

## **Description**

The 1936-38 Deweyville Swing Bridge over the Sabine River in Newton County, Texas is a combined concrete girder and steel swing span structure that connects the states of Louisiana and Texas on Texas State Highway 12 and Louisiana State Highway 12. The bridge is within the city limits of Deweyville, in Newton County, Texas on the west side and in the vicinity of Starks, in Calcasieu Parish, Louisiana on the east. Only minor changes have been made to the bridge since its construction, and it retains a high degree of integrity.

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The Deweyville Swing Bridge was designed by the engineers at the Louisiana Highway Commission in 1936 and constructed by bridge contractors Forcum-James between 1936 and 1938. The bridge was constructed to replace an existing ferry and provide connection between Texas Highway 235 and Louisiana State Highway 7 (now both numbered highway 12) between Starks, Louisiana and Deweyville, Texas. Three hundred and twenty-seven feet overall in length, the five-span bridge has a 160 foot long central swing span with a swinging radius of 82 feet. The bridge roadway is 24 feet wide and rises 44 feet above the water. On each side of the center pier, there is a sixty foot horizontal clearance.

A 1936 Texas-shaped stone marker incised with "Texas" lies just a few yards west of the bridge. These centennial markers were placed on state highways and U.S. highways at all highway entry points to the state.

## **Substructure**

The substructure of the bridge is composed of three piers and four bents. The center span rests on a circular concrete pier (labeled pier number 2 in the original plans, see figure 1), called a footing in the 1936 plans; the plans indicate this spread footing distributes the load of the swing span onto a foundation composed of sixty-six timber piles below the ground surface. When closed the center span is also supported on either end by reinforced concrete column piers (pier numbers 1 and 3) with a solid web wall. The concrete piers (pier 1 and pier 2) each rest on a foundation of twenty timber piles beneath the ground surface. The first and fifth (outermost) spans are supported by concrete end bents (bent numbers 1 and 4) at the termini of the bridge and concrete pile bents (bent numbers 2 and 3) at their other ends. The concrete pile bents are each composed of five concrete piles and a bent cap. These same concrete pile bents support the outer ends of spans 2 and 4. The other ends of spans two and four are supported by the reinforced concrete column piers that support the center span, when closed. The 1936 plans identify the concrete bents as standard plans—"C-3 10A (revised)" for bents 1 and 4 and "C-3 10A" for bents 2 and 3.

## **Superstructure**

The center span (span number 3) of the bridge is a cantilevered, center-bearing, swing span. As a center-bearing swing mechanism, the girder rests on a center bearing, with balance wheels fastened to the floor system that roll on a circular track. When the bridge is in a closed position, wedges are mechanically driven to distribute most of the live load (traffic and wind) to the center concrete pier. The entire dead load (weight of the bridge) is carried by the center pivot, regardless of whether the bridge is open or closed. The operating mechanism for opening the bridge is manual. To operate the bridge, there is a hole in the center of the bridge where a large "T" wrench is inserted and turned in order to open the bridge. The first turns of the wrench lifts the bridge and then wedges are removed at each end to allow the bridge to swing open.

The center span is composed of a built-up, riveted, steel plate, deck girder (see photos 1 and 2). The 1936 plans identify it as being a standard plan "SS 50." This built-up girder has an I-shaped section composed of steel plates which were assembled into a single unit with rivets. The steel plates composing the two girders each consist of a web (a vertical plate), with flanges (horizontal plates) attached to both the upper and lower edges of the web with angle fillet members. Vertical stiffeners, narrow steel plates attached perpendicular to the web that prevent the web from buckling or folding, extend from the upper to the lower flanges on both the inside and outside of the web plates. The web plates exhibit two splices each, which have joined together separate pieces of the fabricated girder. These appear to have been spliced by field riveting during construction. Floor beams, heavy cross members that tie the two girder members together, support three steel stringers. The deck rests on the outside girders and the steel stringers. Diagonal bracing between the floor beams and girders, known as sway bracing, holds the structure in place and prevents longitudinal distortion ("racking").

Each approach is composed of two simple spans (span length is from one support to the next) of reinforced concrete girders. The outermost spans, labeled 1 and 5 in the plans (see figure 1), are identified as "Standard Plan CO 34" and are each 40 feet, 9 inches long. The innermost approach spans, 2 and 4, are not standard plans, as they are labeled "special design." They are also 40 feet, 9 inches long. The deck and five girders in each span are monolithic (one pour). The concrete girders were cast-in-place and the lines of the wooden board form work are visible on the underside of the bridge.

The deck of the bridge is concrete. The sidewalks are cantilevered with a standard Type C concrete railing, terminating at a short section of concrete wall located at each end. The Type C rail consists of two horizontal concrete rails, square in section. The rails are supported by vertical concrete posts, also square in section. On the Louisiana side of the bridge, the concrete walls have square panels incised with the text "1938" and "Sabine River" (see photos 3 and 4). A construction plaque is set into the square wall at the Texas end of the bridge (see photo 5).

### **Integrity**

No significant changes have been made to the Deweyville Swing Bridge since its construction. Texas Department of Transportation files indicate only one change to the bridge; a 1944 bank protection project on the west bank (Texas side). Because the bridge was not regularly used for water traffic in the 1950s and 1960s, it was last opened in 1995 (the last recorded opening previous to this year was 1968). The 1995 event was the result of the construction of a commercial boat upstream from the bridge, requiring the opening of the bridge in order to get the boat out to the gulf (see photos 10 through 15); it was reported to have taken three days to open the bridge. After the 1995 opening the US Coast Guard designated the Sabine River as a non navigable waterway and placed a sign on the bridge, which read, "Notice: this bridge does not open for the passage of vessels." When constructed, the bridge had a traffic gate at each end that was lowered when the bridge was opened for river traffic. These traffic gates have been removed, as the bridge no longer opens, but the bases of the gates are still on each side of the bridge, behind the square panels. The turning mechanism of the bridge is also intact and still operable. At both ends of the bridge, the northern square, incised panels are damaged, with missing concrete exposing reinforcing bar.

As the bridge's original form and material remain intact, it retains a high degree of integrity of materials, design and workmanship. It remains in its original location and is still used as a bridge, lending it integrity of location and association. The evolution of the surrounding area has brought about some changes to the bridge's surroundings since the 1930s, most notably the addition of Interstate 10 to the south as a main route to Baton Rouge. The area's origins as a center of industry and transport are clearly apparent, however, and the bridge retains its integrity of setting and feeling.

### **General Specifications (bridge)**

Dates of construction: 1936 to 1938

Engineers: Louisiana Highway Commission

Contractors: Forcum-James

Type: simple span concrete girder and built-up steel girder, center-bearing swing

No. spans: 5

Overall length: 327'

Main span length: 160'

Height above feature spanned: 44'

Width of road: 24'

Deck: concrete

Railing: concrete, standard Type C

Piers/Interior bents: concrete piers and bents

Abutments/End Bents: concrete

Foundation: timber piles

### **Glossary of bridge terms**

**Abutment:** End support of a bridge (also known as an end bent).

**Approach:** Part of the bridge that carries traffic from roadway to the main spans.

**Bent:** Part of the substructure of the bridge that is composed of a rigid frame and supports a vertical load. A bent is composed of vertical elements (columns, piers, and/or piles) and horizontal elements (the cap or "bent cap" and the footing).

**End bent:** Bent at the end of the bridge (also known as abutment).

**Pile bent:** Bent composed of vertical piles and bent cap.

**Clearance:** Unobstructed space.

**Vertical Clearance:** The minimum unobstructed vertical passage space; the distance between the water level and an overhead obstacle for passage of water traffic)

Horizontal Clearance: Under or along a bridge, the full paved width of the road.

Flange: Longitudinal ribs on a beam or girder that strengthen the member and resist compression and tension. See definition of plate girder, below.

Load: Any type of force exerted on an object.

Dead load: A nonvarying load. Dead loads are weights of material, equipment, or components that are relatively constant throughout the structure's life.

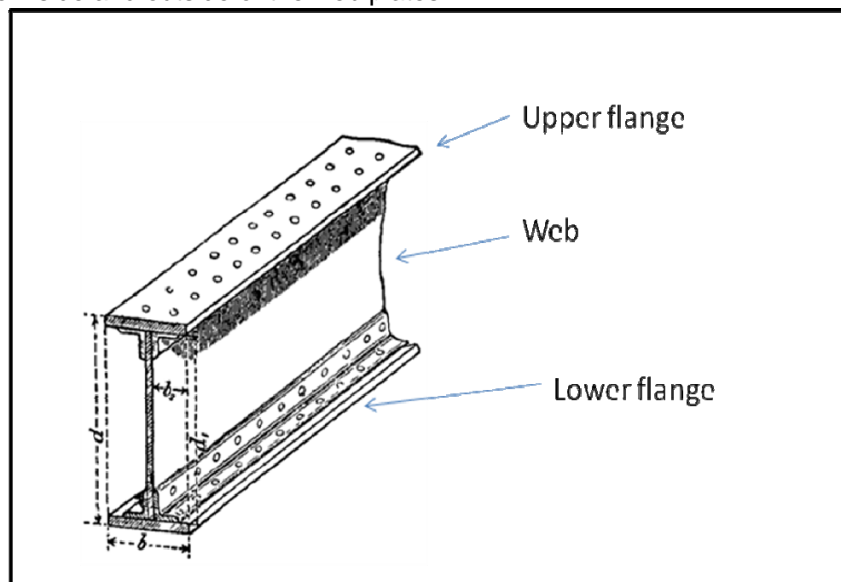
Live load: A moving load. A moving, variable weight added to the dead load or intrinsic weight of a structure.

Member: A structural unit such as a wall, column or beam or a combination of any of these.

Pile: Long timber, steel or reinforced concrete post that has been driven into the earth vertically to support a load.

Pier: A vertical structure that supports the spans of the bridge between the abutments; part of the bent.

Plate girder: A horizontal structural member that supports vertical loads; a built-up girder is composed of multiple metal plates that are welded or bolted together. The vertical plate is called a web and the horizontal plates are known as flanges and are attached to both the upper and lower edges of the web with angle fillet members. Vertical stiffeners, narrow steel plates attached perpendicular to the web to prevent the web from buckling or folding, can extend from the upper to the lower flanges on both the inside and outside of the web plates.



Rollers: A cylindrical device that transmits motion and force by rotation.

Span: The space between two supports.

Stringer: A long horizontal member used to support a floor/deck or to connect upright structural members in a frame.

Substructure: The support members of the bridge, including: abutments or end-bents, piers or interior bents, footings, and piling.

Superstructure: The elements of the bridge that span the crossing, including: deck and structural members.

Swing bridge: A movable bridge that pivots in a horizontal plane around a center pier. The movable part of the bridge is known as the swing span, which has two arms extending from the pivot to each side of the navigation channel.

Web wall: A concrete wall that fills the space between the columns, prevents trees and other drift from getting caught between the columns, and stiffens the columns against side loads.

Significant Dates: 1938  
Architect/Builder: Forcum-James Company, Baton Rouge, LA  
Criteria: A, C

## Statement of Significance

The 1936-1938 Deweyville Swing Bridge in Deweyville, Texas was built during the Depression using federal relief funds and as part of a joint program between the Texas Highway Department and Louisiana Highway Commission to construct bi-state bridges across the Sabine River. The bridge was a unique and innovative design at the time of its construction; responding to the restrictive nature of the site and the fast moving flow of the river, it was designed to accommodate both vertical and horizontal clearance for diverse river traffic, which included steamboats that made regular trips from Sabine Pass to Logansport, Louisiana, and logs floated down river to the saw mills in Deweyville and Orange. Also known as the Sabine River Bridge, it is one of three remaining highway swing bridges that are fifty years old or older in Texas and is the oldest extant moveable span highway bridge in Texas. As the oldest and longest swing bridge of its type in Texas and a good representative of its type from a significant period of bridge construction in Louisiana, the bridge is nominated under Criterion C in the area of engineering at the state level of significance. The bridge was also a link on an early Louisiana named highway associated with the Good Roads Movement, the Evangeline Highway. The bridge is also nominated under Criterion A in the area of transportation at the local level of significance.

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## Early Improved Transportation across the Sabine River

Like other rivers in Louisiana and Texas, the earliest improved crossings of the Sabine River identified in the historical record were ferries, located where roads and trails crossed waterways that could not be forded. It wasn't until well into the twentieth century that Sabine River ferries began to be replaced with bridges in order to establish all-weather crossings. Deweyville was founded in the vicinity of a ferry crossing associated with the community of Princeton, also known as Possum Bluff (no longer extant), which was founded in 1839. A ferry was still in operation until the bridge was constructed in 1938, carrying on a tradition that spanned more than 100 years of ferry operation at this point on the Sabine River.

Ferries over the Sabine River between Texas and Louisiana included:

1. Gaines Ferry, on the Old San Antonio Road in what is now northeastern Sabine County, which operated from approximately 1795 to 1937 until the Pendleton-Gaines Bridge was built that year.<sup>1</sup>
2. Burr's Ferry (also known as Hickman's Ferry in the early 19<sup>th</sup> century), where State Highway 63 now crosses the Sabine River in northeast Newton County, operated until 1936, when the Burr's Ferry Bridge was constructed.<sup>2</sup>
3. Elliot's Ferry, located approximately eight miles northeast of Carthage, was in operation in modern-day Panola County in the nineteenth century.<sup>3</sup>

## Deweyville, Texas

The late nineteenth and early twentieth centuries were a period of intense logging and sawmill processing along the Sabine River.<sup>4</sup> In 1898, the Sabine Tram Company built a sawmill and company town, as was typical of sawmills of the time period, to support the mill operation near the community of Princeton. The town was named after Commodore George Dewey, who had won the battle of Manila Bay, the first major engagement of the Spanish American War, in May of that year. In order to transport timber, Deweyville depended on the railroad and so the construction of the first rail line, the Texarkana and Fort Smith Railway from the Sabine River to Beaumont, coincided with the construction of the sawmill in 1898. In 1921, the Sabine and Neches Valley Railway Company chartered the Sabine and Neches Valley Railway from Rutliff to Gist. The line's sole purpose was to serve the transportation needs of the Peavy-Moore Lumber Company in Deweyville, which had purchased the mill from the Sabine Tram Company in 1919.<sup>5</sup>

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<sup>1</sup> "GAINES FERRY", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/rtg01>), accessed November 05, 2010.

<sup>2</sup> Robert Wooster, "BURR'S FERRY", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/rtb02>), accessed November 05, 2010.

<sup>3</sup> Christopher Long, "ELLIOTT'S FERRY, TX", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/hrewr>), accessed November 05, 2010.

<sup>4</sup> Christopher Long, "SABINE RIVER", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/rms03>), accessed November 05, 2010.

<sup>5</sup> Robert Wooster, "DEWEYVILLE, TX", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/hld21>), accessed November 05, 2010.

Deweyville was the largest town in Newton County until the 1940s, when a fire destroyed the Deweyville sawmill and it was not rebuilt. Much of the local economy depended on the sawmill and the associated Sabine and Neches Valley Railway. The closure of the sawmill was rapidly followed by the closure of the rail line.<sup>6</sup> As a result, the population of Deweyville fell from an estimated 1,500 in 1936 to 800 in 1949. The population remained below 900 until the 1980s, when new employment opportunities became available from local businesses and the nearby Hartsburg oilfield, as well as at the industrial complexes in Orange and Beaumont. This allowed the local economy to grow, supporting a population of 1,218 in 1990.<sup>7</sup>

### **Bi-State Depression-era Bridge Building over the Sabine River**

In 1935, the United States Congress passed the Emergency Relief Appropriation Act, granting Texas nearly \$12 million for road and bridge construction projects. The Deweyville Swing Bridge was the last bridge constructed over the Sabine River out of four interstate bridges between Texas and Louisiana that were funded by the Works Program Highway Project, one of the work relief programs funding categories under this act, and approved by the War Department. The 1936-1937 Burr's Ferry Bridge, which is listed in the National Register of Historic Places, was also funded by this program. The other two interstate bridges funded by this program were the 1938 U.S. Highway 84 bridge over the Sabine River, which replaced an 1897 toll bridge (and is now being replaced by the Texas Department of Transportation), and the 1938 Gaines Memorial Bridge on Texas State Highway 21/ Louisiana State Highway 6, which replaced the Pendleton Ferry. The Toledo Bend Reservoir, created in 1969, most likely required the replacement of the Gaines Memorial Bridge with the causeway that is there now.<sup>8</sup>

These four bridges were also part of a larger bridge building program in cooperation between the states of Louisiana and Texas, in which six bridges crossing the Sabine River were ultimately constructed. The other two bridges were: the U.S. Highway 90 swing bridge over the Sabine River, built under the supervision of the Texas State Highway Department in 1927 and replaced in 1954 with a fixed bridge (the 1927 bridge was the first swing bridge in Texas to span an interstate waterway<sup>9</sup>) and the U.S. Highway 190 bridge over the Sabine River, built under the supervision of the Louisiana Highway Department in 1931 and replaced in 1981 with a fixed bridge. Five of the bridges were placed in areas where there had been no bridge formally; US Highway 84 over the Sabine River was the only bridge replacement. Records indicate that the Deweyville Swing Bridge and the Burr's Ferry Bridge are the only two extant bridges over the Sabine River between Texas and Louisiana that were constructed as part of these two related programs. The 1954 US Highway 90/ Interstate Highway 10 bridge replaced the 1927 Sabine Memorial Bridge in downtown Orange, in order to make way for the US Naval Base.

### ***Extant Bi-State Bridges over the Sabine River***

Research indicates that, including the Deweyville bridge, there are eight highway and railroad bridges spanning the Texas-Louisiana border on the Sabine River that are fifty years old or older and an additional three bridges that are less than fifty years old (including two that are recently constructed or in the process of construction). The 1984 U.S. Department of Transportation and United States Coast Guard report titled *Bridges over the Navigable Waters of the United States- Gulf Coast and Mississippi River System* identifies eight movable bridges over the navigable waterway of Sabine River or Sabine Lake, four of which are swing bridges. The non-swing bridges are as follows: a 1970 pontoon bridge between Orange, Texas and the Levingston Shipbuilding Company (no apparent pontoon bridge in this location today); the 1954 US Highway 90 (Interstate Highway 10) fixed bridge; the 1981 fixed bridge on US Highway 190 between Merryville, Louisiana and Bon Wier, Texas; and a 1928 fixed bridge, also in the Merryville vicinity (this bridge, no longer extant, was most likely the older US 190 bridge which was replaced in 1981 and probably demolished as the report was being compiled or shortly thereafter).<sup>10</sup>

The Deweyville Swing Bridge is one of four swing bridges over the Sabine River identified in the Coast Guard's report, two of which are railroad and two are highway: a Kansas City Southern steel through girder railroad bridge near Rutliff, Texas; a 1955 two-span, combination Warren through truss and Pratt through truss, Southern Pacific bridge near Echo, Texas; a 1958 State Highway 82 bridge in Jefferson County, Texas; and the Deweyville bridge. When the Deweyville bridge was opened in 1995 to accommodate the commercial boat built by Mr. John T. Organ just north of Deweyville, the Kansas City

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<sup>6</sup> Catherine P. Eggers, "SABINE AND NECHES VALLEY RAILWAY", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/eqs03>), accessed November 05, 2010.

<sup>7</sup> Robert Wooster, "DEWEYVILLE, TX", *Handbook of Texas Online*, (<http://www.tshaonline.org/handbook/online/articles/hld21>), accessed November 05, 2010.

<sup>8</sup> D.V. Purington, "The End of No Man's Land." *Texas Parade* (April 1938):7.

<sup>9</sup> Texas Historic Bridge Inventory Survey of Non-Truss Structures. Draft document prepared by Texas Department of Transportation, ENV, n.d. On file at Texas Historical Commission.

<sup>10</sup> U.S. Department of Transportation, United States Coast Guard. *Bridges over the Navigable Waters of the United States: Gulf Coast and Mississippi River System*. Commandant Publication P16590.2, 1984: 105.

Southern Railroad refused to open their downstream bridge for Mr. Organ's boat to pass. The bridge had not been opened in over 50 years and all the electric and telephone cables from Ruliff to Starks were installed on the bridge. It was not until after the US Coast Guard began fining the railroad one million dollars a day did they finally open the bridge. The 1958 State Highway 82 bridge is currently being replaced by the Texas Department of Transportation with a fixed structure.

There are five other bridges over the Sabine River where it forms the border between the states of Texas and Louisiana, which were not included in the Coast Guard's assessment. These are:

1. The 1938 US Highway 84 bridge over the Sabine River in Logansport, Louisiana vicinity; a fixed, steel girder bridge, which was determined eligible for listing in the National Register of Historic Places in 2006, but is currently being replaced by the Texas Department of Transportation.
2. A Southern Pacific Railroad bridge in Logansport, LA vicinity; a fixed, Warren through truss bridge, which has been determined eligible for listing in the National Register of Historic Places.
3. A causeway on Texas State Highway 21/ Louisiana State Highway 6, over Toledo Bend Reservoir, between Milam, Texas and Many, Louisiana.
4. The 1936-1937 Burr's Ferry Bridge (Texas State Highway 63 over the Sabine River between Burkeville, Newton County, Texas and Burr's Ferry, Louisiana); a three-span Parker through truss, which is listed in the National Register of Historic Places.
5. A Burlington Northern and Santa Fe railroad bridge south of Bon Wier, Texas. This bridge may have originally been a swing bridge, but has been modified and upgraded to the extent that it no longer functions as a swing bridge.

### **Moveable Bridges in Louisiana and Texas**

#### ***Louisiana***

##### ***Swing Bridges and Other Movable Bridges***

Louisiana has historically been home to a larger number of moveable bridges, especially swing-span bridges, because of the many navigable waterways and the soft soils that characterize the state. The four common moveable bridge types in Louisiana in the first half of the twentieth century were: pontoon, bascule, vertical-lift and swing span.<sup>11</sup> Prior to the introduction of the Interstate Highway system, the most productive period in highway and bridge construction in Louisiana was from 1928 to 1939. This was largely due to Governor Huey P. Long's efforts to prioritize the improvement of roads in Louisiana during his administration.<sup>12</sup> During these eleven years, 1,083 bridges were built. Although there is not a comprehensive study of historic bridges or historic swing bridges in Louisiana, a 1999 study by URS Greiner Woodward Clyde focused on extant high steel (steel containing a high percentage of carbon) swing bridges from the period from 1928 to 1939. Thirty-four high steel swing bridges were built during this period; as of 2010, only five remain. Deweyville Swing Bridge was not one of the subjects of the study.

Louisiana has thirty swing bridges that, like Deweyville Swing Bridge, are steel, plate girder, swing span bridges. Seven of these are 50 years old or older and eight are approaching the fifty year threshold. However, only three represent the above-mentioned most productive period of bridge construction in Louisiana from 1928 to 1939: The Deweyville Swing Bridge (LA 12 @ Sabine River), the US 190 bridge @ Bayou Lacombe, and the LA 3197 bridge @ the Houma Canal. Deweyville is the longest of the three. While not a unique example of this type of bridge in Louisiana, it still is a good representative of this type from a significant period for bridge construction in the state.

The plate girder swing bridges in Louisiana are compared in Table 1, below.

**Table 1: Louisiana steel plate girder swing bridges**

<b>Location</b>	<b>Parish</b>	<b>Total Length (ft)</b>	<b>Main Span Length (ft)</b>	<b>Year Built</b>
<b>LA 12 @ Sabine River (Deweyville Swing Bridge)</b>	<b>Calcasieu</b>	<b>327</b>	<b>160</b>	<b>1938</b>
US 190 @ Bayou Lacombe	St. Tammany	320	130	1938
LA 3197 @ Houma Canal	Terrebonne	164	136	1938
LA 655 @ Bayou Lafourche	Lafourche	250	212	1940

<sup>11</sup> URS Greiner Woodward Clyde, 2-11.

<sup>12</sup>Ibid., 2-8.

LA 96, Bayou Teche @ St. Martinville	St. Martin	230	133	1942
LA 315 @ Falgout Canal	Terrebonne	176	136	1953
LA 315 @ Provost Bayou	Terrebonne	176	136	1953
LA 56 @ Boudreaux Canal	Terrebonne	284	180	1959
LA 77 @ Bayou Grosse Tete	Iberville	385	240	1961
LA 661 @ Navigation Canal	Terrebonne	364	240	1962
LA 320, Bayou Teche @ Oliver	Iberia	263	183	1963
LA 3069, Bayou Teche @ Franklin	St. Mary	325	180	1963
LA 86, Bayou Teche @ Daspit	Iberia	322	135	1965
LA 82 @ Old Intracoastal Canal (Little Prairie)	Vermilion	465	240	1965
LA 344, Bayou Teche @ Morbihan	Iberia	226	123	1967

### **Texas**

There are three common types of moveable spans that were constructed in Texas in the late nineteenth century and first half of the twentieth century: swing, vertical lift, and bascule. Historically, moveable bridges in Texas were located in the eastern part of the state. In fact, all of the major moveable span bridges in the state that were constructed before World War II spanned the Sabine River, between Louisiana and Texas.<sup>13</sup> The Deweyville Bridge is one of twelve moveable roadway bridges that function today for automobile traffic in the state of Texas, six of which are fifty years old or older as of 2010. The Deweyville Swing Bridge is the oldest extant highway moveable bridge of any type in Texas. All of the moveable bridges in Texas are compared in Table 2, below.

**Table 2: Moveable roadway bridges in Texas**

Bridge no.	Location	County	Date	Type
<b>201760049901001</b>	<b>SH 12 @ Sabine River, Deweyville</b>	<b>Newton</b>	<b>1938</b>	<b>swing</b>
201810030601017	SH 87 EB @ Cow Bayou, Bridge City	Orange	1940	swing
210310063002003	FM 106 @ Arroyo Colorado, Rio Hondo	Cameron	1953	vertical lift
201240093207077	FM 365 @ Hildebrandt Bayou, Port Acres vicinity	Jefferson	1953	movable/ other
201810AA2690006	E. Roundbunch Rd. @ Cow Bayou, West Orange vicinity	Orange	1960	swing
120850B00790001	Seawolf Parkway @ Pelican Island Channel, Galveston	Galveston	1960	bascule
131580060401002	FM 2031 @ Intercoastal Waterway	Matagorda	1969	swing
131580060501016	FM 457 @ Intercoastal Waterway	Matagorda	1969 (reconstructed 1982)	swing
120850036704024	SH 87 N Ferry Landing @ Galveston Bay, Galveston	Galveston	1980	movable steel I-beam
120850036704025	SH 87 S Ferry Landing @ Galveston Bay, Galveston	Galveston	1980	movable steel I-beam
120850036706026	SH 87 @ N Ferry Landing , Galveston	Galveston	1980	movable steel I-beam
120850036706027	SH 87 @ S Ferry Landing, Galveston	Galveston	1980	movable steel I-beam

### *Center-Bearing Swing Bridges*

<sup>13</sup> Texas Historic Bridge Inventory Survey of Non-Truss Structures. Draft document prepared by Texas Department of Transportation, ENV, on file at Texas Historical Commission, n.d.:42.

There are two basic categories of swing bridges: center-bearing and rim-bearing. The very earliest swing bridges were wooden, and were center-bearing, meaning they rotated on a central pivot.<sup>14</sup> However, the earliest swing bridges in the United States were rim-bearing, meaning the bridges rested on a series of evenly-spaced rollers that traveled on a track.<sup>15</sup> The extant swing bridges in Texas are all center-bearing. Rim-bearing swing spans most commonly date from the 1890s to the 1920s, although there are some that were built later because they were preferred for long or heavy spans.<sup>16</sup> However, by the first quarter of the century, center-bearing spans had largely replaced rim-bearing as the favored type for swing bridges in the U.S. This is due to their superiority in load distribution, diminished wear to mechanical parts, allowance for less precision in manufacture and construction, and greater economy of materials. Swing bridges are commonly operated by electric motors; hand-operated swing spans, such as this one, are typically seen on older or smaller spans.<sup>17</sup>

Of the six moveable bridges in Texas that will be 50 years or older by 2010, three are center-bearing swing bridges, compared in table 3, below.<sup>18</sup> The Deweyville Swing Bridge is the oldest of the extant swing bridges in Texas. It is one of two existing swing bridges built as a work-relief bridge construction project during the Depression. The other, the 1940 State Highway 87 Bridge over Cow Bayou in Bridge City, Orange County was constructed using the plans for this bridge as a model.<sup>19</sup> Swing bridges were considered ideal for work-relief bridge construction projects during this period because of their “basic economy of materials and simplified construction.”<sup>20</sup>

**Table 3: Swing bridges in Texas 50 years old or older as of 2010**

Location	County	Total length (ft)	Main span length (ft)	Date of construction	Notes
SH 12 @ Sabine River, Deweyville	Newton	327	160	1938	center-bearing
SH 87 EB @ Cow Bayou, Bridge City	Orange	804	154	1940	center-bearing
E. Roundbunch Rd. @ Cow Bayou, West Orange vicinity	Orange	392	180	1960	center-bearing

#### Evangeline Highway and Good Roads in Louisiana

The Good Roads Movement in the United States was an effort by bicycle enthusiasts, and later, auto enthusiasts, to promote all-weather roads for travel and tourism. The movement began in 1880 and, as it developed in the twentieth century, began to focus on trans-continental (or at least long-distance) roads; the most famous among these was the Lincoln Highway. These long-distance, named, auto trails predated the construction of all-weather roads by state highway departments and the numbering system standardized by the federal government; however, many were also designated later with U.S. or State Highway numbers and are known by that designation today. The construction of these roadways was the result of the promotion efforts of associations chartered specifically to raise publicity for that highway. Two of the most well-known named auto trails that traversed Louisiana include the Old Spanish Trail (U.S. Highway 90) through Southern Louisiana and the Dixie Overland Highway (U.S. Highway 80) through northern Louisiana.

The Deweyville Swing Bridge is an important crossing on a route that was named the “Evangeline Highway.” The modern route of the Evangeline Highway begins near Beaumont, Texas, and through Louisiana follows LA 12 from the Sabine River through Starks and DeQuincy to Ragley, where it follows US 190 through Kinder, Eunice, and Opelousas to Baton Rouge (see map 4). The Evangeline Highway Association was chartered on October 16, 1923 in Opelousas, Louisiana, and specifically formed in order to promote the road.<sup>21</sup> Construction of the road, also assigned the number State Road 7,

<sup>14</sup> Otis Ellis Hovey, *Movable Bridges*, Vol. 1 (New York: John Wiley & Sons, Inc., 1926), 36.

<sup>15</sup> *Ibid.*

<sup>16</sup> *Ibid.*, 40.

<sup>17</sup> Parsons Brinckerhoff and Engineering and Industrial Heritage, 3-118.

<sup>18</sup> Before 2007, there were seven movable bridges, four of which were swing bridges, in the state that were either older than 50 years or almost 50 years old. However, in 2007, the Texas Department of Transportation replaced the causeway and swing bridge on State Highway 82 over the Mouth of the Sabine River in Jefferson County with a high bridge. If the replacement project had delayed another year, the bridge would surely have been determined eligible for listing in the National Register of Historic Places through Section 106 coordination.

<sup>19</sup> “Bridge NRHP Eligibility Report” for SH 87 ED @ Cow Bayou, Texas Bridge Inventory maintained by Texas Department of Transportation. Accessed May 21, 2009.

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*



and US 190 between Baton Rouge and the Mississippi state line, received state and federal aid under the administration of Governor Henry Luse Fuqua and the leadership of W.B. Roberts, State Highway Engineer. Two acts of the Louisiana Legislature that made the completion of this road possible were an act giving the Highway Commission the right to contract with railroad companies for vehicular use for any railroad bridges in the state and another act permitting the use of convict labor to construct state roads.<sup>22</sup>

Remarkably, it was constructed as an all-weather road, despite its alignment through the Atchafalaya Basin.<sup>23</sup> At the time the road was being constructed, it was considered a particularly significant link and described as “unlocking the door to a vast agricultural region through the heart of Louisiana, which up to this time had no connection east nor west. The only means of communication with the outside world were the railroads.”<sup>24</sup> The route had the added benefit to open the state capital of Baton Rouge to parish seats that were formerly somewhat isolated. Completion of the route was slow, although it had a healthy start. By 1926, 168 miles had been completed out of the 286 (44 miles were under construction and 74 had yet to be begun).<sup>25</sup> By 1927, the Louisiana Highway Commission had signed a contract with the Gulf Coast railroad to modify the railroad bridge over the Atchafalaya River (at Krotz Springs) in order to serve automobile traffic for the route, while continuing to serve rail traffic. Automobiles drove over the tracks and both trains and cars had to rely on personnel stationed at the bridge to successfully operate safety equipment and route traffic across without incident. Previously, automobile traffic at that location had been accommodated by ferry.<sup>26</sup> By April 1928, 223.5 miles of the highway had been completed.<sup>27</sup> That year, a *Louisiana Highway Magazine* article anticipated a bridge between Texas and Louisiana at Deweyville would also be constructed within twelve months.<sup>28</sup> However, the Great Depression, negotiation between the two states, and/or some other impediment must have delayed completion.

At the time the bridge was under construction, the entire length of the Evangeline Highway was graded and had some form of hard surface. A February 6, 1938 article in the local newspaper *Beaumont Enterprise* suggested that by the time of the bridge’s completion, Louisiana anticipated the entire length of roadway would be paved. As a result, the *Beaumont Enterprise* anticipated that the completion of the bridge, simultaneous with the completion of another over the Mississippi (the US 190 Bridge over the Mississippi in Baton Rouge, which is a cantilevered, multi-span truss bridge that carries railroad and highway traffic completed in 1940—one of two similarly-designed bridges in Louisiana known as the “Huey P. Long Bridge”), would result in the Evangeline Highway quickly becoming the preferred route of travel through Louisiana. At the time, according to the article, the preferred route through Louisiana was the Old Spanish Trail, which had been open to traffic since 1929. However, the article also notes that the State of Texas had not yet completed construction on the west side of the bridge, as the bridge met a “high, wide, and handsomely terraced dirt roadway that leads west two-hundred feet and drops abruptly into a swamp.”<sup>29</sup>

### **Deweyville Swing Bridge**

Under a construction and maintenance agreement for the project, Louisiana was responsible for the preparation of the plans and supervising the construction of the bridge. In August of 1935, Louisiana submitted plans to the War Department for approval, after which both states advertised contracting bids the following year. The Forcum-James Company of Baton Rouge, Louisiana won the contract to build the Deweyville Swing Bridge on June 10, 1936 and commenced work in September. Completed on February 3, 1938, the Deweyville Swing Bridge over the Sabine River was the last of the four interstate bridges to open for traffic. The final cost for the project was \$120,178.60 with \$78,231.60 provided by federal funds and the remaining difference split between the two states. In an interstate agreement, the upkeep and maintenance of the bridge became the responsibility of the Louisiana Highway Commission and the ownership of the bridge was given to the State of Texas. The U.S Works Program Highway project number was WPSS 82 LA-TEX, the Louisiana State project number was 1909 and the Texas Control number was 499.

One interesting hiccup during bridge construction was the limitation of the use of Texas sod material to just the Texas side of the bridge. At the time, Texas was considered “the last stronghold of cattle tick fever” and soil from Texas was

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<sup>22</sup> n.a. “The Evangeline Highway---What it Means to Louisiana,” *The Louisiana Highway Magazine*, vol.3, no. 12 (January 1928), p. 14.

<sup>23</sup> n.a. “Achievement of Evangeline Highway through Louisiana Climaxes Twenty-five Year Objective,” *Beaumont Enterprise* (Sunday, March 13, 1938): 8-A.

<sup>24</sup> n.a. “The Evangeline Highway---What it Means to Louisiana,” *The Louisiana Highway Magazine*, vol.3, no. 12 (January 1928), p. 8.

<sup>25</sup> n.a. “Third Biennial Report of Louisiana Highway Commission” April 20-1924- April 20, 1926 (p. 64,66). On file at Texas State Library and Archives.

<sup>26</sup> n.a. “Highway Bridge over the Atchafalaya,” *The Louisiana Highway Magazine*, v. 3, no. 11 (December 1927).

<sup>27</sup> n.a. “Fourth Biennial Report of Louisiana Highway Commission.” April 20-1926- April 20, 1928. P. 138-9.

<sup>28</sup> n.a. “The Evangeline Highway---What it Means to Louisiana,” *The Louisiana Highway Magazine*, vol.3, no. 12 (January 1928), p. 8.

<sup>29</sup> n.a. “New Evangeline Route Over Deweyville Bridge Will Attract Heavy Traffic,” *Beaumont Enterprise* (Sunday, February 6, 1938): 4-A.

considered contaminated. Therefore, sod from Texas was used as turf on the Texas side and sod from Louisiana on the Louisiana side.<sup>30</sup>

After two years under construction the bridge was completed and Thursday March 10, 1938 was declared a local blanket holiday for the dedication of the bi-state bridge. It was a general holiday in Deweyville, as well as in many towns along the Evangeline Highway from Baton Rouge, and many citizens "took the day off" to join in the big celebration. By car, bus, on foot and horseback around 3, 500 native sons and daughters of west Louisiana and east Texas converged on the river-bottom picnic grounds on the Texas side of the new \$120,000 bridge for a day of friendly dedicatory ceremonies. Cafes and temporary eating places were doing a capacity business, and highway patrol officers from both states handled the flow of traffic, keeping Louisiana cars on the east of the bright new span and the Texas vehicles on the west side. At 11 o'clock sirens heralded the approach of the Louisiana delegation. From the Texas side of the bridge, the Texas delegation headed by Judge Bobbitt approached to meet the dignitaries of the neighboring state. The bridge was opened followed by many speeches and lots of free barbecue.

Nearly every phase of Beaumont business, industrial and political life was represented in some way or another at the fete for the primary purpose of pledging good faith in a promise made by Beaumont and the Texas Highway Division to pave the cutoff on Highway No. 235 (now called Texas State Highway 12) between Beaumont and Deweyville if Louisiana would go 50/50 on building the bridge. Highway 235 is a 25 mile unpaved strip straight as the crow flies from the bridge to Beaumont. The present route is Highway 87 southward to Orange, thence west to Beaumont on the Old Spanish Trail, a distance of 42 miles from Deweyville to Beaumont.

### **Conclusion**

The Deweyville Swing Bridge is a rare extant example of a center-bearing swing bridge, particularly in the State of Texas, but is also a good example of its type in the State of Louisiana. The Deweyville Swing Bridge is eligible for listing in the National Register of Historic Places under Criterion C, at the state level of significance, as a rare survivor of its type. It is also eligible for listing under Criterion A, in the area of transportation, at the local level of significance, for its association with the Evangeline Highway.

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