian and Galveston Gazette, November 4, 1840, p2, c4.

⁸ "The ship Wharton, 5,000 fine brick." <u>Galveston Weekly News, June 12, 1855, p2</u>.

⁹ "Arrived on the brig Hazard, from Pensacola, with brick for the new customs house." <u>The Civilian and Gazette.</u> <u>Weekly, December 4, 1860, p1, c7</u>.

- ¹⁰ "Bark Trinity, from Boston, loaded with brick." <u>The Civilian and Gazette. Weekly, December 4, 1860, p2, c1</u>.
- ¹¹ "The steamer Era No. 3 from Bolivar Point, Brazos River, 60,000 brick." <u>The Civilian and Gazette. Weekly,</u> <u>December 25, 1860, p1, c4</u>.
- ¹² "Per brig Mary Wheeler from Bordeaux. 20,000 superior pressed brick, English shape." <u>The Weekly Telegraph</u> (Houston, Tex.), February 12, 1861, p3, c10.
- ¹³ "Liberty," *Civilian and Gazette*. April 23, 1857, p1, c5.

¹⁴ *Civilian and Gazette. Weekly*, June 23, 1857, p1, c1.

¹⁵ "New Kind of Brick," <u>Galveston Weekly News</u>, March 30, 1858, p1, c6.

¹⁶ "Novelty in Brickmaking," *Civilian and Gazette Weekly*, July 26, 1859, p3, c4

- ¹⁷ Map of Galveston, 1869. <u>https://www.mapsofthepast.com/galveston-tx-1869.html</u>
- ¹⁸ "Galveston Brick," *Galveston Weekly News*, Jul 6, 1858, p1, c3.
- ¹⁹ Galveston Weekly News, January 17, 1866, p4, c4.
- ²⁰ "Sale by Administratrix," *Flake's Bulletin*, May 3, 1867, p4, c4.
- ²¹ "Our Musquito Fleet," *The Galveston Daily News*, May 8, 1879, p4.
- ²² Fort Anahuac, THC Atlas, National Register, p13.

²³ <u>1859 Texas Almanac, p34.</u>

²⁴ See Appendix, Image 3.

²⁵ "Narrative of the Anahuac, or opening Campaign of the Texas Revolution, by N.D. Labadie," <u>1859 Texas</u> <u>Almanac, p32</u>.

²⁶ See Appendix, Image 10.

²⁷ <u>Record Group 79: Records of the National Park Service; Fort Anahuac National Registry Nomination</u>.

"A Tale of Historic Anahuac," The Progress, Nov 15, 1935, p1.

²⁸ See Appendix, Images 4a, 4b, and 5.

²⁹ Record Group 79: Records of the National Park Service; Ashton Villa National Registry Nomination.

Brick and Charcoal Yards Chambers County Historical Commission

² Chambers County Historical Commission, Member.

³ <u>The Appearance of Bricks in Ancient Mesopotamia</u>. by Kadim Hasson Hnaihen. *Athens Journal of History*-Volume 6, Issue 1, January 2020–Pages 73-96.

⁵ A Prehistory of Houston and Southeast Texas, 2021, by Dan Worrall. <u>www.concertinapressbooks.com</u>

³⁴ "Liberty," *Civilian and Gazette*. April 23, 1857, p1, c5.

³⁵ Harris County Deed Book Vol 13, p112, Jno L. Reese to Fannie Andrews, Sept1, 1873; Hickory Grove Tract..

³⁶ "Two Old Residents," *Galveston Tribune*, June 8, 1899, p2.

³⁷ <u>*Village-Level Brickmaking*</u>, Construction Of The Kiln

³⁸ See Appendix, Images 13 and 14.

³⁹ The pattern is like the English bond in brickmasonry. <u>Brick Bonds</u>.

⁴⁰ Compare the eye design and the construction of the outside skin with the Williamsburg kiln, Appendix, Image 7.

⁴¹ Firing the Bricks at Colonial Williamsburg 11-20-14.

⁴² "85 Year-Old John Kilgore Remains 'Young at Heart'," *<u>The Baytown Sun, September 15, 1963, p8</u>.*

- ⁴³ "Imports for the Past Week from Eastern Cities," <u>Civilian and Gazette. March 21, 1856, p3</u>.
- ⁴⁴ "Letter from Lynchburg," *Texas Christian Advocate*, Oct 29, 1857, p1. See Appendix, Image 6.
- ⁴⁵ 1859 Chambers County Tax assessment.
- ⁴⁶ 1860 Chambers County census, Slave Schedule.

⁴⁷ The Tri-Weekly Telegraph, May 13, 1863, p4.

⁴⁸ <u>1870 Census, Houston Fourth Ward, p67</u>. This area is the Sixth Ward today.

⁴⁹ The bricks found in Old River at the site were broken and the original length could not be determined.

⁵⁰ The date of instrument was January 22, 1867 but not recorded until Feb 13, 1879, leaving open the possibility that it continued as a brickyard for more than ten years. CCDR Vol H, page 416.

⁵¹ Chambers County Deed Record, Vol H, page 042.

⁵² See Appendix, Image 7.

⁵³ Early Physicians of Chambers County, Texas, by Kevin Ladd, excerpted from *Doctor James P. Alford, Resident* of Old River Country, by Ann Mullins.

⁵⁴ See Appendix, Image 20.

⁵⁵ McGinty etal.

⁵⁶ See Appendix, Images 8 and 9.

⁵⁷ "Burning Brush Without Loss," <u>Galveston Daily News</u>, January 6, 1904, p5 c7.

- ⁵⁸ <u>Simple technologies for charcoal making</u>, FAO FORESTRY PAPER 41, Section 7.5. "Charcoal production centres."
- ⁵⁹ <u>Canyon Creek Charcoal Kilns, See Appendix, Image 9.</u>

⁶⁰ Wildrose Charcoal Kilns

⁶¹ Ward Charcoal Ovens

⁶² <u>Piedmont Charcoal Kilns</u>.

Brick and Charcoal Yards Chambers County Historical Commission

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³⁰ <u>Record Group 79: Records of the National Park Service; Chambersea National Registry Nomination.</u>

³¹ Katherine Abigail "Kate" Chambers Sturgis; <u>Find a Grave</u>.

³² Wright Smith Andrews' Civil War Diary, on file at the Chambers County Historical Museum at Wallisville:

³³ Wright Smith Andrews was married to Thomas Edgar's sister Phoebe. Edgar's name will figure greatly as owner of the Double Bayou brick yard and also the yard at Goose Creek in Harris County.

⁶³ Birch Creek Charcoal Kilns

- ⁶⁵ "Two Old Residents," *Galveston Tribune*, June 8, 1899, p2.
- ⁶⁶ Available at the research library at the <u>Chambers County Museum at Wallisville</u>.
- ⁶⁷ See Appendix, Image 11.
- ⁶⁸ Born in Slavery: Slave Narratives from the Federal Writers' Project, 1936-1938, Hiram Mayes, p1 of 3
- ⁶⁹ <u>Historic Aerials</u>, Double Bayou, 1930. Edgar's property was on the east side of FM 562 between Humphrey Road and Carrington Road. <u>Chambers County Deed Record, Book C, page 405</u>.
 - Edgar Tobin 1941 Aerial Survey, Map CRC-1A-121.
- ⁷⁰ <u>1928 Corps of Engineers Anahuac Quadrangle map</u>.
- ⁷¹ "The Mosquito Fleet," *<u>The Galveston Daily News</u>*, March 2, 1986, p7.
- ⁷² "Part of Galveston to Get Natural Gas Supply Thursday," <u>Houston Chronicle</u>, March 25, 1929, p12.
- ⁷³ "Charcoal Fleet made Obsolete by Modern Fuel," <u>*Houston Chronicle*</u>, October 6, 1929, p14</u>.
- ⁷⁴ Walters, William D. "Nineteenth Century Midwestern Brick." Pioneer America, vol. 14, no. 3, 1982, pp. 125–136. JSTOR, <u>www.jstor.org/stable/29763649</u>. Accessed 8 Feb. 2021.
- ⁷⁵ <u>Fox etal</u>, page 58.
- ⁷⁶ The dimensions of the bricks indicates a date before the Civil War.
- ⁷⁷ See Appendix, Image 12.
- ⁷⁸ "How Bricks Were Made Along Cedar Bayou," By Nelson A. Martin <u>Baytown Sun</u>, February 14, 1968, p4.
- ⁷⁹ <u>1860 Chambers County Census, Cedar Bayou Post Office, page 80</u>.
- ⁸⁰ Galveston Weekly News, August 28, 1860. p3.
- ⁸¹ "Texas, County Tax Rolls, 1837-1910", FamilySearch (<u>https://familysearch.org/ark:/61903/1:1:QJ8G-KB5H</u> : 20 February 2021), James Chandler, 1860.
- ⁸² US Patent No. 57,628, Brick Machine, H.J. Ferguson, Aug 28, 1866.
- ⁸³ "A Wonderful Brick Machine" The Houston Union, Wed, Mar 15, 1871, p3 c1.
- ⁸⁴ Estate of S.G. Rosamond, October 4, 1888, p102. Harris County Archives Probate books.
- ⁸⁵ "In Menory of a Deceased Brother," *The Galveston Daily News*, July 11, 1885, p5.
- ⁸⁶ "Cedar Bayou," *Galveston Daly News*, November 15, 1886, p3.
- ⁸⁷ CCDB Vol C, p314, Rachael McLean to Rosamond, Milam & Bro
- ⁸⁸ CCDB Vol G, p506, J.W. Magee to Emerie Rheaume
- ⁸⁹ CCDB Vol M, p496, Agnes Rheaume to Donnelley and Morgan
- ⁹⁰ CCDB Vol C, p216, Mike Peterson to C.F. Jennische, Apr 13, 1881.
- ⁹¹ <u>1910 US Census, Chambers County, Pct 5</u>.
- ⁹² "New Brick Plant Going up near Mont Belvieu," *<u>The Baytown Sun</u>*, September 9, 1959, p1.
- 93 "Cordell," *The Houston Chronicle*, December 16, 1988, p46.
- ⁹⁴ "Brick Plant Rises on Interstate 10, First on Industrial Row'," <u>The Baytown Sun, November 8, 1959, p3</u>.

⁶⁴ <u>"Charcoal Kilns"</u> showed in a Google Images search.

⁹⁷ "Court Records," <u>The Baytown Sun, April 30, 1967, p4</u>.

⁹⁸ "Area Brick Factory Turning out Four Homes Worth Daily," <u>The Baytown Sun, January 16, 1969, p3</u>.

Aztec Brick Co is listed in the 1969 but not in the 1970 phone book.

- ⁹⁹ "Court Records," <u>The Baytown Sun, November 13, 1962, p7</u>.
- ¹⁰⁰ "Cordell," *<u>The Houston Chronicle</u>*, February 6, 1968, p44.
- ¹⁰¹ The Andy Cordell Brick Company was listed in the 1994 but not in the 1996 phone book.
- ¹⁰² "Haunted House and Freaky Forest," *<u>The Baytown Sun, October 23, 2006 p2</u>.*

⁹⁵ Texas General Land Office aerial image, December 31, 1969. Shown on Google Earth Historical Imagery. 29°49'34.83"N, 94°51'42.72W.

⁹⁶ <u>Aztec Brick Company</u>.

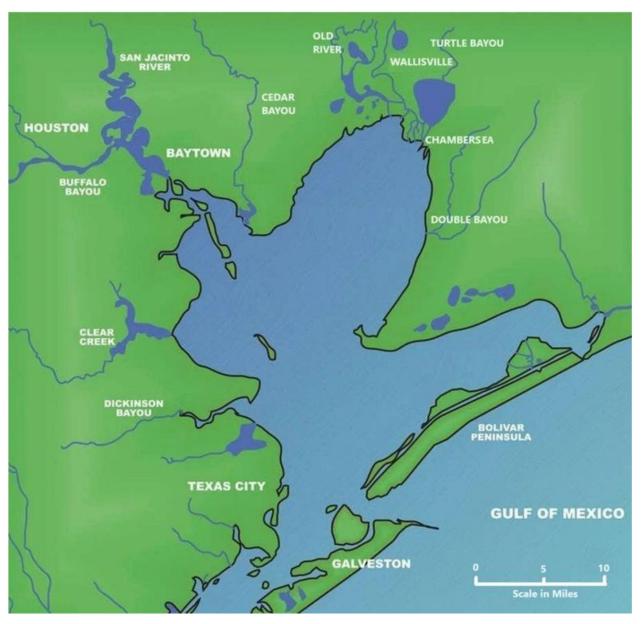


Image 1. Cedar Bayou forms the western boundary of Chambers County, separating it from Harris County. This map of the bay area shows the locations of brick yards at Double Bauou, Turtle Bayou, Old River, and Cedar Bayou. Fort Anahuac is shown as Chambersea.

1



Image 2. Fort Anahuac was a Mexican Fort completed on the Texas Coast in late 1831. It was built to control trade, immigration, commerce, and enforce Mexico's civil laws (particularly those prohibiting slavery) in its northern territory. It took more than a year to build. When completed, it was an impressive edifice overlooking Trinity Bay, constructed of hand-made brick with three-foot foundation walls, diamond-shaped bastions on the bayward and landward sides, a courtvard, interior rooms for barracks and officer's quarters, a corral, a kitchen, a magazine, a hospital, all surrounded by a light, probably low exterior wall. Text by Rachel Feit of Acacia Heritage Consulting.



Image 3. This is a brick from Fort Anahuac. The diagonal striations were made by striking excess clay from the top of the brick mold and the indentations are fingerprints that could have been made by Texian prisoners. The actual color is redder than this photograph indicates. Courtesy of Myra Norman.

This sideboard came from "Chambersia", at anchuac, Texas, which was the so-called Spanish house, home, where my grandparents, Maj/Gen. Thomas Jefferson Chambers and his bride, ADA-Sill Chubb Chambers, went after they were marked ried at Galveston, in Trinity church, in 1851. The "Spanish House" was built at the time the Mexicans built the fort at Anahuac, where they expected to exact duties on all goods going into Texas to the colonists. A fine quality of brick was used in the construction of both places, andwhen later the for was demolished, the bricks were brought to Galveston, and can be seen today in some of pathe, residences where they were used, notably in the old Tim drown house, at 24th & Bway.

Written Ry Rathanne Stungin Evans gabrestor Lexas, Dec. 14, 1955

Images 4a & 4b. This file card was taped to the inside bottom of the right hand drawer of the sideboard in the house of Thomas Jefferson Chambers (1802-1865). The note was written by Kate Evans (1874-1958), a granddaughter of Chambers. She would have heard the story from her mother, Katherine Chambers Sturgis (1852-1936) who was alive when Ashton Villa was built. The "Spanish House" was on the Chambers property near Fort Anahuac. Jim Brown is better known as James Moreau Brown, the builder and first owner of Ashton Villa in Galveston.

Chambers County Historical Commission

Image 5. Ashton Villa in Galveston was built in 1859 using bricks from Fort Anahuac. <u>Library of Congress</u>.



Chambers County Brick and Charcoal Yards Chambers County Historical Commission Chuck Chandler © February 20, 2024

For the Texas Christian Advocate. LETTER FROM LYNCHBURG.

MR. EDITOR :-- [was abroad the other day on a business visit to the neighboring settlement of Old River, and I there saw some thing of which I will, with your permission, tell your readers. Let me first tell you where Old River is. It has its source and confluence both in the South West part of Liberty County, Texas. The River is a tide water stream some twenty or twenty-five miles in length, flowing from West to East or vice versa as the tide may be-it has its junction with the Trinity about two miles from the mouth of that River. The best body of timber within fifty miles of Galveston is found in the greatest abundance on its banks consisting of Pine the numerous varieties of Oak, Elm, Hickory, Cypress, Cedar, Wild Peach, Hackberry, Ash, &c., and quite extensive Cane, and Reed brakes. The soil is of first rate quality, as the plantations of Dr. Hartman, Mr. Carman, and Mr. Paine which I visited, and others of which I heard will show, on examination. The people here, even this hard season, have raised corn, potatoes, peas, pumpkins, &c., plenty and to share. Water of very good quality is obtained by digging from twenty to forty feet, though the people are becoming convinced of the necessity of having cisterns. This leads me to notice

a very important enterprise just undertaken by Messrs. Carman and Paine, (both of whom pay the preacher and are subscribers to the Advocate) that is a Brick Yard. I paid a flying visit to it and found them busily engaged in moulding and setting up a Kiln. Mr. Tharp, the gentlemanly manager of the yard, told me he felt confident of making a fair merchantable article, though he was working under the disadvantages of operating on a new yard, and, with one or two exceptions, with unexperienced hands. He also stated that he had seen, but a short distance from the site of his present operations, a soil, for making bricks, of a very superior quality. I think that our friends, are bound to be eminently successful in their undertakings. So mote it be. Their yard is directly on the bank of the River. They have wood convenient. Soil well adapted. Sail vessels can reach your city in twelve or fifteen hours, where a ready market will always be found, at remunerative prices, not only for their brick and cord-wood but also for every description of produce. The range for cattle in the prairies, adjacent to the River, is good. The health of the inhabitants is also good and lands cheap. Let emigrants go there and take a look. S.

P. S. I own no property on old River and get no pay for writing this.

Lynchburg. October, 16th, 1857.

Image 6. This article from the Oct 29, 1857 *Texas Christian Advocate* describes the brick yard at Old River. The soil mentioned as "of a very superior quality" was on Cedar Bayou.



Image 7. The sharp edges and fine texture of this post-Civil War brick found at Pierre Almeras' brick yard on Old River indicates advanced technology equal to yards on Cedar Bayou. The bump on the bottom was caused when the still-soft brick was stacked at right angle on top of other bricks in the kiln. Image by author.

Chambers County Brick and Charcoal Yards Chambers County Historical Commission

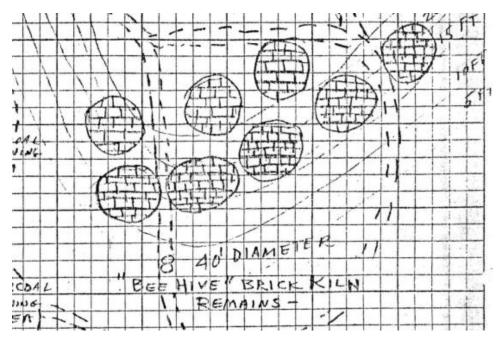


Image 8. Bricks from Almeras' brick yard were used to construct the charcoal kilns, mistakenly identified as brick kilns in the 1978 study. Compare the spacing and configuration with the charcoal kilns below. Image from the 1978 archaeological study.



Image 9. The charcoal kilns at Canyon Creek in southwest Montana were built in the mid-1880s to provide fuel for the silver smelter in nearby Glendale. A Google Images search for "<u>charcoal kilns</u>" yields dozens of similar kiln configurations throughout the western states. Image from Google Earth.



Image 10. This scove kiln at Colonial Williamsburg is identical to what was used at the Chambers County brickyards throughout the 19th century. The tunnels to the right of the brick maker allowed wood to be charged into the kiln throughout the two-week burn. The dark bricks at the center burned hotter and harder and the brick shrinkage during the burn is evident in the picture. Screenshot from the Colonial Williamsburg production, <u>Meet the Brickmakers!</u>

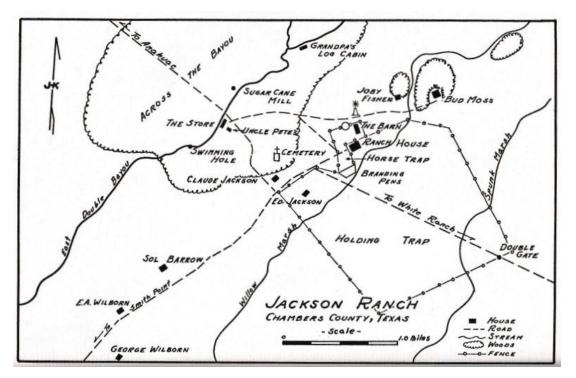


Image 11. The land across the bayou was owned by brick maker Thomas Edgar. This map shows the store and the sugar mill mentioned in the Hiram Mayes interview. The road to Anahuac shown on the map is FM-562. Image from *Home on the Double Bayou* by Ralph Semmes Jackson.

Chambers County Brick and Charcoal Yards Chambers County Historical Commission 6

Appendix

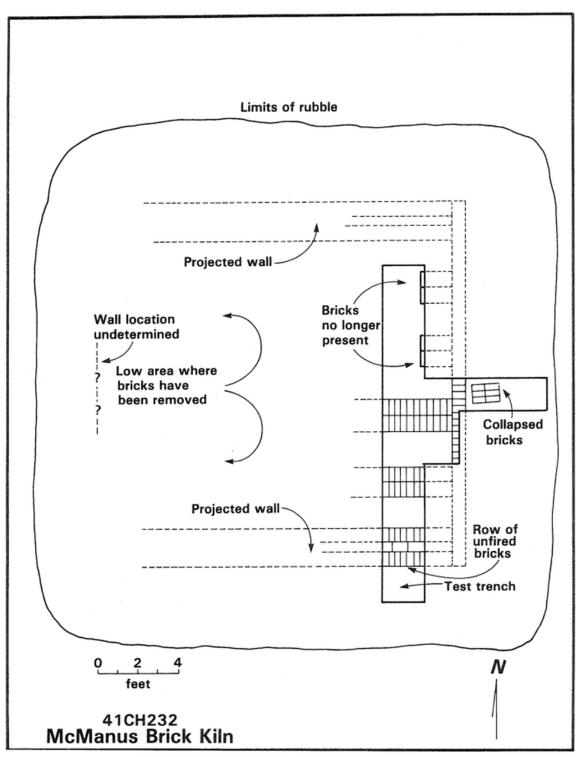


Image 12. The drawing indicates that the eyes in this kiln run east and west. From the 1980 archaeological study



Image 13. Three eyes in this Cedar Bayou kiln are barely visible in this photograph. Almost the entire kiln has been covered by alluvium from more than a century's worth of floods. Image by author.



Image 14. The corner of the kiln closest to the water's edge has more of the kiln visible due to the silt washing over the edge of the bank. The eyes of the kiln have been filled and almost the entire kiln has been covered with silt. Compare the construction of the eye with the Williamsburg kiln above. Image by author.



Image 15. Not all bricks had the common shape. This "bull-nose" brick was found at the Milam yard on the Chambers County side of Cedar Bayou under the Highway 146 bridge. It was made to be used in a <u>street curb in Galveston</u>. Image by author.



Image 16. This schooner loaded with sacks of charcoal is headed to Galveston. At the bottom of the photograph is written "Schooner, Galveston Bay, 20 miles from port, taken from mail boat 'Eva', 1910." Courtesy Chambers County Museum at Wallisville.



Image 17. This aerial image taken in December 1969 shows the Aztec brick plant on the left and the Andy Cordell plant on the right. The borrow pit at the Aztec plant has been enlarged as a recreational lake for Gene's Power Sports. The drying shed (running east to west) at the Andy Cordell plant is still standing at the Cutting Edge RV Supply but the pit has been filled in. The Andy Cordell plant had a round beehive kiln that stood as a landmark on Interstate 10 for many years. Google Earth Image.



Image 18. This brick was found near the pond at the old Aztec brick plant behind Gene's Power Sports. The indentation carrying the brick logo is called a frog and was attached to the bottom of the brick mold by two screws. The impressions of the screw heads can be seen in this brick and also on the brick below. Image by author.



Image 19. This brick was found near the shed at the old Andy Cordell brick plant behind Cutting Edge RV Supply. Image by author.



What's Left of the old brick yards?

Image 20. Like the brick yards on Cedar Bayou, the boat loading area at Old River was paved with bricks several courses thick. Over the years, as the bank eroded and the bricks were strewn into the mud flats at the margins of the river. They can be seen when the water is low, like after a hard norther blows the water down. Image by author.



Fig 21. Rosamond, Milam & Bro. This was one of several yards owned by the company, located on the Chambers County side of Cedar Bayou beneath the Highway 146 bridge. At low water level, bricks can be seen here. Bricks can also be seen at more than a dozen sites along Cedar Bayou. Image by author.