United States Department of the Interior

NATIONAL PARK SERVICE
1849 C Street, N.W.
Washington, D.C. 20240

March 21, 2011

Notice to file:

This property has been automatically entered in the National Register of Historic Places. This is due to the fact that the publication of our Federal Register Notice: "National Register of Historic Places: Pending Nominations and Other Actions" was delayed beyond our control to the point where the mandated 15 day public comment period ended after our required 45 day time frame to act on the nomination. If the 45th day falls on a weekend or Federal holiday, the property will be automatically listed the next business day. The nomination is technically adequate and meets the National Register criteria for evaluation, and thus, automatically listed in the National Register of Historic Places.

Edson Beall
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National Register of Historic Places
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NPS Form 10-900 OMB No. 1024-0018 (Expires 5/31/2012)

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United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

1. NAME OF PROPERTY

HISTORIC NAME: Henderson Street Bridge
OTHER NAME/SITE NUMBER: Royal Street Bridge

2. LOCATION

STREET & NUMBER: Henderson Street at the Clear Fork of the Trinity River
CITY OR TOWN: Fort Worth **VICINITY:** N/A **NOT FOR PUBLICATION:** N/A
STATE: Texas **CODE:** TX **COUNTY:** Tarrant **CODE:** 439 **ZIP CODE:** 76102

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 _x_locally. (___See continuation sheet for additional comments.)

Mark Wolfe — 1/28/11

Signature of certifying official — Date

State Historic Preservation Officer, Texas Historical Commission

State or Federal agency and bureau

In my opinion, the property ___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 — for Edson H. Beall — 3-21-11
___ 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) = bridge

CURRENT FUNCTIONS: Transportation/road-related (vehicular) = bridge

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: Other: Open Spandrel Concrete Arch Bridge

MATERIALS:
FOUNDATION Concrete
WALLS N/A
ROOF N/A
OTHER Superstructure: Concrete; Roadwearing surface: Asphalt; Railing: Concrete

NARRATIVE DESCRIPTION (see continuation sheets 7-5 through 7-7)

Summary Description

The Henderson Street Bridge (originally known as the Royal Street Bridge) spans the Clear Fork of the Trinity River in Fort Worth, Texas. Constructed in 1930, the reinforced concrete structure is 796' long between abutments and 836' in total length. It consists of a 124' long open spandrel concrete arch and 14 variable depth concrete girder approach spans. The bridge is 73' wide carrying a 56' wide four-lane roadbed and 7' wide sidewalks on either side. The roadbed of the bridge is paved with asphaltic concrete pavement. The graceful open spandrel arch, cantilevered brackets, curved girder fascias and the decorative handrails add an architectural quality and contribute to the aesthetically pleasing design. The handrails feature round arch concrete panels divided into sections by concrete posts. These posts are detailed with classical plinth, dado and coping. Original concrete light standards surmounting approximately every other post have been removed. The bridge is located one-tenth of a mile south of White Settlement Road and approximately three-eights of a mile west of the confluence of the Clear and West forks of the Trinity River. Henderson Street is a major north-south arterial near the western edge of the Central Business District and becomes part of SH 199 at Interstate 30 (south of the bridge). To the southeast of the bridge is the modern campus of RadioShack Corporation (2004-05). Beneath the southern girder spans of the bridge and extending further west are the remnants of a parking lot. The north bank of the river is edged with a paved walking/bike trail. The Henderson Street Bridge retains a high degree of integrity.

Description

With its open spandrel concrete arch, the Henderson Street Bridge provides a fitting gateway into downtown Fort Worth, Texas. Spanning the Clear Fork of the Trinity River on SH 199, also known as the Jacksboro Highway, the bridge is an important link between the Central Business District and points northwest of the city. The overall length of the bridge is 836'. It is 796' long between the abutments. It was designed by C. Milo Thelin, an engineer with the City of Fort Worth, and Ira G. Hedrick, a noted bridge consultant from Hot Springs, Arkansas. It was constructed in 1930 by Frank Parrott of Dallas, Texas. The bridge consists of a 124' long open spandrel concrete arch and 14 variable depth reinforced concrete beam and girder approach spans of 48' each. The bridge is 73' wide which includes a four-lane asphalt-topped roadbed that is 56' wide with 7' wide concrete sidewalks on both sides. The design of the bridge is notable for its graceful open spandrel concrete arch, curved fascia girders, cantilevered brackets beneath the sidewalks, and handrails along the sidewalks that consist of rounded arched concrete panels divided by concrete posts. The posts are classically detailed with plinth, dado and coping.

The substructure of the bridge is divided into three sections. The southern section consists of eleven girder spans and the northern section has three girder spans (see Figure 3). The girder spans are placed 48' apart. Each span is supported by chamfered piers between curved fascia girders. A horizontal curve towards the west

begins with the second girder span from the south end of the bridge (see Figure 6). Extending perpendicular from the fascia girders are cantilevered brackets that support the sidewalk above. Between the southern and northern sections is an open spandrel four-rib concrete arch having a 124' span (see Figure 1). This is the most distinctive design element of the bridge. Four chamfered piers of varying lengths connect the tops of the ribs with the superstructure. A notable feature of the design of the arch span is the 7' slab between the two interior ribs used to carry two 20" water mains across the river (only one is now present, see Figure 8).

With the exception of the arch abutments, the entire structure rests on concrete piers varying in length from 15' to 35' driven into rock. The arch abutments are embedded at least 3' in solid rock 30' below ground surface. Expansion joints are placed every two girder spans (96' apart). Another provision for allowing expansion is the placement of two bronze plates ½" thick under each girder.[1]

On each of the four end handrail posts, a bronze plaque is attached to the dido facing the roadbed (see Figure 5). The plaques read:

1930
HENDERSON STREET BRIDGE
BUILT BY
CITY OF FORT WORTH, TEX.

O. E. CARR D. L. LEWIS IRA G. HEDRICK
CITY MANAGER CITY ENGINEER CONSULTING ENGINEERING

COUNCILMEN
W. BURTON J. R. PENN
J. B. DAVIS WM. BRYCE E. T. RENFRO
VAN ZANDT JARVIS MAYOR DR. W. R. THOMPSON
WM. MONNING A. E. THOMAS
CONTRACTOR FRANK PARROTT

Several other bronze plaques are also located on the dados of posts on the west side of the bridge. One was erected by the Frances Cooke Van Zandt Chapter of the Daughters of the Republic of Texas dedicating the bridge to James Pinckney Henderson, first governor of Texas. Another was erected by the Tarrant County Historical Society commemorating the location of Fort Worth's first mill, originally located west of the bridge.

[1] C. Milo Thelin, "High-Strength Concrete Used in New Fort Worth, Tex., Bridge," *Engineering News-Record* (October 1, 1931): 527.

Alterations/Current Condition

The Henderson Street Bridge retains a high degree of integrity. The most noticeable alteration is the removal of the original concrete light standards that formerly surmounted the posts of the handrails. Currently, lights hang from underneath the southern girder spans and formerly illuminated the parking lot in this area. As originally constructed, the roadbed was considered to be wide enough for six lanes; four 9' and two 10' wide traffic lanes. It retains its original width but now carries four lanes. According to a Texas Department of Transportation Bridge Inspection Report from June 13, 1996 (reinspected August 1, 1997), the bridge's overall condition is satisfactory, displaying signs of aging and wear as might be expected on a heavily used bridge that is over 75 years old. The handrails have a few areas of collision damage, scaling, delamination and spalling with exposed rebar at various locations. At the time of the inspection the roadbed was noted as having patched area as well as cracking and spalling at joints. It appears that the deck has been resurfaced since that report. The super- and substructures display some cracking and spalling with exposed rebar. These conditions are still present. Although the bridge has suffered slight deterioration, it retains its integrity of design, materials, workmanship, location, feeling and association.[2]

The setting of the bridge has changed somewhat with improvements to the levee system along the Trinity River and its tributaries. Following the Great Flood of 1949, significant measures were undertaken by the U.S. Corps of Engineers, Fort Worth District, to control flooding. One aspect of this project included the rechanneling of the Clear Fork which straightened portions of its meandering course in the immediate vicinity of the bridge. Grassy banks now line the river and a walking/bike trail follows the north bank of the Clear Fork, running under the north end of the bridge. As mentioned earlier, a paved parking lot is located beneath the south end of the bridge. Over the next several years, the City of Fort Worth will construct a new channel for the Trinity River, straightening the course of the river through town as part of their project to develop the "Central City" area north of downtown (see Figure 9). The Clear Fork of the Trinity will retain its current water level at the location of the Henderson Street Bridge. The levees along the Clear Fork, however, will be decommissioned and eventually removed. The area around the bridge is already very developed, the levees have been constantly altered throughout the history of the bridge, and therefore no loss of integrity of setting is anticipated based on these changes.

[2] Texas Department of Transportation. Bridge Inspection Report, Henderson Street Bridge, June 13, 1996, reinspected August 1, 1997.

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: Engineering; Transportation

PERIOD OF SIGNIFICANCE: 1930-1961

SIGNIFICANT DATES: 1930, 1931

SIGNIFICANT PERSON: N/A

CULTURAL AFFILIATION: N/A

ARCHITECT/BUILDER: Hedrick, Ira G., Consulting Engineer
Thelin, C. Milo, Engineer [designer]
Lewis, Dudley, City Engineer [supervisor]
Parrott, Frank, Contractor

NARRATIVE STATEMENT OF SIGNIFICANCE (see continuation sheets 8-8 through 8-16).

9. MAJOR BIBLIOGRAPHIC REFERENCES

BIBLIOGRAPHY (see continuation sheets 9-17 through 9-18).

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, Environmental Affairs Division)*
_ Federal agency
_Local government
_ University
_ Other -- Specify Repository:

Statement of Significance

The Henderson Street Bridge, originally called the Royal Street Bridge, is an excellent example of a reinforced concrete, open spandrel arch bridge. Spanning the Clear Fork of the Trinity River in Fort Worth, Texas, it is one of a small number of intact examples of the type in Texas. Built in 1930, it was designed by C. Milo Thelin of the City's Engineering Department and Ira G. Hedrick, noted bridge consultant from Hot Springs, Arkansas. Its 124' arch spans the river and creates a graceful gateway to the west side of downtown Fort Worth. Its arcaded concrete handrails, cantilevered brackets beneath the sidewalks and curved fascia girders also add to its architectural sophistication. Because of its design qualities, it is eligible for listing in the National Register of Historic Places under Criterion C at the state level of significance in the area of Engineering. Constructed during an era of City and County efforts to improve mobility, the bridge became a vital link on the Jacksboro Highway (originally SH34, now SH199), connecting the Central Business District to points northwest of the downtown and beyond the city. It remains an important link over a significant crossing on the Jacksboro Highway and is also eligible for the National Register under Criterion A at the local level of significance for its importance to the Transportation history of Fort Worth and Tarrant County. The period of significance is from 1930, representing the year the bridge was constructed, to 1961. The latter year corresponds with the National Register's 50-year criterion.

Narrative History

The Trinity River and its tributaries, the Clear Fork and the West Fork, have played an important role in the settlement and growth of Fort Worth, Texas. The city's origins began in 1849 as a military outpost on the bluffs above the confluence of the two forks of the river. By 1853, the military had abandoned the fort but the settlement that had grown up around it survived and eventually flourished. Fort Worth became the seat of Tarrant County in 1860 and the city was incorporated in 1873. In 1876, the Texas & Pacific Railway reached the town and it soon became a major railroad hub in North Central Texas. By 1900, it had a population of 26,688. With the arrival of the Armour and Swift meat packing plants in 1902, the population of Fort Worth grew at an incredible rate and by 1910, had grown to 73,312. As the central core of the city was surrounded by the river on three sides, it became imperative to construct adequate bridges to connect the city with the Stock Yards to the north and the areas developing on its fringes, as well as to facilitate travel beyond Fort Worth.

Early Fort Worth bridges were constructed of wood or a combination of wood and steel (some being noted as wire bridges). With the Trinity River's untamed nature and tendency to flood, a concerted effort was made to build bridges that could survive such events. Tarrant County residents passed a bond issue to construct four bridges—the Main Street, West Seventh Street, Samuels Avenue and East Fourth Street viaducts—across the Trinity River in December 1911. S. W. Bowen of Brenneke and Fay, Consulting Engineers, of St. Louis was the designer. All were of reinforced concrete. For two of the structures, the West Seventh Street (or Van Zandt) Viaduct and the Main Street Viaduct, Bowen chose open spandrel arched designs. Both of these structures were important links to the Central Business District (CBD) and the Seventh Street Viaduct was adjacent to a large public park and "in a high-class residential district." The arched designs were not only beautiful, but for Bowen,

they were logical choices as such designs were well suited for the particular geological conditions at both sites and were ideal for withstanding major flooding. Spanning a distance of 1,745' 3", the Main Street Viaduct, constructed between December 1912 and March 1914 and officially named the Paddock Viaduct in 1913, was the first reinforced concrete arch bridge in the nation to use self-supporting reinforced steel. Thus the precedence of using open spandrel concrete bridges to span the Trinity River in Fort Worth was set early in the 20th century. Since then, the Paddock Viaduct has become an important landmark in Fort Worth. It was listed on the National Register of Historic Places in 1979 at the national level of significance for its innovative design and has been designated a Texas Civil Engineering Landmark.[3]

With its rapid growth during the early 20th century, finding an adequate supply of water for Fort Worth became a source of concern for city leaders. In 1911, a recommendation was made to impound the water of the West Fork of the Trinity River. The construction of a dam began that year and the reservoir was completed in 1914. Known as Lake Worth, it soon became a recreational destination. The City of Fort Worth constructed a meandering road around its forty-mile shoreline and one-year campsite leases were issued by the Park and Recreation Department.[4]

But the Lake Worth dam was over five miles northwest of the CBD and a convenient way of getting there by automobile did not exist. By 1928, the residents of Tarrant County had passed a bond issue for the construction of a highway from Fort Worth that would extend from the city limits in a northwest direction to Lake Worth and then beyond to Azle at the Tarrant County-Parker County line. From there, the highway would continue on to Jacksboro in Jacks County. Formerly, to get to Jacksboro from Fort Worth, one had to travel through Decatur, Texas, for a distance of 82 miles. The new highway would provide a more direct route at a distance of 60 miles. When the bond issue was passed, the plan called for the highway to connect with a bridge the City planned to build at the north end of Royal Street. Royal Street ran at a northwest angle from West Fifth Street and the north end of Henderson Street, a north-south street on the western edge of the CBD, and terminated at the south bank of the Clear Fork (see Map 1). This plan met with opposition from business interests on North Main Street who preferred that the highway traverse their district, but the Royal Street proposition prevailed. By March 1929, the final route of the Jacksboro Highway within the city limits had been approved. From the proposed Royal Street Bridge, the highway would run in a northwesterly direction across the Trinity River bottoms, an area largely used for truck farming, for approximately three-quarters of a mile where it would cross the West Fork over a bridge to be constructed by the State. From there it would connect

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[3] S. W. Bowen, "The Design and Construction of Four Reinforced Concrete Viaducts at Fort Worth, Texas," *American Society of Civil Engineers Transactions,* Paper no. 1329, 1914; Historic American Engineering Record (HAER), National Park Service, U.S. Department of the Interior, "Main Street Viaduct (Paddock Viaduct)," HAER No. TX-50 [TEX 220-FOWOR, 7-], Prints and Photographs Division, Library of Congress. The West Seventh Street Viaduct still exists but received an addition on the west end in the early 1950s. In addition, the river was rechanneled to the west so that it no longer flows under the historic arch. The Texas Department of Transportation is developing plans to replace this structure.

[4] Tarrant County Historic Resources Survey, *Selected Tarrant County Communities* (Fort Worth: Historic Preservation Council for Tarrant County, Texas, 1990), 101.

with Terrace Avenue at Northwest Twelfth Street and then follow Terrace out of the city limits to the new bridge the City was building at the nine-mile road at Lake Worth (see Map 2).[5]

The construction of the Royal Street Bridge was part of a $1,000,000 plan adopted by the City Council in April 1928 that also called for the widening of Henderson Street in order to make it a north-south traffic arterial. Henderson Street was chosen for development as the arterial because it was the one street in the CBD that ran most continuous in a north and south line. It afforded the most suitable location for a grade separation at the Texas & Pacific (the traditional separation of the downtown and South Fort Worth) and the Frisco railways. The name of Royal Street was to be changed to Henderson Street, thus giving the street its northern extension. But the "Royal Street" name continued in use for several years and during and after construction, the bridge over the Clear Fork was often referred to as the Royal Street Bridge. The designer of the bridge, C. Milo Thelin, even referred to it as the Royal Street Bridge in an article about its construction that was published in the October 1, 1931 issue of *Engineering News-Record*.[6]

Preparation of plans and specifications for the bridge began in late August 1929. The design of the structure was a collaboration of the city's designing engineer, C. Milo Thelin, and consulting engineer, Ira G. Hedrick of Hot Springs, Arkansas, under the supervision of D. L. Lewis, city engineer. A newspaper account reported that the bridge was to be 650' long and 73' wide. This width would accommodate six lanes of traffic and seven foot wide concrete sidewalks on either side. The bridge was to be built above high water levels and without upgrade approaches. The south approach would begin at a point on Royal Street about 50' north of Valley Street and veer 17° westward. The north approach would begin on Franklin Street about 140' west of Woodward Street.[7]

When it was finally announced that the plans would be made available for bid, the *Fort Worth Star-Telegram* reported that the bridge would be 836' long and include ornamental light standards. The 14 girder spans would be 48' in length and the arch spanning the river would be 124' long. In March 1930, the contract for the construction of the bridge was awarded to Frank Parrott of Dallas for $235,639.58. Parrott's bid specified that the project would be completed in 250 working days. The contract stipulated that Parrott use local labor and materials. The funding for the project came from the recent sale of bonds that had been approved in 1925.[8]

Construction had begun on the bridge by April 1930. By November of that year, the work had progressed enough that installation of the bridge's lighting system was underway. Local electricians filed an injunction with the Seventeenth District Court asserting that Parrott had violated a local ordinance which stated that electrical work had to be done by qualified licensed and bonded contractors. Parrott countered that all of the work was

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[5] *Fort Worth Press,* September 6, 1928; *Fort Worth Record-Telegram*, January 18, 1929; *Fort Worth Star-Telegram*, March 20, 1929.
[6] *Fort Worth Star-Telegram*, April 17, 1928; *Fort Worth Record-Telegram,* march 31, 1931; Thelin, "High-Strength Concrete Used in New Fort Worth, Tex., Bridge."
[7] *Fort Worth Record-Telegram*, August 22, 1929.
[8] *Fort Worth Star-Telegram,* February 23, 1930 and March 11, 1930.

being done under the supervision of the city electrician. City Engineer D. L. Lewis told the City Council that the bridge lighting was not subject to the city electrical code. Around this same time, a Councilman opposed awarding Parrott a contract for relocating a sanitary sewer line at the city filtration plant on the grounds that Parrott had not kept his word regarding employment of local men during the construction of the Henderson Street Bridge. Finding employment for residents was an important issue for leaders during these early years of the Great Depression. Parrott insisted that the laborers were local men with the exception of a few specialists. The bridge was completed within nine months with the exception of the asphalt road surface which was not a part of Parrott's contract.[9]

Built nearly simultaneously as the Henderson Street Bridge and located approximately three-quarters of a mile to the northwest was the West Fork Bridge (or the Northwest Highway/Jacksboro Highway Bridge), a reinforced concrete cantilever span bridge supported by five concrete piers, each with triple rounded arches, and two solid concrete piers. It was 486' long and 4 lanes wide. Unlike the Royal Street Bridge, the construction of this bridge was a County project designed by state highway department engineers Gib Gilchrist (highway engineer) and George G. Wickline (bridge engineer). This bridge, also erected by Frank Parrott of Dallas, was constructed for approximately $200,000.[10]

The construction of the Henderson Street Bridge and the Northwest Highway/Jacksboro Highway Bridge coincided with the implementation of a five-year improvement plan fostered by the City of Fort Worth, Tarrant County and the Fort Worth Chamber of Commerce. From 1928 to 1932, numerous streets and boulevards, under- and overpasses, viaducts and bridges were constructed as either City or County sponsored projects. Besides the Henderson Street Bridge, another bridge constructed by the City during this era was the Lake Worth Bridge (Nine-Mile Bridge) at a cost of $200,000. County bridges, many of which received State aid, included the Purvis Road Bridge over the West Fork ($52,000), Stove Foundry Road (West Vickery Boulevard) Bridge over the Clear Fork ($80,000), East Belknap Street Bridge over the Trinity ($150,000), Frey Avenue Bridge over the Trinity ($50,000) and Cold Springs Road Bridge over the Trinity ($17,000).[11]

The Jacksboro Highway (initially designated as Highway 34), was also considered a part of this five-year plan (see Map 2). Local officials saw it as an important gateway to West Texas and wanted the highway to be constructed as a "dignified parkway," one which would provide a fitting entrance into the city. The landscape architecture firm of Hare and Hare of Kansas City, Missouri, was involved in the design of features along the divided highway which included concrete retaining walls on its east side at the base of the Grand Street bluff. As envisioned by the firm, the wall was to have been constructed with stone but instead was constructed of

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[9] *Fort Worth Star-Telegram,* November 19, 1930.

[10] Tarrant County Historic Resources Survey, *Fort Worth Near North Side and West Side, Westover Hills (*Fort Worth, Texas: Historic Preservation Council for Tarrant County, 1988): 91. This bridge is still extant.

[11] Fort Worth (Texas) Chamber of Commerce, *Five Years of Progress* (50th Anniversary Commemorative Re-Issue, Graphic History Limited, 1982): 19.

concrete. The firm gave recommendations for covering the wall with ivy and planting the slopes above with shrubs or ground cover. Portions of this wall are still extant along the highway.[12]

The Jacksboro Highway between Fort Worth and Lake Worth was formally opened for traffic on Tuesday, August 11, 1931. Following a band concert at 6:30 p.m., a ribbon cutting with speeches by local dignitaries was held at 7:00 p.m. at the newly completed bridge over the West Fork. At 8:00 p.m., a car caravan to Lake Worth began. As noted in a local paper, "From West Seventh Street [south of the Henderson and West Fork bridges] to the end of the paved portion of the new highway beyond Lake Worth, the parade of automobiles resembled a huge serpent of light when viewed from high points along the parkway type highway of reinforced concrete."[13]

As a main artery for transportation in the 1940s and 1950s, the Jacksboro Highway had several businesses along its length associated with automobile travel, including restaurants, night clubs, and tourist courts. Nicknamed "Thunder Road," the businesses catering to entertainment featured musicians such as Bob Wills and the Texas Playboys and Willie Nelson.[14] Despite the Jacksboro Highway's sordid reputation as a haven for criminal activity, including the illegal sale of liquor, gambling, and illegal prostitution, it remained one of the major arterials in Fort Worth leading to outlying communities (see Maps 3 and 4). The 1995 USGS Haltom City 7.5' quadrangle still identifies the contemporary route as a primary highway. The Jacksboro Highway and consequently, the Henderson Street Bridge, remain important connections to Lake Worth and the communities along its route in Tarrant County, as well as a link to West and Northwest Texas.

Designers and Builders of the Henderson Street Bridge

C. Milo Thelin designed the Henderson Street Bridge. He received a degree in Civil Engineering from South Dakota A & M College (South Dakota State University). Prior to his employment with the City, he worked for three years as a bridge designer and engineer for the Indiana Highway Department and a year in the engineering department of Standard Oil of Indiana. He began his employment with the City of Fort Work in 1928 as a designing engineering. His first project was designing the Lake Worth Bridge (D. L. Lewis is the engineer of record and Ira G. Hedrick was the consulting engineer). Other projects with which he was associated included the lighting systems at the municipal airport and for the underpasses built by the Texas & Pacific Railway, the East Rosedale Street Bridge, as well as other bridges and paving projects. In 1941, he became

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[12] Texas Department of Transportation, *Connecting History: The Bridges of Fort Worth* [video], (Fort Worth, Texas: Fort Worth District, Texas Department of Transportation, 2001); S. Herbert Hare to Mrs. Will F. [Mary Daggett] Lake, September 23, 1931, Mary Daggett Lake Papers, Fort Worth Public Library Archives, Series V, Box 5-1:16.

[13] *Fort Worth Star-Telegram*, morning edition, August 12, 1931.

[14] Arnold, Ann. *Gamblers and Gangsters: Fort Worth's Jacksboro Highway in the 1940s and 1950s*. Eakin Press, Austin: 1998: 10, 16.

Assistant City Engineer in Fort Worth. In 1946 he served as the acting public works director and was made the permanent director of that department in 1947. Thelin was a member of the American Society of Civil Engineers, the Texas Society of Professional Engineers, the American Public Works Association and served as president of the Texas Public Works Association later in his career.[15]

Ira G. Hedrick, the consulting engineer for the Henderson Street Bridge, received a bachelor's degree in Civil Engineering from the University of Arkansas in 1892. He obtained a Bachelor of Applied Science in 1899, a Master of Science in 1901 and Doctor of Science in 1905, all from McGill University in Montreal. From 1899-1907, he was a junior partner in the firm of Waddell & Hedrick in Kansas City with the noted bridge engineer Dr. J. A. L. Waddell, with whom he had worked previously. From 1907-1915, he partnered with Victor Hugo Cochrane in the firm of Hedrick & Cochrane and then was a partner in the firm of Hedrick & Hedrick, all of Kansas City, Missouri. At the time of the construction of the Henderson Street Bridge, Hedrick was based in Hot Springs, Arkansas. Notable projects with which he was associated included the Houston Street Viaduct, an open spandrel reinforced concrete arched viaduct in Dallas, (1911, designed while with Hedrick & Cochrane, NR 1984), the Sellwood Bridge, a Warren deck truss bridge spanning the Willamette River in Portland, Oregon (1925), several bridges in Arkansas constructed in the late 1920s and early 1930s including the Newport Bridge, a cantilevered steel truss bridge in Newport, Arkansas (1929-30, NR 1990), and the Lake Worth Bridge (Nine-Mile Bridge), a concrete girder bridge in Fort Worth (1929, demolished 1987).[16]

D. (Dudley) L. Lewis served as the supervising engineer for the design of the Henderson Street Bridge. He was born in 1885 and attended Millsaps College, a preparatory school in Jackson, Mississippi, before entering Mississippi A & M College in Starksville and graduating from there in 1906 with a degree in Civil Engineering. He obtained a Bachelor of Science in Civil Engineering from Cornell University in 1908. He became resident engineer for a construction firm building the White Rock Reservoir in Dallas in 1910. Two years later he came to Fort Worth as a draftsman in the city's engineering department. Within two months he was appointed assistant engineer in charge of sidewalk and storm sewer projects. He was made assistant engineer in charge of construction and maintenance of sanitary sewers two years later. Lewis then became assistant city engineer and in 1919 was named head of the city's engineering department. In 1937 he was named acting city manager and was named the permanent city manager in August 1938. After only 11 months, he was removed from that position because of a personnel dispute. In 1940, he began work for Wyatt C. Hedrick on various defense-related projects in Texas and Arizona. In 1943, Lewis was named executive director of the State Department of Public Works in Austin. He died January 6, 1965.[17]

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[15] Fort Worth Star-Telegram Clippings Files, *s.v.* "Thelin, C. Milo," AR406-7-171, also AR406-7-56-13, Special Collections Division, University of Texas at Arlington Libraries, Arlington, Texas [hereafter cited as SCDUTA].

[16] *Who's Who in Engineering, 1922-23* (New York, John W. Leonard Corporation, 1922): 276, 581, 1314; Online database of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) Collection at the Library of Congress, available at http://memory.loc.gov/cgi-bin/query, accessed June 26, 2007;Tarrant County Historic Resources Survey, *Selected Tarrant County Communities* (Fort Worth: Historic Preservation Council for Tarrant County, 1990): 133.

[17] Fort Worth Star-Telegram Clippings file, *s.v.* "Lewis, Dudley L," AR406-7-97-71, SCDUTA.

Frank Parrott of Dallas erected the bridge. His construction firm had several projects in the Dallas area subsequent to building the Henderson Street and Jacksboro Highway bridges in Fort Worth. These included an underground reservoir in southwest Oak Cliff in Dallas (1929) and a reinforced concrete bridge on Corinth Street for Dallas County (1929). W. O. Jones, assistant engineer for the City of Fort Worth, supervised the construction of the Henderson Street Bridge. W. W. O'Farrell was the resident engineer.[18]

Open Spandrel Concrete Arch Bridges

The first open spandrel concrete arch bridge in the United States was constructed ca. 1906 and one of the earliest in Texas was the 1910 Medina River Bridge in Bexar County. This type of bridge was an evolutionary step from the closed-spandrel arch bridge, using less material and giving open spandrel arch bridges a lightness and aesthetic appeal.[19] As a result, this kind of bridge was more appealing for prominent locations and made it an ideal choice for the State Highway Department to create entry bridges for their highways leading into cities, such as the Henderson Street Bridge in Fort Worth.[20]

According to the Texas Historic Bridge Inventory, the Henderson Street Bridge "gains its significance for its type, design, and architectural treatment. The bridge is a good example of a reinforced concrete, open-spandrel arch bridge. The bridge is one of a small number of intact examples of this bridge type in Texas, and is noteworthy for its graceful design and architectural treatment of its structural members. The bridge has retained its integrity of design, materials, workmanship, location, and sufficient integrity of setting, feeling and association, to meet National Register eligibility under Criterion C, Engineering, at the state level of significance."[21]

The Texas Department of Transportation's database indicates that there are only nineteen extant open-spandrel arch concrete bridges in Texas (see Table 1). Of these, one is not historic-age and three have been altered to the point that they no longer retain sufficient integrity for listing in the National Register of Historic Places; leaving fifteen that meet the criteria for eligibility. A small number of these are listed in the National Register of Historic Places. Most bridges of this type are located in urban areas and those that have been listed fall into this category. As mentioned previously, the Paddock Viaduct in Fort Worth is listed on the National Register at the national level of significance as the first reinforced concrete arch bridge in the country to use self-supporting reinforced steel. In addition, the following open spandrel concrete arch bridges are listed on the

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[18] *Dallas Morning News*, June 18 and June 25, 1929; Thelin, "High-Strength Concrete Used in New Fort Worth, Tex., Bridge."

[19] Parsons Brinckerhoff and Engineering and Industrial Heritage, *A Context for Common Historic Bridge Types: NCHRP Project 25-25, Task 15*. October 2005: 3-67. Texas Department of Transportation (TxDOT). "Texas Historic Bridge Inventory, Survey of Non-Truss Structures."

[20] Texas Department of Transportation (TxDOT). "Texas Historic Bridge Inventory, Survey of Non-Truss Structures:" 27-8.

[21] Texas Department of Transportation, Texas Historic Bridge Inventory, Structure ID 022200171-05-018, August 31, 1999.

National Register of Historic Places at the state level of significance: the Lamar Boulevard Bridge and the Barton Springs Bridge (as a contributing resource in the Zilker Park Historic District), both in Austin; the Houston Street Viaduct in Dallas; and the Iturbide Street Bridge and the Zacate Creek Bridge (both contributing resources in the Barrio Azteca Historic District) in Laredo.[22] In addition, the Lamar Boulevard Bridge in Austin and the Houston Street Viaduct in Dallas are both listed at the local level of significance for their importance to the history of Transportation in their locales.

Conclusion

The Henderson Street Bridge is an excellent example of a reinforced concrete, open spandrel arch bridge. Based on the criteria outlined in the statewide historic bridge context ("Historic Bridges of Texas, 1866-1945"), the Henderson Street Bridge is eligible for listing in the National Register of Historic Places under Criterion C, at the state level of significance because as one of nineteen extant reinforced concrete, open spandrel arch bridge in Texas, and it embodies the defining characteristics of its type. This bridge is also significant under Criterion A, at the local level, because it played a critical role in the development of a regional transportation system, as a critical crossing of the Jacksboro Highway over the Clear Fork of the Trinity River. The period of significance is from 1930, representing the year the bridge was constructed, to 1961. The latter year corresponds with the National Register's 50-year criterion. It retains its historic integrity through the retention of its character-defining features, including arch ribs, spandrel, spandrel columns, railing, piers, abutments, and wingwalls.

[22] Mark Brown, Texas Department of Transportation, e-mail correspondence with Susan Allen Kline, July 11, 2007; Warren Grannis, Texas Department of Transportation, e-mail correspondence with Susan Allen Kline, July 12, 2007.

Table 1. Open spandrel concrete arch bridges in Texas.

Road or facility	Feature crossed	County	Year built	Significance	Structure length (ft)	Number of Spans	Length of main span (ft)
Henderson Street (SH 199)	Clear Fork Trinity River	Tarrant	1930	eligible	796	15	124
N Main Street (BU 287P)	Trinity River	Tarrant	1914	NR listed	1319	16	225
E Vickery Boulevard	Sycamore Creek	Tarrant	1930	not eligible	116	1	60
Business 287/ Loop 370	Wichita River	Wichita	1929	eligible	276	3	95
5th Street	Waco Creek	McLennan	1930	not eligible	46	1	45
South 15th Street	Waco Creek	McLennan	1922	eligible	42	1	38
Main Street	Buffalo Bayou	Harris	1914	NR listed	1275	31	170
San Jacinto Street	Buffalo Bayou	Harris	1914	NR listed	325	8	110
Lamar Street (Loop 343)	Colorado River	Travis	1943	NR listed	659	6	105
West 24th Street	Shoal Creek	Travis	1928	NR listed	138	3	55
Barton Springs Road	Barton Creek	Travis	1925	NR listed	212	3	70
South Congress Avenue	Ladybird Lake	Travis	1909	not eligible	946	8	119
Canyon Ridge	Branch of Walnut Creek	Travis	2003	not historic age	1311	5	47
Business 35	Guadalupe River	Comal	1934	eligible	818	10	120
San Antonio Street	Comal River	Comal	1923	eligible	410	7	70
Houston Viaduct	IH 30 & Trinity River	Dallas	1911	NR listed	4785	65	103
Blackburn Street	Turtle Creek	Dallas	1928	eligible	33	1	30
Iturbe-Market Street	Zacate Creek	Webb	1928	NR listed	112	1	96
Parking lot	Zacate Creek	Webb	1928	NR listed	98	1	90

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Who's Who in Engineering, 1922-23. New York: John W. Leonard Corporation, 1922.

10. GEOGRAPHICAL DATA

ACREAGE OF PROPERTY: approximately 1.4 acres

UTM REFERENCES	Zone	Easting	Northing
1.	14	655422.5	3625551.5
2.	14	655240	3625724

VERBAL BOUNDARY DESCRIPTION The nomination encompasses the structure, the Henderson Street Bridge at the Clear Fork of the Trinity River, from the extreme south end of the structure (beginning at the southernmost end posts of the handrails) to the extreme north end of the structure (ending at the northernmost end posts of the handrails) on the north side of the river and the extreme edges of concrete construction to include the sidewalks and concrete handrails on the east and west sides of the bridge.

BOUNDARY JUSTIFICATION The boundaries include all of the components historically associated with the nominated structure.

11. FORM PREPARED BY (with assistance from Adrienne Campbell, THC Historian)

NAME/TITLE: Susan Allen Kline, Subcontractor

ORGANIZATION: Geo-Marine, Inc. **DATE**: July 2007

STREET & NUMBER: 2201 K Avenue, Suite A2 **TELEPHONE**: 972-423-5480

CITY OR TOWN: Plano **STATE:** Texas **ZIP CODE:** 75074

ADDITIONAL DOCUMENTATION

CONTINUATION SHEETS

MAPS (see continuation sheet MAPS-19 through MAPS-22)

PHOTOGRAPHS (see continuation sheet PHOTO-30 through PHOTO-31)

ADDITIONAL ITEMS (see continuation sheet FIGURES-23 through FIGURES-29)

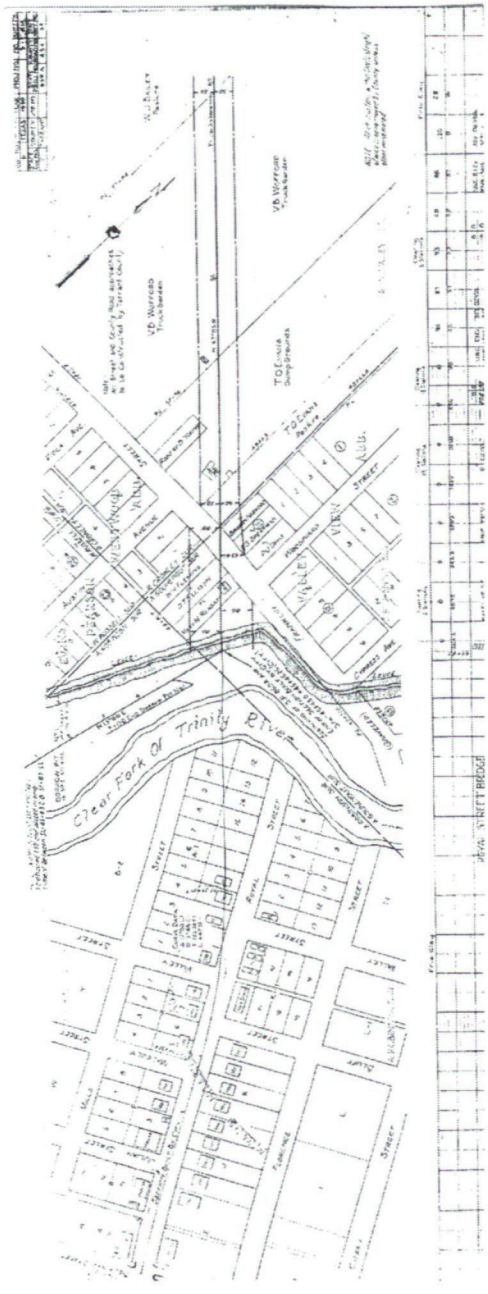
PROPERTY OWNER

NAME: Office of the Governor, State of Texas

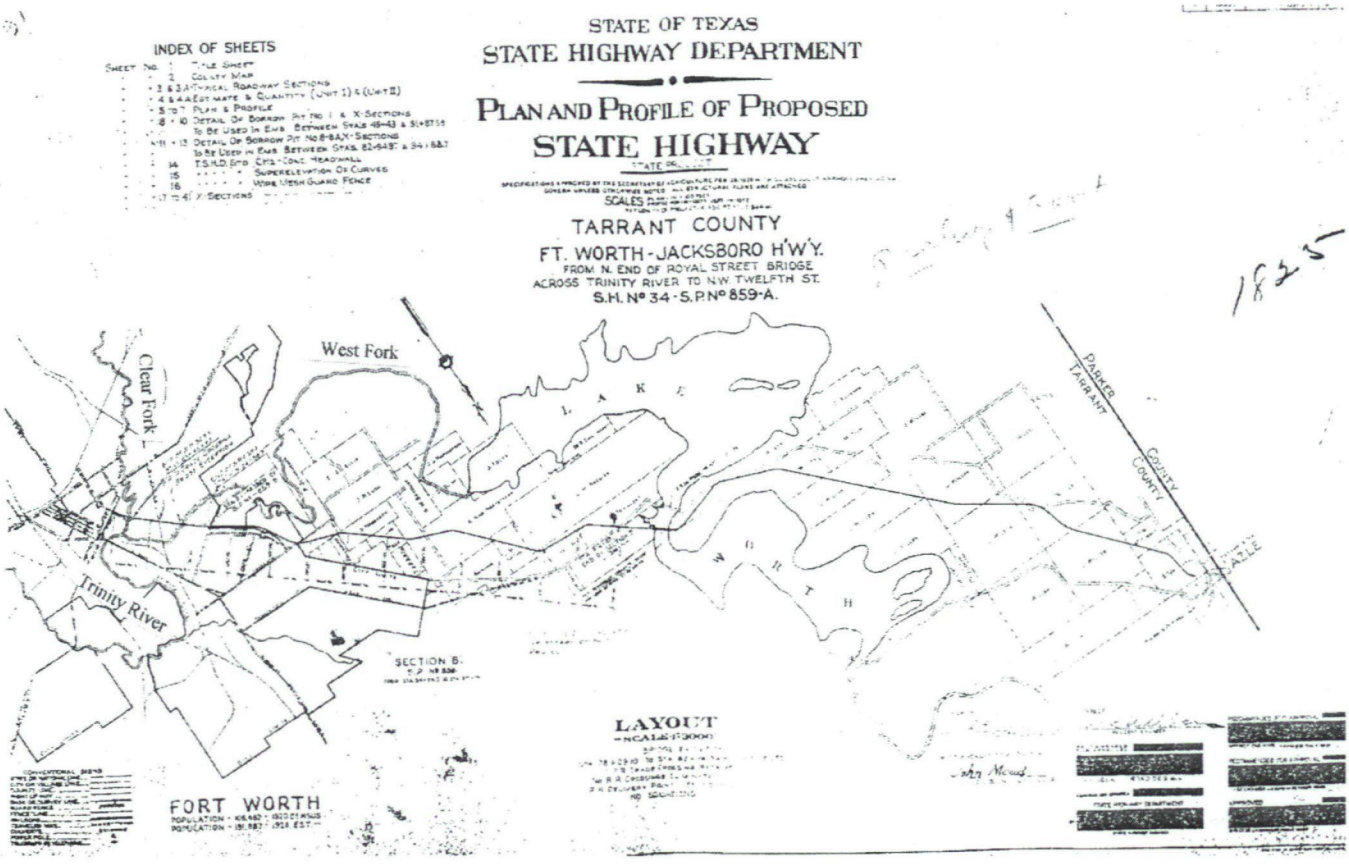
STREET & NUMBER PO Box 12428 **TELEPHONE:** (512) 463-1782

CITY OR TOWN Austin **STATE** Texas **ZIP CODE** 78711-2428

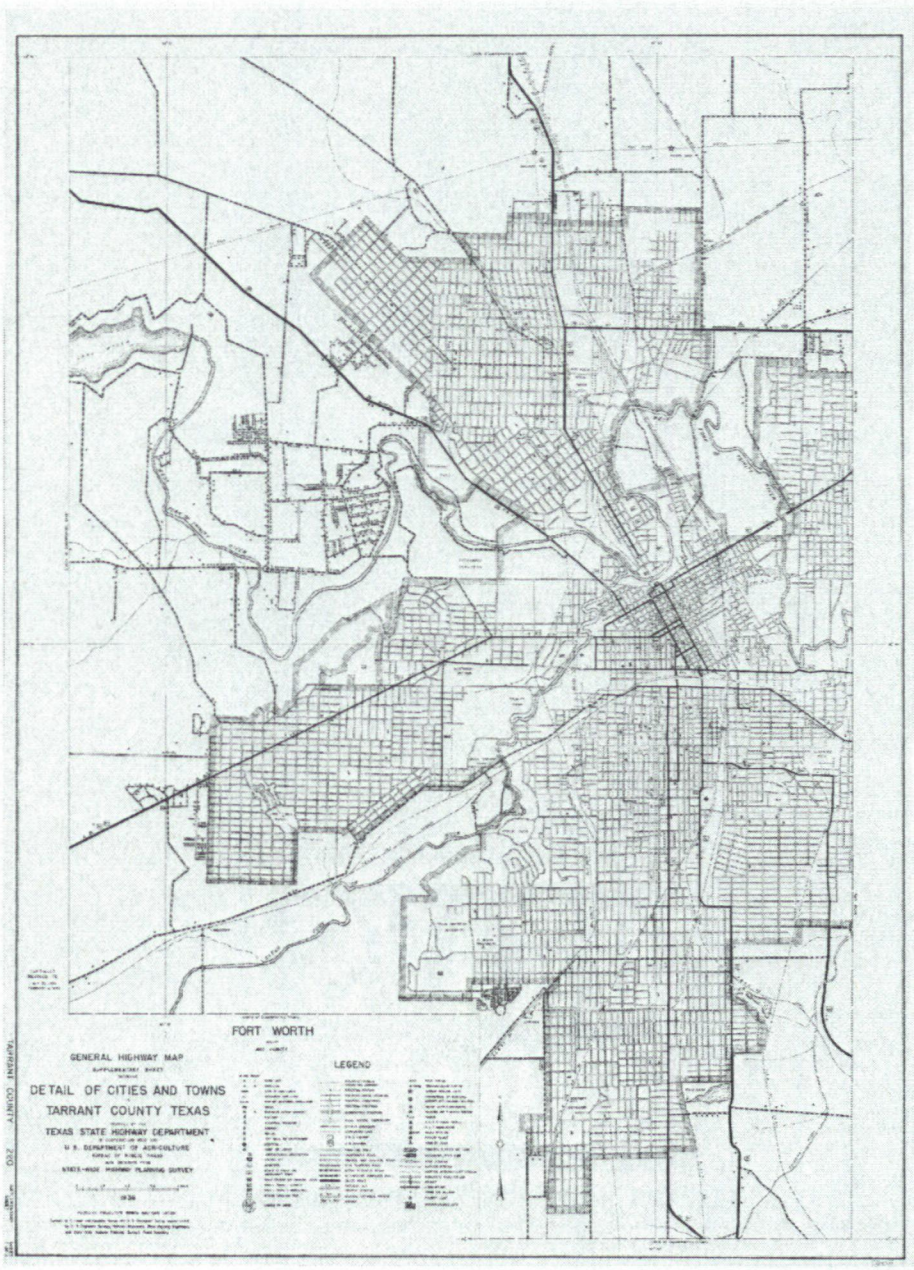
Map 1: Location of proposed Royal Street/Henderson Street Bridge over the Clear Fork of the Trinity River, *Courtesy Texas Department of Transportation.*



Map 2: Route of the Jacksboro Highway (SH34) from Fort Worth to the Tarrant County-Parker County Line, *Courtesy Texas Department of Transportation.*



Map 3: General Highway Map. Detail of Cities and Towns in Tarrant County, Texas [Fort Worth and vicinity]/ 1940. The Jacksboro Highway (SH 199) is visible as the major thoroughfare that heads northwest from downtown. *Image courtesy Texas State Library and Archives.*



Map 4: General Highway Map. Detail of Cities and Towns in Tarrant County, Texas. City Map, Fort Worth and vicinity, Tarrant County, Texas / 1961. Interstate highways 20, 820, and 35 are partially constructed, but the Jacksboro Highway (SH 199) is still the major thoroughfare to Lake Worth, Eagle Mountain Lake, and outlying communities northwest of downtown. *Image courtesy Texas State Library and Archives.*

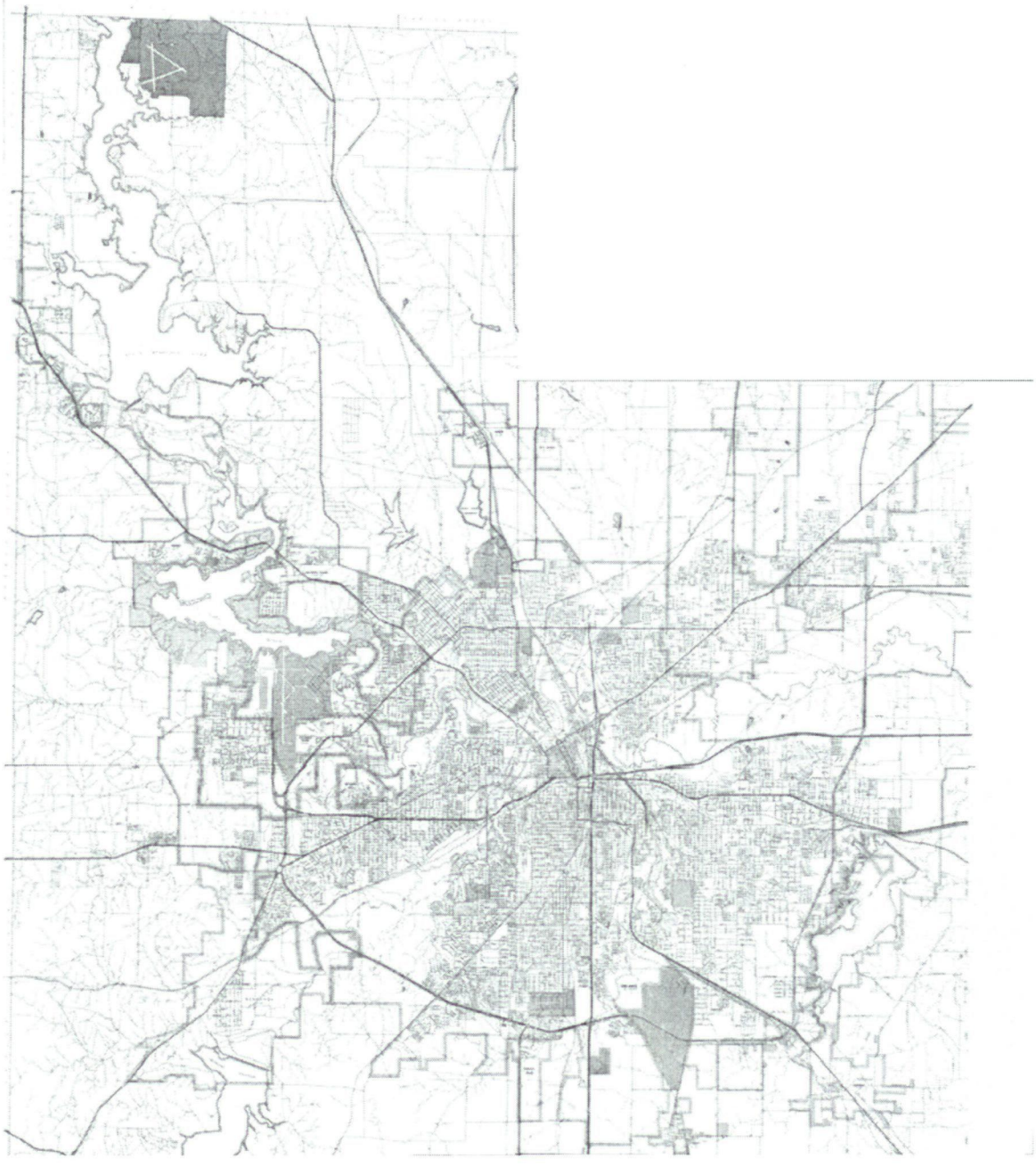


Figure 1: General Plan and Profile, *Courtesy Texas Department of Transportation.*

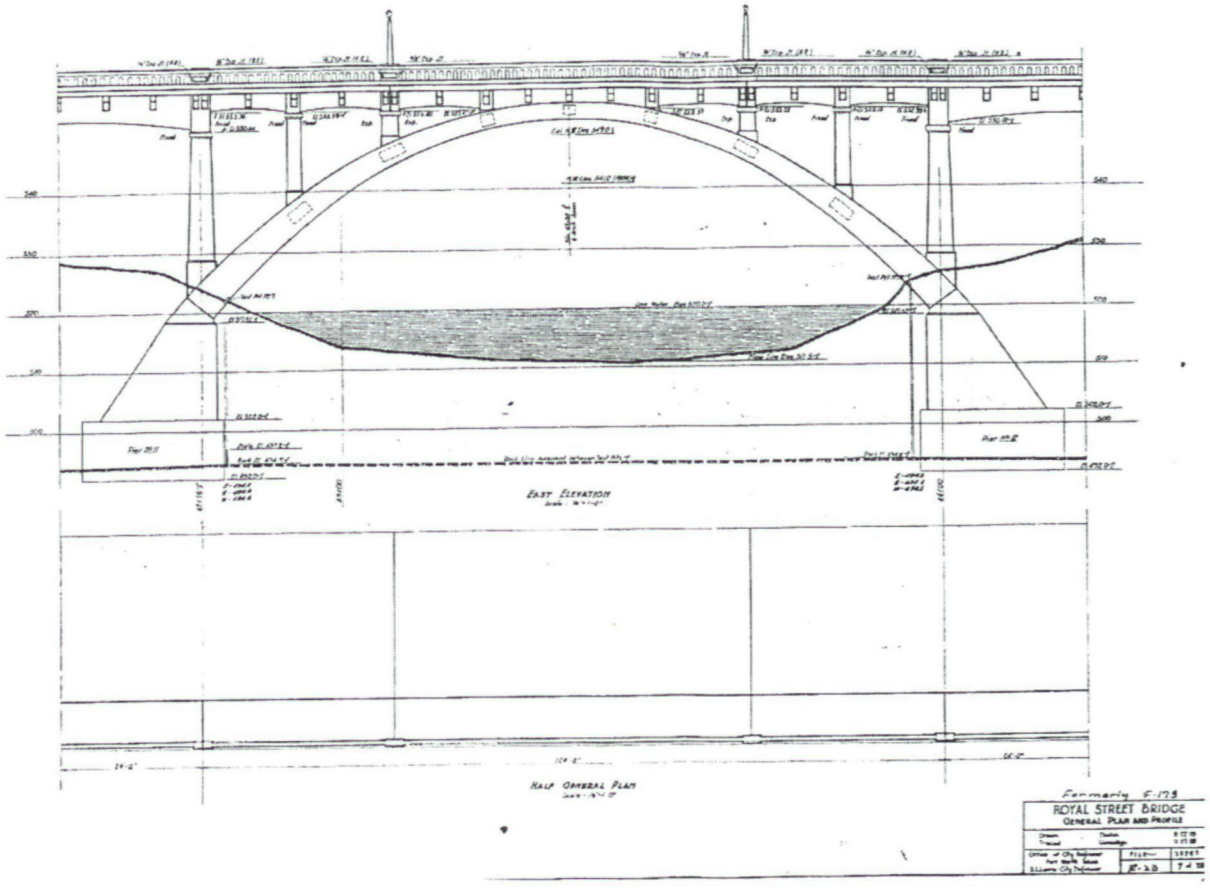


Figure 2: Half Section of Arch, Girder Shank and Column Detail, *Courtesy Texas Department of Transportation.*

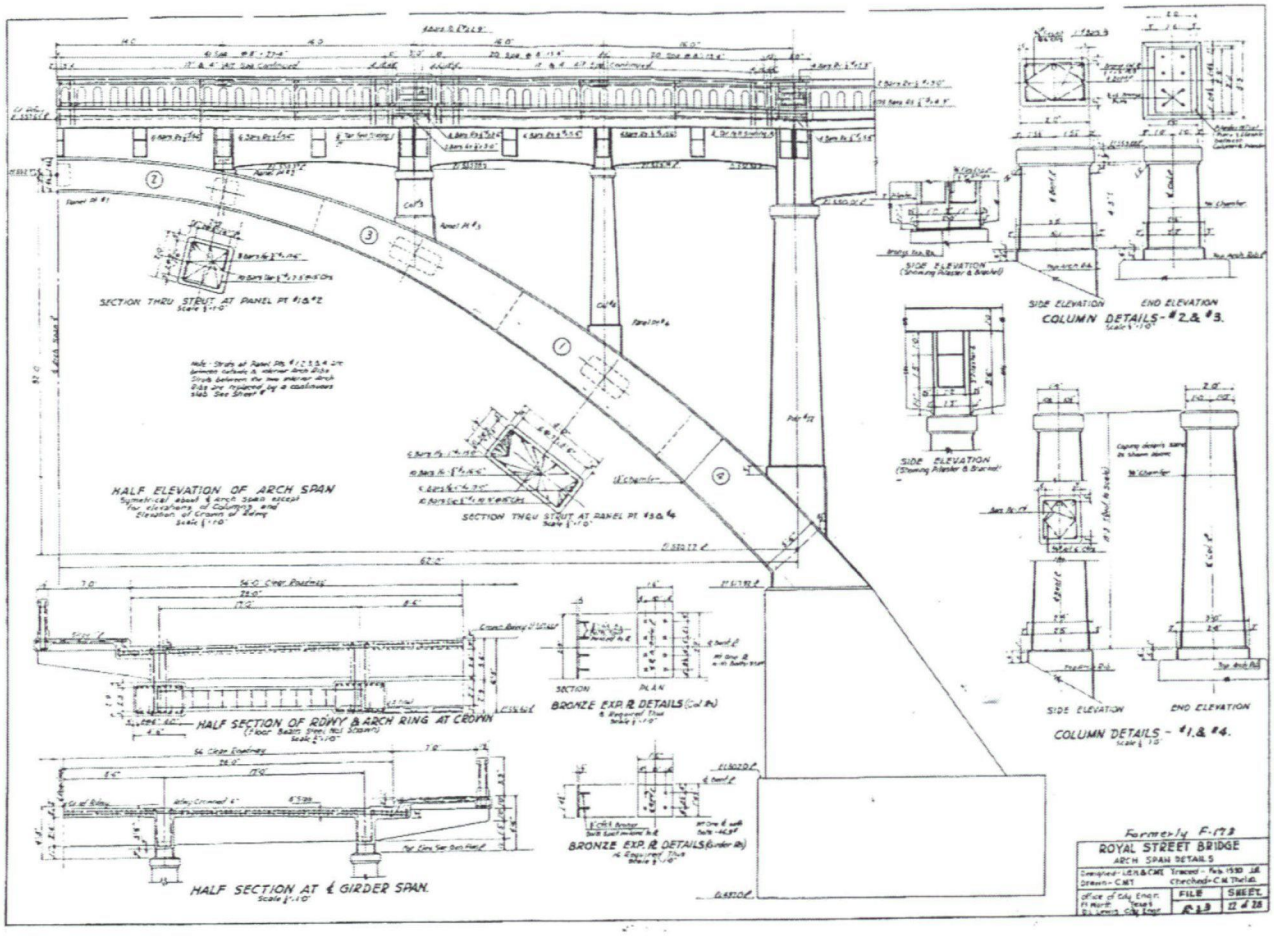


Figure 3: East elevation (south end) and General Plan, *Courtesy Texas Department of Transportation.*

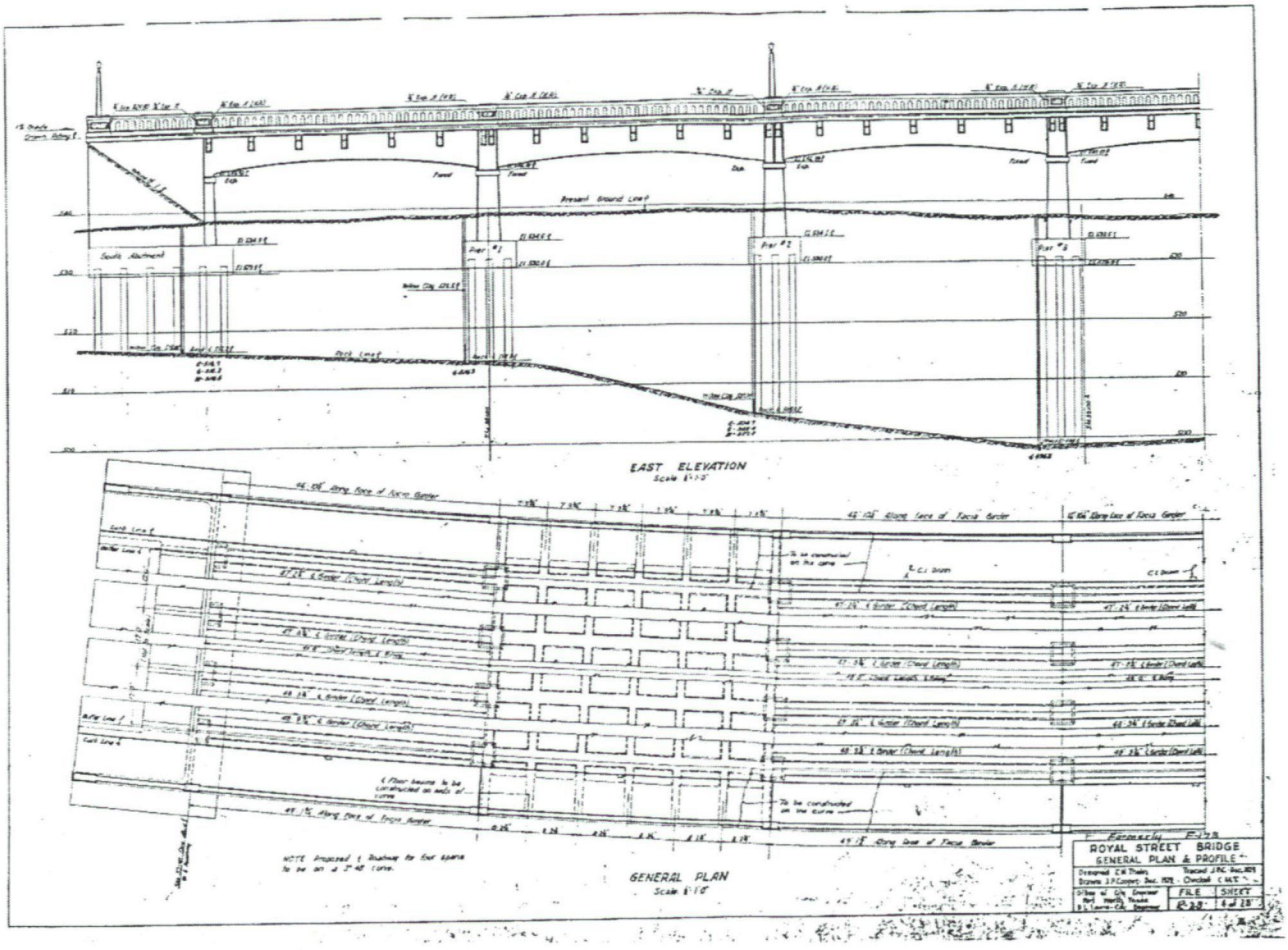


Figure 4: photo of Henderson Street Bridge from the August 1937 edition of Fort Worth's *Municipal Life*.

Figure 5: Dedication plaque on Southwest handrail post, looking west.

Figure 6: From deck looking north at horizontal curve

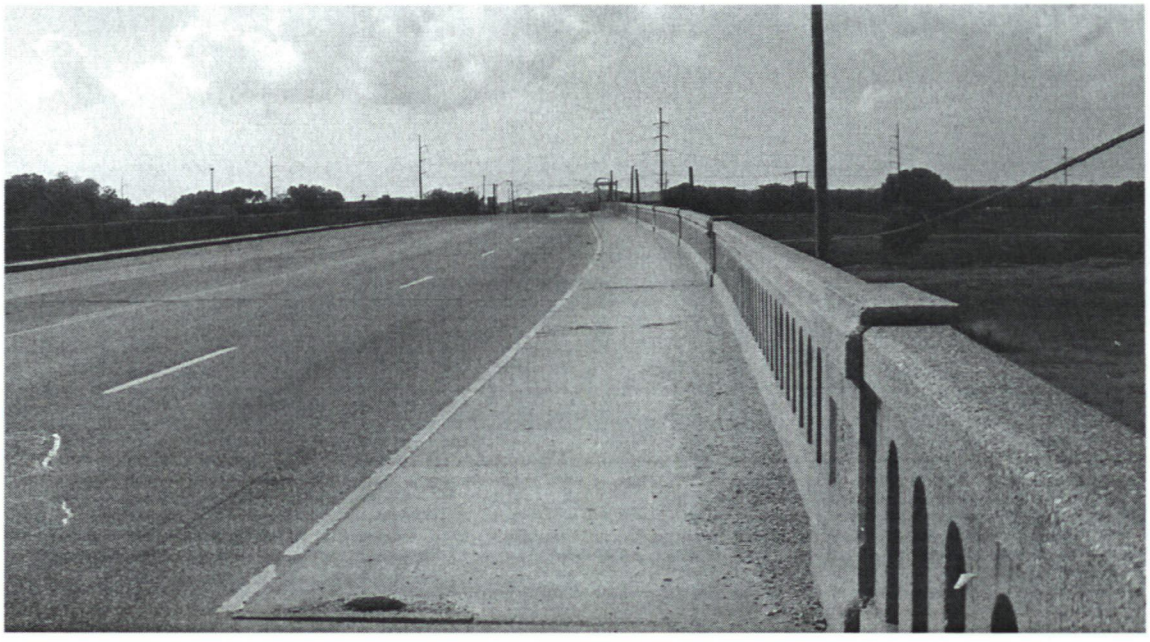


Figure 7: Looking southeast toward downtown Fort Worth

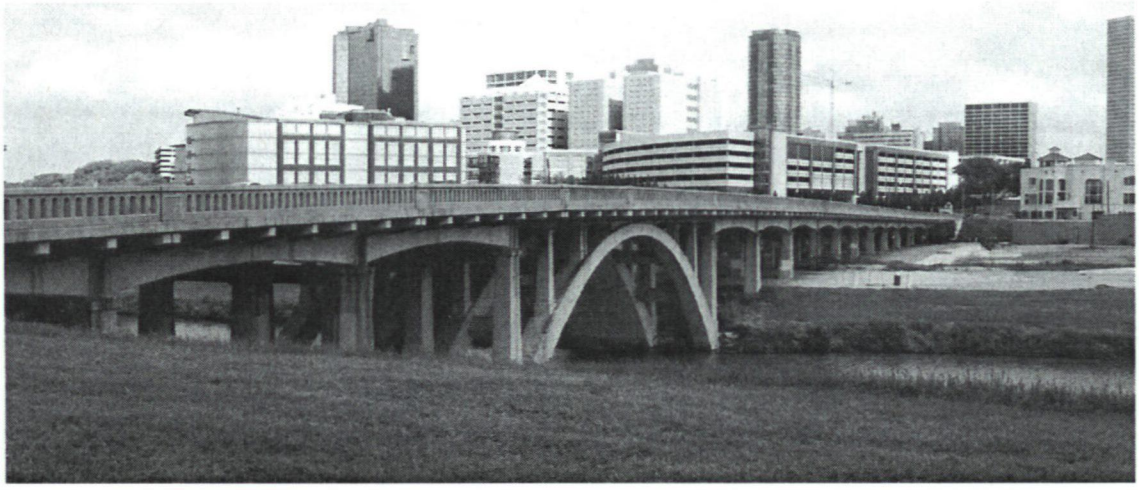


Figure 8: Conduit slab between the ribs of the arch, looking south

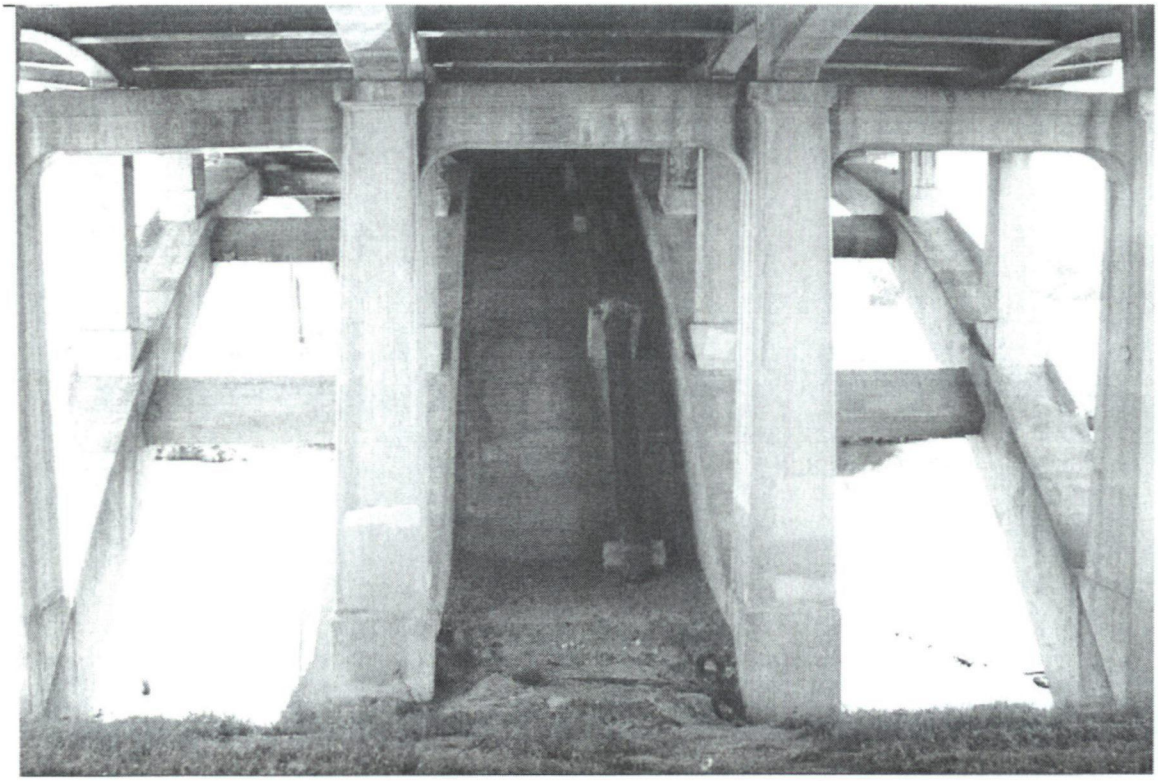


Figure 9: Trinity River Vision Central City Project, changes to setting of bridge.

Photograph Log

All photographs are credited as follows:

Name of Property:	Henderson Street Bridge
City:	Fort Worth
County:	Tarrant County
State:	Texas
Photographer:	Susan Allen Kline
Date:	September 12, 2010
Location of digital files:	Texas Historical Commission, Austin

Printed on HP Premium Plus Photo Paper with HP Vivera ink

Photo 1 (TX_Tarrant County_Henderson Street Bridge_0001.tif)
Plaque on southeast plinth
Camera facing: Northeast

Photo 2 (TX_Tarrant County_Henderson Street Bridge_0002.tif)
Deck of Bridge; south end of east side
Camera facing: Northwest

Photo 3 (TX_Tarrant County_Henderson Street Bridge_0003.tif)
Deck of Bridge; north end of west side
Camera facing: Southeast

Photo 4 (TX_Tarrant County_Henderson Street Bridge_0004.tif)
East side of Bridge from south end
Camera facing: Northwest

Photo 5 (TX_Tarrant County_Henderson Street Bridge_0005.tif)
East side of Bridge from north bank
Camera facing: Southwest

Photo 6 (TX_Tarrant County_Henderson Street Bridge_0006.tif)
Arch from west side of Bridge
Camera facing: Southeast

Photo 7 (TX_Tarrant County_Henderson Street Bridge_0007.tif)
West side of Bridge from north end
Camera facing: Southeast

Photo 8 (TX_Tarrant County_Henderson Street Bridge_0008.tif)
Beneath west side of Bridge on north bank
Camera facing: Southeast

Photo 9 (TX_Tarrant County_Henderson Street Bridge_0009.tif)
Beneath Bridge on north bank
Camera facing: Southeast

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Henderson Street Bridge

MULTIPLE NAME: Historic Bridges of Texas MPS

STATE & COUNTY: TEXAS, Tarrant

DATE RECEIVED: 2/03/11 DATE OF PENDING LIST: 3/09/11
DATE OF 16TH DAY: 3/24/11 DATE OF 45TH DAY: 3/21/11
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 11000128

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 3·21·11 DATE

ABSTRACT/SUMMARY COMMENTS:

Entered in
The National Register
of
Historic Places

RECOM./CRITERIA_____

REVIEWER_____ DISCIPLINE_____

TELEPHONE_____ DATE_____

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

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.


19 30
HENDERSON STREET BRIDGE
BUILT BY
CITY OF FORT WORTH, TEX.
O.E. CARR
CITY MANAGER
D.L. LEWIS
CITY ENGINEER
IRA G. HEDRICK
CONSULTING ENGINEER
COUNCILMEN
W. BURTON
J.B. DAVIS
VAN ZANDT JARVIS
WM. MONNIG
WM. BRYCE
MAYOR
J.R. PENN
E.T. RENFRO
DR. W.R. THOMPSON
A.E. THOMAS
CONTRACTOR FRANK PARROTT

TX_Tarrant County_Henderson Street Bridge_0001.tif

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TX_Tarrant County_Henderson Street Bridge_0003.tif

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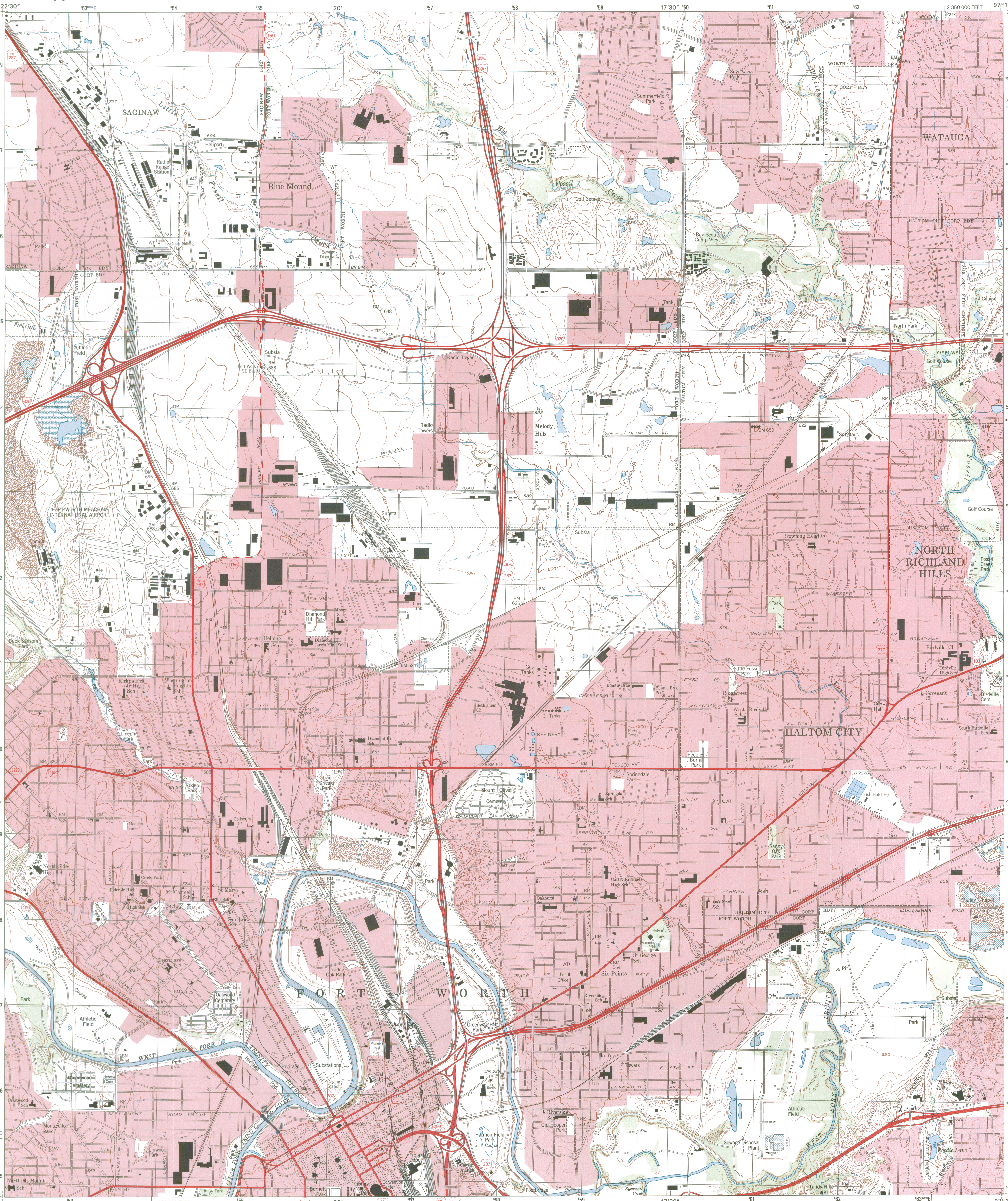
USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

HALTOM CITY QUADRANGLE
TEXAS-TARRANT CO.
7.5-MINUTE SERIES (TOPOGRAPHIC)



Produced by the United States Geological Survey

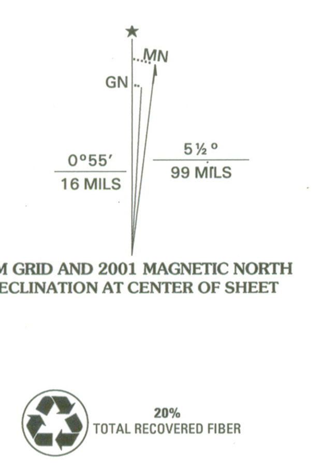
Topography compiled 1952. Planimetry derived from imagery taken 1995 and other sources. Survey control current as of 1955. Boundaries current as of 2000

North American Datum of 1983 (NAD 83). Projection and 1 000-meter grid: Universal Transverse Mercator, zone 14
10 000-foot ticks: Texas Coordinate System of 1983 (north central zone)

North American Datum of 1927 (NAD 27) is shown by dashed corner ticks
The values of the shift between NAD 83 and NAD 27 are obtainable from National Geodetic Survey NADCON software

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

Houses of worship, schools, and other labeled buildings verified 1955



UTM GRID AND 2001 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

KILOMETERS 1 .5 0 1 2
METERS 1000 0 1000 2000
MILES 1 .5 0 1
FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
TO CONVERT FROM FEET TO METERS, MULTIPLY BY 0.3048

QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

1 Avondale
2 Keller
3 Colleyville
4 Lake Worth
5 Hurst
6 Benbrook
7 Fort Worth
8 Kennedale

ADJOINING 7.5' QUADRANGLE NAMES

3297-431

INTERIOR - GEOLOGICAL SURVEY, RESTON, VIRGINIA - 2001

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, P.O. BOX 25286, DENVER, COLORADO 80225
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

20% TOTAL RECOVERED FIBER

HENDERSON STREET BRIDGE
FORT WORTH, TARRANT COUNTY, TEXAS
UTM 1. 14 655422.5 E 3625551.5 N
2. 14 655240 E 3625724 N

HALTOM CITY, TX
1995

NIMA 6549 IV SE-SERIES V882

ISBN 0-607-93644-4

TEXAS HISTORICAL COMMISSION
real places telling real stories

MEMORANDUM

TO: Linda McClelland, National Register of Historic Places

FROM: Adrienne Campbell, Texas Historical Commission

CC:

DATE: January 31, 2011

RE: Henderson Street Bridge, Fort Worth, Tarrant County, Texas

The following materials are submitted regarding the Park Road 4 Historic District:

1 Original National Register of Historic Places form
__ Resubmitted nomination
Multiple Property nomination form
9 Photographs
4 USGS map
Correspondence
1 Other: Archival Gold compact disc with digital photos

COMMENTS:

___ SHPO requests substantive review
___ The enclosed owner objections (do__) (do not__) constitute a majority of property owners
Other: