

United States Department of the Interior  
National Park Service



NATIONAL REGISTER OF HISTORIC PLACES  
REGISTRATION FORM

1. NAME OF PROPERTY

HISTORIC NAME: State Highway 5 Bridge at High Creek  
OTHER NAMES/SITE NUMBER: FM 1509 Bridge at Cane (High) Creek; LR0045-14-101

2. LOCATION

STREET & NUMBER: FM 1509, 1.8 miles west of junction with FM 38 NOT FOR PUBLICATION: N/A  
CITY OR TOWN: Brookston VICINITY: X  
STATE: Texas CODE: TX COUNTY: Lamar CODE: 277 ZIP CODE: 75421

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  
xmeets \_\_does not meet the National Register criteria. I recommend that this property be considered significant \_\_nationally  
xstatewide \_\_locally. ( \_\_See continuation sheet for additional comments.)

*Curtis J. Jernell*  
Signature of certifying official

9-6-96  
Date

State Historic Preservation Officer, Texas Historical Commission

State or Federal agency and bureau

In my opinion, the property xmeets \_\_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:

- 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): \_\_\_\_\_

*Edson H. Beall*  
Signature of the Keeper

Date of Action

10-10-96

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**5. CLASSIFICATION**

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**OWNERSHIP OF PROPERTY:** public-State

**CATEGORY OF PROPERTY:** structure

<b>NUMBER OF RESOURCES WITHIN PROPERTY:</b>	<b>CONTRIBUTING</b>	<b>NONCONTRIBUTING</b>
	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

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**6. FUNCTION OR USE**

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**HISTORIC FUNCTIONS:** TRANSPORTATION/road-related (vehicular)

**CURRENT FUNCTIONS:** TRANSPORTATION/road-related (vehicular)

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**7. DESCRIPTION**

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**ARCHITECTURAL CLASSIFICATION:** Other: Warren pony truss bridge

**MATERIALS:** FOUNDATION substructure: concrete abutments

WALLS N/A

ROOF N/A

OTHER superstructure: steel truss

**NARRATIVE DESCRIPTION** (see continuation sheets 7-1 through 7-3)



**United States Department of the Interior  
National Park Service**

**National Register of Historic Places  
Continuation Sheet**

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

Section number 7 Page 1

**Description:**

The State Highway 5 Bridge at High Creek (now Cane Creek) consists of a single 50-foot Warren pony truss span resting on reinforced concrete abutments (see Photographs 1 and 2). The bridge is on Farm-to-Market Road (FM) 1509 in southwestern Lamar County. Located in northeast Texas, Lamar County hugs the northern edge of the Blackland Prairie. The bridge lies halfway along the 6-mile route of FM 1509, adjacent to the town of High, a small agricultural settlement. The bridge serves local traffic between Petty, High and Brookston, and links these communities with US 82 (see Figure 1).

For the truss, Texas Highway Department (THD) engineers used standard designs that the Bridge Division developed. They chose the THD T5 standard design for a riveted Warren pony truss with verticals (a variation of the Warren as discussed in the property type discussion). In the T5 design, floor beams are suspended beneath the bottom chords, so that in elevation the I-beams are clearly visible hanging below the truss. The floor beams connect to the truss at the vertical members, which extend down beyond the bottom chord where the beams are bolted to them (see Figure 2). Truss railing consists of two rows of 3-inch deep steel channels attached to the inside of the truss and supported at each end by a steel angle post.

In 1920 and 1921, the Austin Brothers Bridge Company (now Austin Bridge Company) constructed the High Creek bridge under contract with THD. In 1936, THD widened the bridge to provide a 21-foot roadway. As part of this undertaking, the original concrete deck was replaced with a wooden deck made up of timber stringers and wood plank flooring with wheel guards; these wooden elements are still visible on the bridge today (see Photograph 2). Other than the 1936 widening, THD has not performed any major repairs on this bridge. Modern guardrails were added to the bridge in the 1980s. No material was removed during the process and the original channel railing remains. Although the addition of the guardrails does impact integrity of feeling, the work is reversible. In addition, the bridge retains integrity of design, materials and workmanship. The bridge and its surroundings appear relatively unchanged since 1936, maintaining integrity of location, setting and association. Although no projects are currently planned for this bridge, its BRINSAP sufficiency rating as of April 1995 is 36.8, making the bridge eligible for replacement under the federal Highway Bridge Replacement and Rehabilitation Program (HBRRP).

**GENERAL SPECS**

**TRUSS TYPE:** Warren pony  
**THD STD. DESIGN:** T5  
**NO. TRUSS SPANS:** 1  
**TRUSS SPAN LENGTH:** 50'  
**ROADWAY WIDTH:** 21'  
**DECK WIDTH:** 25'  
**APPROACH SPANS:** none  
**OVERALL LENGTH:** 52'

**SUPERSTRUCTURE**

**TRUSS DEPTH:** 6'6"  
**TRUSS PANELS:** 6 - 8'4" panels  
**TOP CHORD & END POSTS:** 2 channels w/ cover plate and lacing  
**BOTTOM CHORD:** 2 pairs of double angles w/ batten plates  
**VERTICAL POSTS:** 2 pairs of double angles w/ batten plates and lacing  
**DIAGONAL MEMBERS:** 2 angles w/ batten plates or lacing  
**DECK TYPE:** wooden deck over timber stringers

**SPECIAL FEATURES**

**BRIDGE PLAQUE:** none  
**APPROACH RAILING:** none  
**OTHER:** wooden deck

**SUBSTRUCTURE**

**PIERS/INTERIOR BENTS:** none  
**THD STD. DESIGN:** n/a  
**ABUTMENTS/END BENTS:** concrete abutments  
**THD STD. DESIGN:** A6

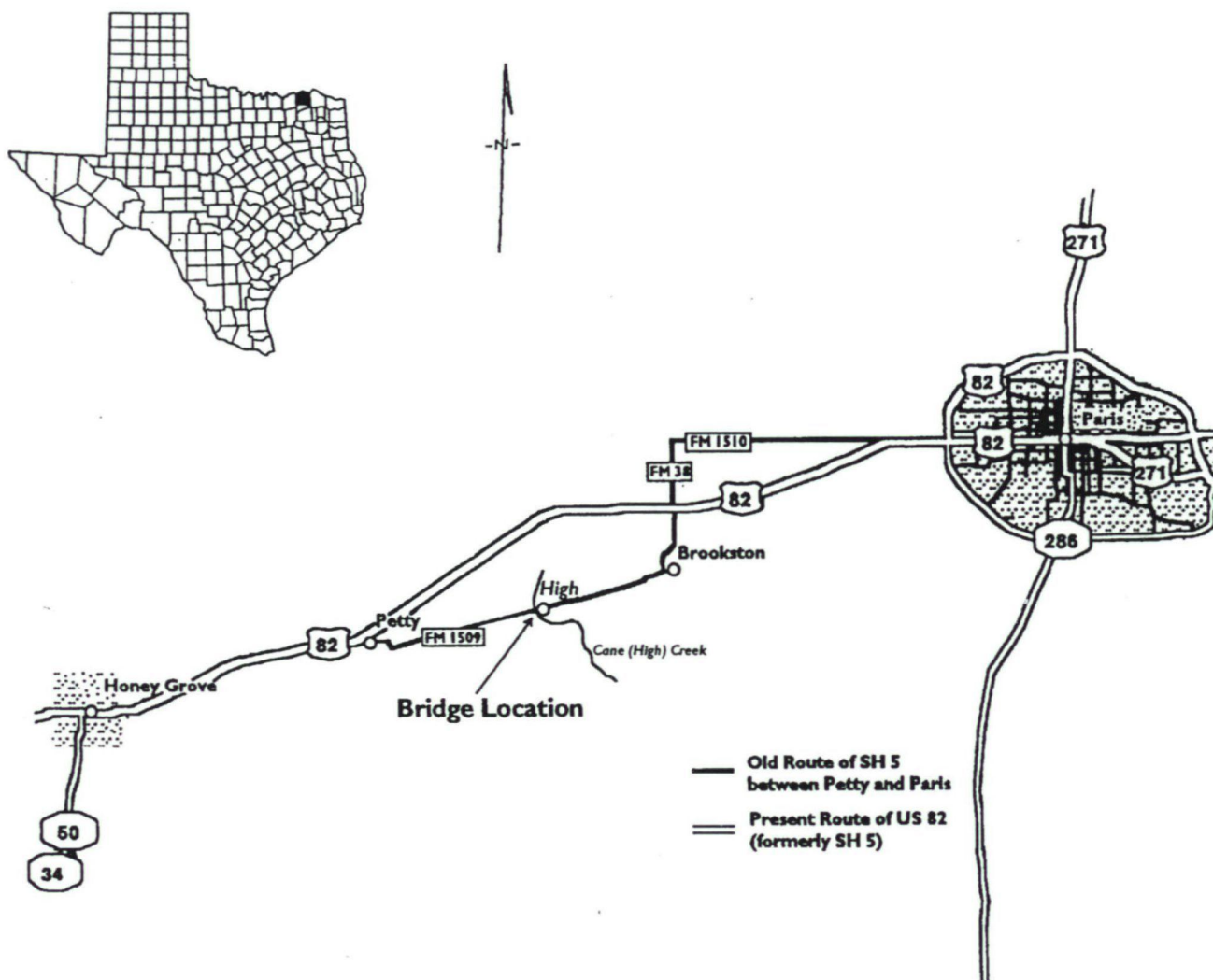
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# National Register of Historic Places Continuation Sheet

Section number 7 Page 2

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

Figure 1. Map of US 82 between Honey Grove and Paris showing the location of the State Highway 5 Bridge at High Creek.



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



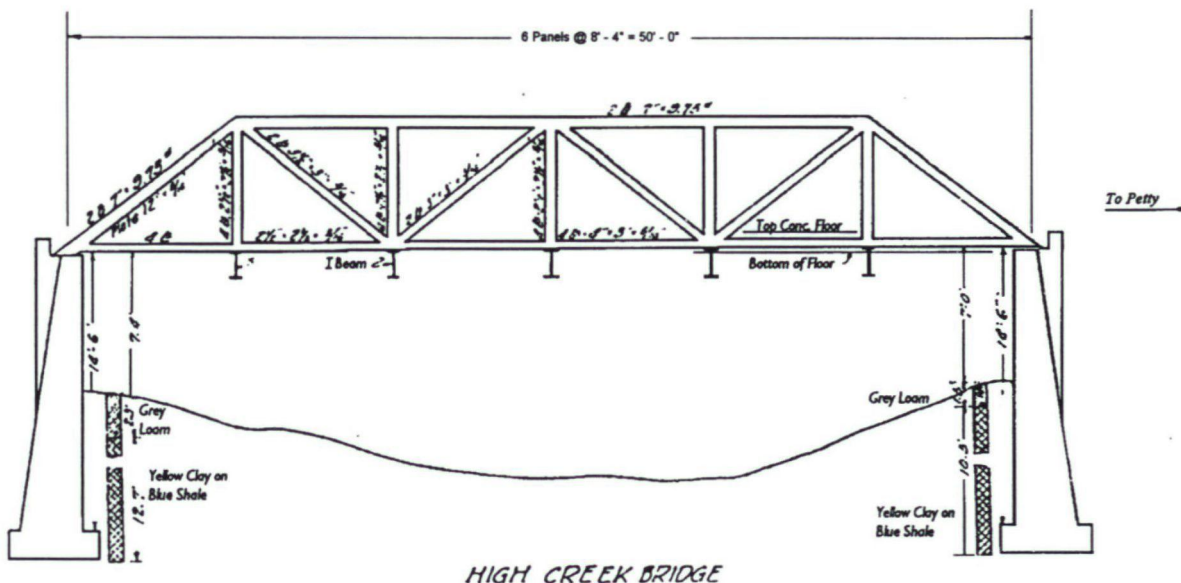
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National Park Service

# National Register of Historic Places Continuation Sheet

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

Section number 7 Page 3

Figure 2. Elevation of State Highway 5 Bridge at High Creek as shown in the 1935 plans.



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**8. STATEMENT OF SIGNIFICANCE**

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**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:** 1920-1921; 1935-1936

**SIGNIFICANT DATES:** 1920-1921; 1935-1936

**SIGNIFICANT PERSON:** N/A

**CULTURAL AFFILIATION:** N/A

**ARCHITECT/BUILDER:** Bridge Designer: Texas Highway Department  
Truss Fabricator: Austin Brothers Bridge Company of Dallas, Texas  
Bridge Builder: Austin Brothers Bridge Company of Dallas, Texas

**NARRATIVE STATEMENT OF SIGNIFICANCE** (see continuation sheets 8-4 through 8-6)

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**9. MAJOR BIBLIOGRAPHIC REFERENCES**

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**BIBLIOGRAPHY** (see continuation sheet 9-7)

**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:



United States Department of the Interior  
National Park Service

## National Register of Historic Places Continuation Sheet

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

Section number 8 Page 4

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### Statement of Significance:

The State Highway 5 Bridge at High Creek was built from 1920 to 1921 and widened from 1935 to 1936. The bridge serves as an example of early highway department design and THD's economical construction and maintenance practices during the Depression. As such, it is significant for "representing technology that is rare or unusual for Texas." The bridge meets National Register Criterion C in the area of Engineering at a state level of significance.

The High Creek bridge was built on the old Paris-Honey Grove Road, a local road that THD designated as part of the original state highway system in 1917. The road served as a section of State Highway (SH) 5, also known as the North Texas Highway, which ran east to west along the Texas and Pacific Railroad line and passed through Paris, the Lamar County seat.

A THD project (state project 116) to provide grading and drainage structures for SH 5 and SH 19 in Lamar County included the construction of the High Creek bridge. As was common practice during the early 1920s, the county was responsible for developing the plans and choosing the designs for the drainage structures. This was done in consultation with THD engineers and with their final approval. The T5 design was chosen for the High Creek bridge, as well as a bridge six miles away on SH 5, the Big Pine Creek bridge (refer to nomination of State Highway 5 Bridge at Big Pine Creek, LR0045-15-089, NRHP 1995).

The T5 is one of 20 THD standard designs developed for Warren pony truss spans. Only six of these designs are represented by bridges in Texas today. With a design date of March 1920, the T5 is the earliest of the six. The design encompasses specifications for Warren pony trusses in three span lengths: 50, 60 and 70 feet. Four examples of the 50-foot T5 design survive: in addition to the two on SH 5 in Lamar County, two bridges survive on local roads (formerly state highways) in Limestone and Harrison counties.

The T5 design employs suspended floor beams, a configuration used in pinned bridges and early riveted bridges which the braced beam configuration, a more sophisticated and efficient design, later superseded. The T5 is one of only four THD standard designs utilizing suspended floor beams and no examples of the other three designs survive. As such, the High Creek bridge and the bridge at Big Pine Creek are the only two bridges surviving on the Texas state highway system that use the suspended floor beam design.

In addition to developing the plans, the county engineer was responsible for receiving bids and contracting out the work. Bids were opened on September 24, 1920. The county awarded the contract for grading to Smith Brothers & Healy Construction Company of Crockett. The A.D. McClain Company of Houston won the contract for the drainage structures; they sub-contracted the construction of steel truss bridges to the Austin Brothers Bridge Company.

By October 1921, the High Creek bridge was completed. Work continued on the rest of state



United States Department of the Interior  
National Park Service

National Register of Historic Places  
Continuation Sheet

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

Section number 8 Page 5

project 116 and on November 27, 1921, the state paid out \$47,415 for roadwork in Lamar County (on SH 5 and SH 19), the largest monthly allotment paid for roadwork in Texas up to that date. Upon completion of the project, THD undertook another improvement of SH 5 in Lamar County. This project, implemented during 1923 and 1924, included widening the roadway to 18 feet and surfacing with concrete pavement; structures were not affected.

In 1935 and 1936, THD widened the High Creek bridge. The widening was part of THD's maintenance program to upgrade existing bridges to prolong their use. The bridge was widened from 15 feet to 21 feet, exceeding state and national requirements of the time that called for an 18-foot roadway width.

In order to widen the bridge, the truss span was lifted off the abutments, which were then removed and rebuilt to wider dimensions. The 9-inch concrete slab of the original bridge deck was also removed, and the steel floor beams were replaced with longer, larger I-beams. Bolted pairs of timber stringers were installed and covered with 2- by 4-inch planks 22-feet in length placed perpendicular to traffic. Spacer blocks and wheel guards were installed and the deck was then surfaced with asphalt (see Figure 3).

By 1936 the bridge's route was designated SH 5/US 82, and by 1939, the original SH 5 designation had been dropped. From 1946 to 1948 the route of US 82 was straightened, bypassing several portions of the original highway, including the section containing the High Creek bridge. The completion of the new route caused an immediate reduction of service for the High Creek bridge, which was now on a Farm-to-Market Road (FM 1509). It is probably for this reason that this modest bridge remains in service on the state highway system with its wooden deck intact.

The High Creek bridge serves as an example of how THD responded to material shortages and financial difficulty during the Depression of the 1930s. The reintroduction of wood for deck material (commonly used in standard plans dating from 1918 through 1920) at such a late date is unusual, and was likely part of a materials conservation effort implemented during these years. While THD engineers always considered economy of materials a primary design factor, during war and economic depression their skills as designers were especially challenged, and creative solutions were needed to meet these crises. By using wood instead of concrete for the replacement deck, the engineers extended the useful life of the bridge while minimizing the expense. The two SH 5 bridges are the only surviving examples of highway bridges that were widened using this technique. The widening is therefore considered a historically significant alteration occurring within the bridge's period of significance.



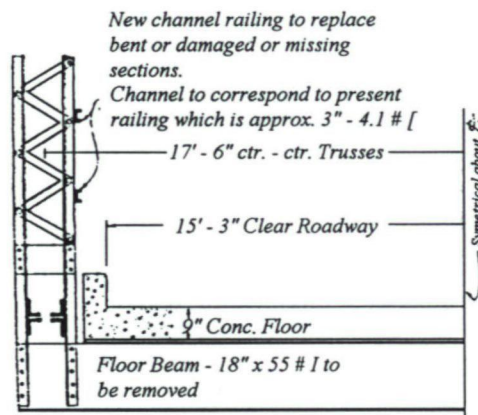
United States Department of the Interior  
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# National Register of Historic Places Continuation Sheet

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

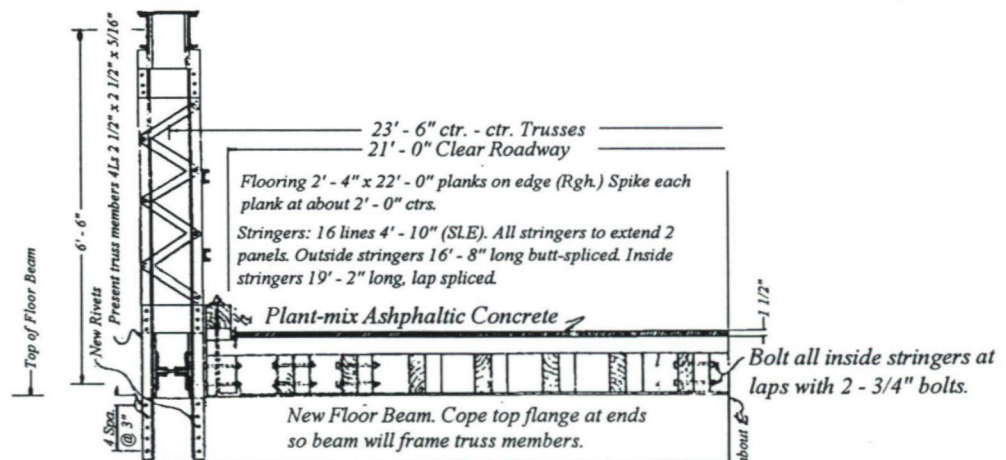
Section number 8 Page 6

Figure 3. Cross-sectional views of State Highway 5 Bridge at High Creek as shown in the 1935 widening plans.



**HALF SECTION PRESENT TRUSS SPAN**

[before widening]



**HALF SECTION WIDENED TRUSS**

All timber: 12# F.C. Creosoted

[after widening]

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**10. GEOGRAPHICAL DATA**

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**ACREAGE OF PROPERTY:** less than one acre

UTM REFERENCES	Zone	Easting	Northing	Zone	Easting	Northing
1	15	245110	3722330	3	—	—
2	—	—	—	4	—	—

(— see continuation sheet)

**VERBAL BOUNDARY DESCRIPTION** (see continuation sheet 10-7)

**BOUNDARY JUSTIFICATION** (see continuation sheet 10-7)

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**11. FORM PREPARED BY**

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<b>NAME/TITLE:</b>	text by Regina A. Lauderdale graphics by Pat St. George	
<b>ORGANIZATION:</b>	Texas Historical Commission/ Texas Department of Transportation	<b>DATE:</b> September 1996
<b>STREET &amp; NUMBER:</b>	Texas Historical Commission P.O. Box 12276	<b>TELEPHONE:</b> 512/463-6094
<b>CITY OR TOWN:</b>	Austin <b>STATE:</b> TX	<b>ZIP CODE:</b> 78711

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**ADDITIONAL DOCUMENTATION**

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**CONTINUATION SHEETS**

**MAPS**

**PHOTOGRAPHS**

**ADDITIONAL ITEMS**

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**PROPERTY OWNER**

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**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 Continuation Sheet

Historic Bridges of Texas  
State Highway 5 Bridge at High Creek  
Lamar County, Texas

Section number 9, 10 Page 7

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### 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. 0045-08-001, located at TxDOT headquarters in Austin.
- Texas Highway Department. Plans of Proposed State Highway Improvement. Control-Section-Job No. 0045-08-005, located at TxDOT headquarters in Austin.
- Texas Highway Department. Plans of Proposed State Highway Improvement. Control-Section-Job No. 0045-08-009, located at TxDOT headquarters in Austin.
- Texas Highway Department. Plans of Proposed State Highway Improvement. Control-Section-Job No. 0045-08-010, located at TxDOT headquarters in Austin.
- Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0045-08-001, located at TxDOT headquarters in Austin.
- Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0045-08-002, located at TxDOT headquarters in Austin.
- Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0045-08-003, located at TxDOT headquarters in Austin.
- Texas Highway Department. Project Correspondence Files. Control-Section-Job No. 0045-08-004, located at TxDOT headquarters in Austin.

### Verbal Boundary Description:

The nomination boundaries encompass the complete structure, State Highway 5 Bridge at High Creek, 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 State Highway 5 Bridge at High Creek  
NAME:

MULTIPLE Historic Bridges of Texas MPS  
NAME:

STATE & COUNTY: TEXAS, Lamar

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: 96001102

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. LR0045-14-101  
SH 5 BRIDGE AT HIGH CREEK  
HISTORIC BRIDGES OF TEXAS  
LAMAR CO., TEXAS  
PHOTOGRAPH 1 OF 2



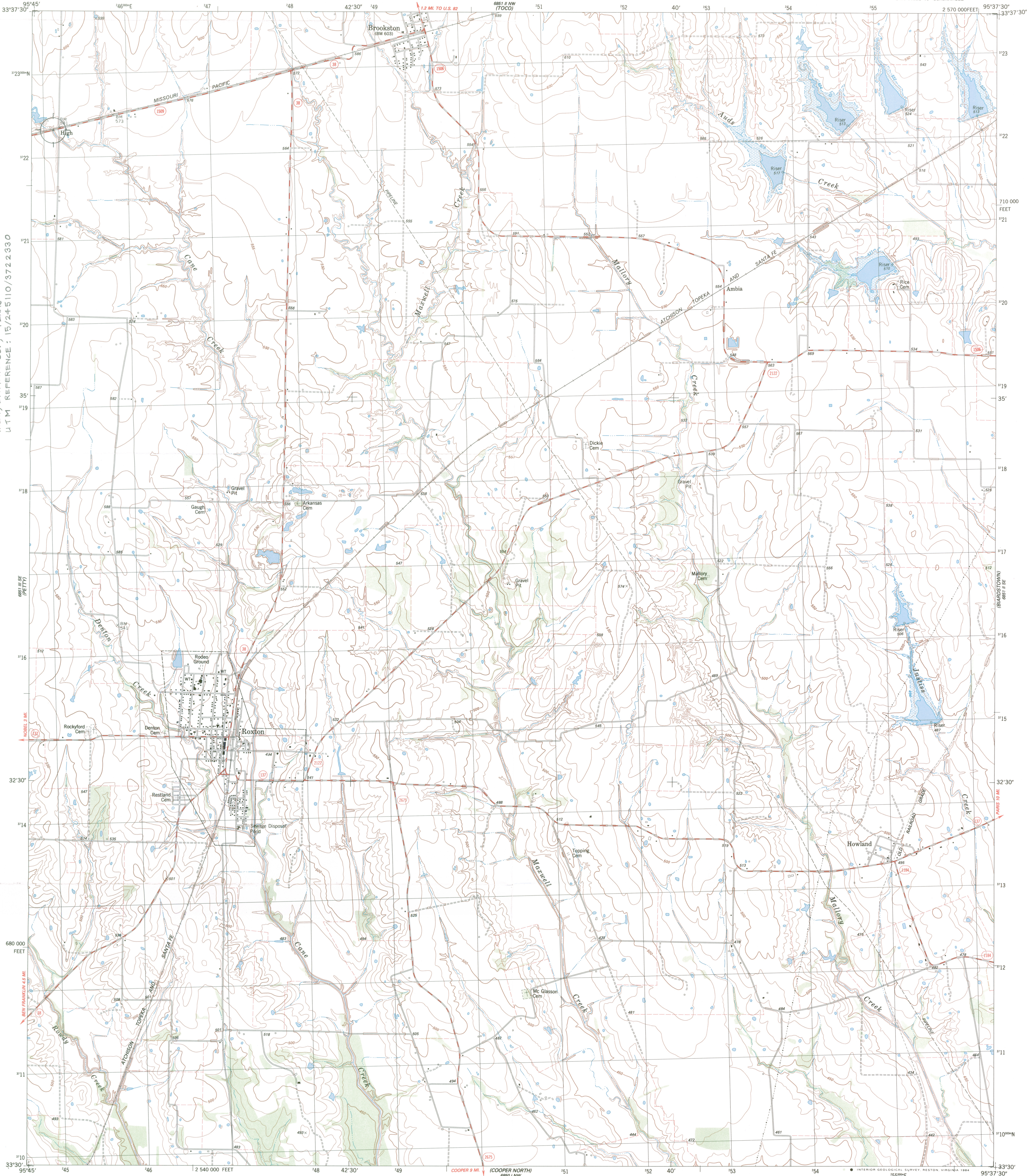


SITE NO. LR0045-14-101  
SH 5 BRIDGE AT HIGH CREEK  
HISTORIC BRIDGES OF TEXAS  
LAMAR CO., TEXAS  
PHOTOGRAPH 2 OF 2

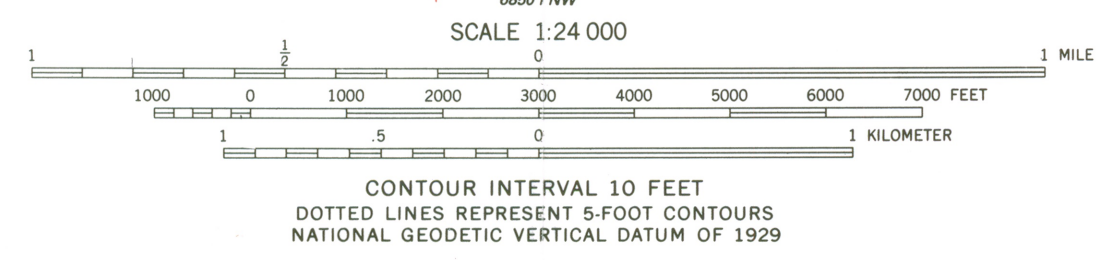
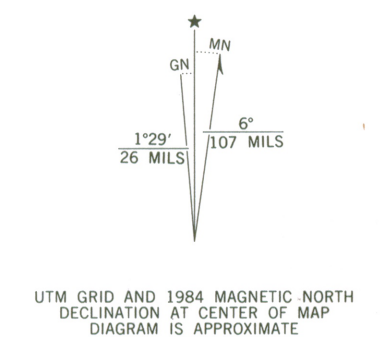


SITE NO. LAR0045-14-101

HISTORIC BRIDGES OF TEXAS  
SH 5 BRIDGE AT HIGH CREEK  
HIGH, LAMAR CO., TEXAS  
UTM REFERENCE: 15/245110/3722330



Mapped, edited, and published by the Geological Survey  
Control by USGS and NOS/NOAA  
Topography by photogrammetric methods from aerial photographs taken 1976. Field checked 1977. Map edited 1984  
Projection and 10 000-foot grid ticks: Texas coordinate system, north central zone (Lambert conformal conic) 1000-meter Universal Transverse Mercator grid, zone 15 1927 North American Datum  
To place on the predicted North American Datum 1983 move the projection lines 8 meters south and 23 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



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



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

3395-312

ROXTON, TEX  
SW/4 PARIS 15' QUADRANGLE  
33095-E6-TF-024

1984

DMA 6851 II SW-SERIES V882