NPS Form 10-900
(Oct. 1990)

1114

OMB No. 10024-0018

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

RECEIVED 2280
SEP - 9 1996
NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

1. NAME OF PROPERTY

HISTORIC NAME: State Highway 3 Bridge at the Trinity River
OTHER NAMES/SITE NUMBER: US 90 Bridge at the Trinity River (eastbound lanes); LB0028-03-022

2. LOCATION

STREET & NUMBER: US 90, 1.3 miles west of junction with FM 2684 **NOT FOR PUBLICATION:** N/A
CITY OR TOWN: Liberty **VICINITY:**
STATE: Texas **CODE:** TX **COUNTY:** Liberty **CODE:** 291 **ZIP CODE:** 77575

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.)

Courtlin Junnell — 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.)

Signature of commenting or other official — Date

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

_√_ entered in the National Register — Edson H. Beall — 10-10-96
__ 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
	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)

Description:

The State Highway 3 Bridge at the Trinity River consists of three 150-foot Parker through truss spans, one steel I-beam approach span and 29 concrete girder approach spans (see Photograph 2). The bridge is located just west of Liberty, the county seat for Liberty County, carrying two lanes of eastbound traffic on US 90, former State Highway (SH) 3. The bridge serves traffic between Liberty and Dayton, five miles to the west, and links these and other towns along US 90 with Houston and Beaumont (see Figure 1). Liberty County is on the Coastal Plain of southeast Texas. The area's economy relies primarily on rice and soybean production, as well as the oil, lumber and chemical industries.

For the truss spans, Texas Highway Department (THD) engineers chose the THD T24-150 design for a riveted Parker through truss, one of many standard designs the Bridge Division developed. The bridge's three truss spans rest on reinforced concrete piers consisting of battered cylindrical columns in a dumbbell configuration. The bridge's 30 approach spans, supported on a series of concrete bents, total 1,008 feet (see Figure 2). These spans feature Type D open concrete railing which has been shortened. Matching concrete paneled entrance railing, also shortened, sits atop abutment wing walls at each end of the main bridge. This railing flares out, providing a transition between the approach roadway and the bridge (see Photograph 1). Truss railing consists of two rows of 9-inch deep channels placed 18 inches apart. A bronze plaque affixed to the railing end post names the bridge contractor, as well as the THD and Liberty County officials involved in the project. The plaque reads:

TRINITY RIVER BRIDGE
BUILT 1930
STATE HIGHWAY COMMISSION
R.S.STERLING CHAIRMAN
CONE JOHNSON MEMBER
W.R. ELY MEMBER
GIBB GILCHRIST STATE HIGHWAY ENGR.
G.G. WICKLINE BRIDGE ENGINEER
D.G. McKIM RESIDENT ENGINEER
LIBERTY CO.
C.R. WILSON CO. JUDGE
H.A. DISMUKES CO. COM.
J.K. TURNER CO. COM.
K.B. RICE CO. COM.
GEO. L. FARMER CO. COM.
BUILT BY
AUSTIN BRIDGE COMPANY

In 1929 and 1930, the Austin Bridge Company built the Trinity River bridge under contract to THD. In 1948, THD maintenance forces shortened the concrete approach and entrance railings to about half their original height. From 1959 to 1962, THD undertook a project to turn the Trinity River bridge

into part of a one-way pair by constructing a companion bridge to serve westbound lanes. No other major alterations have been performed on the bridge. As such, it retains integrity of design, materials and workmanship. Because the bridge remains in place serving vehicular traffic on a state highway, it also retains integrity of location and association. Although the construction of the new bridge has somewhat compromised integrity of setting and feeling, the truss bridge retains substantial integrity overall. A project to widen the new bridge to serve both directions of traffic is in the preliminary planning stages. The truss bridge will be retained in place for pedestrian and/or bicycle traffic.

GENERAL SPECS

TRUSS TYPE:	Parker through
THD STD. DESIGN:	T24-150
NO. TRUSS SPANS:	3
TRUSS SPAN LENGTH:	150'
ROADWAY WIDTH:	24'
DECK WIDTH:	26'
APPROACH SPANS:	29 - 32'6" DG-8 girder spans & 1 - 65' I-beam span
OVERALL LENGTH:	1463'

SPECIAL FEATURES

BRIDGE PLAQUE:	yes
APPROACH RAILING:	Type D concrete railing (shortened)
OTHER:	paneled entrance railing (shortened)

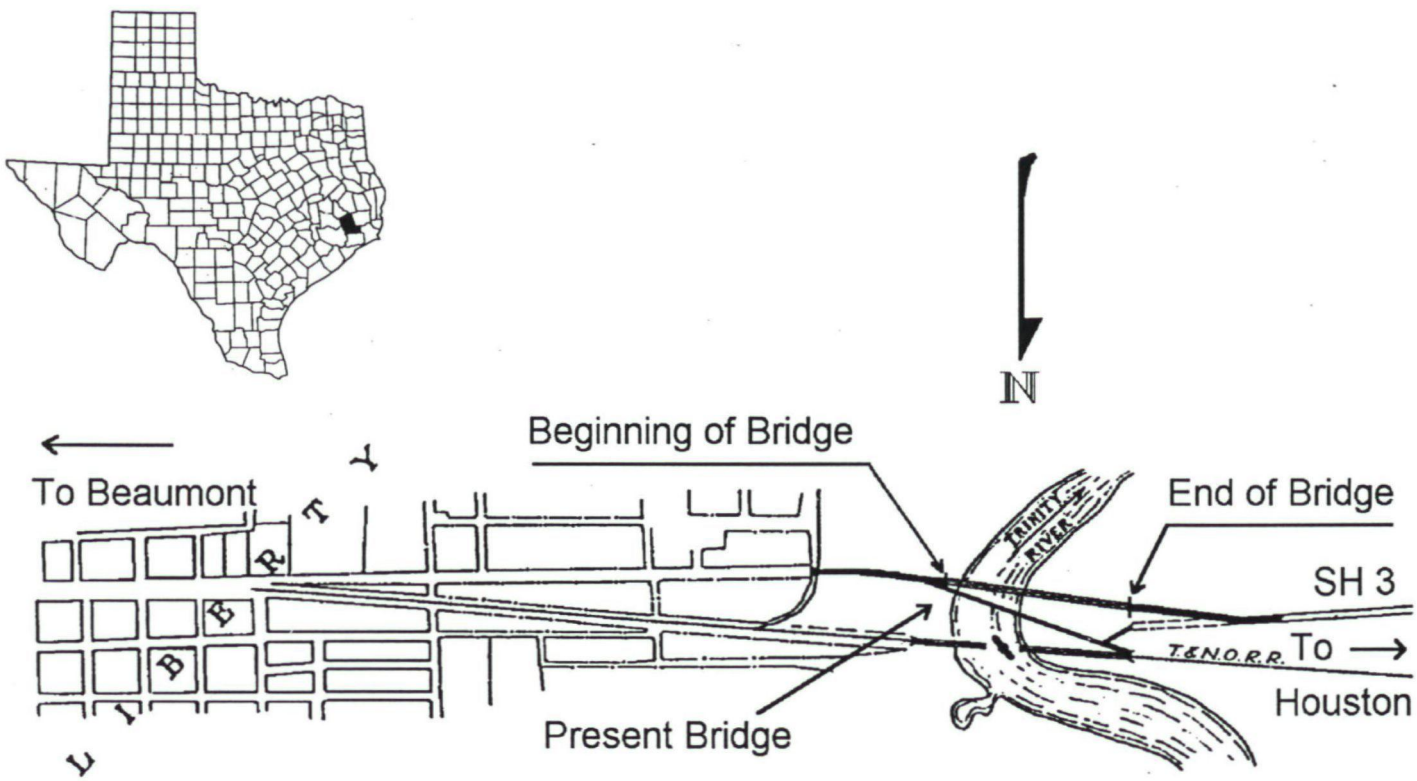
SUPERSTRUCTURE

TRUSS DEPTH:	30'0"
TRUSS PANELS:	8 - 18'9" 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
DIAGONAL MEMBERS:	2 angles w/ batten plates
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

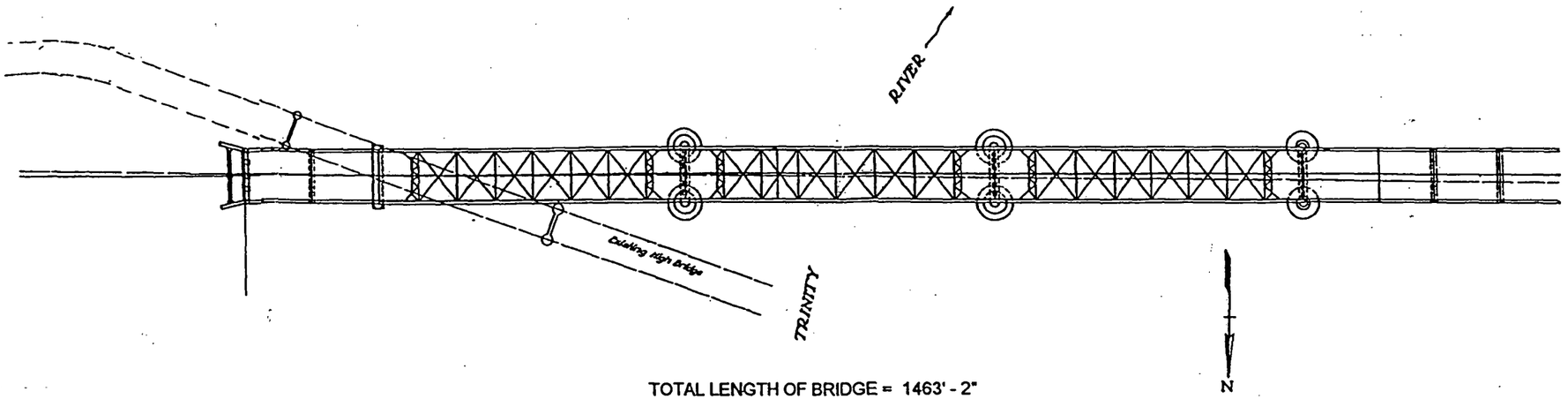
Figure 1. Map of SH 3 west of Liberty with the location of the Trinity River bridge as shown in the 1929 plans.



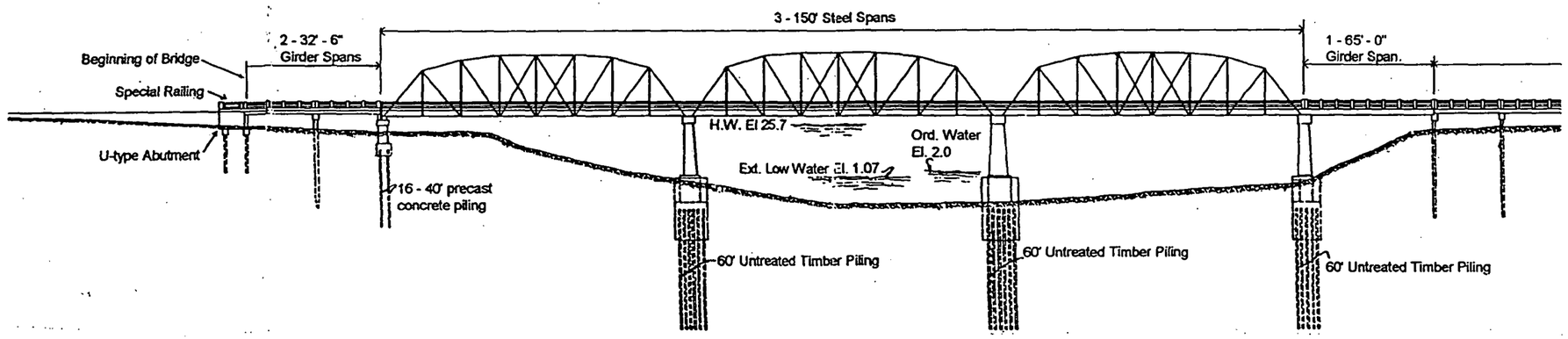
Source: Texas Highway Department, CSJ 0028-03-006, 1929.

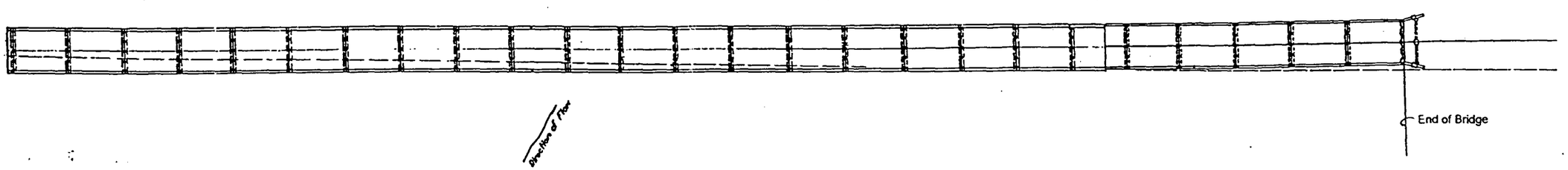
Figure 2. Elevation of the Trinity River bridge as shown in the 1929 plans.

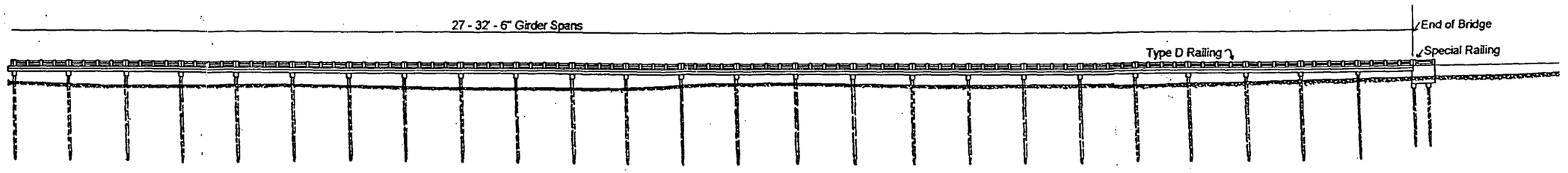
Source: Texas Highway Department, CSJ 0028-03-006, 1929.



TOTAL LENGTH OF BRIDGE = 1463' - 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.
_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: Engineering

PERIOD OF SIGNIFICANCE: 1929-1930

SIGNIFICANT DATES: 1929-1930

SIGNIFICANT PERSON: N/A

CULTURAL AFFILIATION: N/A

ARCHITECT/BUILDER: Bridge Designer: Texas Highway Department
Truss Fabricator: Virginia Bridge & Iron Company of Roanoke, Virginia
Bridge Builder: Austin Bridge Company of Dallas, Texas

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

9. MAJOR BIBLIOGRAPHIC REFERENCES

BIBLIOGRAPHY (see continuation sheet 9-9)
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 3 Bridge at the Trinity River, built from 1929 to 1930, is significant for embodying the defining characteristics of a THD truss bridge. As such, it meets National Register Criterion C in the area of Engineering at a state level of significance.

The Trinity River bridge was built on the original SH 3, also known as the Southern National Highway, which linked Del Rio, San Antonio, Houston, Beaumont and Orange. From Seguin to Houston, the route paralleled a branch of the Texas & New Orleans Railroad (also known as the Southern Pacific Railroad). By about 1930, the route was actually designated SH 3/US 90; by 1938 the original SH 3 designation had been dropped.

The Trinity River bridge replaced an unsafe truss bridge the Austin Bridge Company had built in 1914. The old bridge consisted of three pin-connected truss spans: a center Parker through span measuring 230 feet and two Pratt through spans, each measuring 137.5 feet in length. Timber trestle approach spans totaled 1,416 feet. The center truss span rose approximately 60 feet above the low water level to afford clearance for navigation. The bridge's 16-foot roadway accommodated two-way traffic. The steep rise, irregular alignment and narrow roadway width had resulted in several serious accidents.

In May 1927, engineers from THD, the Bureau of Public Roads (BPR) and Liberty County inspected the old bridge and subsequently recommended that the load limit be reduced from 5 tons to 5,000 pounds and that the speed limit over the bridge be set at five miles per hour. THD engineers also began preliminary work on plans for a replacement bridge. In the meantime, THD contracted with E.P. Pennock of Jasper, Texas, to perform temporary repairs on the old bridge so that it could remain in service until the replacement bridge was completed. In June 1928, R.S. Sterling, chairman of the State Highway Commission, sent a memo to George Wickline, State Bridge Engineer, stating that he had "knowledge of accidents happening every day" on the Trinity River bridge and that its replacement was the most important project before them.

Because the Trinity River fell under the jurisdiction of the War Department as a navigable waterway, THD was required to submit a preliminary design to that agency for approval. Under the River and Harbor Act passed by Congress in 1922, plans to develop navigation on the Trinity River upstream of Liberty were abandoned. However, the War Department considered the section of river south of Liberty to be "under improvement" and bridges constructed on that section had to address navigational clearance. The act did not specify the upstream point of this section, but as a practical matter, the War Department fixed that point at the Texas & New Orleans Railroad bridge, a swing bridge about 430 feet upstream from the proposed site of the new bridge. Wickline proposed that the site of the new bridge mark the upstream point of improvement so that the bridge would not have to include a movable span. In the end, the point was not relocated, and the plans the War Department approved showed fixed truss spans with a provision for the possible future conversion of the center truss to a vertical lift span.

THD constructed the Trinity River bridge as part of a larger undertaking to reconstruct SH 3

between Liberty and the Harris County line on a new alignment. A previous THD project had provided for new roadway grading and surfacing with shell material and concrete pavement. THD prepared the final construction plans for the bridge and, because it was a federal aid project, BPR reviewed and approved them. The THD resident engineer in Liberty supervised the construction, which engineers from both THD and BPR inspected.

THD bridge engineers chose the T24-150 design for the truss spans of the Trinity River bridge. The T24-150 is one of 25 different THD standard designs the Bridge Division developed for Parker through truss spans; only 11 of these designs are represented by Texas bridges today. The T24-150 was first designed in 1928; a second version was completed in 1930. The Trinity River bridge is the only extant example of the earlier version; two bridges conforming to the later version also survive. The State Highway 3 Bridge at the Trinity River, with its three standard design truss spans, long approach length, standard-design concrete approach railing and transitional entrance railing, is the best of the three examples.

In order to improve the bridge's overall aesthetics, THD engineers modified the height of the truss railing from the T24-150 standard design so that it would line up with the open concrete railing used on the approach spans. The bridge's 29 concrete girder approach spans conform to THD DG-8 standard design. These spans, along with the single steel I-beam span, provide a lengthy approach of more than 1,000 feet. With an overall length of 1,463 feet, the Trinity River bridge is the longest Parker truss bridge surviving from 1930 or earlier.

THD engineers set the alignment of the bridge at an angle to the old structure, so that their paths crossed at the river's east bank. Fortunately, the old bridge did not have to be dismantled in order for the replacement bridge to be built. The old structure had a 60-foot vertical clearance - enough to facilitate the construction of the east end of the replacement bridge underneath. In this manner, the old bridge could continue in service until the new bridge was completed.

The Texas Highway Commission held bidding for the project in May 1929. Three bids were received for about $190,000, $232,000 and $251,000. The small response was attributed to the unusually high number of bridge construction projects under way in other states. The Austin Bridge Company of Dallas submitted the low bid, which was nearly 30 percent below THD's preliminary estimate. As the builder of the 1914 bridge, the company had prior experience with the soil conditions at the crossing and was therefore able to submit the most economical bid. THD awarded the contract to the Austin Bridge Company and made an unprecedented request that it assign W.C. Lasater, who had constructed the old bridge, as well as other structures in the area, as construction superintendent. The company agreed and, responding that it "took this job on a very close margin," asked that THD assign an inspector who would "help rather than hinder, and who will be constructive, rather than causing delays, destroying morale and getting the contractor on the defensive." The Virginia Bridge & Iron Company of Roanoke, Virginia, fabricated the truss spans at its Birmingham, Alabama, plant. Work on the bridge began on July 20, 1929, and was completed on October 18, 1930. The cost of the project totaled just over $204,000; the federal contribution came to about $101,000. The bridge was dedicated on October 23, 1930, the same day the Liberty County Fair opened.

While construction on the bridge was completed in just over a year, difficulties were encountered throughout the project. The start of construction was delayed because the county judge had not acquired the necessary right-of-way. He argued that the county could not be responsible for seizing right-of-way property, as it had no right of condemnation. THD responded by citing the state law requiring the county to supply right-of-way on federal and state highway projects and granting the county the right to condemn such property when necessary. Further delays occurred when drift carried by floodwaters got caught in the bridge falsework. The contractor initially refused to dislodge the drift, but reversed their decision when Gibb Gilchrist, State Highway Engineer, sent a telegram stating that THD maintenance forces would perform the task and the cost would be charged to their company. In addition, the telegram stated that "the accumulation of drift caused by your falsework endangers present highway bridge and may cause damage to railroad bridge," and that THD would take no responsibility for damage to the falsework resulting from the removal of the drift.

Still concerned over the tendency for drift to accumulate on the river's west bank, THD enacted a field change to modify the configuration of approach spans at that location. By using one 65-foot steel I-beam span at the west bank rather than the two 32-foot 5-inch concrete girder spans called for in the original plans, there would be one less concrete bent and greater clearance under the span.

As construction proceeded, THD began to push for an early completion date. THD engineers felt the old bridge was unsafe as it was carrying "an exceptionally heavy and large amount of traffic," and should be taken out of service as soon as possible. As the bridge approached completion, THD abandoned its usual policy of disallowing the use of quick-setting cement. Instead, it encouraged the contractor to use such a material for the construction of the final section of floor slab. Even with these efforts, the bridge was completed only two days earlier than the 200 working days allotted.

The next priority was to dismantle the old bridge. Not only was it considered "unsightly," but the location of one of its piers interfered with concrete railing construction on the new bridge. Austin Bridge Company officials requested that bidding for the dismantling be held while their equipment was still in place, so that they could provide the most competitive bid:

> In view of the fact that we struck it a little hard on the building of this bridge on account of continued high water and other troubles, we are hopeful that you will advertise this bridge at once so bids can be had before we leave there and that you will not object to such advantage, if any, we might have over others on account of being on the ground. There is no doubt but what the bridge could be removed cheaper, if advertised while our equipment is there than it could to be advertised later. On account of the principal span of the bridge being directly over the new structure and two of the piers very close to the new structure, it is not going to be a very simple job to handle and considerable equipment is going to be necessary to handle it in a satisfactory way.

As an immediate measure, THD executed a supplemental agreement with the Austin Bridge Company to take down only the bridge's easternmost truss span, which crossed over the new bridge. It is unclear how

the rest of the bridge was dismantled.

In 1948, THD maintenance forces shortened the bridge's concrete approach and entrance railings. This was done as part of a THD campaign promoting bridge safety initiated by DeWitt C. Greer, then State Highway Engineer. In 1944, he released Administrative Circular 3-44 encouraging districts to shorten Type C and Type D concrete bridge railing. Evidently, the standard railing height of just over 3 feet made bridges appear narrow, causing drivers to veer toward the center of the roadway and sometimes collide. By shortening the railing, the illusion of the narrow bridge relative to the approach roadway was lessened. In addition, the decreased railing height allowed truck overhangs to clear the railings. The modification was performed by sawing off the top of each concrete post, removing the upper row of railing and casting a new top on each post. The Trinity River bridge is the only extant highway truss bridge with concrete paneled entrance railing that has been shortened.

From 1959 to 1962, THD responded to increasing traffic volumes on US 90 by constructing a concrete and steel girder bridge on the north side of the Trinity River bridge to serve westbound lanes. The original truss bridge was retained in place to serve eastbound lanes. This configuration lightened the traffic burden on the truss bridge, allowing for its preservation in place. Although the construction of the new structure has somewhat altered the setting of the truss bridge, as a transportation facility it is compatible with the use of the original bridge and therefore does not significantly compromise its integrity.

10. GEOGRAPHICAL DATA

ACREAGE OF PROPERTY: less than one acre

UTM REFERENCES	Zone	Easting	Northing		Zone	Easting	Northing
1	15	324630	3326380	3	_	_____	_____
2	_	_____	_____	4	_	_____	_____

(___see continuation sheet)

VERBAL BOUNDARY DESCRIPTION (see continuation sheet 10-9)

BOUNDARY JUSTIFICATION (see continuation sheet 10-9)

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 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

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. 0028-03-006, located at TxDOT headquarters in Austin.

Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0028-03-006, located at TxDOT headquarters in Austin.

Zlatkovich, Charles P. *Texas Railroads*. Austin: University of Texas at Austin, 1981.

Verbal Boundary Description:

The nomination boundaries encompass the complete structure, State Highway 3 Bridge at the Trinity River, including the approach spans and concrete approach railing, as well as the ground upon which the structure stands.

Boundary Justification:

The boundary includes all components historically associated with the property.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: State Highway 3 Bridge at the Trinity River

MULTIPLE NAME: Historic Bridges of Texas MPS

STATE & COUNTY: TEXAS, Liberty

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: 96001114

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. LB0028-03-022
SH 3 BRIDGE AT TRINITY RIVER
HISTORIC BRIDGES OF TEXAS
LIBERTY CO., TEXAS
PHOTOGRAPH 1 OF 2


13'3"
CURB
15 FT 8 IN
13'3"
CURB

SITE NO. LB0028-03-022
SH 3 BRIDGE AT TRINITY RIVER
HISTORIC BRIDGES OF TEXAS
LIBERTY CO., TEXAS
PHOTOGRAPH 2 OF 2

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

LIBERTY QUADRANGLE
TEXAS–LIBERTY CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)

SITE NO: LB0028-03-022

HISTORIC BRIDGES OF TEXAS
SH 3 BRIDGE AT TRINITY RIVER
LIBERTY, LIBERTY CO., TEXAS
UTM REFERENCE: 15/324630/3326380

PRODUCED BY THE UNITED STATES GEOLOGICAL SURVEY
CONTROL BY ..... USGS, NOS/NOAA
COMPILED FROM AERIAL PHOTOGRAPHS TAKEN 1976
FIELD CHECKED ..... 1977 MAP EDITED 1984
PROJECTION ..... LAMBERT CONFORMAL CONIC
GRID: 1000-METER UNIVERSAL TRANSVERSE MERCATOR ..... ZONE 15
10,000-FOOT STATE GRID TICKS ..... TEXAS, CENTRAL ZONE
UTM GRID DECLINATION ..... 0°54' WEST
1984 MAGNETIC NORTH DECLINATION ..... 5°30' EAST
VERTICAL DATUM ..... NATIONAL GEODETIC VERTICAL DATUM OF 1929
HORIZONTAL DATUM ..... 1927 NORTH AMERICAN DATUM

To place on the predicted North American Datum of 1983, move the projection lines as shown by dashed corner ticks (19 meters north and 20 meters east)

There may be private inholdings within the boundaries of any Federal and State Reservations shown on this map

NORTH

PROVISIONAL MAP
Produced from original manuscript drawings. Information shown as of date of field check.

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 5 FEET

FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225
OR RESTON, VIRGINIA 22092

TEXAS
QUADRANGLE LOCATION

1	2	3	1 Simmons Bottom 2 Capers Ridge 3 Hardin 4 Dayton 5 Daisetta 6 Sheeks 7 Moss Bluff 8 Shiloh
4		5	
6	7	8	

ADJOINING 7.5 QUADRANGLE NAMES
3094-221

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1985

ROAD LEGEND

Improved Road .....
Unimproved Road .....
Trail .....
Interstate Route U.S. Route State Route

LIBERTY, TEXAS
PROVISIONAL EDITION 1984
30094-A7-TF-024