
5. CLASSIFICATION

OWNERSHIP OF PROPERTY: public-State

CATEGORY OF PROPERTY: structure

NUMBER OF RESOURCES WITHIN PROPERTY:	CONTRIBUTING	NONCONTRIBUTING
	0	0 BUILDINGS
	0	0 SITES
	1	0 STRUCTURES
	0	0 OBJECTS
	1	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: Parker through 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)

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State Highway 53 Bridge at the Leon River
Bell County, Texas

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Description:

The State Highway 53 Bridge at the Leon River consists of a single Parker through truss span with two steel I-beam approach spans on each end (see Photograph 2). The bridge serves traffic on Farm-to-Market Road (FM) 817 over the Leon River just northeast of Belton, in central Bell County (see Figure 1). FM 817 is a 3.5-mile route linking Belton, the Bell County seat, with Temple, a larger and more industrial town to its northeast. Bell County is in Central Texas on the western edge of the Blackland Prairie. The area's economy is based primarily on agriculture, with cotton and corn as the leading crops.

Texas Highway Department (THD) engineers developed a special design for the bridge's 200-foot riveted Parker through truss span. This span rests on reinforced concrete piers consisting of battered cylindrical columns in a dumbbell configuration. The bridge's four steel I-beam approach spans are supported on arched concrete bents (see Figure 2). Along its north side, the bridge features a 5-foot wide pedestrian walkway with decorative steel railing (see Photograph 1). A single row of 6-inch steel H-beams is used for truss railing. A bronze plaque affixed to a concrete monument adjacent to the bridge's northern entrance identifies the bridge contractor as well as the THD officials responsible for the project. The plaque reads:

LEON RIVER BRIDGE
BUILT IN 1939 BY THE
TEXAS HIGHWAY DEPARTMENT
STATE HIGHWAY COMMISSION
ROBERT LEE BOBBITT CHAIRMAN
JOHN WOOD MEMBER
HARRY HINES MEMBER
JULIAN MONTGOMERY
HIGHWAY ENGINEER
AUSTIN BRIDGE COMPANY
CONTRACTORS

In 1938 and 1939, the Austin Bridge Company built the Leon River bridge under contract to THD. No major alterations have been performed on the bridge. As such, it retains integrity of design, materials and workmanship, as well as location and association. Although the bridge's surroundings have changed somewhat with the development of Belton and Temple, it retains substantial integrity of setting and feeling. Although no projects are currently planned for the Leon River bridge, its BRINSAP sufficiency rating as of May 1995 is 61.7, making it eligible for rehabilitation, but not replacement, under the federal Highway Bridge Replacement and Rehabilitation Program (HBRRP).

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GENERAL SPECS

TRUSS TYPE: Parker through
THD STD. DESIGN: n/a
NO. TRUSS SPANS: 1
TRUSS SPAN LENGTH: 200'
ROADWAY WIDTH: 24'
DECK WIDTH: 25'
APPROACH SPANS: 4 - 52'0" steel I-beam spans
OVERALL LENGTH: 412'

SPECIAL FEATURES

BRIDGE PLAQUE: yes
APPROACH RAILING: steel railing
OTHER: pedestrian walkway with
decorative steel railing

SUPERSTRUCTURE

TRUSS DEPTH: 38'0"
TRUSS PANELS: 8 - 25'0" panels
TOP CHORD & END POSTS: 2 channels w/ cover plate and lacing
BOTTOM CHORD: 2 channels w/ batten plates
VERTICAL POSTS: 2 channels w/ lacing or I-beam
DIAGONAL MEMBERS: 2 angles w/ batten plates or 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

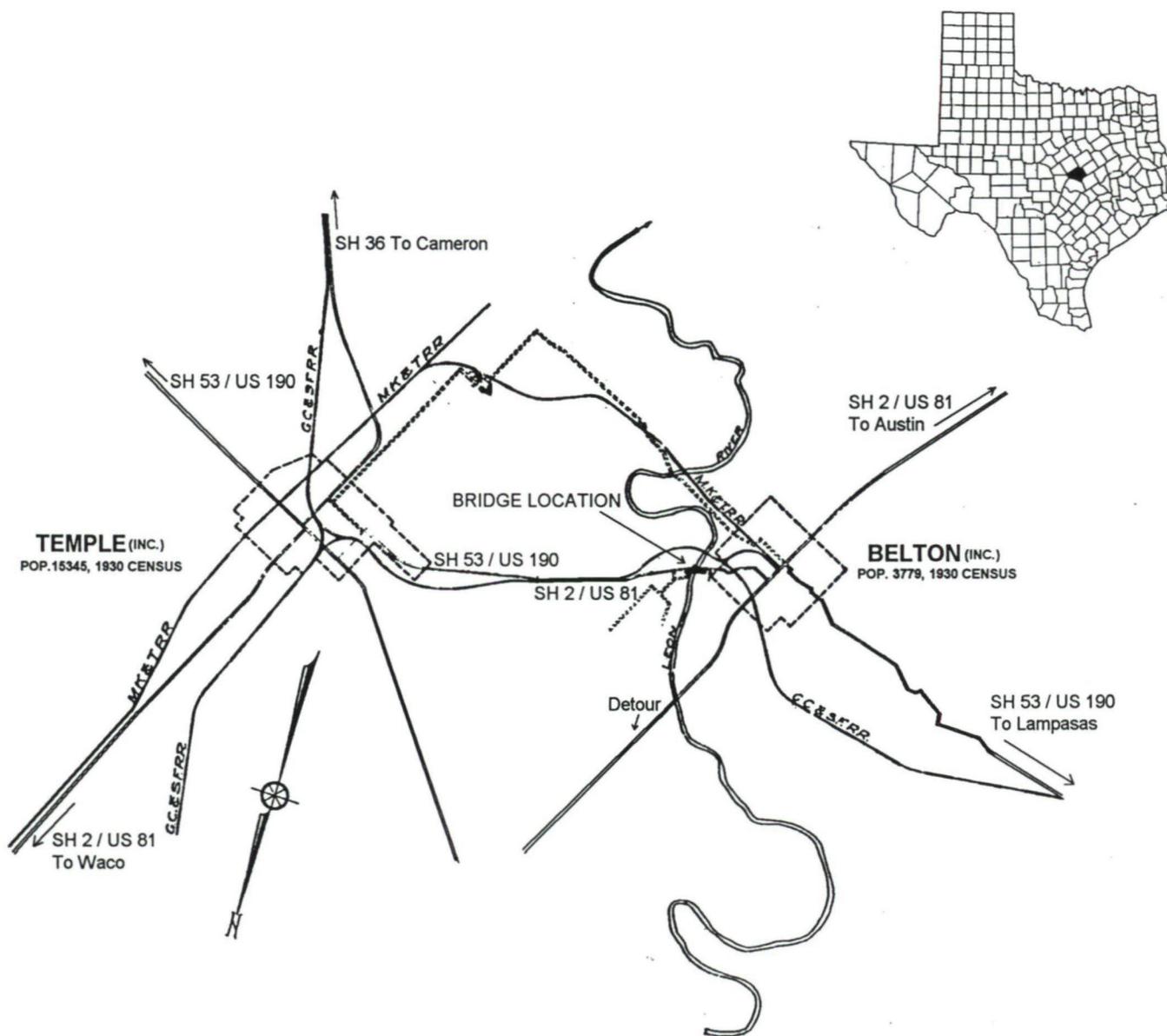
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Historic Bridges of Texas
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Figure 1. Map of SH 53 between Temple and Belton with the location of the Leon River bridge as shown in the 1938 plans.



Source: Texas Highway Department, CSJ 0015-05-005, 1938.

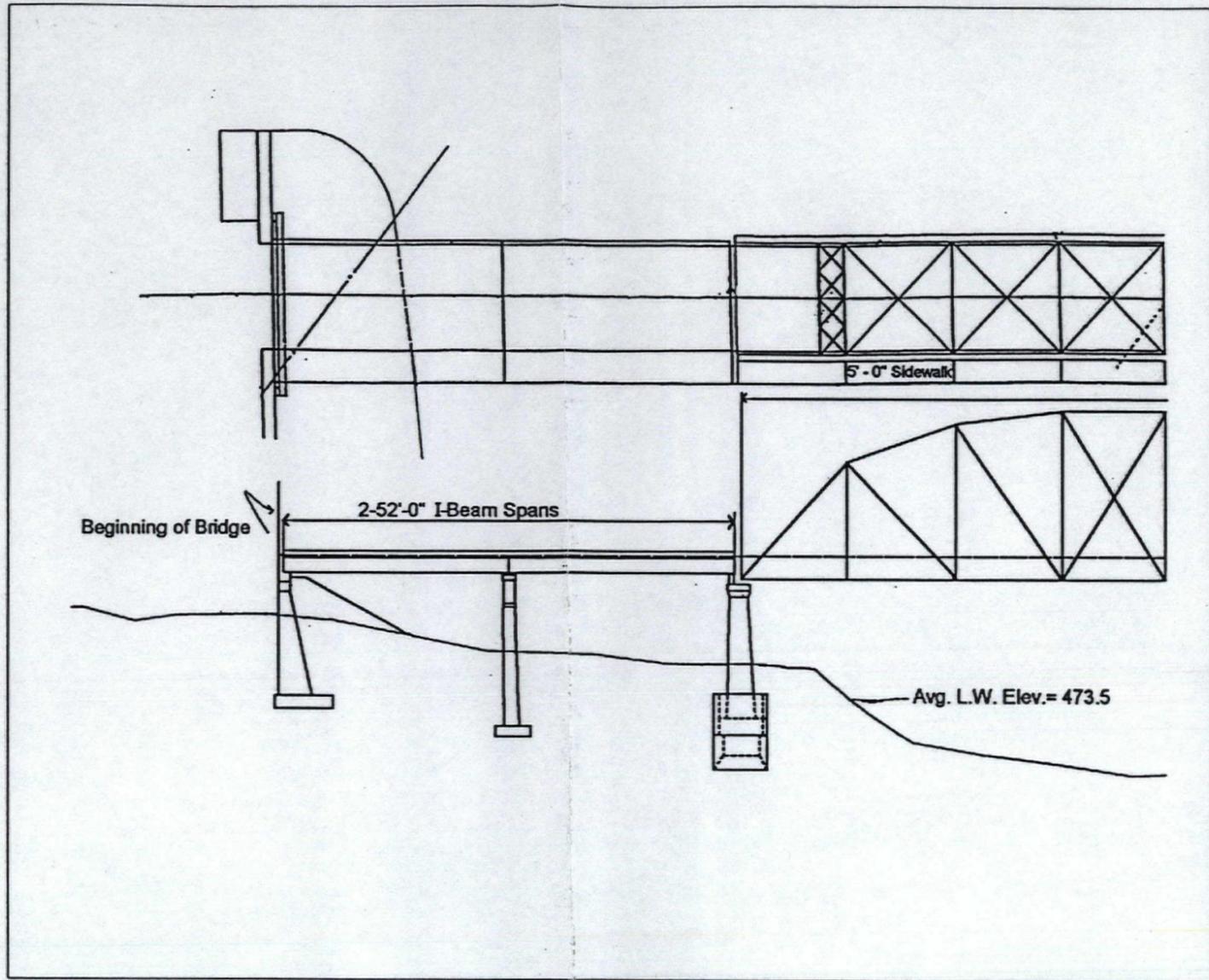
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National Register of Historic Places Continuation Sheet

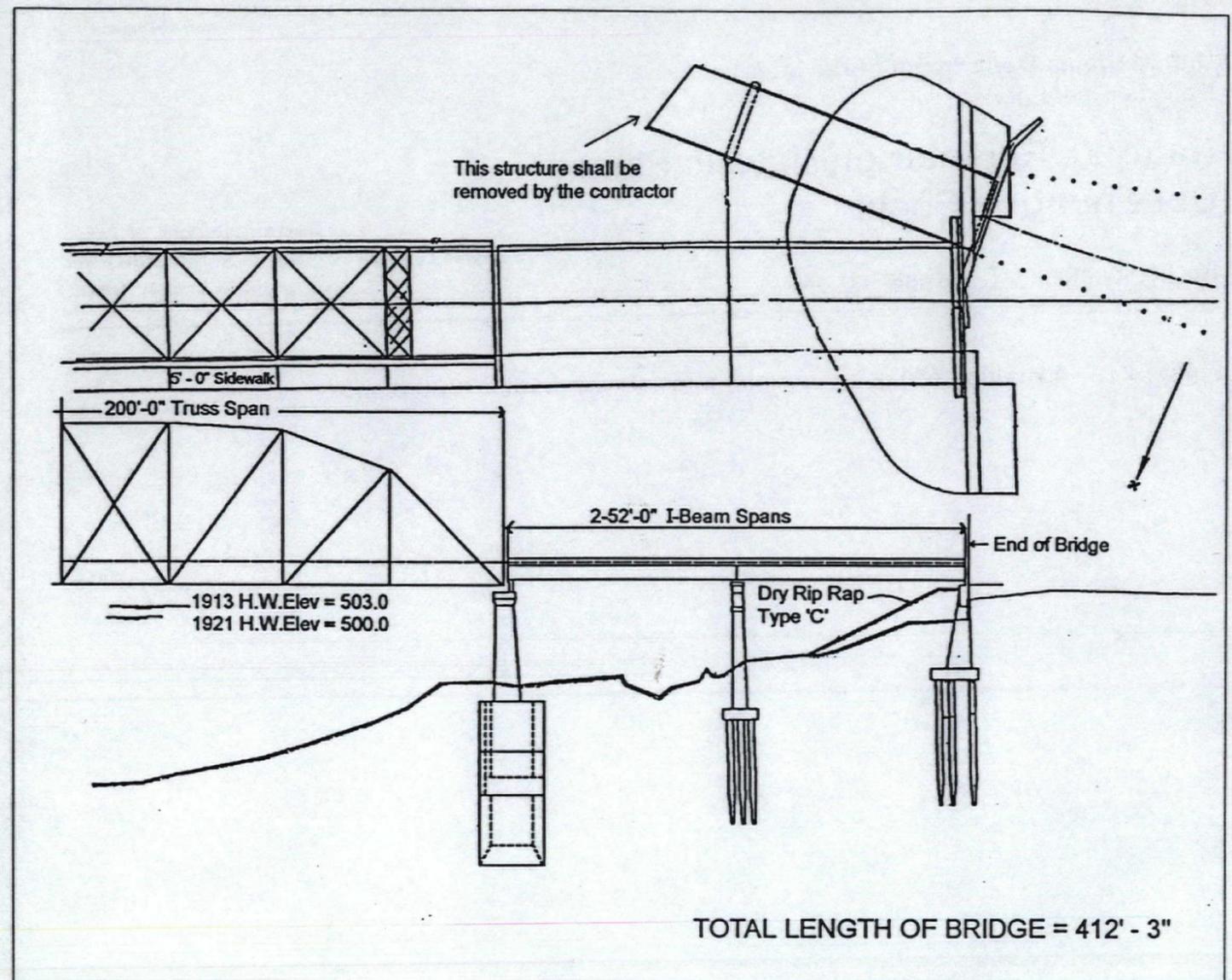
Section number 7 Page 4

Historic Bridges of Texas
State Highway 53 Bridge at the Leon River
Bell County, Texas

Figure 2. Elevation of Leon River bridge as shown in the 1938 plans.



PLAN SHEET 1 OF 2



PLAN SHEET 2 OF 2

8. STATEMENT OF SIGNIFICANCE

APPLICABLE NATIONAL REGISTER CRITERIA

- 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.
- 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: Engineering

PERIOD OF SIGNIFICANCE: 1938-1939

SIGNIFICANT DATES: 1938-1939

SIGNIFICANT PERSON: N/A

CULTURAL AFFILIATION: N/A

ARCHITECT/BUILDER: Bridge Designer: Texas Highway Department
Truss Fabricator: Mosher Steel Company of Houston, Texas, owned by the
Mosher Steel & Machinery Company of Dallas, Texas
Bridge Builder: Austin Bridge Company of Dallas, Texas

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:

- State historic preservation office (*Texas Historical Commission*)
- Other state agency (*Texas Department of Transportation*)
- Federal agency
- Local government
- University
- Other -- Specify Repository:

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Statement of Significance:

The State Highway 53 Bridge at the Leon River was built from 1938 to 1939. This custom-designed Parker through truss bridge with special decorative features is significant for embodying the defining characteristics of a highway department-designed Parker truss bridge. As such, it meets National Register Criterion C in the area of Engineering at a state level of significance.

The Leon River bridge was built on a 7-mile segment of highway which ran between Belton and Temple. Two routes shared this segment, which traversed Central Texas. The east-west route held the shared designation SH 53/US 190. This regional route began at the junction of US 77 in the southern tip of Falls County and extended west through Belton and Killeen in Bell County to Lampasas, the Lampasas County seat. The north-south route, originally known as the Meridian Highway, was designated SH 2 in 1917 when THD selected the first 25 state highways. The route had been redesignated US 81 by the time the bridge was constructed. This route linked Burkburnett and Wichita Falls in North Central Texas with Laredo on the Texas-Mexico border, passing through Fort Worth, Waco, Temple, Belton, Austin and San Antonio.

THD constructed the Leon River bridge to replace the previous bridge, built by the county in 1907, which consisted of one 175-foot truss span with a pony truss span at each end. THD inherited this bridge when the route was designated a state highway in 1917. As was often the practice in pre-highway department bridge construction, the old bridge crossed the river at nearly a right angle. This alignment allowed for the shortest possible bridge length, but also required sharp curves at each end of the bridge, up to 32 degrees in this case. In addition, the bridge had only a 17-foot roadway and a maximum load capacity of 10 tons. For these reasons, the bridge was considered unsafe to carry the amount and type of traffic at speeds commonly traveled in the 1930s. The 1907 bridge, built for horse and buggy traffic, had become functionally obsolete.

As described in a memorandum dated August 3, 1936, THD implemented a temporary measure to rehabilitate the old bridge in 1933: "In December, 1933, the structure was completely overhauled under a Maintenance Contract, this work consisting of replacing the floor system with treated timber stringers and laminated floor and tightening several loose tension members of the trusses." As is recounted in the memorandum, the work was not enough to solve the bridge's inherent deficiencies: "Since the repair work was done both pony trusses have been wrecked due to collision by trucks. The pony trusses have been dismantled and the approach spans are now supported by timber pile bents."

In 1936 THD engineers began preparing the plans for the replacement bridge. Consideration was given to applying to the Bureau of Public Roads (BPR) for federal funding, but as described in a memorandum dated June 17, 1937, the eventual relocation of SH 2 (later SH 53), complicated the issue:

It is quite possible that Regular Federal Aid could be applied on the proposed bridge, however, such procedure would require the submission of the usual route sketch map to the Bureau of Public Roads with a request for Federal inspection and approval of the proposed

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location. Since the proposed future routing of Highway 2 between and adjacent to the towns of Belton and Temple represent (sic) a rather major departure from the present road and the application of Regular Federal Aid funds on the proposed Leon River bridge may complicate matters should it be desired to proceed with improvements along the proposed future routing of Highway No. 2 within the near future and request Federal participation on proposed construction.

Rather than use a standard design, THD bridge engineers specially designed the 200-foot riveted Parker through truss span for use on the replacement bridge. Nine other Parker truss bridges specially designed by THD survive today. One of these, in Travis County, uses a similar design for its single truss span (refer to nomination of Montopolis Bridge, TV0265-01-034, NRHP 1995). As part of an effort to improve the aesthetics of bridge design, particularly for structures in or near urban areas, several decorative elements were incorporated into the design of the Leon River bridge. The bridge substructure, which was readily visible from the Riverside Swimming Pool (now Summer Fun, USA) to the northwest, exhibits arched concrete bents and concrete piers with beveled copings. In addition, decorative steel railing flanks a 5-foot wide pedestrian walkway. The posts are made up of H-beams placed vertically, then cut, bent and welded to form the curved top end of the post. The top handrail consists of 3-inch piping. Below, two rows of channels between the posts face down. Small square steel pickets of varying lengths hang from the pipe handrail to fill out the railing. These pickets run through holes in the three rows of steel channels and are welded in place. The result is an elaborate and labor-intensive decorative steel railing. This is the most decorative type of steel railing used on THD bridges. The Leon River bridge is one of only three surviving THD truss bridges exhibiting a pedestrian walkway with this type of decorative steel picket railing.

The Texas Highway Commission held bidding for the Leon River bridge in July 1938. After reviewing the three bids received, the commission awarded the project to the low bidder, the Austin Bridge Company of Dallas. Its bid of \$93,763 was the only one of the three bids to come in below the THD's estimate of \$103,900. The Mosher Steel Company of Houston, formerly Houston Structural Steel Company, owned by the Mosher Steel & Machinery Company of Dallas, fabricated the steel truss span and the pedestrian railing.

The contract executed between THD and the Austin Bridge Company provided for the continued use of the old bridge during construction and for its dismantling upon the completion of the new bridge. In order to accommodate the construction of the new bridge, the old bridge's west end was shifted 8 feet south. THD's efforts to maintain traffic flow over the bridge is reflected in a memorandum to the division (now district) engineer written February 7, 1939, by the resident engineer:

The Superintendent on the above project has requested permission to place a construction joint on abutment No. 2 in the columns at the intersection with the haunches under the caps. By doing this he can delay the shifting of the old structure with its inconvenience to the traveling public for several weeks, as the backfill can be practically all constructed, and the embankment constructed to the elevation of the old bridge. Incidentally, this will allow us to

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pass machinery between the columns for compaction of the front slope.

Construction of the bridge began on September 12, 1938, and was supervised by the THD resident engineer in Belton. The THD division engineer and assistant division engineer in Waco joined the resident engineer for monthly inspections of the work. During construction of the bridge, the THD resident engineer submitted a field change to use "Dardalet rivet bolts" rather than field rivets on the steel member supporting the sidewalk. The Dardalet bolt or interference body bolt, which replaced rivets in steel construction, was a tight-fitting bolt which was nailed into a steel member and set in place with a nut. Because the concrete forming the bridge's sidewalk slab had recently been placed, the resident engineer feared that the riveting operation might cause some cracking of the slab. The bridge was completed on May 31, 1939, at a cost of just over \$98,000.

In October of the same year, construction began on a roadside park (since abandoned) located to the northeast of the bridge. In the early 1950s, THD began improving SH 81 and by 1959 the route had been upgraded and designated Interstate 35 (I-35). The original route was relocated as necessary in order to obtain an improved alignment. Most of the segment of highway between Belton and Temple, also used by the SH 53/US 190 route, was shifted ½-mile to the southeast. The original roadway, including the bridge over the Leon River, was retained to serve local traffic as FM 817. This configuration lightened the traffic burden on the bridge, allowing for its preservation in place.

United States Department of the Interior
National Park Service

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Historic Bridges of Texas
State Highway 53 Bridge at the Leon River
Bell County, Texas

Section number 9, 10 Page 8

Bibliography:

Texas Highway Department. *General Information on Texas Highways*. Austin: Von Boeckmann-Jones, 1919.

Texas Highway Department. Plans of Proposed State Highway Improvement. Control-Section-Job No. 0015-05-005, located at TxDOT headquarters in Austin.

Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0015-05-005, located at TxDOT headquarters in Austin.

Verbal Boundary Description:

The nomination boundaries encompass the complete structure, State Highway 53 Bridge at the Leon River, including the approach spans and pedestrian walkway with decorative steel railing, as well as the ground upon which the structure stands.

Boundary Justification:

The boundary includes all components historically associated with the property.

10. GEOGRAPHICAL DATA

ACREAGE OF PROPERTY: less than one acre

UTM REFERENCES	Zone	Easting	Northing	Zone	Easting	Northing
1	14	648620	3437790	3	—	—
2	—	—	—	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	DATE: September 1996
ORGANIZATION:	Texas Historical Commission/ Texas Department of Transportation	TELEPHONE: 512/463-6094
STREET & NUMBER:	Texas Historical Commission P.O. Box 12276	ZIP CODE: 78711
CITY OR TOWN:	Austin STATE: TX	

ADDITIONAL DOCUMENTATION

CONTINUATION SHEETS

MAPS

PHOTOGRAPHS

ADDITIONAL ITEMS

PROPERTY OWNER

NAME Texas Department of Transportation	
STREET & NUMBER 125 East 11th Street	TELEPHONE 512/416-2606
CITY OR TOWN Austin STATE TX	ZIP CODE 78701

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY State Highway 53 Bridge at the Leon River
NAME:

MULTIPLE Historic Bridges of Texas MPS
NAME:

STATE & COUNTY: TEXAS, Bell

DATE RECEIVED: 9/09/96 DATE OF PENDING LIST: 9/24/96
DATE OF 16TH DAY: 10/10/96 DATE OF 45TH DAY: 10/24/96
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 96001119

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 10-10-96 DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA _____

REVIEWER _____ DISCIPLINE _____

TELEPHONE _____ DATE _____

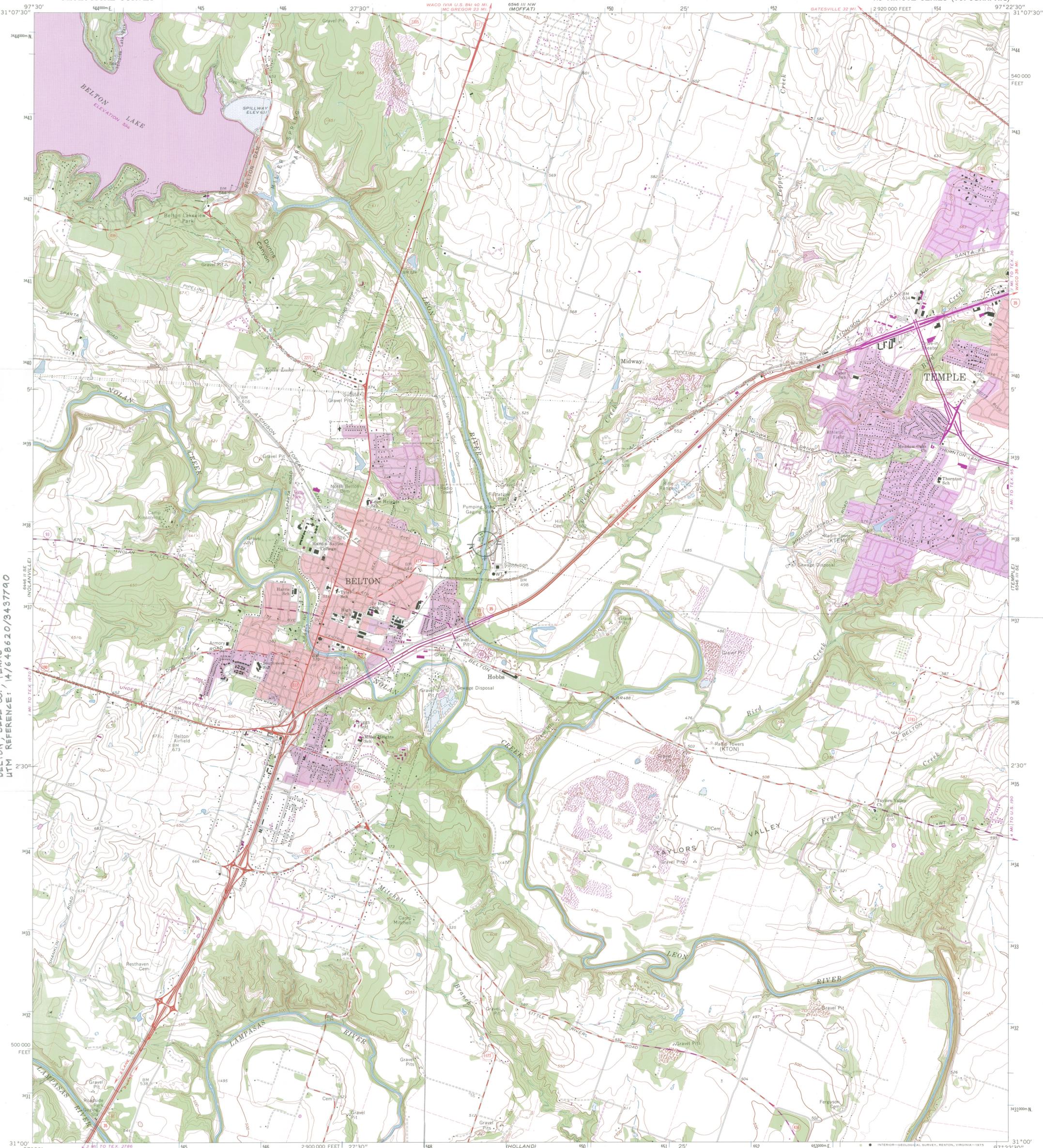
DOCUMENTATION see attached comments Y/N see attached SLR Y/N



SITE NO. BLOO15-05-060
SH 53 BRIDGE AT LEON RIVER
HISTORIC BRIDGES OF TEXAS
BELL CO., TEXAS
PHOTOGRAPH 1 OF 2

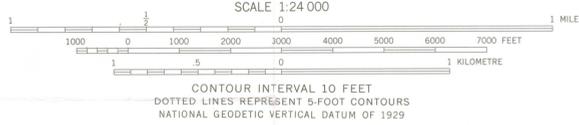
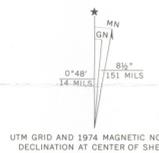


SITE NO. BLOOIS-05-060
SH 53 BRIDGE AT LEON RIVER
HISTORIC BRIDGES OF TEXAS
BELL CO., TEXAS
PHOTOGRAPH 2 OF 2



SITE NO: BL0015-05-060
HISTORIC BRIDGES OF TEXAS
SH 53 BRIDGE AT LEON RIVER
BELTON, BELL CO., TEXAS
UTM REFERENCE: 147648620/3437740

Mapped, edited, and published by the Geological Survey
Control by USGS, NOS/NOAA, and USCE
Topography by photogrammetric methods from aerial
photographs taken 1964. Field checked 1965
Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system,
central zone
1000-metre Universal Transverse Mercator grid ticks,
zone 14, shown in blue
Red tint indicates areas in which only landmark buildings are shown
Fine red dashed lines indicate selected fence lines
Areas covered by dashed light-blue pattern are subject to
controlled inundation
Revisions shown in purple compiled aerial photographs
taken 1974. This information not field checked
Purple tint indicates extension of urban areas



ROAD CLASSIFICATION

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



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

BELTON, TEX.
N3100—W9722.5/7.5
1965
PHOTOREVISED 1974
AMS 546 III SW—SERIES V882