

Description:

The Burr's Ferry Bridge consists of three Parker through truss spans and 34 concrete girder spans. The center truss span is a 250-foot riveted Parker through truss conforming to the Louisiana SHT 27 standard design; two secondary spans each measure 120 feet in length and conform to the SHT 32 standard design (see Figure 2). With its 24-foot roadway, the bridge carries two-way traffic on State Highway (SH) 63 across the Sabine River at the Texas and Louisiana state line. It serves traffic traveling between the central Louisiana cities of Leesville and Alexandria and towns in East Texas, including Jasper, Livingston and Huntsville. The bridge also links the community of Burr Ferry, 1.2 miles to the east in Vernon Parish, Louisiana, with Burkeville, 9 miles to the west in Newton County, Texas. Located in a densely forested region, the area's economy is dominated by the timber industry.

The Texas Highway Department (THD) and the Louisiana Highway Commission (LHC) jointly undertook the construction of the Burr's Ferry Bridge. The bridge engineers at LHC, who were primarily responsible for designing the bridge, chose Louisiana standard designs for the three riveted Parker through truss spans. Two rows of 8-inch deep steel channel members form the truss railing. The truss spans rest on reinforced concrete piers with straight cylindrical columns in a dumbbell configuration. Piers one and four, located where the approach spans meet the two secondary trusses, are stub piers measuring less than 20 feet high. Piers two and three, supporting the ends of the center truss span are two-tiered, and are supported on precast concrete piling. The approach spans are supported on a series of reinforced concrete pile bents. These spans feature open concrete approach railing similar to that used on THD-designed bridges. A bronze plaque identifies the governmental agencies involved in the project. This plaque fronts a concrete monument with stepped top and chamfered edges. The plaque reads:

BURR'S FERRY BRIDGE
OVER
SABINE RIVER
□□□□
U.S. WORKS PROGRAM
HIGHWAY PROJECT N° W.P.H. 833 ^{LA.} _{TEX.}
CONSTRUCTED BY
LOUISIANA HIGHWAY COMMISSION
TEXAS HIGHWAY DEPARTMENT
AND
U.S. BUREAU OF PUBLIC ROADS
1937

A water level gaging station operated by the United States Geological Survey (USGS) is attached to the bridge's south side.

LHC prepared plans for the bridge with the involvement and approval of THD engineers. From 1936 to 1937 the W. Horace Williams Company constructed the bridge under contract to LHC. In 1977, THD replaced the portal bracing on the approach ends of the two 120-foot truss spans. Though welding rather than riveting was used to connect the replacement members, they maintain the general appearance of highway department portal design. No other major alterations have been performed on the bridge. As such, it retains substantial integrity of design, materials and workmanship. Because the bridge remains in place serving highway traffic, it also retains integrity of location and association, as well as setting and feeling. A project to replace the bridge is in the preliminary planning stages. The disposition of the Burr's Ferry Bridge is undecided.

GENERAL SPECS

TRUSS TYPE: Parker through
THD STD. DESIGN: Louisiana standards SHT 27; SHT 32
NO. TRUSS SPANS: 3
TRUSS SPAN LENGTH: 1 @ 250; 2 @ 120'

SUPERSTRUCTURE

TRUSS DEPTH: 42'0"
TRUSS PANELS: 9 - 27'9 panels
TOP CHORD & END POSTS: 4 angles w/ web & cover plates

ROADWAY WIDTH: 24'
DECK WIDTH: 25 double angles w/ web plate
of
APPROACH SPANS: 34 - 40 9 CG-26 girder spans
or
OVERALL LENGTH: 1882

BOTTOM CHORD: 4 angles w/ web & batten plates
VERTICAL POSTS: 2 channels w/ lacing or 2 pairs
of
DIAGONAL MEMBERS: 2 angles w/ batten plates
2 pairs of double angles w/
batten plates
DECK TYPE: concrete

SPECIAL FEATURES

BRIDGE PLAQUE: yes
APPROACH RAILING: concrete railing
and bents
OTHER: 2 secondary spans: 120' Parker
through spans (LHC std SHT 32)

SUBSTRUCTURE

PIERS/INTERIOR BENTS: concrete piers
THD STD. DESIGN: n/a
ABUTMENTS/END BENTS: concrete end bents
THD STD. DESIGN: n/a

Significant dates 1936-1937
Architect/Builder Bridge Designer: Louisiana Highway Commission
Truss Fabricator: Unknown
Bridge Builder: W. Horace Williams Company of New Orleans

Criterion A & C

Statement of Significance:

The Burr's Ferry Bridge was built from 1936 to 1937 with emergency relief funds. Because of its association with a federal work relief program implemented during the Depression, the bridge meets Criterion A in the area of Transportation (subcategory Depression-era Public Works) at a state level of significance. (Refer to Section F, Associated Property Types, for a discussion on subcategories within an area of significance.) The design of the Burr's Ferry Bridge addressed difficult site conditions and employed innovative solutions, including the use of long spans and a slightly curved alignment. As such, the bridge is significant for "employing technically complex, advanced or innovative designs or construction methods." It therefore meets Criterion C in the area of Engineering at a state level of significance.

The Burr's Ferry Bridge was built on State Highway (SH) 45, now SH 63. This route, formerly part of the East and West Texas Highway, linked Bryan, Huntsville, Livingston, Woodville, Jasper and Burkeville in Texas, and connected with Louisiana State Route (SR) 21, now SR 8, at the Sabine River (see Figure 1). SR 21 led to the settlement of Burr's Ferry (now Burr Ferry, a suburb of Leesville) and to Leesville, Louisiana. Burr's Ferry was named for Dr. Timothy Burr, second cousin of Vice President Aaron Burr, who settled along the Louisiana side of the Sabine River around 1809. His son Bryant purchased land on the Texas side in 1849, and used the ferry to travel between his residence in Louisiana and his plantation in Texas. Pioneers entering Texas in the 19th century with their livestock and household effects also crossed at Burr's Ferry, which was reportedly the most heavily used of the four ferry crossings across the Sabine. A toll ferry was in use at this location until the Burr's Ferry Bridge was completed in 1937.

At the time the bridge project was under consideration, the portion of SH 45 east of Jasper was not maintained by THD. This section was an "improved dirt road," reportedly impassable much of the year. THD built the Burr's Ferry Bridge as part of a larger undertaking to upgrade this section of SH 45 and replace the toll ferry with a free bridge. The bridge construction project was a joint undertaking between THD and LHC. Construction and maintenance costs for such projects were usually financed equally by the states involved. The responsibility of preparing the plans, specifications and estimate (PS&E) and of supervising the construction for any particular bridge alternated between the two bordering states. For the Burr's Ferry Bridge, LHC took on these responsibilities, with the consultation and approval of THD engineers.

An article from the April 1938 issue of Texas Parade reveals the significance of interstate bridge construction across the Sabine:

Today, the forces of civilization have brought law, industry and agriculture into this once turbulent community and the final step in conquest has been accomplished this year with the completion of the co-operative program of bridge building by the states of Texas and Louisiana.

The old trails which the explorers used and the ferries, some of which have served not only the pioneers but also the modern travelers until a recent date, have been supplanted throughout by modern travel conveniences....

The article continues with a description of each of the six Sabine River bridges built jointly by the two states between 1927 and 1938. The Burr's Ferry Bridge, the fourth to be completed, was built "to furnish a new outlet for the timber and oil industries in that area."

Throughout the late 1920s and early 1930s, citizens of Newton and Jasper counties requested THD to "close the gap" on SH 45 and provide a crossing over the Sabine River to Louisiana. On February 24 1928. citizens from the two counties and from the adjoining parishes in Louisiana, made a resolution requesting to "the Highway Commissions of the States of Louisiana and Texas that a crossing be selected on the Sabine River for a connection of Highway No. 21 in Louisiana and Highway No. 45 in Texas at the earliest possible time. Such location for crossing to be made by the engineers of the two commissions."

Both Newton and Jasper counties were prepared to pass bonds for their shares of the construction cost, but not until the exact route of SH 45 was determined. The section from Jasper to the Jasper and Newton county line was undisputed, but the route through Newton County was still unresolved. The issue revolved around whether the highway would head directly east towards Leesville, Louisiana, passing through Burkeville and crossing the Sabine at Burr's Ferry or whether the route would head northeast, passing through Toledo in the northeast corner of Newton County, with a crossing at Hadden's Ferry. In a March 4, 1929, letter to Texas Highway Commissioner W.R. Ely, the Jasper Chamber of Commerce Secretary stated that "Jasper County has just voted a bond issue for the construction of #45, by a 7 to 1 majority, and we are anxious to see the road completed...."

The situation was not so easily resolved in Newton County. The desperation for financial aid to the region, brought on by the Depression and exacerbated by drought, escalated the competition between residents living east of Burkeville towards the Burr's Ferry crossing and those living northeast of Burkeville near Toledo and the Hadden's Ferry crossing. Throughout the early 1930s, residents from each of these two areas wrote Gibb Gilchrist, State Highway Engineer, urging for the route to go through their part of the county and admonishing THD for collecting a gasoline tax without appropriating any of the proceeds to roads in rural areas. Though residents complained about the lack of good roads in their area, the need for employment appears to have been the greater issue. A September 13, 1930, letter to THD from E.A. Lindsey, Newton County Judge, included a "request for special allotment of funds for highway work in Newton County to relieve drought and financial depression...." The request, initiated as a citizen's petition to the Newton County Commissioners' Court, outlined that such funds "be expended upon the highways of this county for the purpose of furnishing employment for farmers who have had crop failures visited upon them, and to supply laborers in general with a means of doing some useful work to maintain themselves and families during this financial depression."

In 1931 and 1932, THD implemented a project to provide roadway grading and drainage structures for the 8-mile segment of SH 45 from the town of Jasper east to the Newton County line. Controversy over the route through Newton County continued and was compounded by the county's difficulty in raising its share of funds for the project. In his January 30, 1932, letter, Gilchrist informed the local highway association that "at this time county bounds are not marketable and if you voted

bonds now it will be very unlikely that you could get any price for them at all." The situation was resolved with the passage in September 1932 of the State Assumption Highway Bond Law, which abolished the requirement of a county contribution, other than right-of-way on state highway projects.

With the issue of county funding resolved, members of the local road committee focused on the use of local labor on the road project. In his November 21, 1932, letter, J.M. Westbrook explained:

If we can even get the remaining 7 or 8 miles to Burkeville surveyed and staked and thereby connect up with 87, this would greatly relieve some of the unemployment situation. It is the duty of every county and state department to use every possible effort to open avenues of employment, so our people may be given an opportunity to earn their bread and tax money. Conditions are growing more acute as the winter months advance, and the people will need food and clothing, and lots of them can not pay their taxes unless some plan for jobs are arranged for them.

Before THD could proceed with planning for the upgrade of SH 45, possibly involving a relocation of the route, a site for the bridge had to be selected. On November 2, 1932, George Wickline, State Bridge Engineer, performed a preliminary site inspection with the LHC Bridge Engineer and two engineers from the Bureau of Public Roads (BPR). Having eliminated the Hadden's Ferry site as being too far out of the way, requiring an indirect and lengthy route, the engineers focused on a location at or near the Burr's Ferry crossing. Three sites were under consideration: two were a couple of miles upstream of the Burr's Ferry crossing at the mouth of Pearl Creek and the third site was 100 yards below Pearl Creek. The first two sites had a high bank on the Texas side, but a low bank subject to overflow on the other side. The third site held the advantage of a road leading to it on the Louisiana side, built by LHC five years earlier. Unfortunately, on the Texas side, the bridge would traverse 1½ miles of swamp and lowland and part of the alignment would be parallel to a crack in the river. Some of the ravines to be crossed were rather deep and would require a considerable amount of trestle opening or heavy fill. It was decided that further investigations would be required before a final site could be determined.

Probably due to lack of funding, planning for the project subsided until 1935, when Congress passed the Emergency Relief Appropriation Act. This act gave Texas grant money amounting to nearly \$12 million for road and bridge construction and another \$11 million for railroad grade crossings. Projects funded under this act were subject to special labor provisions. Among other things, the provisions required that at least 90 percent of the laborers be obtained from public relief rolls and that hand labor methods be used whenever possible. THD and LHC applied for funding for the bridge construction as a Works Program Highway Project, one of several work relief programs funded by the act. The Burr's Ferry Bridge construction was one of 234 projects funded under the act between September 1935 and August 1936 and one of only 69 such projects on federal or federally funded highways.

Having found a source of funding for the bridge and having fixed its location at or near Burr's Ferry, THD proceeded on the related project to upgrade SH 45. By August 27, 1935, the State Highway Commission had already passed a motion authorizing a survey of SH 45:

In Newton County, it is ordered by the State Highway Commission that a location survey be made on State Highway No. 45 from the Louisiana Line to the Jasper County Line, on condition that the County will agree in advance to obtain right-of-way fully fenced on location approved by the State Highway Engineer and will also agree to clear and grub the right-of-way with W. P. A. labor. (Minute No. 11185)

Two months later, a second bridge site inspection was made, as described in a October 9, 1935, document entitled "Office Bridge Memorandum":

A number of sites were investigated, but on account of an old river channel with a large bend it was found that the best site that could be considered was just below the old [Burr's] ferry landing where Pearl Creek enters the Sabine River on the Louisiana side....

On account of the excess amount of drift Mr. C.T. Nitteberg of the U. S. Bureau of Public Roads suggested that a 250 central span should be used and Mr. Lant [Louisiana Bridge Engineer] and the writer concurred in this recommendation. Suitable approach spans varying from 125 to 160 ft. should be used after a new profile has been run and test borings have been obtained. This structure will require a considerable length of approach on the Texas side which is the low side of the river

THD engineers greatly influenced the design of the Burr's Ferry Bridge. They called on their engineering experience to debate the type and lengths of spans required. In his January 29, 1936, letter to the LHC Bridge Engineer N.E. Lant, THD's Acting Bridge Engineer Herbert Eldridge stated:

In looking over the layout for the above proposed bridge we are of the opinion that the spans adjacent to the truss should be longer than 70 ft. We have considerable trouble in the past where excavations were made for piers close to the banks. Sooner or later these banks start to slide and carry the adjacent pile bents with the slide or expose the piling to such an extent as to cause concern....

After a careful review of the layout it is the opinion of this office that the 250 ft. span should be flanked on either side with spans at least 150 ft. long. We are also of the opinion that the remainder of the bridge should be composed of spans at least 40 ft. long due to possible drift through this wooded section. The roads on the Texas side should be raised so that the clear distance below girders to highwater should be at least two feet.

The Preliminary Inspection Report dated March 19, 1936. stated that after reviewing THD's comments, LHC engineers still preferred to retain the 70-foot I-beam spans originally proposed. "Considerable discussion followed with reference to the length of spans which should be used. It was finally agreed to use 120' through steel truss spans supported on concrete stub piers."

Plans that LHC revised and returned to THD on March 30, 1936, reflected the following changes made to the bridge design: the 70-foot I-beam spans on each side of the 250-foot span had been changed to 120-foot through truss spans; the concrete deck girder approach spans were lengthened to 40 feet; and the west end of the bridge was shortened by about 600 feet.

This last change was made at the suggestion of LHC engineers who pointed out that, because of the topography of the river bed, the additional 600 feet of approach spans would provide only a small waterway opening over high ground. In addition, dense vegetation on the river's west bank would prevent unobstructed flow of floodwaters. THD would have to build relief structures on the Texas side to provide the additional waterway opening needed during flooding. LHC engineers did not find the additional 600 feet of approach spans, estimated at \$42,000, to be cost-effective. THD engineers concurred with the assessment, considering that in several other joint bridge projects, LHC had taken full financial responsibility for relief structures in Louisiana. Both states agreed to a design change whereby the west bank would be built up with fill to support an approach roadway. Despite this change, the bridge has one of the longest series of approach spans for a truss bridge in Texas: the 34 concrete girder approach spans total 1,386 feet.

In addition to employing long spans lengths to accommodate floodwaters and the resulting drift, the bridge design also addressed the unique topography by having a slightly curved alignment. This was a relatively new practice, as all early highway bridges were constructed on a straight alignment. The curved alignment allowed the bridge to connect with the road built several years earlier on the Louisiana side without requiring it to traverse the deep ravines in the river bottom.

In May 1936, BPR informed both states that approval of the PS&E and the letter of authority to advertise would not be provided until each state could verify that adequate relief labor would be available for the project. THD confirmed that there was sufficient relief labor available in Texas to furnish its share of the labor. BPR's subsequent approval of the bridge project as a Works Program Highway Project included a grant of federal funds to cover the total project cost.

The Louisiana Highway Commission opened bids for the construction of the Burr's Ferry Bridge on June 10, 1936. After reviewing the eleven bids submitted, the commission awarded the contract to the W. Horace Williams Company of New Orleans which submitted the low bid of just under \$235,000. Construction on the bridge began on August 12, 1936 and was completed September 13, 1937. A field change was apparently implemented in the design of the abutment wing walls to accommodate a plaque at the bridge entrance.

By July 1937, BPR had approved federal aid for 11 relief structures and 10 miles of roadway grading between Burkeville and the Burr's Ferry Bridge. The federal aid would cover nearly half the total cost estimated at about \$289,000. By January 26, 1938 construction of the relief structures had started. Ironically the road between Burkeville and the Sabine River was impassable, so that engineering crews had to reach the job site by way of Louisiana. These structures were constructed under a separate contract implemented after the completion of the Burr's Ferry Bridge and are not a part of this nomination.

In 1940 and 1941, THD contracted with the Austin Road Company to provide asphalt surfacing on SH 45 east of Burkeville. About 1939, the portion of SH 45 west of Jasper had changed to US 190 and by 1942 the eastern portion had been redesignated SH 63. It wasn't until the early 1950s that THD provided roadway grading and drainage structures on the portion the highway between the Jasper County line and Burkeville. In 1969, the Toledo Bend Reservoir was created upstream of the Burr's Ferry Bridge eliminating the possibility of flooding at the bridge site. In 1977, THD replaced the portal bracing on the approach ends of the two 120-foot truss spans. The replacement members, though slightly larger than the original, maintain the appearance and configuration of the original design.

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