1518

NPS Form 10-900
(Oct. 1990)

OMB No. 10024-0018

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

1. NAME OF PROPERTY

HISTORIC NAME: State Highway 79 Bridge at the Red River
OTHER NAMES/SITE NUMBER: CY0282-01-005

2. LOCATION

STREET & NUMBER: SH 79 at the Oklahoma state line **NOT FOR PUBLICATION:** N/A
CITY OR TOWN: Byers **VICINITY:** X
STATE: Texas **CODE:** TX **COUNTY:** Clay **CODE:** 077 **ZIP CODE:** 76357

3. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this _x_ nomination __ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property _x_ meets __ does not meet the National Register criteria. I recommend that this property be considered significant __ nationally _x_ statewide __ locally. (__ See continuation sheet for additional comments.)

Curtis Tunnell — 9-6-96

Signature of certifying official — Date

State Historic Preservation Officer, Texas Historical Commission

State or Federal agency and bureau

In my opinion, the property _x_ meets __ does not meet the National Register criteria.
(__ See continuation sheet for additional comments.)

J. Blake Wade — 4 November 1996

Signature of commenting or other official — Date

Oklahoma Historical Society, SHPO

State or Federal agency and bureau

4. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is: — Signature of the Keeper — Date of Action

for Edson H. Beall — 12-20-96

√ entered in the National Register
__ See continuation sheet.
__ determined eligible for the National Register
__ See continuation sheet.
__ determined not eligible for the National Register
__ removed from the National Register
__ other (explain): _____

5. CLASSIFICATION

OWNERSHIP OF PROPERTY: public-State

CATEGORY OF PROPERTY: structure

NUMBER OF RESOURCES WITHIN PROPERTY:	CONTRIBUTING	NONCONTRIBUTING
	0	0 BUILDINGS
	0	0 SITES
	2	0 STRUCTURES
	0	0 OBJECTS
	2	0 TOTAL

NUMBER OF CONTRIBUTING RESOURCES PREVIOUSLY LISTED IN THE NATIONAL REGISTER: 0

NAME OF RELATED MULTIPLE PROPERTY LISTING: Historic Bridges of Texas, 1866-1945

6. FUNCTION OR USE

HISTORIC FUNCTIONS: TRANSPORTATION/road-related (vehicular)

CURRENT FUNCTIONS: TRANSPORTATION/road-related (vehicular)

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: Other: camelback pony truss bridge

MATERIALS:

FOUNDATION	substructure: concrete piers, bents and abutments
WALLS	N/A
ROOF	N/A
OTHER	superstructure: steel truss

NARRATIVE DESCRIPTION (see continuation sheets 7-1 through 7-4)

Description:

The State Highway 79 Bridge at the Red River consists of 21 100-foot camelback pony truss spans with a single steel I-beam approach span flanking each end (see Photograph 1). A relief structure on the west (Texas) side of the main bridge consists of 26 40-foot steel I-beam spans similar to those used on the main bridge (see Photograph 3). The bridge provides a crossing over the Red River between Clay County, Texas, and Jefferson County, Oklahoma, on State Highway (SH) 79. SH 79 is a short route of about 100 miles originating in Throckmorton County. It extends northeast through Young and Archer counties on its way to Wichita Falls, the Wichita County seat. The route continues through Petrolia and Byers in Clay County, crossing the Red River into Oklahoma and terminating in Waurika, just 6 miles inside the state line. The Red River bridge links Wichita Falls, Petrolia and Byers in Clay County with Waurika in Jefferson County, Oklahoma (see Figure 1). Located in the Western Cross Timbers region of North Central Texas, Clay County has an economy based primarily on oil, agriculture and varied manufacturing.

The Texas Highway Department (THD) and the Oklahoma Highway Commission (OHC) jointly undertook the construction of the Red River bridge. The bridge engineers at OHC, who were primarily responsible for designing the bridge, chose riveted camelback pony trusses for the main spans. Two rows of 6-inch H-beams form the truss railing. The truss spans rest on reinforced concrete piers with straight cylindrical columns in a dumbbell configuration (see Photograph 2). Concrete abutments support the bridge ends. The bridge's east abutment and all piers use concrete footings; the west abutment is supported on precast concrete foundation piling (see Figure 2). The relief structure's I-beam spans are supported on a series of precast concrete pile bents. These spans, along with the single approach span on the main bridge, feature open concrete railing with grooved decorative treatment on the end posts (see Photograph 4). Both structures provide a 24-foot roadway flanked by 18-inch curbs serving as refuge walks for stranded pedestrians.

OHC prepared plans for the bridge with the approval of THD engineers. In 1939, Brooks & Dahlgren, Inc., constructed the bridge under contract to OHC. Several joint efforts were made to control erosion resulting from shifting river banks. These repairs, implemented as early as 1956 and continuing into the 1990s, included the installation of timber piling, steel and timber jetties and stone rip rap. No other major repairs have been performed on these structures. As such, they retain substantial integrity of design, materials and workmanship. The structures and their surroundings appear relatively unchanged since 1939, maintaining integrity of location, setting, feeling and association. Although no projects are currently planned for the Red River bridge, its BRINSAP sufficiency rating as of March 1996 is 47.8, making it eligible for replacement under the federal Highway Bridge Replacement and Rehabilitation Program (HBRRP).

GENERAL SPECS

TRUSS TYPE:	camelback pony
THD STD. DESIGN:	n/a
NO. TRUSS SPANS:	21
TRUSS SPAN LENGTH:	100'
ROADWAY WIDTH:	24'
DECK WIDTH:	28'
APPROACH SPANS:	1 - 50' & 1-60' steel I-beam span
OVERALL LENGTH:	2255'

SPECIAL FEATURES

BRIDGE PLAQUE:	none
APPROACH RAILING:	concrete railing
OTHER:	concrete railing w/ grooved treatment; relief structure with matching railing; 18-inch refuge walks

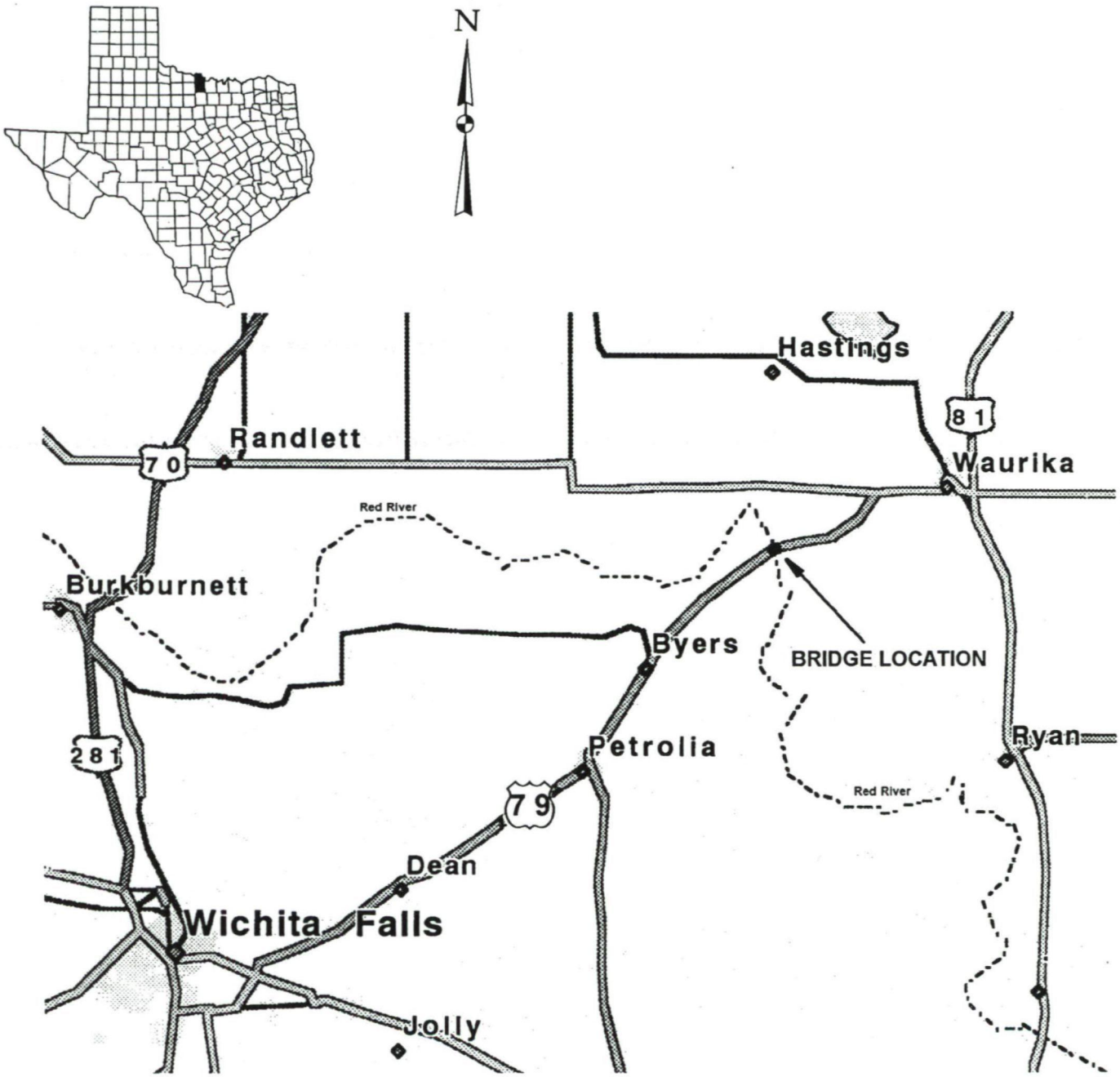
SUPERSTRUCTURE

TRUSS DEPTH:	12'6"
TRUSS PANELS:	5 - 20'0" panels
TOP CHORD & END POSTS:	2 channels w/ cover plate & lattice
BOTTOM CHORD:	2 channels w/ batten plates
VERTICAL POSTS:	I-beam
DIAGONAL MEMBERS:	I-beam
DECK TYPE:	concrete

SUBSTRUCTURE

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

Figure 1. Map of Wichita County, Texas, and Jefferson County, Oklahoma, showing the location of the Red River bridge.

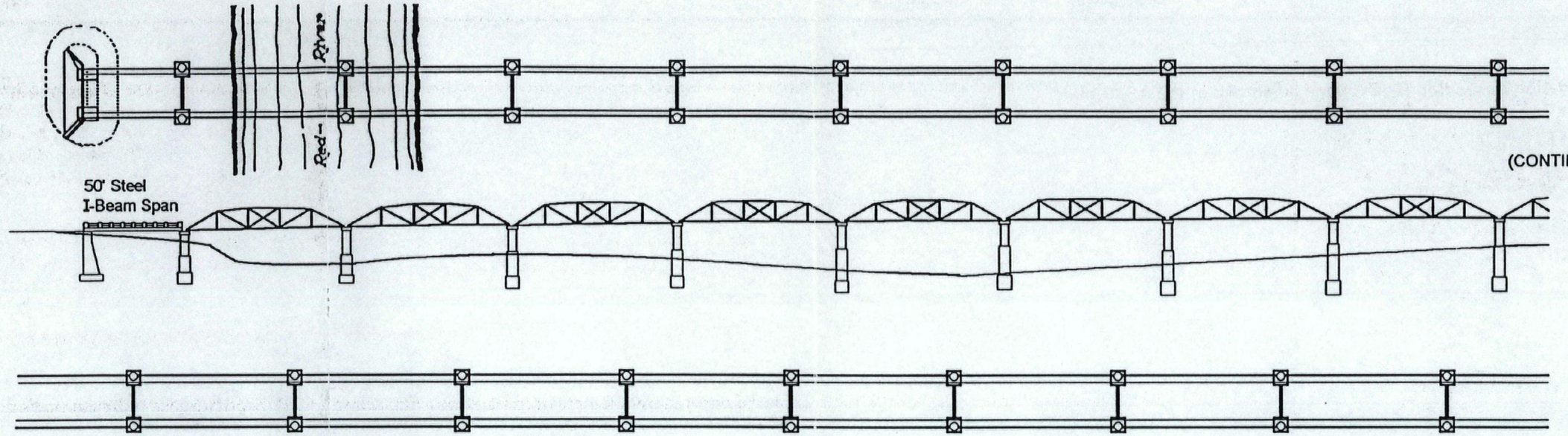


Source: Adapted from "Street Atlas USA," DeLorme Mapping, 1993.

Figure 2. Elevation of the Red River bridge as shown in the 1939 plans.

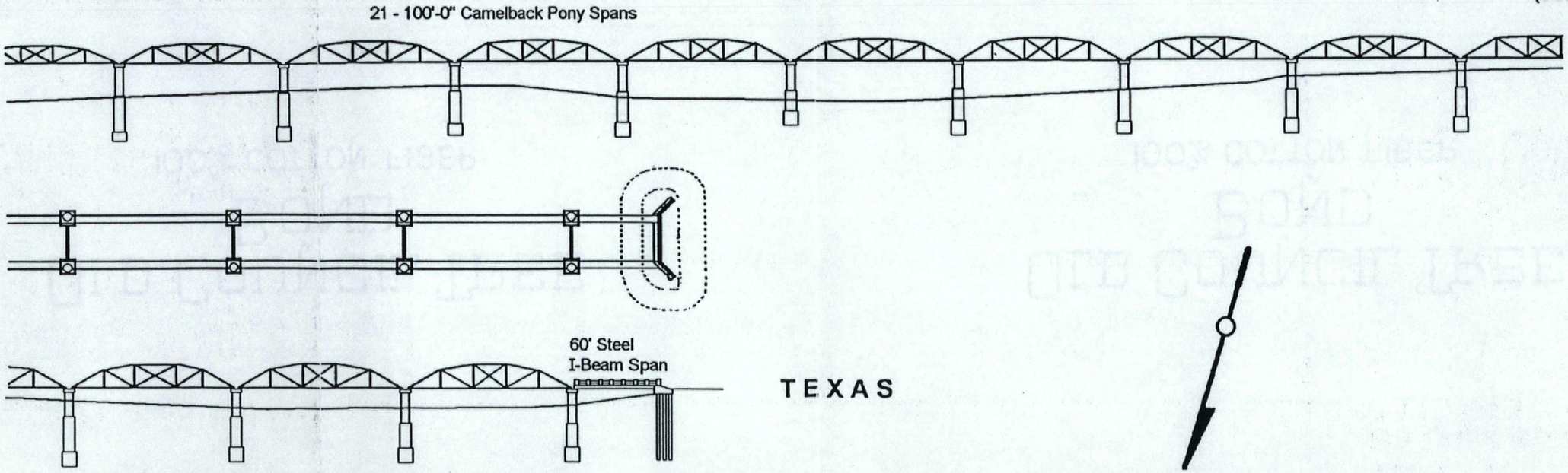
Source: Texas Highway Department, CSJ 0282-01-001, 1939.

OKLAHOMA



(CONTINUED BELOW)

(CONTINUED BELOW)



TEXAS

8. STATEMENT OF SIGNIFICANCE

APPLICABLE NATIONAL REGISTER CRITERIA

_x_ **A** PROPERTY IS ASSOCIATED WITH EVENTS THAT HAVE MADE A SIGNIFICANT CONTRIBUTION TO THE BROAD PATTERNS OF OUR HISTORY.
___ **B** PROPERTY IS ASSOCIATED WITH THE LIVES OF PERSONS SIGNIFICANT IN OUR PAST.
_x_ **C** PROPERTY EMBODIES THE DISTINCTIVE CHARACTERISTICS OF A TYPE, PERIOD, OR METHOD OF CONSTRUCTION OR REPRESENTS THE WORK OF A MASTER, OR POSSESSES HIGH ARTISTIC VALUE, OR REPRESENTS A SIGNIFICANT AND DISTINGUISHABLE ENTITY WHOSE COMPONENTS LACK INDIVIDUAL DISTINCTION.
___ **D** PROPERTY HAS YIELDED, OR IS LIKELY TO YIELD, INFORMATION IMPORTANT IN PREHISTORY OR HISTORY.

CRITERIA CONSIDERATIONS: N/A

AREAS OF SIGNIFICANCE: Transportation (Regional Economic Development); Engineering

PERIOD OF SIGNIFICANCE: 1939

SIGNIFICANT DATES: 1939

SIGNIFICANT PERSON: N/A

CULTURAL AFFILIATION: N/A

ARCHITECT/BUILDER: Bridge Designer: Oklahoma Highway Commission
Truss Fabricator: Virginia Bridge & Iron Company of Roanoke, Virginia
Bridge Builder: Brooks & Dahlgren, Inc. of Oklahoma City, Oklahoma

NARRATIVE STATEMENT OF SIGNIFICANCE (see continuation sheets 8-5 through 8-7)

9. MAJOR BIBLIOGRAPHIC REFERENCES

BIBLIOGRAPHY (see continuation sheet 9-8)
PREVIOUS DOCUMENTATION ON FILE (NPS): N/A
___ preliminary determination of individual listing (36 CFR 67) has been requested.
___ previously listed in the National Register
___ previously determined eligible by the National Register
___ designated a National Historic Landmark
___ recorded by Historic American Buildings Survey #
___ recorded by Historic American Engineering Record #
PRIMARY LOCATION OF ADDITIONAL DATA:
_x_ State historic preservation office *(Texas Historical Commission)*
_x_ Other state agency *(Texas Department of Transportation)*
___ Federal agency
___ Local government
___ University
___ Other -- Specify Repository:

Statement of Significance:

The State Highway 79 Bridge at the Red River was constructed in 1939. This camelback pony truss bridge is significant for rarity of type. As such, it meets Criterion C in the area of Engineering at a state level of significance. The bridge is additionally significant for facilitating major economic development in the region. It therefore also meets National Register Criterion A in the area of Transportation (subcategory Regional Economic Development) at a state level of significance. (Refer to Section F, Associated Property Types, for a discussion on subcategories within an area of significance.)

The Red River bridge was built as part of a joint effort between the Texas and Oklahoma highway departments to replace a toll bridge and provide a more direct route between Wichita Falls, Texas, and Waurika, Oklahoma. Although SH 79 first appears on Texas highway maps in 1932, the segment from Wichita Falls to the Oklahoma state line is labeled as an unimproved dirt road. This segment was not maintained by the state and held a conditional designation as a state highway. Rather than use this dirt road, motorists traveling from Waurika to Wichita Falls chose to head west on US 70 and cross into Texas on SH 30, now US 277, despite the 8-mile increase in route length. In addition to the Red River bridge project, THD implemented related projects for upgrading this segment of SH 79. The upgraded highway would better link two major oil-producing regions located in Central Oklahoma and southwest of Wichita Falls.

The bridge construction project was a joint undertaking between THD and OHC. 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 Red River bridge, OHC took on these responsibilities, with the consultation and approval of THD engineers.

By 1932, citizens from both sides of the state line had begun pushing for a free bridge to link Byers and Waurika. Two possible sites, downstream from the Byers toll bridge and about one mile apart, were under consideration. Despite a lack of funding for a bridge project, OHC proceeded with preliminary investigations of the sites. Homer White, OHC Bridge Engineer, explained his agency's position in his February 7, 1934, letter to THD:

> The State Highway Commission of Oklahoma . . . advise that they will not be in a position to construct this bridge during the year of 1934. They feel, however, that this bridge is probably desirable and are willing to consider it in the following year, in all probability . . . I therefore am of the opinion that we will be justified in making preliminary studies as to the location of this structure.

George Wickline, State Bridge Engineer, reported in his October 16, 1934, response to a Petrolia citizen who had complained of delays in the planning process:

> This matter has been taken up several times with the State Highway Department of

> Oklahoma, and they stated that owing to a rush of work in connection with the NRA [National Recovery Act] Program, they are not in position to make immediate investigation of this [bridge project] with the State Highway Department of Texas. . . . The Oklahoma State Highway Department have (sic) been short of funds on account of diverting their State Highway funds to take care of other state indebtedness. The Oklahoma State Highway Commission have (sic) been embarrassed during the past two years. We hope this condition will be improved with the additional grant of federal funds.

On December 14, 1934, officials from both highway departments met at a joint site inspection to choose the final site for the bridge. THD engineers found both sites satisfactory and left the decision to OHC engineers, who voiced a preference for the northern (upstream) location. Due to the lack of available funding, it was anticipated that the bridge construction project would not be programmed for several years. The project was therefore put on hold.

In July 1937, anticipating the upcoming bridge project, THD began to focus on the construction of SH 79 between Byers and the bridge site and applied for National Recovery Work Relief (NRWR) Program funds for its construction. In addition, THD requested permission from the Works Progress Administration (WPA) to divert funds from an NRWR project on the adjacent segment of SH 79, between Petrolia and Byers. This project included grading, drainage structures and select material, but the placement of select material (a single course of crushed sandstone) was eliminated from the project and the savings used on the Byers to Red River segment. Work on this segment began on January 27, 1938, and was completed July 23, 1938.

Planning on the bridge construction project resumed on January 7, 1938, when a second joint site inspection was held with the additional participation of engineers from the Bureau of Public Roads (BPR). The inspection report cites a concern regarding potential scouring at the northern site, which was located adjacent to a bend in the river. As a result, this location was eliminated in favor of the alternate site downstream. The tentative bridge layout discussed at the inspection called for a 2,200-foot main bridge with two relief structures, 160 feet and 950 feet in length. The bridge's foundations would be placed in an underlying stratum of red shale. The preliminary estimate came to $430,000 based on this layout.

By May 1938, OHC had placed the bridge project on its regular Federal Aid Program for 1939. In mid-June, OHC bridge engineers began working on the plans. They chose to use 21 standard-design camelback pony truss spans for the main bridge. OHC favored the riveted camelback truss and made extensive use of it on state highways, with over 170 remaining in service. The Red River bridge is, however, the only camelback pony bridge surviving on a state highway in Texas. The bridge is also the fourth longest highway department truss bridge in the state. The bridge is unique for the grooved decorative treatment on the concrete railing used on the approach spans and relief structure.

On August 1, 1938, OHC submitted the PS&E for THD's review and approval. Echoing a previous suggestion regarding the interstate bridge in Fannin County (refer to nomination of State Highway 78 Bridge at the Red River, FN0279-02-024, NRHP 1995), THD recommended the use of pier copings in the

bridge design. In his August 24, 1938, letter, Julian Montgomery, State Highway Engineer, stated "It is believed that the appearance and stiffness of the piers would be enhanced by a coping on top of the web and connecting the two shafts." He also expressed a preference for a "railing design which offers less obstruction to view, such as a metal railing or a low concrete railing with one horizontal bar the top of which would not be over about 3 ft. above the top of roadway surface." In his September 27, 1938, response, White stated, "I do not believe that the appearance of the top of the piers is enhanced by extending a web to the top of the piers and adding a coping to it. Furthermore, I feel that the web as designed provides adequate stiffness for the pier columns. Therefore, I have not conformed to your suggestion in this matter." He did, however, revise the railing design for approach spans and relief structure, providing low concrete railing similar to that used by THD.

With these changes made, OHC proceeded with an application to BPR for federal aid. Plans submitted included the design revisions and showed just one relief structure, on the Texas side of the truss bridge. The updated cost estimate came to $427,000. On October 29, 1938, BPR approved the PS&E, providing an allocation of federal funds to cover roughly half of the estimated project cost.

The two highway departments entered into a contract covering the bridge's construction and maintenance which specified that duplicate bids be filed in Oklahoma City and Austin. On November 22, 1938, bids were opened at both locations. After reviewing the 11 bids received, both states agreed to award the contract to Brooks & Dahlgren, Inc., of Oklahoma City, on its low bid of $345,188.50. The Virginia Bridge & Iron Company of Roanoke, Virginia, fabricated the truss spans. A special provision required the contractor to hire an equal number of laborers from each state. Construction on the bridge and associated relief structure began on January 2, 1939. The project was completed on September 11, 1939, under budget and ahead of schedule, at a cost of just over $340,000. Texas Highway Commissioner Harry Hines presided over the dedication ceremony held on February 21, 1940.

Bibliography:

"Highway Party Scheduled for Wednesday." *Wichita Daily Times*, 18 February, 1940, 1.

"Hines to Speak at Highway Event." *Wichita Daily Times*, 5 February, 1940, 1.

King, Joseph E. *Spans of Time: Oklahoma Historic Highway Bridges*. Oklahoma City: Oklahoma Department of Transportation, 1993.

Texas Highway Department. Plans of Proposed State Highway Improvement. Control-Section-Job No. 0282-01-001, located at TxDOT headquarters in Austin.

Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0282-01-001, located at TxDOT headquarters in Austin.

Texas Highway Department. *Twelfth Biennial Report of the State Highway Commission*. Austin, n.p., 1940.

Verbal Boundary Description:

The discontiguous boundaries define two distinct areas. The first area (corresponding to the UTM coordinates listed in Section 10) encompasses the complete structure, State Highway 79 Bridge at the Red River, including the approach spans and concrete railing. The second area encompasses the associated relief structure 0.3 mile west of the main bridge's west end. The ground upon which these structures stand is included within the appropriate area. The roadway connecting these structures is excluded from the boundaries.

Boundary Justification:

The boundary includes all components historically associated with the property. The roadway between the structures has been excluded from the boundaries because it does not contribute to the significance of the property. Additionally, the roadway lacks integrity of design, materials, workmanship and feeling.

Location:

The State Highway 79 Bridge at the Red River is located in both Clay County (077), Texas, and Jefferson County (067), Oklahoma.

10. GEOGRAPHICAL DATA

ACREAGE OF PROPERTY: 1.5 acre

UTM REFERENCES	Zone	Easting	Northing		Zone	Easting	Northing
1	14	583850	3777070	3	_	____	____
2	14	583180	3776890	4	_	____	____

(___see continuation sheet)

VERBAL BOUNDARY DESCRIPTION (see continuation sheet 10-8)

BOUNDARY JUSTIFICATION (see continuation sheet 10-8)

11. FORM PREPARED BY

NAME/TITLE: text by Regina A. Lauderdale
graphics by Pat St.George

ORGANIZATION: Texas Historical Commission/
Texas Department of Transportation DATE: September 1996

STREET & NUMBER: Texas Historical Commission TELEPHONE: 512/463-6094
P.O. Box 12276

CITY OR TOWN: Austin STATE: TX ZIP CODE: 78711

ADDITIONAL DOCUMENTATION

CONTINUATION SHEETS

MAPS

PHOTOGRAPHS

ADDITIONAL ITEMS

PROPERTY OWNERS

NAME Texas Department of Transportation and Oklahoma Department of Transportation

STREET & NUMBER 125 East 11th Street TELEPHONE 512/416-2606

CITY OR TOWN Austin STATE TX ZIP CODE 78701

NAME Oklahoma Department of Transportation

STREET & NUMBER 200 NE 21st Street TELEPHONE 405/521-2606

CITY OR TOWN Oklahoma City STATE OK ZIP CODE 73105

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: State Highway 79 Bridge at the Red River

MULTIPLE NAME: Historic Bridges of Texas MPS

STATE & COUNTY: TEXAS, Clay

DATE RECEIVED: 11/21/96 DATE OF PENDING LIST: 12/03/96
DATE OF 16TH DAY: 12/19/96 DATE OF 45TH DAY: 1/05/97
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 96001518

NOMINATOR: STATE

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	N	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	N	NATIONAL:	N

COMMENT WAIVER: N

___ACCEPT ___RETURN ___REJECT _____DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA_____

REVIEWER_____ DISCIPLINE_____

TELEPHONE_____ DATE_____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N


NO
STOPPING
OR
STANDING

SITE NO. CY0282-01-005
SH 79 BRIDGE AT RED RIVER
HISTORIC BRIDGES OF TEXAS
CLAY CO., TEXAS
PHOTOGRAPH 1 OF 4

SITE NO. CY0282-01-005
SH 79 BRIDGE AT RED RIVER
HISTORIC BRIDGES OF TEXAS
CLAY CO., TEXAS
PHOTOGRAPH 2 OF 4

SITE NO. CY0282-01-005
SH 79 BRIDGE AT RED RIVER
RELIEF STRUCTURE
HISTORIC BRIDGES OF TEXAS
CLAY CO., TEXAS
PHOTOGRAPH 3 OF 4

SITE NO. CY0282-01-005
SH 79 BRIDGE AT RED RIVER
RELIEF STRUCTURE
HISTORIC BRIDGES OF TEXAS
CLAY CO., TEXAS
PHOTOGRAPH 4 OF 4

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

WAURIKA WEST QUADRANGLE
OKLAHOMA–TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)
NE/4 HASTINGS 15'QUADRANGLE

6352 I SW (TEMPLE) · 6352 I SE (CORUM) · 6457 IV SW (COMANCHE)

98°07'30" · 81000mE · 82 · CORUM 8 MI. · 83 · 1 820 000 FEET (TEX.) · 84 · 5' · 85 · 86 · 87 · 88 · 2'30" · 89 · 1 990 000 FEET (OKLA.) · 90 · 91 · 98°00'

34°15' · 940 000 FEET (TEX.) · 330 000 FEET (OKLA.) · 37°90

37°89 000mN · 37°88 · 37°87 · 37°86 · 37°85 · 37°84 · 37°82 · 37°81 · 10' · 37°78 · 900 000 FEET (TEX.) · 37°77 000mN · 290 000 FEET (OKLA.) · 34°07'30"

T3S · T4S · T5S

WAURIKA LAKE · BOURLAND · PRICE · GRAYSON

Kiowa Park No 2 · Riser · Picnic Areas · Campground · Chisholm Trail Ridge Park · Picnic Area · Campground · Beaver Creek Landing Park · Moneka Park · Hastings · Water Tanks · Sewage Disposal Ponds · Cemetery · Grave · Jeff · Well · Wells · Water Tank · Athletic Field · Filtration Plant · Golf Course · Waurika · Cemetery · Sewage Disposal

PIPELINE · SPWY · AQUEDUCT · STRIP LANDING · OKLAHOMA KANSAS AND TEXAS · BR 902 · BR 904 · BR 909 · BR 873 · BR 891 · BR 882 · RAILROAD GRADE · OLD

Beaver Creek · Saline Creek · Whiskey Creek · Comanche Creek · RED RIVER · OKLAHOMA TEXAS · CLAY CO · JEFFERSON CO · INDEFINITE BOUNDARY

TEMPLE 9 MI. · RANDLETT 19 MI. HOOPER 2.8 MI. · BYERS 6 MI. · WINGLING 24 MI. · (WAURIKA EAST) 9462 III NW · 6353 II NW (HOOPER) · (PETROLIA) 6352 II SW · (IRVING) 6362 II SE · (RYAN) 6462 III SW

R9W · R8W · 1 970 000 FEET (OKLA.) · 1 840 000 FEET (TEX.)

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA 1985

Mapped, edited, and published by the Geological Survey

Control by USGS and NOS/NOAA

Topography by photogrammetric methods from aerial photographs taken 1978. Field checked 1979. Map edited 1984

Projection: Oklahoma coordinate system, south zone (Lambert conformal conic)
10,000-foot grid ticks based on Oklahoma coordinate system, south zone and Texas coordinate system, north central zone
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 6 meters south and 30 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence lines

Areas covered by dashed light-blue pattern are subject to controlled inundation

MN · GN · 0°32' 9 MILS · 7° 124 MILS

UTM GRID AND 1984 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

SCALE 1:24 000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
DOTTED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

OKLAHOMA
QUADRANGLE LOCATION

3498–114

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route · U. S. Route · State Route

WAURIKA WEST, OKLA.–TEX.

NE/4 HASTINGS 15' QUADRANGLE
34098–B1–TF–024

1984

DMA 6352 II NE–SERIES V883

HISTORIC BRIDGES OF TEXAS
SH 79 BRIDGE AT RED RIVER
VICINITY OF BYERS, CLAY CO., TEXAS
UTM REFERENCES: A. 14/583850/3777070
B. 14/583180/3776890

SITE NO: CY02 82-01-005