HISTORIC AMERICAN ENGINEERING RECORD

ROCKPORT BRIDGE

HAER No. AR-47

LOCATION:	State Highway 84, spanning the Ouachita River, Rockport, Hot Spring County, Arkansas. UTM: 15/514835/3804730 Quad: Malvern North, Arkansas
DATE OF CONSTRUCTION:	1900
BUILDER:	Stupp Brothers Bridge and Iron Company, St. Louis, Missouri.
ENGINEER:	O.W. Childs, St. Louis, Missouri.
PRESENT OWNER:	City of Malvern, Arkansas.
PREVIOUS OWNER:	Hot Spring County, Arkansas.
PRESENT USE:	Pedestrian Bridge (1980-1982, 1987-present).
PREVIOUS USE:	Vehicular Bridge (1900-1980, 1982-1987).
SIGNIFICANCE:	The Rockport Bridge is one of six Parker through truss bridges remaining in Arkansas, and is unique in the state because it has a camelback truss approach span at either end. The bridge is an excellent example of turn-of-the-century metal bridge construction. The bridge builder, Stupp Brothers Bridge and Iron Company, is one of the largest steel fabricators in the country, and is known to have built at least thirty bridges in Arkansas between 1900 and 1930.
HISTORIAN:	Lola Bennett
DESCRIPTION:	Corinne Smith Arkansas Historic Bridge Recording Project, 1988.

Built in 1900, the Rockport Bridge is significant as one of six Parker through truss bridges remaining in the state. The bridge is unique in Arkansas, in that it has a Camelback through truss approach span at either end.

The company that built the bridge, Stupp Brothers Bridge and Iron Company of St. Louis, Missouri, is still in existence and is one of the largest and oldest steel fabricators in the country. The company is known to have built at least thirty bridges in Arkansas between 1900 and 1930.

Located on what was once a major thoroughfare, the Rockport Bridge served much of the vehicular traffic in south central Arkansas until 1970, when the Interstate 30 bridge was built nearby. Turn-of-the-century metal through truss bridges, such as the Rockport Bridge, facilitated the movement of heavy commercial traffic, particularly wagons carrying lumber and produce, which could not safely utilize wooden bridges or ferries, and thus played an important role in the history of commerce.

Although presently in weakened and deteriorating condition, the Rockport Bridge is an excellent example of a pre-automobile metal bridge which was so well engineered that it was able to be adapted for the use of motorized vehicles.

The Rockport Bridge was nominated to the National Register of Historic Places in 1982.

EARLY HISTORY OF ROCKPORT, ARKANSAS

In Rockport, Arkansas, it is a source of local pride that Lewis and Clark, Edgar Allen Poe, and Franklin D. Roosevelt have all visited the town, at various points in its history.(1) Located on the banks of the Ouachita River, Rockport also has the distinction of being one of the earliest white settlements west of the Mississippi River.(2)

In 1832, Samuel A. Emmerson laid out and sold lots in the area, and Rockport became a city.(3) The Hot Spring County seat was moved from Hot Springs to Rockport in 1846. The town, in 1851, consisted of a church, a school, a tannery, a blacksmith shop, a grist mill, and a sawmill operated by the Ouachita Falls Lumber Company.(4)

THE FIRST BRIDGE OVER THE OUACHITA RIVER

The first crossing of the Ouachita River at Rockport was by ferry. Ferries, in fact, continued to be the primary means of crossing the river until the turn-of-the-century.(5)

The first river bridge built in Arkansas was where the Military Road (see HAER report AR-46) crosses the Ouachita River at Rockport. This bridge has been described as being "a lattice type bridge built of wood."(6) It was built in 1846 by the Little Rock Bridge Company, which had been granted the privilege of erecting such a bridge, with the right to charge tolls, by the General Assembly of 1844.(7) An article in the July 1, 1847, issue of the Arkansas Gazette stated:

> The Washita Bridge . . . we understand from its enterprising projector, Capt. D.H. Bingham, is now nearly complete. We are also pleased to learn from all persons who have seen the work, that it is highly creditable to its builder, and will turn out, contrary to the expectations of many, a source of large profit to its stockholders.(8)

The next spring, the river rose unusually high, creating a swift current which resulted in the bridge being washed downstream. The Arkansas Gazette reported:

> The bridge across the Ouachita River at Rockport which had cost the stockholders $20,000 to build was swept away by a flood. The bridge was thought to be 8 feet above the high water mark but on the day of its destruction 'the river was eleven feet higher than it had ever been known to be before.' The bridge was lifted from its foundation and forced from its position by a mass of drift, and 'when last seen' was floating down stream with all its parts holding together.(9)

Apparently, it was not until 1873 that the County decided to build another bridge over the insidious Ouachita River.

THE ROCKPORT BRIDGE THAT WAS NEVER BUILT

On January 23, 1873, the Hot Spring County Courthouse at Rockport burned to the ground.(10) Within two weeks, the County Court issued bonds for both a new brick courthouse and "a good strong and substantial bridge to be built across the Ouachita River at Rockport . . . one of King's Latest Improved Patent Wrought Iron Bridges."(11) The Commissioners of Public Buildings contracted with E.A. Nickels for the courthouse, and the contract was approved by the Court on February 12, 1873.(12)

On July 8, 1873, the Court ordered that the contract between the Commissioners and E.A. Nickels be "disapproved, rejected and held for naught," that the commissioners be dismissed, and that the clerk sign and issue no bonds on the contract.(13) The reason for this, they said, was that:

> There is no report of the letting of said building on the records of the court, nor is there any approval of any such letting and contract by the said court on its records, and . . . there are papers purporting to be a contract between said commissioners of Public Buildings and E.A. Nickels contractor on file and recorded on the deed record.
>
> And it appearing that the said commissioners did not comply with the law, and advertise for bids, and that the said commissioners let the work privately to said E.A. Nickels, and such letting ought to be submitted to the court for approval or rejection, and it was not so done.(14)

The Court also found the proceedings of the Bridge Commissioners were "irregular and not in pursuance of law," as they did not advertise for bids, or disclose the name of the contractor.(15) The Bridge Commissioners were, therefore, dismissed as well, and the Court refused to pay on "any

Bonds or Scrip that have been or may be issued for the building of the Court House by E.A. Nickels contractor, and the building of a bridge across the Ouachita river at Rockport by King Iron Bridge Co."(16) This action of the Court angered the people of the county who had bought bonds, and they entered a suit in Federal court, and won.(17) This resulted in a huge indebtedness for the county.

Shortly thereafter, in 1875, the Hot Springs Railroad connected with the St. Louis, Iron Mountain and Southern Railroad at Malvern.(18) Consequently, people left Rockport and moved to Malvern, which became the county seat in 1878.(19) To further complicate matters, an act of the State Legislature in 1873 provided for the formation of Garland County, from part of Hot Spring County, and the two counties were involved in a lawsuit over whether or not Garland County would pay a share of the indebtedness over the courthouse-bridge bond issue until August of 1900.(20) These incidents, particularly the bond issue, caused the county to completely drop the matter of building a bridge across the Ouachita River at Rockport until 1897.

The reason for this lapse of nearly a quarter of a century from the time that the county expressed initial interest in a bridge at Rockport until the time that the bridge was actually built, may also have been due, in part, to the construction of a wooden bridge by the Ouachita Falls Lumber Company, sometime between 1874 and 1887.(21) This bridge appears in photographs of the sawmill, which was located just north of the present Rockport Bridge.(22) County Court records indicate that on July 5, 1887, the Military Road was changed so that the road crossed the river over the bridge owned by the Ouachita Falls Lumber Company, and the company would, therefore, be authorized to charge tolls for the public use of their bridge:

> The public shall at all times have the right to cross and re-cross said Ouachita River on the said bridge so belonging to the said Ouachita Lumber Company, . . . the company shall at all times keep said

> bridge and the approaches thereto in good and safe condition for the use of the public and . . . the said Ouachita Lumber Co. shall have the right to charge and receive a toll from the persons crossing . . . over said bridge.(23)

It is unknown how long the Lumber Company bridge remained in use. County Court Records indicate that several ferries operated on the Ouachita at Rockport between 1873 and 1900--the Rockport Ferry was operated by John Miles and J.N. Alexander until the 1890s, and by Robert W. Baker from 1898 until 1901; and Edward Kemp operated a ferry at Grigsby's Ford in the 1890s--however, these ferries were probably insufficient during periods of high water and for carrying heavy wagon loads. Thus, by 1897, the citizens of Hot Spring County were demanding a free bridge across the Ouachita River.

HOT SPRING COUNTY'S GREAT BRIDGE DEBATE

The Ouachita Bridge issue surfaced again on July 30, 1897, when the following article appeared in the pages of the Arkansas Meteor:

> For many years the sister Co. of Saline, a much poorer county than Hot Spring, has owned and enjoyed the conveniences of a substantial free iron bridge across the Saline near Benton. On the 5th inst. Pulaski celebrated the completion of her magnificent free bridge across the Arkansas. The Spirit of progress is in the air. The people of Ark. are beginning to recognize the fact that nothing adds so much to the happiness and permanent prosperity of a community as good roads and bridges. There is scarcely a county in the state in better financial condition than Hot Spring. . . . Why then do we hesitate to build a bridge across the Ouachita? At least one half of the population of the county is located west of the river, and nearly all these people are compelled to come to Malvern at some time or other during the year. Beyond question, a bridge such as mentioned would be of great benefit and at times, add much to the safety of the citizens of that part of the county. Again if a bridge were built across the Ouachita at or near Rockport thousands of dollars in trade would then

> come to Malvern whereas it now goes to Arkadelphia and Hot Springs. . . . we trust the matter will be agitated in every part of the county until the free bridge becomes a reality.(24)

Not everyone, however, favored the construction of such a bridge. The following reply to the editor, by L.M. Goza, was dated August 18, 1897:

> I see in your paper of July 30th a plan outlined for a free bridge across the Ouachita. The plan seems very plausible; but to come down to facts, the condition of the drouth striken people of the county for the last two years does not warrant such an enterprise. . . . I believe that a large majority of the people of Hot Spring County are opposed to building a bridge across the Ouachita, especially at the point that has always been suggested as a suitable location. I am opposed to taxing the masses for the benefit of the few. I have never been able to see wherein the bridge would be a benefit to all the people of the county. As the bridge question has been raised, I hope the matter will be agitated in every part of the county until it is settled. You can put me down against the bridge, and if those who favor it have any argument on the other side, let them come.(25)

The issue of bridging the Ouachita River was then taken up by many residents of the county, who wrote to the newspaper with their opinions. An article on September 10 read as follows:

> . . .A bridge across the Ouachita is a matter of vital importance to the future development of the county. It is a matter that merits the immediate attention at the hands of the honorable co. court. . . . furthermore, we have had quite enough demagoguery and child's play and we now demand action. To the minds of all thoughtful persons the bridge is a necessity.(26)

From there, the controversy branched out. Not only were there arguments as to whether a bridge should be built, but there were arguments as to where the bridge, if built, should be located. Several locations for the bridge were proposed, the two most popular being at the end of Main Street in Rockport, and at Grigsby's Ferry, about two miles upstream from Rockport. This letter appeared in the September 24 issue of the Meteor:

> Not seeing anything from our side of the river in regard to the bridge across the Ouachita River, I have concluded to say something. I have talked to several about the matter and all say let us have the bridge at Kemp's Ferry, or thereabouts. To put one at Rockport would benefit but a small per cent of the west end of the county, therefore, we say Kemp's Ferry all the time. We would expect the large property holders on the east side of the river to kick at the proposition but do not look for opposition from the small fellow who would pay only 10 or 12 cts. bridge tax. . . .It's our county, our money that builds it, our enterprise and we pay the tax, so let her fly. It is a great necessity to the west-end of the county. Why, we pay more ferriage in one year in going to Malvern than our bridge tax would be for ten years. We can build a bridge and never feel it. We, the people of the west side of the river, want a little of the sugar in our coffee.(27)

On October 4 of that year, the Hot Spring County Levying Court met and listened to a number of gentlemen who addressed the question of building a bridge. The court, however, refused to make an appropriation for it. "There appeared to be no particular opposition to the bridge, but the justices had an idea that, taking into consideration the prevalence of two drouths following each other, a levy should not be made for that purpose at this time."(28)

Apparently, the mud-slinging controversy subsided for a while after that. No more letters or editorials appeared in the local newspapers until September 1899, when the matter was brought up once again:

> The proposition to bridge the Ouachita now appears to be very popular in every part of the county and the indications point increasingly to the levying of a tax for that purpose next Monday. So certain are we that the county levying court will afford citizens living on the west side of the river some relief from the burdens, vexations and uncertainties attending the crossing of a dangerous and swollen river for several months of each year, that we are constrained to thank these gentlemen in advance for the noble work they are now on the eve of accomplishing.(29)

COUNTY COURT PROCEEDINGS

On October 2, 1899, the Hot Spring County Court levied a tax "to pay the expense of building [a] bridge across the Ouachita River, 1 mill on the dollar."(30) This tax amounted to an appropriation of $10,000. That same day, the Court elected William M. Lambert and David S. McCray to serve with County Judge J.M. Caldwell as bridge commissioners.

Two weeks later, the bridge commissioners met to inspect the two proposed locations for the bridge, but chose to postpone their decision, in light of the various conflicting interests. The newspaper reported that if the bridge was located at Rockport, the approaches would need to be somewhat longer than at Kemp's Ferry, but if the bridge was located at the ferry, it would be necessary to build one and a quarter miles of new road through some valuable farm land, "and in addition to this an expenditure of, perhaps, $10,000 would be required for levying purposes in order to render the bridge accessible during periods of high water."(31)

The bridge commissioners met again on October 30, and decided to leave the final settlement of the question of the location for the bridge up to the people of the county. Saturday, December 2 was set as the date for holding an election.(32) In the weeks that followed, the local newspapers were once again filled with discussion over the bridge and probable location:

> . . . If the bridge should be located at Grigsby's Ford, we would have nothing but a dry weather bridge which would be of no value to the county or to those for whose benefit it is intended. On the other hand, at Rockport there is high land on either side of the river that never overflows and the location there is such that meets every requirement and appears, as if intended by nature, that the busy throngs of humanity should cross and recross the Ouachita at that particular point.(33)
>
> The location of the new bridge at Grigsby's Ford would not only be a grave mistake, but would prove an unnecessary expense, a burden

> and a nuisance--in point of importance second only to the old Court House debt and steal that required a long series of years to get rid of.(34)
>
> As to any suggestions where it ought to be built, I have none now to make; but, I did hear a good old Methodist say that it was fore-ordained and predestinated before the foundation of the world that it was to be built at old Rockport, else there would not have been such good natural advantages at that place.(35)

Several letters appeared in opposition to these statements, one saying, "Grigsby's Ford is the place for the bridge,"(36) another saying, "Success to the people when the bridge is built at Grigsby's Ford."(37) It appeared, however, that the majority of the people favored the location at Rockport. Indeed, when the votes were cast on December 2, 1899, Rockport won, 1,392 to 297.(38)

On February 3, 1900, the bridge commissioners presented to the court plans and specifications drawn by O.W. Childs of St. Louis, Missouri.(39) The court examined and approved the plans, "with the amendment that the piers and floor shall be two feet higher than is specified."(40) A contract was then approved:

> wherein O.W. Childs agrees to furnish plans and specifications for the bridge to be built across the Ouachita River at Rockport, and inspect the structure after it is built and make report whether same is according to plans and specifications herein filed and for which the bridge commissioners agree to pay the sum of $250.(41)

On March 6, 1900, the bridge commissioners opened public bids for the building of the bridge. There were twenty-two firms bidding, and bids opened at $40,000. The lowest, submitted by Stupp Brothers Bridge and Iron Company, of St. Louis, Missouri, was $26,500, but the commissioners rejected all the bids, hoping to get a lower one.(42) When the second set of bids were in, the contract was awarded to the Stupp Brothers Company, who rebid at $26,000.(43)

The County entered into contract with Stupp Brothers Bridge and Iron Company, on April 3, 1900.(44) The contract, signed by George Stupp, company president, stated that Stupp Brothers:

> agrees . . . to furnish and erect, complete and have ready for travel, the superstructure and substructure for an Iron and Steel Bridge over the Ouachita River at a point known as Rockport about two miles north west of Malvern, Arkansas. . . . And said company hereby agrees to have said structure completed and ready for inspection on or before the first day of November, 1900. . . . The county hereby contracts and agrees to pay to the company . . . the sum of Twenty six thousand dollars.(45)

CONSTRUCTION OF THE ROCKPORT BRIDGE

On September 14, 1900, the Arkansas Meteor reported that construction on the bridge was progressing rapidly, one pier had already been finished, and work had begun on the other.(46) By October 5, the bridge was nearing completion, and the newspaper reported:

> One making a visit there at this time will be much impressed with the perfect order and system among the workmen engaged upon different parts of the structure. The spans and arches are being painted a brilliant red, and the floor is also being placed. The location is inspiring and we predict many a romance will turn in memory to the trystings on the bridge.(47)

The Rockport Bridge was completed on November 6, and formally accepted by the County Bridge Commissioners on November 8, 1900.(48) According to this item in the Arkansas Meteor, the new bridge was quite a spectacle for folks in the county and surrounding communities:

> The new bridge, so far as the Malvern folks are concerned, is by all odds the most interesting object in the State. Several hundred persons visited it last Sunday, some of whom walked--some rode on horses; others, in buggies and wagons--but it was reserved for one woman to make the trip in a horseless carriage which attracted a great deal of attention.(49)

The formal acceptance and celebration of the bridge took place on Thursday, November 8, at the west end of the bridge, with some two hundred people in attendance, "most citizens of the west side and that immediate neighborhood."(50) Several dignitaries made speeches before the crowd enjoyed a great picnic, and the Meteor reported:

> Col. W.B. Houston, the second speaker and the erector of the bridge, is a born orator and on this occasion probably delivered the best speech of his life. He was frequently applauded during the course of its delivery, and said, among other things, that he had been in the bridge building business all his life, and of all the bridges he had ever built the Rockport bridge stood easily first as the most magnificent structure of them all.(51)

STUPP BROTHERS BRIDGE AND IRON COMPANY (52)

In 1856, John Stupp established the South St. Louis Iron Works in St. Louis, Missouri. The German-born iron worker had apprenticed throughout Europe, first with ornamental and structural iron, and later with building barges, before coming to America in 1854. For two years, he was employed by a St. Louis company that made plows, but soon left the firm to start his own business. The South St. Louis Iron Works manufactured engines, lathes, boilers, and small machine parts. Gradually, production expanded to include ornamental iron products--fences, gates and building fronts.

In the 1880s, Stupp's sons, George, Peter, and Julius, entered the business. During this decade, the Stupp Company began to design, fabricate and erect bridges. The company's growth during this period led to its incorporation as Stupp Brothers Bridge and Iron Company in 1890.

Throughout its history, Stupp Brothers Company has been engaged in fabricating bridges; constructing industrial, civic and commercial buildings; and providing steel for national defense

projects, including armor plate for Union gunboats in the Civil War, and parts for transport ships, bridges, and landing craft in both World Wars.

Today, Stupp Brothers continues its long tradition of steel manufacture, supplying fabricated steel for national and international projects, such as the space program, power plants, oil rigs, pipelines and bridges. After 130 years of operation, with fifth generation Stupps still in the business, Stupp Brothers Company can boast of being "one of the largest steel fabricators in the country and certainly the oldest under one family control."(52)

CLOSING OF THE ROCKPORT BRIDGE

In May 1980, the Malvern Daily Record reported that County Judge Carl Fowler had closed the 80-year-old bridge, on the recommendation of the State Highway Department engineers.(53) For many years, the bridge had been under the jurisdiction of the State Highway and Transportation Department, because of its location on a state-owned highway (Highway 84), but in 1976 the state had assigned responsibility for the bridge back to the county. The State Highway Department, however, continued to inspect the bridge periodically. A letter dated May 8, 1980, from John W. Kizer, State Highway Department Engineer, to Hot Spring County Judge Carl Fowler, stated:

> At your request we have made a second inspection of the Rockport Bridge. . . . The condition . . . was found to be very poor. The timber deck is deteriorating very rapidly. The diagonal members in many of the truss panels are unsatisfactory with only one of the two serving to carry any load. The floor beams are most critical with deterioration in the webs and flanges being more extensive than observed during our initial inspection of March 27, 1979.
>
> Rehabilitation of the structure to even a reasonable load-carrying capacity of perhaps 7 or 8 tons would require extensive work estimated to exceed $250,000 or more. For the protection of the traveling public it is recommended that the bridge be closed to all

traffic.(54)

In June of that year, an editorial ran in an issue of the Daily Record which called the Rockport Bridge "an accident waiting to happen," and suggested that the County dismantle the bridge, "so as not to endanger the curious."(55) Apparently, however, this sentiment was not shared by the majority of the local citizens. One group of concerned residents formed "The Rockport Bridge Committee," and devoted much time and effort to saving the old bridge. On May 26, 1980, the group met to discuss possible avenues for reopening the bridge. Unfortunately, the meeting turned into a political forum with almost all the county political candidates in attendance--the bridge issue being one of the hottest issues in the election for county judge--and no decisions were reached.(56)

The committee then decided that their best course of action might be to circulate petitions advocating repairing and reopening the bridge. One of the main arguments they used was that it was unsafe to have to go out onto the Interstate for the short run from one side of the river to the other.(57) An article in the Arkansas Gazette on September 14, entitled, "3,000 Sign Petitions Opposing Order Closing Turn-of-century Iron Bridge," said that adamant Hot Spring County residents were intending to present their petition to Governor Bill Clinton and United States Senators David Pryor and Dale Bumpers. They had presented them to the County Judge earlier, without success. "There's nothing I can do about it," Fowler was quoted as saying. "The county doesn't have that kind of money."(58) Dewey Tanner, one of the leaders of the petition drive, said that besides being a shortcut to Malvern, the old bridge had a lot of sentimental value. In fact, it meant so much to some rural residents that they hadn't gone to Malvern since the bridge was closed.(59) Other residents expressed their displeasure by refusing to obey the "Bridge Closed" signs, and

continuing to drive over it. At first, barricades were put up, but someone removed them. Then, iron rails were welded across the portals, but someone drove a vehicle through one of them. Finally, loads of gravel were dumped at either end of the bridge, "and that stopped the traffic, but not the controversy."(60)

In December of that year, hoping to obtain a safe (and legal) reopening of the bridge, the Rockport Bridge Committee offered "shares" of the bridge for a donation of $7.50. This money would be used to purchase the $7000 worth of lumber needed to replace the old deck.(61) Judge Efird, who donated $2000 to the cause, stated that an engineer had estimated 21,000 board feet of decking needed to be replaced, four new I-beams installed, and new diagonal cables strung, at a probable cost of $10,000 to $15,000.(62) Once these repairs were made, and the bridge clearance lowered to prevent large trucks from crossing, the bridge could be reopened to automobile traffic.

The bridge committee placed donation cans in area stores, two local banks opened savings accounts for the bridge, businesses donated materials, and residents volunteered their time to work on the project.(63) John Erwin, a member of the county historical society, contacted Stupp Brothers Company in St. Louis and obtained copies of the original plans for the bridge. A letter from the bridge company advised welding the nuts when the builder's plates were reinstalled, in order to prevent theft.(64)

On January 4, 1982, the Rockport Bridge Committee requested an appropriation of $5000 from the county court, "to refurbish the bridge."(65) County Judge Efird felt that although the county could not afford to take the money out of the budget, they could donate labor. At the same meeting, the court passed an ordinance "to impose heavy fines on people who drive overweight vehicles on the structure."(66)

On January 28, the Meteor Journal reported that the lumber had arrived, and work was progressing on the bridge.(67) On August 18, the newspaper said that work was continuing slowly:

> County road workers said that added steel supports must be placed after each span of planks, and that it has slowed the pace. The road crew has planked about 100 feet of the bridge. More than 200 feet is left to be planked.(68)

By October 25, the new oak flooring and stringers were in place, the bridge had been sandblasted and repainted black, "which longtime residents say is the original color(69)," and the builders plates had been restored.(70) Although not officially open, traffic was already using the bridge.

A court order, filed December 29, officially opened the bridge to light traffic, "limited to passenger cars, half-ton pickup trucks, smaller vehicles and pedestrians."(71) A commemorative plaque, installed at the east end of the structure,

1982
ROCKPORT BRIDGE RESTORATION
MADE POSSIBLE BY CONTRIBUTIONS
FROM CITIZENS AND FRIENDS OF
HOT SPRING COUNTY
CLOSED MAY, 1980
REOPENED OCTOBER, 1982
HENRY EFIRD COUNTY JUDGE

The bridge was temporarily stable and safe for traffic, but having invested so much of themselves in its preservation, county citizens wanted to insure its survival. That winter, the county court obtained recommendations on a 20-year lifespan for the bridge. McNutt & Schneller, Inc. of Little Rock estimated that this would cost $26,000.(72) These plans were never to get underway, however.

On February 28, 1987, gusting winds of nearly 60 mph, and heavy rains totaling 3 inches, inundated Hot Spring County.(73) The first reports said no bridges had been washed out. but on March 3, kayakers discovered that the Old Rockport Bridge had succumbed to the storm. They had

hung plumb lines off the bridge for slalom practice, and they noticed that the entire middle span was tilting north.(74) They notified authorities, who determined that following the heavy rain, some debris had washed against the piers and triggered the movement.(75) The bridge was immediately closed to vehicles, and has remained closed since that time. There are no immediate plans to reopen the bridge, which is now under the jurisdiction of the City of Malvern.

DESCRIPTION

The Rockport Bridge is a three-span through truss, with a Parker truss in the center, and a camelback truss on either end. The center span has eleven panels, and the end spans have eight panels. The ends of each span bear on 4-foot-diameter columns made by rivetting steel plate rings together. The columns are joined with a steel plate. The south pier is tilting upstream about ten degrees, so the bridge is closed to vehicular traffic. The bridge has built-up members, punched eyebars, and wrought iron eyebars with turnbuckles.

The polygonal top chord is constructed with two channel sections riveted to a continuous top plate with single-bar lacing on the bottom of the chord. The compression forces in the top chord are resisted at the bearing blocks by the two rectangular eyebars of the bottom chord, which are thread cut on each end to pass through the block and be secured to it by a nut. Tension forces along the bottom chord of the bridge are passed through pinned connections at each panel point. The top chord is rivetted throughout its length, while the bottom chord, verticals and diagonals are all pin-connected.

The vertical members are channels, flanges turned outward, with single-bar lacing on two sides. One-inch-diameter eyebars, used as counters in the truss panels, have turnbuckles to allow

the members to be adjusted as necessary. In all but the two end panels of each truss, the single eyebar passes between two rectangular eyebar diagonals. Where the counters have broken, they have been spliced and welded, or replaced with steel cables.

The lateral stability of the bridge is maintained by portal bracing, upper lateral rods, sway bracing at each vertical, and floor rods. A double-intersection Warren truss acts as the portal brace at each inclined impost. Curved brackets made from angle sections brace the bottom of these four-panelled trusses. Sway bracing consists of a top lateral strut and round rods with turnbuckles crossing beneath the strut to attach to another strut below the top chord. Each sway brace gives about 15 feet vertical clearance. The top and bottom chords are laterally braced with rods, two in each panel, running diagonally from each panel point. The lower lateral rods have turnbuckles, while the top ones do not.

Timber stringers carry the load from the wooden deck to the I-beam floor girders, which are riveted to the verticals. Planks are placed longitudinally along the tire paths of the one-lane bridge.

Specification for a bridge over the Ouachita River at Rockport Hot Springs County, Arkansas.

The location of the bridge is about two miles northwest of Malvern, Arkansas.

The work to be done consists of furnishing all material and labor and constructing complete and ready for travel, superstructure, substructure, rip rap, trestle approach, dirt approaches, and completing the bridge in every respect.

Substructure: The substructure consists of one masonry or concrete abutment A, two tubular piers B C in the River, one tubular pier D on the west bank and a pier or bent E, all of which shall be built of the form and dimensions as shown on plans.

The abutment A may be built of either squared stone range masonry or of concrete, at the option of the contractor. The contractor shall clean off the rock ledge and level it sufficiently to give a secure and solid foundation for the abutment.

Masonry: The masonry shall consist of pitch faced squared stone masonry laid in courses not less than 6" thick decreasing regularly in thickness from the bottom to top. The stone shall be good first Class stone subject to approval of the inspector.

Stretchers shall not be less than 3 feet in length 18" in width and greater in width than in depth.

Headers shall extend to full width of the wall and be at least 18" in width. All stones must be laid on their natural bed and laid in cement mortar and shall be neatly pointed up.

The Coping shall be at least 12" thick and composed of stones having a top area of at least 12 square feet. The mortar shall consist of one part cement to two parts clean sharp sand and no mortar shall be used after it has commenced to set.

All work must be done in a first Class workmanlike manner.

Concrete: Concrete for the abutment shall be composed of one part Portland cement, two parts clean sharp sand and four parts broken stone and the surface of the abutment shall be covered with a coat 1/2" thick,

The metal in all members shall be of mild or medium steel except that all square and round rods may be of mild steel or refined iron.

All metal shall conform to the manufacturers standard specification as given in Carnegie's Hand book Edition 1897.

All details of construction not specifically given shall be in accordance with the general specifications for Steel highway bridges, by Theodore Cooper.

In erection all connections must be riveted wherever possible.

Good and sufficient anchorage must be made to transfer all wind stresses to the substructure.

Trestle approach: A Trestle approach of 20 ft in length resting on a framed bent shall be built as shown on plans with backing to hold the dirt fill.

Dirt fills: Shall be made as shown at each end of the span. The fill at the west end will extend about 30 ft and is dirt only. The fill at the east end is about 30 ft and will require clearing away rocks, obstructions etc now there. A while oak skin shall be put on abutment at A to raise joist over lateral rods and at the ends of joist covered with 2 ½" N.O. plank which must project beyond shoes.

Lumber: All lumber to be strictly first Class, sawed true and out of wind, full size, free from wind shakes, large or loose knots, decayed or sap wood, worm holes or other defects impairing its strength or durability.

Painting: All metal shall have one coat of red mineral paint before leaving the shop, and after erection all metal work and the hand rail shall have one coat of good red mineral paint.

Name Plates: A Cast iron name plate giving date of erection and names of County officials connected with building of bridge shall be put on each end of bridge.

The Contractor shall carefully check up and be responsible for all measurements of the location before beginning work or ordering material.

He shall also furnish Complete working drawings for approval and one week's time will be allowed the engineer in which to examine and report on drawings.

All material and work entering into the structure shall be subject to the inspection and acceptance

both when being worked on and when completed, by the County Bridge Commissioners or inspectors appointed by them.

These plans and specifications are intended to cover a completed structure and everything necessary to complete the structure is implied even if not specially mentioned.

The Contractor shall furnish all staging and false work required for the erection of the work, and shall also remove the same after erection, leaving the stream free from obstructions.

He shall also remove any or all of the timber crib and mud bank at Pier B which may interfere with the building of the Pier.

This work will be under the supervision of the County Bridge Commissioners and shall be completed to the satisfaction of the said Commissioners and the County Court.

Piers shall be 2 feet higher than shown on plans and all changes from the plans made necessary to do this, shall be made.

Ordered that Court adjourn until to-morrow morning at 9 o'clock.

J. M. Caldwell
County Judge.

Wednesday Morning April 4th, 1900.

Court met pursuant to adjournment; present and presiding as on yesterday when the following proceedings were had to-wit:

In the matter of J. S. Morehead Collector
To
Report Sale 16th Section Lands

On this day is presented to the Court the Report of J. S. Morehead, Collector of Hot Spring County, Arkansas, of sale of the unsold parts of Section 16 Tp. 3 S R 16 west; that for more than four weeks next before the first day of the present April Term, 1900, of the Hot Spring County Court, the same was advertised in the Arkansas Metion a weekly newspaper published in said County and by posted [illegible] at public place notice

Now, therefore, if the said Stupfe Bros. Bridge & Iron Co. shall erect and deliver said Bridge in accordance with the terms and provisions of said Contract, then this bond shall be void; otherwise it shall be and remain in full force and effect.

Revenue Stamps Seal Seal

Stupfe Bros. Bridge & Iron Co
By Geo. Stupfe,
Its President.

The United States Fidelity & Guaranty Co.
By A. M. Landrey,
Atty. in fact.

Bridge Contract.

This agreement, made and entered into, this 3d day of April, 1900 by and between the Stupfe Bros. Bridge & Iron Co. a corporation duly organized and existing under the laws of the State of Missouri, and authorized to do business in the State of Arkansas, party of the first part, and Hot Spring County, Arkansas by J. M. Caldwell, County Judge, duly authorized to act for said County in this behalf, party of the second part, witnesseth: That the said party of the first part agrees for itself, its successors and assigns, to furnish and erect complete and ready for travel, the superstructure and substructure for an Iron and Steel Bridge over the Ouachita River at a point known as Rockport about two miles north west of Malvern, Arkansas, according to the Plans and Specifications hereto attached, which by this reference are made a part of this Contract.

And said party of the first part hereby agrees to have said structure completed and ready for inspection on or before the first day of November, 1900, allowing a reasonable extension of time in case of unavoidable delays by reason of high water, strikes, accidents in construction or other causes beyond the control of the party of the first part.

And in consideration of the above mentioned material and work to be furnished and executed by the said party of the first part, the said party of the second part hereby contracts and agrees to pay to the said party of the first part, its successors and assigns the sum of Twenty six thousand dollars, as follows: in County warrants of said Hot Spring County drawn

on the Bridge fund as hereinafter provided.

It is expressly agreed by and between the parties hereto that said second party obligates itself hereby to cause to be levied annually a tax of not less than one mill on all of the taxable property of said County which is to be used for the purpose of redeeming the said County warrants; that immediately upon completion and acceptance of said bridge, the said party of the second part will cause the said County warrants to issue against the Bridge fund only in the sum of Ten Thousand Dollars; that being the amount heretofore appropriated for the building and cost of said bridge; that also, at that time, the said party of the second part will allow the Claim of the said Stupp Bros. Bridge & Iron Co. against the County in an additional sum of Sixteen thousand dollars which shall be payable out of the Bridge fund, only, of said County, and for which amount the Levying Board of said County shall, at its next and succeeding term, make an appropriation covering the amount, and after the said appropriation the said party of the second part shall cause the Clerk of the County Court to draw further warrants of said County against the Bridge fund, only for said additional sum of Sixteen Thousand Dollars.

It is further understood and agreed by and between the parties hereto that if the Levying Board or Court of said County at its next regular session after this date, shall make an appropriation covering the amount of the bid of the said party of the first part for the Construction of said Bridge over and above the amount already appropriated, that then said party of the second part, will cause warrants on the bridge fund, only, to be issued immediately upon completion and acceptance of the bridge, for the full amount of the Contract price of the same.

In witness whereof, said party of the first part has caused its Corporate name and seal to be hereto affixed, and the said party of the second part has caused its name to be hereto affixed by the Judge of the County Court thereof, the day and year first aforesaid.

Seal

Stupp Bros. Bridge & Iron Co.,
By Geo. Stupp, Prest.

At Spring County,
By J. M. Caldwell, County Judge.

one part sand and one part cement. Each coat shall be put on at the same time the body of the abutment is built and it shall be smoothed and finished up in a careful manner.

Piers B & C: These piers set in the river and the contractor shall clean away all obstructions and set the piers in the solid rock bottom at least 1 1/2 feet, anchor the piers to the rock with 4 anchor bolts to the tube, 1 1/4" round fastened to the inside of tubes with lugs, and set into the rock at least two feet.

The space around the outside of the tube shall be filled in with concrete up to be level with the solid rock. Portland cement shall be used for this concrete around the outside of tubes.

Soft mud or other obstructions except gravel shall be cleaned away from around the piers B & C and rip rap dumped in around tubes as it will extend up to the rock bracing and slope out at a slope of 1/2 to 1.

The lower sections of tubes B & C may be made in 10 ft sections so as to provide for leaving off such length as may not be necessary in case solid foundation is found without using the full length of tube.

Pier D sets in bank and shall be anchored to solid rock in case rock is reached by it but otherwise three white oak piles 12" butt and 16 ft long shall be driven in each tube.

All concrete in tubes shall be composed of one part natural cement, two parts clean sharp sand and four parts broken stone or gravel.

The stone must be broken so as to pass through an iron ring 3" inside diameter and gravel must be clean and coarse gravel.

In mixing all concrete, the sand and cement must be thoroughly mixed before wetting and the stone or gravel then added and the whole thoroughly mixed and wet, it shall then be put into the tubes before having a chance to set and thoroughly rammed in layers.

Superstructure: The superstructure consists of two spans 119 ft each and one span 209 feet all with 16 ft roadway all as per accompanying plans.