

# **Historic Bridge Management Plan for the Illinois Central Railroad Bridge**

**Recall Number: 014400**

**Structure Number: 04090530908941**

**Parish: Caddo**

**Route: US 71**

**Crossing Description: ICG RR**



Prepared for

**Louisiana Department of  
Transportation and  
Development**

Prepared by

**Mead  
& Hunt**

[www.meadhunt.com](http://www.meadhunt.com)

June 2017

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## Executive Summary

The Illinois Central Railroad Bridge (Recall No. 014400) is located in Shreveport, Caddo Parish, Louisiana, and is owned by the State of Louisiana. The bridge was completed in 1937 and determined eligible for the National Register of Historic Places (National Register) in 2013. It has significance as a grade-separation structure funded through the U.S. Works Program Grade Crossing program (U.S. WPGC) during the Depression era as part of its goal to provide safe railroad-highway crossings. The bridge retains good integrity and clearly demonstrates its significance as the work of the Emergency Relief Appropriation Act.

The bridge carries four lanes of U.S. Highway (US) 71 over the Illinois Central Railroad and city of Shreveport Festival Plaza at Union Square in Caddo Parish. The 238-foot-long crossing consists of 10 steel I-beam spans of varying length from 15 feet to 32 feet, 8-1/2 inches. Spans 1, 2, 5, 7, 8, and 9 have nine steel I-beams (stringers) supporting the roadway and two steel channels supporting the sidewalks per span, and spans 3, 4, 6, and 10 have 21 steel I-beams (stringers) supporting the roadway and two steel channels supporting the sidewalks per span. Abutment 1 is a reinforced-concrete, full-height counterfort abutment, and abutment 2 is a reinforced-concrete, full-height abutment. The nine steel interior bents consist of steel caps, columns, and sway bracing. Steel longitudinal bracing between adjacent intermediate bents is utilized in spans 2, 5, and 9. The bridge has a metal vertical picket railing. The bridge is load (weight) posted for 15-25 tons (15T-25T). The bridge is classified as fracture critical because it contains steel members in tension.

The bridge is in overall fair condition and appears to adequately serve its purpose of carrying vehicular traffic over the Illinois Central Railroad. The major deficiencies are paint system failure of the superstructure steel; cracking, spalling, and exposed reinforcing steel on the concrete deck, and concrete spalls on both sides of the pour seal deck joints. With proper maintenance and rehabilitation, the Illinois Central Railroad Bridge can continue to serve in its present capacity for 20 years or longer.

Any work on the bridge should proceed according to recommendations in this Historic Bridge Management Plan (Plan), which adhere to the *Secretary of the Interior's Standards for the Treatment of Historic Properties* (Secretary's Standards), the *Management Plan for Historic Bridges Statewide* (Statewide Historic Bridge Plan), and the *Programmatic Agreement among the Federal Highway Administration, the Louisiana Department of Transportation And Development, the Advisory Council on Historic Preservation, and the Louisiana State Historic Preservation Officer Regarding Management of Historic Bridges in Louisiana* (PA).

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## 1. Introduction

This Plan, used in conjunction with the Statewide Historic Bridge Plan, provides guidance on the approach to preservation activities for the Illinois Central Railroad Bridge (Recall No. 014400), identified as a Preservation Priority Bridge. Completion of individual management plans for Preservation Priority Bridges and the Statewide Historic Bridge Plan fulfills terms of the PA, which was executed on September 21, 2015.

The PA provides the basis and procedures for the management of historic bridges in Louisiana and outlines the procedures for the treatment of historic bridges, including Preservation Priority Bridges. In accordance with the PA, an owner seeking state or federal funding for Preservation Priority Bridges will be required by the Louisiana Department of Transportation and Development (LADOTD), in cooperation with the Louisiana State Historic Preservation Office (LASHPO) and the Federal Highway Administration (FHWA), to follow the procedures outlined in this Plan and the Statewide Historic Bridge Plan.

The Statewide Historic Bridge Plan outlines the overall approach to bridge preservation through a discussion of the collaboration of the historian and engineer, guidance on assessing preservation needs, and resources and technical guidance on maintenance and rehabilitation activities that are broadly applicable to historic bridges. A glossary of common engineering and historical terms is included in the Statewide Historic Bridge Plan.

This Plan for the Illinois Central Railroad Bridge compiles and summarizes the specific historic and engineering information for this Preservation Priority Bridge. It documents the existing use and condition of the bridge, along with assessments of the preservation needs, including cost estimates. Preservation can be accomplished in two manners: preventative maintenance and rehabilitation. Maintenance includes cyclical or condition-based activities that, along with regular structural inspections, are directed toward continued structure serviceability. Rehabilitation activities are near- or long-term steps that need to be taken to preserve and in some cases restore a bridge's structural condition and serviceability. In assessing preservation activities for each Preservation Priority Bridge, a design life of 20 years was considered, which is consistent with the duration of the PA. This Plan provides the bridge owner, and other interested parties, with detailed information related to the historic nature of the bridge and the necessary background to make an informed planning decision. Recommendations within this Plan should be reviewed in 10 years following completion of the Plan to identify any needed updates or revisions.

Existing bridge data sources typically available for Louisiana bridges were gathered for this Plan, and field investigation confirmed the general structural condition and character-defining features of the subject bridge. These sources include:

- The current LADOTD Bridge Inspection Report, and any other similar inspection reports
- Original bridge construction plans, any rehabilitation plans, and record as-built plans, as available
- Existing historical and documentary material related to the historic bridges

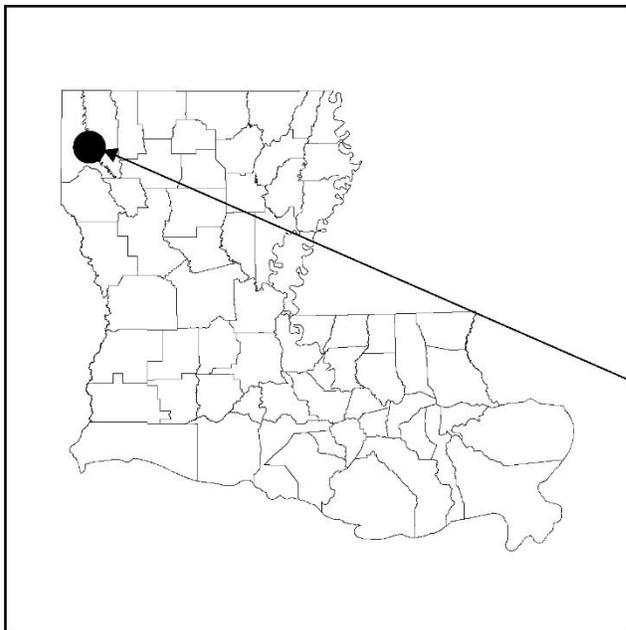
Recommendations within this Plan are consistent with the Secretary's Standards. The Secretary's Standards are basic principles created to help preserve the distinct character of a historic property and its site, while allowing for reasonable change to meet new engineering standards and codes. The Secretary's Standards recommend repairing, rather than replacing, deteriorated features whenever possible. A version of the Secretary's Standards that is specific to historic bridges is included in the Statewide Historic Bridge Plan. Following these standards is a requirement of the PA.

A bridge historian and bridge engineer from Mead & Hunt, Inc. (Mead & Hunt) jointly prepared this Plan under contract to the LADOTD. The LADOTD, FHWA, and LASHPO reviewed and provided input into the final Plan.

## 2. Location Map



0 1,250 2,500 5,000 Feet



**PROJECT LOCATION**  
 Bridge Number: 014400  
 Structure Number: 04090530908941  
 Caddo Parish  
 Route: US 71  
 Crossing Description: I.C.G. RR

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### 3. Historic Data

#### A. Identifying information

**Structure Number:** 04090530908941

**Recall Number:** 014400

**LASHPO Number:** 09-02123

**Bridge Name:** Illinois Central Railroad Bridge

**Date of Construction:** 1937

**Main Span Type:** Steel I-beam

**Contractor:** McMichael and Welch, Shreveport, La.  
Mosher Steel Company, Dallas, Texas (steel fabrication)

**Designer/Engineer:** Louisiana Highway Commission

#### B. Description of bridge

The Illinois Central Railroad Bridge carries four lanes of US 71 (cosigned as Louisiana Highway 1 and locally as N. Spring Street) over the Illinois Central Railroad and city of Shreveport Festival Plaza at Union Square in Caddo Parish. The bridge was built in 1937. The average daily traffic (ADT) across the bridge is approximately 16,260 vehicles. The 238-foot-long crossing consists of 10 steel I-beam spans of varying length from 15 feet to 32 feet, 8-1/2 inches. The bridge is load (weight) posted for 15-25 tons (15T-25T). The bridge is classified as fracture critical because it contains steel members in tension.

The bridge has a 6-inch reinforced-concrete deck in spans 3, 4, 6, and 10, and a 7-inch reinforced-concrete deck in spans 1, 2, 5, 7, 8, and 9. The spans are described from south to north. Span 1 is a 15-foot, 9-3/8-inch I-beam span. Span 2 is a 20-foot I-beam span. Span 3 is a 31-foot I-beam span. Span 4 is a 28-foot, 4-inch I-beam span. Span 5 is a 22-foot, 7-1/2-inch I-beam span. Span 6 is a 28-foot, 4-inch I-beam span. Span 7 is a 32-foot, 8-1/2-inch I-beam span. Spans 8 and 9 are 15-foot I-beam spans. Span 10 is a 29-foot, 2-5/8-inch I-beam span. Spans 1, 2, 5, 7, 8, and 9 have nine steel I-beams (stringers) supporting the roadway and two steel channels supporting the sidewalks per span, and spans 3, 4, 6, and 10 have 21 steel I-beams (stringers) supporting the roadway and two steel channels supporting the sidewalks per span. All connections are riveted. Abutment 1 is a reinforced-concrete, full-height counterfort abutment, and abutment 2 is a reinforced-concrete, full-height abutment. The nine steel interior bents consist of steel caps, columns, and sway bracing. Steel longitudinal bracing between adjacent intermediate bents is utilized in spans 2, 5, and 9.

The bridge deck provides a 40-foot clear roadway width as measured between faces of the sidewalk curb. Five-foot-wide sidewalks are located on each side of the roadway. These sidewalks are constructed of 4-inch reinforced concrete. The metal vertical picket railing consists of an I-beam post (rounded at the top), a 3-1/2-inch-diameter standard pipe at the top of the I-beam post, and a channel at the bottom with 3/4-inch vertical bars, or pickets, spaced at 6 inches. The metal railing I-beam posts are attached to a channel at the edge of the sidewalk.

### C. History and significance

The Illinois Central Railroad Bridge is located approximately two blocks west of the Red River in downtown Shreveport, Caddo Parish. The area, which was previously an industrial corridor along the Illinois Central Railroad, now features civic infrastructure including an open-air festival plaza. The railroad stretched through Shreveport from southwest to northeast, continuing due east to cut across northern Louisiana toward Vicksburg, Mississippi.<sup>1</sup> A significant proportion of funding for the project came from the U.S. WPGC, a New Deal agency that improved safety nationwide by supporting the construction of grade separations between highways and railroads.

Several crossings were located on Spring Street over the railroad in the late nineteenth and early twentieth centuries, before the Illinois Central Railroad Bridge was constructed. As early as 1885 a wooden bridge connected early dwellings on either side of the tracks; in addition, a central train platform and freight depot stood adjacent to the bridge.<sup>2</sup> By 1903 what was described as a “modern bridge” was situated over the railroad and connected a residential neighborhood to the south with industrial warehouses to the north.<sup>3</sup> In 1935, just before the construction of the overpass, a wooden viaduct still stood at this location and the freight depot extended underneath the bridge. The area north of the railroad had grown into a thriving commercial and industrial corridor with wholesale goods suppliers, automobile sales and service shops, and a bank and hotel.<sup>4</sup>

In 1935 the State of Louisiana received allocated funds through the Emergency Relief Appropriation Act, which subsidized U.S. WPGC projects including the Illinois Central Railroad Bridge.<sup>5</sup> By 1936 the Louisiana Highway Commission (LHC) included the overpass on a list of railroad grade separation

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<sup>1</sup> “Illinois Central,” *American Rails*, <http://www.american-rails.com/images/illinois-central-railroad-map.jpg>.

<sup>2</sup> Sanborn Map Publishing Company, *Shreveport Louisiana*, 50 feet = 1 inch (New York: Sanborn Map Publishing Company, 1885), 9.

<sup>3</sup> Sanborn Map Company, *Insurance Maps of Shreveport Louisiana*, 50 feet = 1 inch (New York: Sanborn Map Company, 1903), 16.

<sup>4</sup> Sanborn Map Company, *Principal Mercantile District Map of Shreveport, La., Vol. 1*, 200 feet = 1 inch (New York: Sanborn Map Company, 1935), 2a.

<sup>5</sup> “Tenth Biennial Report of the Louisiana Highway Commission of the State of Louisiana,” prepared for the Governors and Members of the Legislature (1939), 73.

projects that would, overall, receive a \$2.61 million budget allotment.<sup>6</sup> The Illinois Central Railroad Bridge contract was signed on June 6, 1936, for the amount of \$62,353.<sup>7</sup> Steel fabrication was completed by the Mosher Steel Company of Texas.<sup>8</sup> Resident Engineer R.I. Senn oversaw the project and contractor McMichael and Welch, based locally in Shreveport, completed the crossing in just over one year.<sup>9</sup> The bridge was officially accepted by the LHC in July 1937 at a total cost of \$60,622, coming in under budget.<sup>10</sup>

The Illinois Central Railroad Bridge originally carried State Route (LA) 4, which was also known as the Dixie Overland Highway. The Dixie Overland Highway was a tourist route beginning in the 1910s that ran from Savannah, Georgia, to Los Angeles, California, with Shreveport as a major destination along the way.<sup>11</sup> Today Spring Street along this alignment is part of LA 1, which cuts across the state from southeast to northwest, and U.S. Highway (US) 71, which runs from central Louisiana to Minnesota. The area surrounding the overpass has lost much of its industrial character since the mid-twentieth century. Today it is a downtown tourist and civic zone with event venues and hotels. The Illinois Central Freight Station depot remains intact beneath the bridge as part of Festival Plaza, an open-air event space on the banks of the Red River.<sup>12</sup> Two concrete block restrooms for the Festival Plaza are located under the Illinois Central Railroad Bridge.

The Illinois Central Railroad Bridge is eligible for listing in the National Register under *Criterion A: Politics/Government and Transportation*. It has significance as a grade-separation structure funded through the U.S. WPGC during the Depression era as part of its goal to provide safe railroad-highway crossings. The bridge retains good integrity and clearly demonstrates its significance as the work of the Emergency Relief Appropriation Act.

#### **D. Character-defining features**

Character-defining features are prominent or distinctive aspects, qualities, or characteristics of a historic property that contribute significantly to its physical character. Features may include materials, engineering design, and structural and decorative details. Elements of the bridge that are not identified

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<sup>6</sup> "Eighth Biennial Report of the Louisiana Highway Commission of the State of Louisiana," prepared for the Governors and Members of the Legislature (1935), 101.

<sup>7</sup> "Ninth Biennial Report of the Louisiana Highway Commission of the State of Louisiana," prepared for the Governors and Members of the Legislature (1937), 36.

<sup>8</sup> Mosher Steel Company, "I.C.R.R. – Spring Street Overpass," prepared for the Louisiana Highway Commission, 1936.

<sup>9</sup> State of Louisiana Highway Commission, "Plan and Profile of Proposed State Highway: Spring Street Overpass," as-built plans, 1937.

<sup>10</sup> "Ninth Biennial Report of the Louisiana Highway Commission of the State of Louisiana," 52.

<sup>11</sup> Richard F. Weingroff, "U.S. Route 80 the Dixie Overland Highway," *Highway History*, U.S. Department of Transportation Federal Highway Administration, <https://www.fhwa.dot.gov/infrastructure/us80.cfm>.

<sup>12</sup> "Festival Plaza," *City of Shreveport Louisiana*, <https://www.shreveportla.gov/facilities/facility/details/Festival-Plaza-30>.

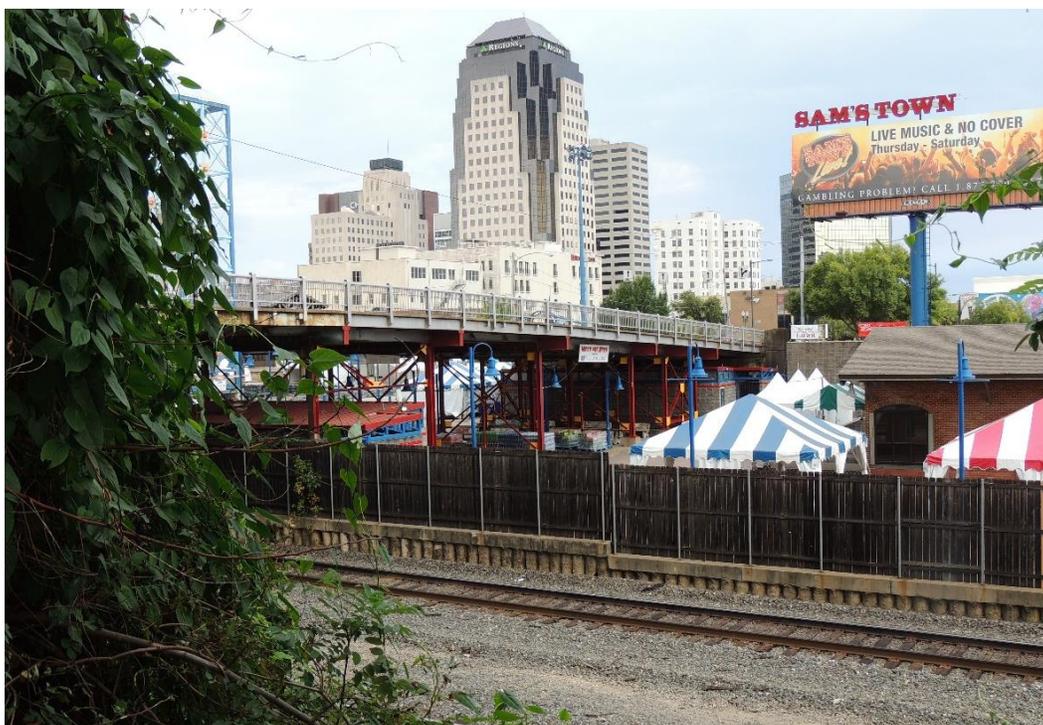
as character-defining features may be historic fabric. Historic fabric is material in a bridge that was part of original construction. It is important to consider both character-defining features and the bridge's historic fabric when planning any work.

The Illinois Central Railroad Bridge has one-character defining feature: the bridge superstructure that represents its historic significance as a grade crossing (described below). Other elements that represent historic fabric but are not considered to be character-defining are the reinforced-concrete wall type abutments and brick wingwalls, steel interior bents and bracing, original metal vertical picket railing, and the concrete end posts on each quadrant of the bridge. The barriers on the northwest and southeast quadrants have bronze plaques identifying the name of the bridge, the Federal Aid project number, and prominent officials at the time of the bridge opening in 1937.

The following item is the character-defining feature of this bridge:

#### **Feature 1: Design and construction of railroad grade-separation overpass**

This feature includes the entire 238-foot overpass superstructure, which encompasses 10 steel I-beam spans over the active Illinois Central Railroad and a pedestrian plaza in downtown Shreveport.



*Character-defining Feature Photo 1: Design and construction of a railroad grade-separation overpass. The steel I-beam spans, which crosses the railroad, comprise the superstructure.*



*Character-defining Feature Photo 2: Design and construction of a railroad grade-separation overpass. The steel I-beam spans, which crosses the railroad, and adjacent concrete deck girder spans comprise the superstructure. Detail of span 2.*

The following images illustrate other bridge features that are historic fabric, meaning they are part of original construction but are not considered to be character-defining features:



*Historic Fabric Photo 1: Reinforced-concrete abutment, partially obscured by a restroom facility, and brick wingwall on north end of bridge.*



*Historic Fabric Photo 2: Steel interior bents and bracing, view to south.*



*Historic Fabric Photo 3: Concrete endposts on each quadrant of the bridge. Bronze plaques recording the bridge name, the Federal Aid project number, and prominent highway officials were placed on the southeast and northwest quadrants.*



*Historic Fabric Photo 4: Original metal vertical picket bridge railings, west elevation.*

## 4. Engineering Data

### A. Existing conditions

#### (1) Structural observations

The Illinois Central Railroad Bridge is in overall fair condition and appears to adequately serve its purpose of carrying vehicular traffic over the Illinois Central Railroad. The bridge is load (weight) posted for 15-25 tons (15T-25T), with signs on either end of the bridge.

The superstructure, including the cast-in-place reinforced-concrete deck, is in fair condition. The top of the deck is exhibiting wear and exposed aggregate on the traveled surface. The top of deck and sidewalk have random 1/16-inch to 1/8-inch cracks and spalls. The bottom of the deck has transverse and map cracking with efflorescence and spalls with exposed reinforcing steel. Spans 3 and 4 are stained from the railroad locomotive soot. The open deck joints and the pour seal deck joints are in fair condition. The open deck joints are locked in the closed position and the pour seal deck joints have concrete spalls on both sides of the joint. Some of the spalls have been patched with hot mix asphalt. The steel I-beams are in fair condition. The steel I-beams in spans 3 and 4 (over the railroad) are stained from railroad locomotive soot and exhibit paint failure and corrosion on both the top and bottom flanges. Additionally, spans 5-10 exhibit minor to moderate corrosion and paint system failure. The metal railing system is in overall satisfactory condition. The railing is in good structural condition with minor paint system failure.

The substructure is in overall fair condition. The reinforced-concrete abutments are in satisfactory condition. The north abutment is covered by minor vegetation growth and a restroom and tents are set up in front of the abutment, making it difficult to be visually inspected. Noted from a previous inspection report, the wingwall had separated from the backwall and has been repaired. From visual observation, it appears that the repair is working as intended. The south abutment is parallel to the railroad tracks and was not located in a manner that could be observed. Both the north and south abutments have previously reported vertical hairline cracks. The steel bent caps are in satisfactory condition, exhibiting minor to moderate corrosion and paint system failure. The steel bent columns are in satisfactory condition. The sway bracing between columns 1 and 2 on bent 4 is bent. The expansion and fixed bearings are in satisfactory condition with moderate corrosion.

#### (2) Non-structural observations

The approach slabs are in satisfactory condition. The slabs have been overlaid with asphalt and exhibit minor spalling, although this does not affect readability of the surface. The relief joints have been covered by a hot mix asphalt overlay and are no longer functional.

#### (3) Serviceability observations

The ADT across the bridge is approximately 16,260 vehicles. The posted speed limit is 25 mph. The bridge clear roadway width of 40 feet provides for four 10-foot lanes of traffic with 5-foot

sidewalks on each side of the bridge. The bridge appears to adequately handle this traffic volume. The horizontal and vertical geometry of the bridge is good.

The metal railing system on the bridge does not meet current code requirements for approach end treatments or transitions or height requirements for pedestrian use. However, the functionality of these railings is acceptable without modification. The curbs of the sidewalks provide a barrier between the roadway and the railings; therefore, the railings do not need to be structurally crash-test rated.

**B. Sources of information**

<b>Plans available:</b>	Yes, available at the LADOTD Bridge Section office
<b>Inspection report date:</b>	February 24, 2016
<b>Fracture critical report date:</b>	(included as part of routine inspection report)
<b>Underwater inspection report:</b>	Not applicable to this bridge
<b>Date of site visit:</b>	September 27, 2016



*Condition Photo 1: South bridge approach looking north.*



*Condition Photo 2: Open joint at bent 3 locked in the closed position and a patched concrete deck spill.*



*Condition Photo 3: Spalled concrete at pour seal deck joint at bent 2.*



*Condition Photo 4: Asphalt patched pour seal deck joint at bent 4, as well as transverse cracks and exposed aggregate and wear.*



*Condition Photo 5: Spalled concrete to asphalt transition at north abutment.*



*Condition Photo 6: Vegetation growth from the north abutment wall.*



*Condition Photo 7: Repaired north abutment backwall separation from the wingwall.*



*Condition Photo 8: Span 4 staining with soot from the locomotive exhaust.*



*Condition Photo 9: Spans 3 and 4 stained with soot from the locomotive exhaust.*



*Condition Photo 10: Transverse deck cracking with efflorescence and exposed steel, as well as paint failure on the floor system.*



*Condition Photo 11: Paint failure of the steel floor system and longitudinal cracking and efflorescence.*



Condition Photo 12: Elevation view looking south of spans 3 through 10.



Condition Photo 13: Elevation view of railing looking south.

## 5. Recommendations

This Preservation Priority Bridge should remain in use and can meet current and projected transportation needs for the next 20 years or more. Maintenance and rehabilitation activities should be completed in a manner consistent with the long-term preservation of this historic bridge. The Statewide Historic Bridge Plan provides additional guidance and approaches to completing maintenance and rehabilitation activities that adhere to the Secretary's Standards. Work should be conducted under the supervision of a qualified professional historian, as defined in the PA. The bridge engineer, or the bridge engineer's supervising engineer, should have demonstrated expertise in historic bridge projects and must have completed the LADOTD's historic bridge training. When developing plans and specifications for a project, the bridge engineer should follow the recommendations below.

Under the terms agreed upon in the PA, the bridge owner may undertake certain activities that are considered to be best practices without additional consultation or public notification. These activities are documented in Attachment 5 of the PA and are limited to the activities specifically noted. All recommended preventative maintenance and rehabilitation activities for this bridge are included in Attachment 5 and are not expected to alter character-defining features or historic fabric of the bridge. Some cyclical or condition-based maintenance items are noted below under Rehabilitation because they are expected to be completed as part of an overall rehabilitation project for this bridge. These activities may need to be completed as conditions dictate to promote long-term preservation of this historic bridge. Recommendations within this Plan should be reviewed in 10 years following completion of the Plan to identify any needed updates or revisions.

The opinions of probable costs provided below are in 2016 dollars. The costs were developed without benefit of preliminary rehabilitation plans and are based on the above identified tasks using engineering judgment and/or gross estimates of quantities and historic unit prices and are intended to provide a programming level of estimated costs. Refinement of the probable costs is recommended once preliminary plans have been developed. The estimated preservation costs include a 10% contingency and 7% mobilization allowance of the preservation activities, excluding soft costs. Actual costs may vary significantly from those opinions of cost provided herein. Engineering design, historical consultation, and construction administration costs are not included as these may be provided by the owner or consultants.

### A. Preventative maintenance

The following are recommendations for cyclical maintenance. Because these activities are routinely done, the cost is not included in the cost estimate. There are no condition-based maintenance recommendations at this time, based on the bridge condition as observed during the site visit and as documented in available information.

1. Remove vegetation from substructure units as necessary.

**B. Rehabilitation**

The following are recommendations for rehabilitation. These activities should be performed when necessary (estimated to be within the next two to five years):

1. Clean and paint the superstructure steel in spans 1 through 10, including the I-beams and interior steel bents, in accordance with the current standard cleaning and painting specification.
2. Mill and overlay the bridge deck with a concrete overlay. Mill and overlay the roadway approaches with an asphalt overlay.
3. Reset joints at intermediate bents 1, 3, 6, and 9.
4. Re-establish the 4-inch relief joints in the roadway approach slabs to provide for roadway expansion.
5. Install new backer rod and pourable joint material at intermediate bents 2, 4, 5, 7, and 8.
6. Remove and replace spalled concrete on the bottom of the concrete deck. Clean exposed reinforcing steel.

<b>Bridge Recall No. 014400</b>				Date:	6/12/2017
<b>Illinois Central Railroad Bridge</b>					
<b>Opinion of Probable Costs</b>					
<b>Rehabilitation</b>					
	<b>Item</b>	<b>Quantity</b>	<b>Unit</b>	<b>Unit Cost</b>	<b>Total</b>
	Clean and paint the superstructure steel in spans 1 through 10, including the I-beams and interior steel bents, in accordance with the current standard cleaning and painting specification.	1	LS	\$500,000	\$500,000
	Mill and overlay the bridge deck with concrete overlay. Mill and overlay the roadway approaches with an asphalt overlay.	1,245	SY	\$100	\$124,500
	Reset joints at intermediate bents 1, 3, 6, and 9.	4	EA	\$25,000	\$100,000
	Re-establish the 4" relief joints in the roadway approach slabs to provide for roadway expansion.	1	LS	\$5,000	\$5,000
	Install new backer rod and pourable joint material at intermediate bents 2, 4, 5, 7, and 8.	250	LF	\$50	\$12,500
	Remove and replace spalled concrete on the bottom of deck. Clean exposed reinforcing steel	1	LS	\$75,000	\$75,000
	Traffic control, signage, drums and temporary pavement marking for staged construction of items listed above	1	LS	\$30,000	\$30,000
	Item Subtotal				\$847,000
	Contingency			10.00%	\$84,700
	Mobilization			7.00%	\$65,219.00
	<b>TOTAL ESTIMATED CONSTRUCTION COST</b>				
					<b>\$996,919</b>
				Round to:	<b>\$997,000</b>

**C. Identification of any anticipated design exceptions**

No design exceptions were noted, nor are any design exceptions recommended.

**Appendix A. Historic Inventory Form**

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# Louisiana Historic Bridge Inventory

Recall Number: 014400

Structure Number: 04090530908941

SHPO Number: 09-02123

Bridge Name: ILLINOIS CENTRAL R/R

## Location Data:

District: 04

Parish: Caddo

Feature Crossed: ICG RR

Facility Carried: US0071

Location: .5 MI NORTH OF I-20

City, Village or Town (if applicable): Shreveport

Status: Open

Bridge Owner: State of Louisiana

Latitude: 32.512944

Longitude: -93.744778

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## Structural Data:

Bridge Type: Concrete Deck & Bents w/ Steel I-Beam

Year Built: 1937

Main Span Configuration (if applicable):

Maximum Span Length (feet): 33

Number of Spans: 10

Overall Structure Length (feet): 239

Approach Span Type (if applicable): N/A

Posted Load: 25-40

Current ADT: 018360

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## Design and Construction Data:

Engineer or Builder:

Unknown

Bridge Plaque:

Spring Street Overpass, Federal Aid Project No. W.P.G.M 319, Constructed Under The Administration Of Richard W. Leche, Governor; Earl K. Long, Lieut. Governor; L.P. Abernathy, Chairman; Louisiana Highway Commission 1937

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## National Register of Historic Places Evaluation:

This bridge has significance for its association with important trends or events that have made a significant contribution to the broad patterns of Louisiana history. The significance of this grade separation structure is directly related to its funding through the U.S. Works Program Grade Crossing program during the Depression-era to provide safe railroad-highway crossings. In the 1930s, increased attention was given to creating grade separations between railway lines and roads and specific legislation was passed to provide funds for highway-rail grade separations through the NIRA (1933), Hayden Cartwright Act (1934), and Emergency Relief Appropriation Act (1935). The U.S. Works Grade Crossing Program resulted from the Emergency Relief Appropriation Act funding. A plaque on the bridge identifies it as a federal aid project and this project is also documented in the Louisiana Highway Commission Biennial reports. The bridge retains good integrity and clearly conveys the significant features to demonstrate its significance as the work of the Emergency Relief Appropriation Act. This bridge is eligible for the National Register under Criterion A: Politics/Government and Transportation.

No evidence was found during research or data collection activities to indicate that this bridge is an important example of bridge design, engineering, or construction. This bridge does not possess significance under Criterion C.

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Within/Adjacent to Known Historic District: Yes

National Register Historic District Name: Shreveport Commercial Historic District

National Register Determination: Eligible

National Register Determination Date: 2013

Surveyor: Mead & Hunt, Inc.

Date Surveyed: 2013



# Louisiana Historic Bridge Inventory

Recall Number: 014400

Structure Number: 04090530908941

Bridge Name: ILLINOIS CENTRAL R/R

Parish: Caddo

Bridge Owner: State of Louisiana

Feature Crossed: ICG RR

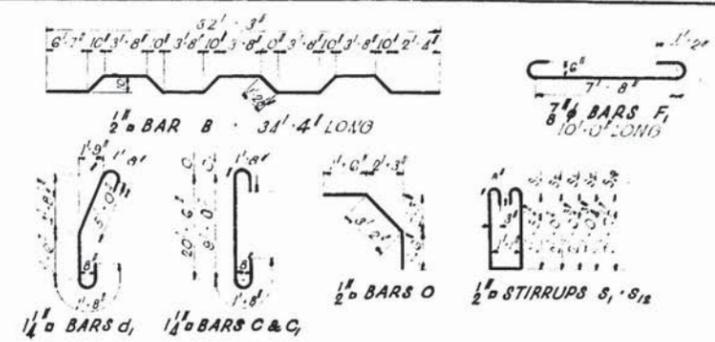
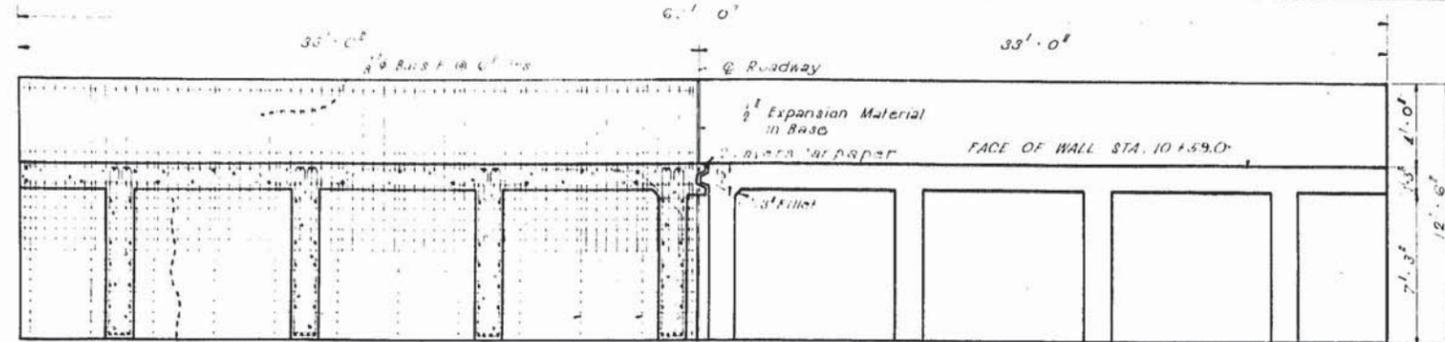
Facility Carried: US0071

## Photographs:



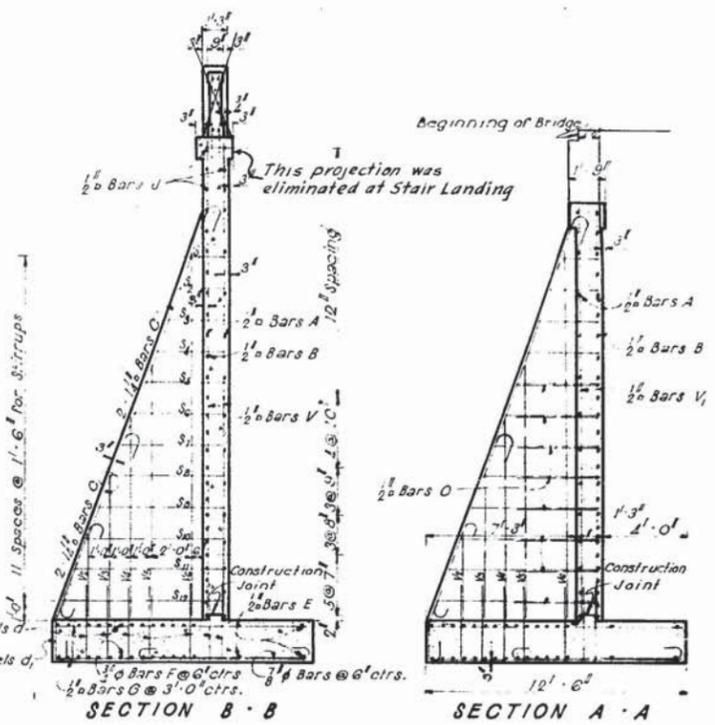
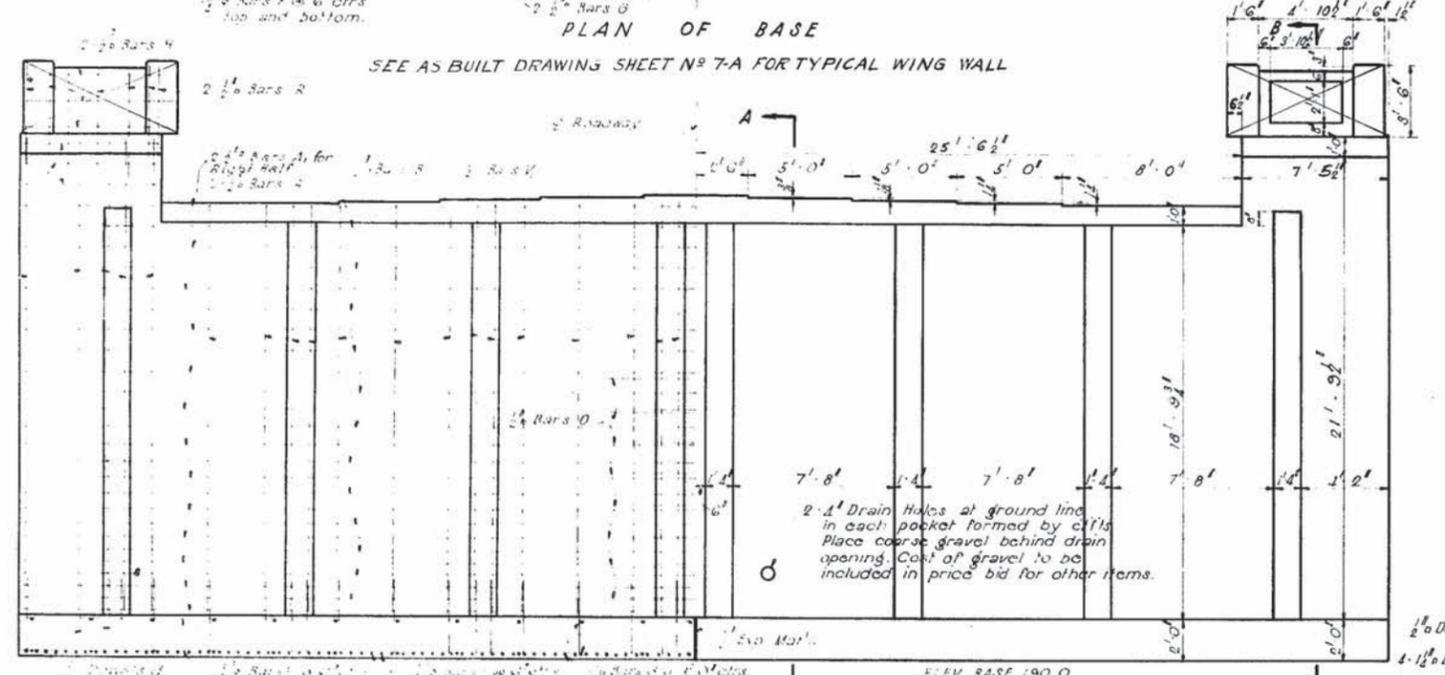
**Appendix B. Select Plan Sheets**

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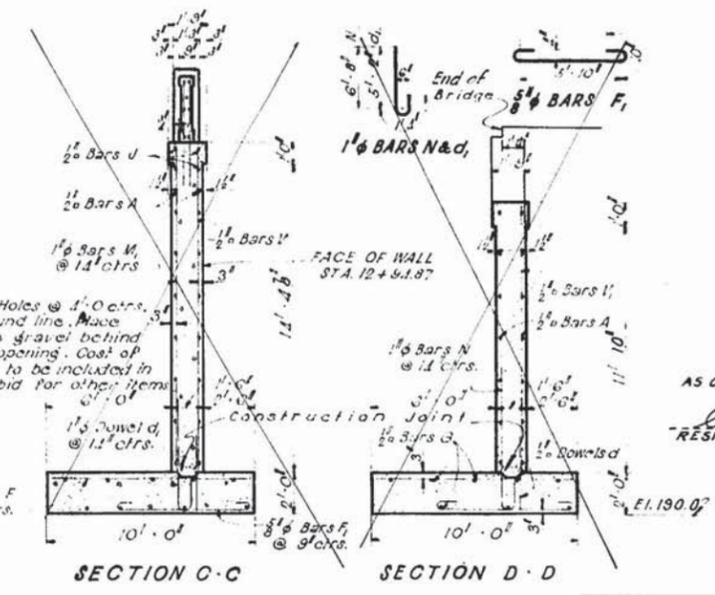
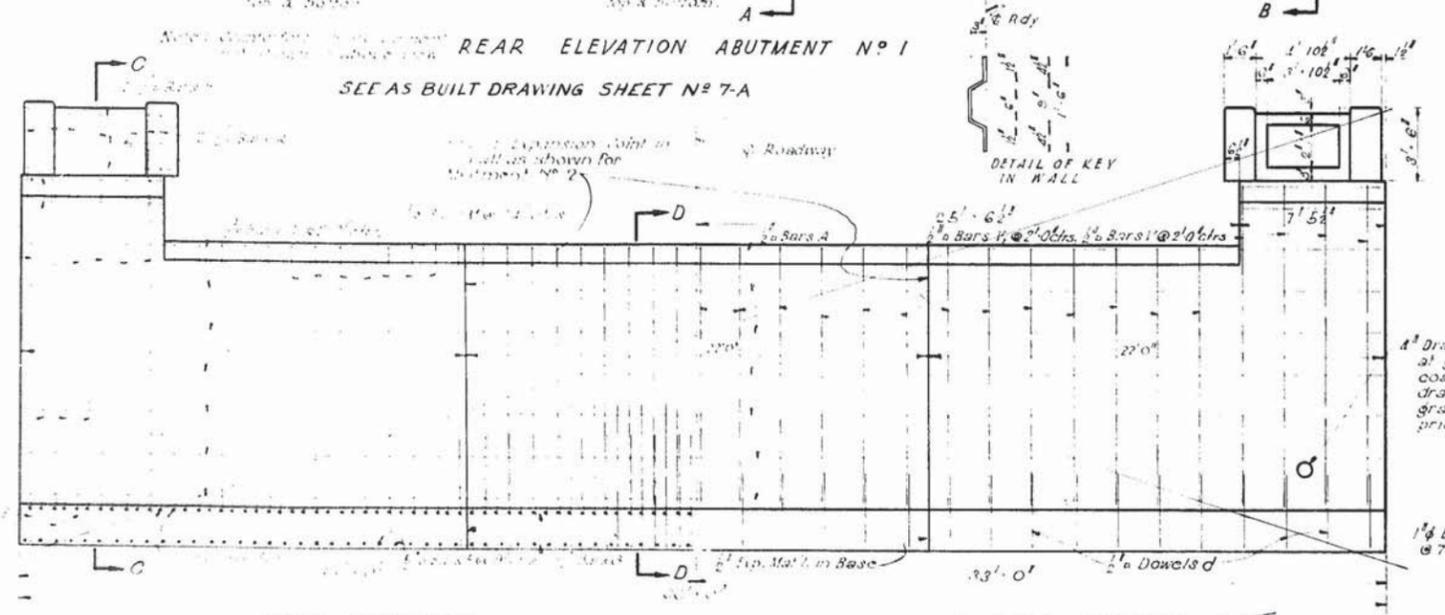
**QUANTITIES FOR ABUTMENT NO. 1**

BAR SIZE	NO.	UNIT LGTH	TOTAL LGTH	LOCATION
A	28	14'-0"	392'-0"	Face Wall
R	12	11'-0"	132'-0"	Handrail
V	12	22'-0"	264'-0"	Face Wall
d	122	4'-0"	488'-0"	Dowels to Base
A	26	32'-0"	832'-0"	Face Wall
B	24	34'-0"	816'-0"	Face Wall
E	8	30'-0"	240'-0"	Base
G	40	11'-0"	440'-0"	Base
O	16	4'-0"	64'-0"	Cont. at Exp. Joint
S	300	14'-0"	4200'-0"	Counterforts
V	16	4'-0"	64'-0"	
V	16	7'-0"	112'-0"	
V	16	3'-10"	56'-0"	
V	16	12'-0"	192'-0"	
V	16	17'-10"	284'-0"	
V	16	7'-0"	112'-0"	Face Wall
TOTAL 1/2" BARS			6397'-0" = 504#	
F	50	3'-0"	150'-0"	Base
TOTAL 3/8" BARS			1800'-0" = 273#	
F	132	10'-0"	1320'-0"	
TOTAL 3/4" BARS			1320'-0" = 239#	
C	10	23'-10"	238'-0"	Counterforts
C	16	10'-0"	160'-0"	
d	30	5'-10"	174'-0"	
TOTAL 1 1/4" BARS			392'-0" = 144#	
CLASS 4" CONCRETE			155.00 CU. YDS.	
REINFORCING STEEL			16126 LBS.	
STRUCTURAL EXCAVATION			777 CU. YDS.	
*Structural Exc. computed below El. 213.0				



**QUANTITIES FOR ABUTMENT NO. 2**

BAR SIZE	NO.	UNIT LGTH	TOTAL LGTH	LOCATION
H	10	7'-0"	70'-0"	Handrail
R	20	7'-0"	140'-0"	Handrail
V	8	15'-0"	120'-0"	Face Wall
V	25	12'-0"	300'-0"	Face Wall
d	33	3'-0"	99'-0"	Dowels to Base
A	42	21'-0"	882'-0"	Face Wall
V	8	7'-0"	56'-0"	Face Wall
G	24	21'-0"	504'-0"	Base
TOTAL 1/2" BARS			2255'-0" = 1917#	
F	80	7'-0"	560'-0"	Base
TOTAL 3/8" BARS			660'-0" = 68#	
M	44	12'-0"	528'-0"	Face Wall
N	56	8'-0"	448'-0"	Face Wall
d	56	3'-0"	168'-0"	Dowels to Base
F	12	11'-0"	132'-0"	Base
M	11	11'-0"	121'-0"	Face Wall
TOTAL 1" BARS			2222'-0" = 56#	
CLASS 4" CONCRETE			130.22 CU. YDS.	
REINFORCING STEEL			9563 LBS.	
STRUCTURAL EXCAVATION			4.0 CU. YDS.	
*Structural Exc. computed below El. 205.0				



**GENERAL NOTES**  
 SPECIFICATIONS: LOUISIANA HIGHWAY COMMISSION.  
 ALL EXPOSED CONCRETE SURFACES TO HAVE RUBBED FINISH.  
 ALL EXPOSED CORNERS TO BE CHAMFERED 3".  
 DIMENSIONS RELATING TO REINFORCING STEEL ARE TO BAR CENTERS.  
 MAXIMUM EARTH PRESSURE 4000 POUNDS PER SQUARE FOOT.

AS CONSTRUCTED  
 RESIDENT ENGINEER

**ABUTMENTS Nos. 1 & 2**  
 SPRING STREET OVERPASS  
 OVER  
 I. C. R. R.  
 STREVEPORT, LA.

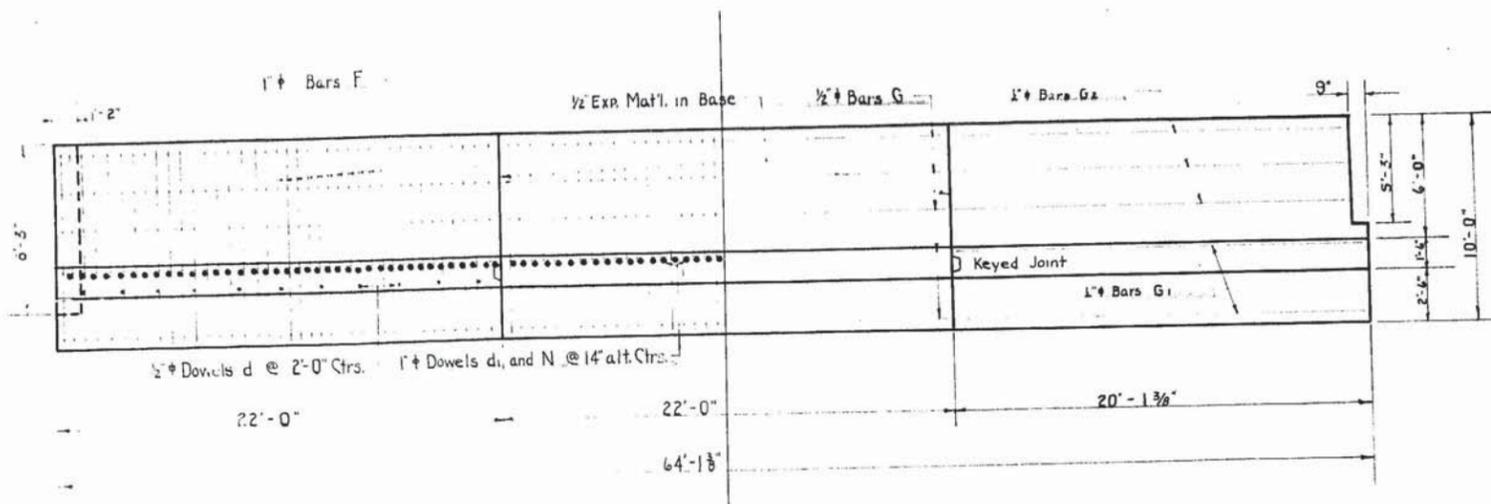
**LOUISIANA HIGHWAY COMMISSION**  
 BATON ROUGE, LA. APRIL 1935  
 DESIGNED BY: [Signature]  
 CHECKED BY: [Signature]  
 IN CHARGE OF: [Signature]



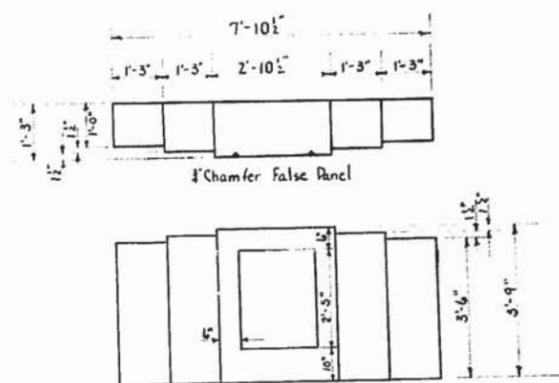
AS BUILT PLANS

### CONCRETE QUANTITIES

	Left Section	Center Section	Right Section	Cu. Ft.
Footing	22.0' X 10.0' X 2.0' = 117' X 1.79 X 8.25 =			431.38
Wall	15.64' X 1.5' X 22.0' + 0.25' X 1.0' X 22.0' = 523.27 Cu ft			
"	Deduct 1.5' X 2.57' X 14.54 = 56.05 Cu ft (523.27 - 56.05) =			467.22
Hand Rail	1.25 [(3.50' X 2.0') + (3.625' X 2.25') + (2.875' X 3.75')] =			52.43
Footing	22.0' X 10.0' X 2.0'			440.00
Wall	22.0' X 1.5' X 12.83' + 0.25' X 1' X 22.0'			428.84
Footing	20.11' X 10.0' X 2.0' = 5.25' X 0.75' X 2.0'			394.32
Wall	14.60' X 1.5' X 21.20' + 21.20' X 0.25' X 1.0' = 469.58 Cu ft			
"	Deduct 2.57' X 1.5' X 14.54' = 56.05 Cu ft			
"	Deduct 4.17' X 1.5' X 1.08' = 108' X 1.08' X 1.5' = 5.88 Cu ft			
"	Total deductions = 56.05 + 5.88 = 61.93 Cu ft (469.58 - 61.93) =			407.65
Hand Rail	1.05 [(3.50' X 2.0') + (3.625' X 2.25')] + (2.864' X 3.75' X 1.25') =			29.35
Total Cu Ft.				2631.24
Total Class 'A' Concrete Abutment No. 2				= 97.45 Cu. Yds.



PLAN OF BASE

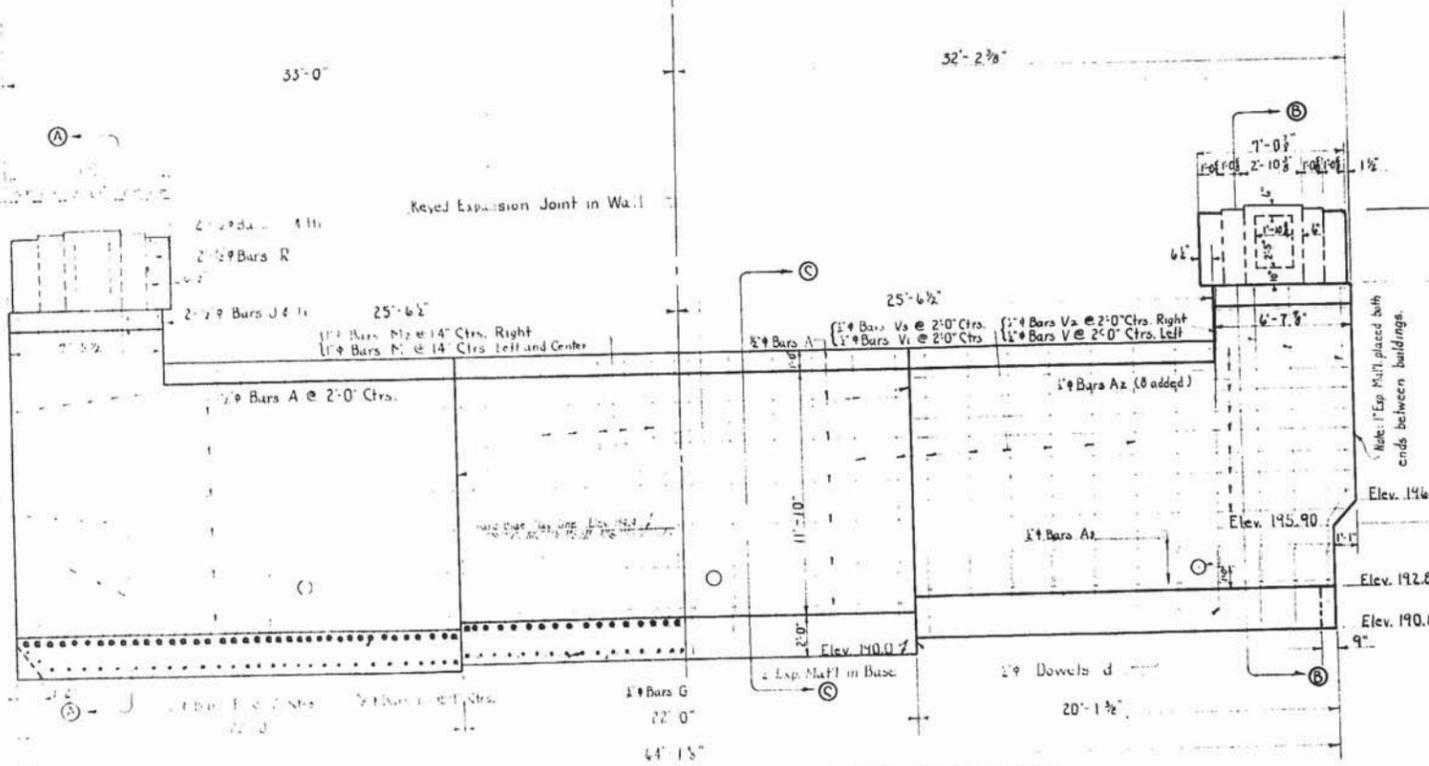


Typical Wing Wall  
Note: All Wing Walls Constructed As Shown Except Right Wing Abutment No. 2.

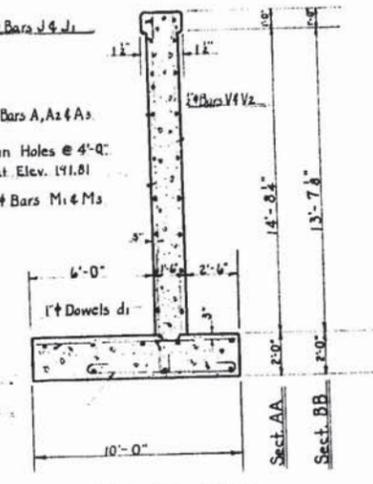
### QUANTITIES FOR ABUTMENT NO. 2

BAR SIZE	No.	UNIT LGTH	TOT. LGTH	LOCATION
H1	6	6'-9"	40'-6"	Hand Rail (Right)
H2	6	7'-7"	45'-6"	(Left)
R	28	5'-0"	140'-0"	Wall (Left Side)
V	4	15'-0"	60'-0"	(Right)
V2	4	4'-3"	17'-0"	(Center & Left Sect)
V3	18	12'-6"	225'-0"	(Right Side)
V4	7	11'-9"	82'-3"	Footing Dowels
J	33	3'-6"	115'-6"	Wall
Az	4	19'-6"	78'-0"	(8 added)
Az	18	20'-9"	373'-6"	
A	28	21'-6"	602'-0"	(Right)
J1	4	6'-3"	25'-0"	(Left)
J2	4	7'-2"	28'-0"	Footing
G1	4	19'-6"	78'-0"	
G2	4	18'-7"	74'-4"	
G	16	21'-6"	344'-0"	
TOTAL 1/2" Bars = 2,369'-3"				2,014 Lbs.
F	188	17'-6"	3,288'-0"	Footing
TOTAL 1/2" Bars = 6,657'-3"				6,888 Lbs.
M	32	12'-6"	400'-0"	Wall (Center & Left)
M2	12	11'-8"	140'-0"	(Right)
N	56	8'-0"	448'-0"	Footing Dowels
D	56	6'-6"	364'-0"	
F	112	9'-6"	1,064'-0"	Footing
M1	6	14'-3"	85'-6"	Wall (Right)
M2	6	15'-0"	90'-0"	(Left)
TOTAL 1" Bars = 2,591'-6"				6,919 Lbs.
CLASS 'A' CONCRETE				= 97.45 Cu Yds.
REINFORCING STEEL				= 9,621 Lbs.
STRUCTURAL EXCAVATION				= 377.6 Cu Yds.

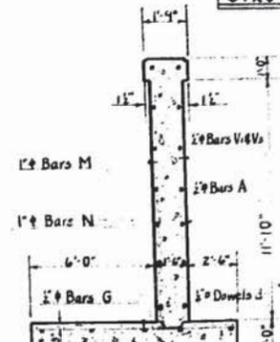
Note: Structural Exc. computed below Elevation 2050  
For record and computations, See Book No. 18-474 page No. 23.



HALF ELEVATION SHOWING REINFORCEMENT REAR FACE OF WALL      HALF ELEVATION SHOWING REINFORCEMENT FRONT FACE ABUTMENT NO.-2.



SECTION AA & BB

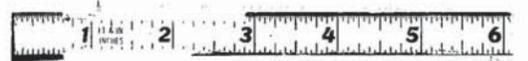


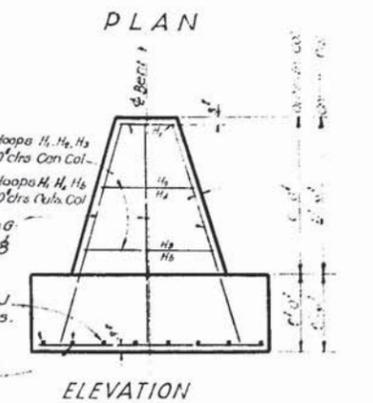
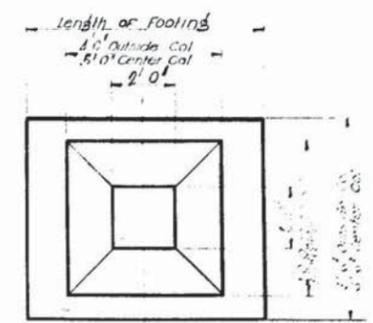
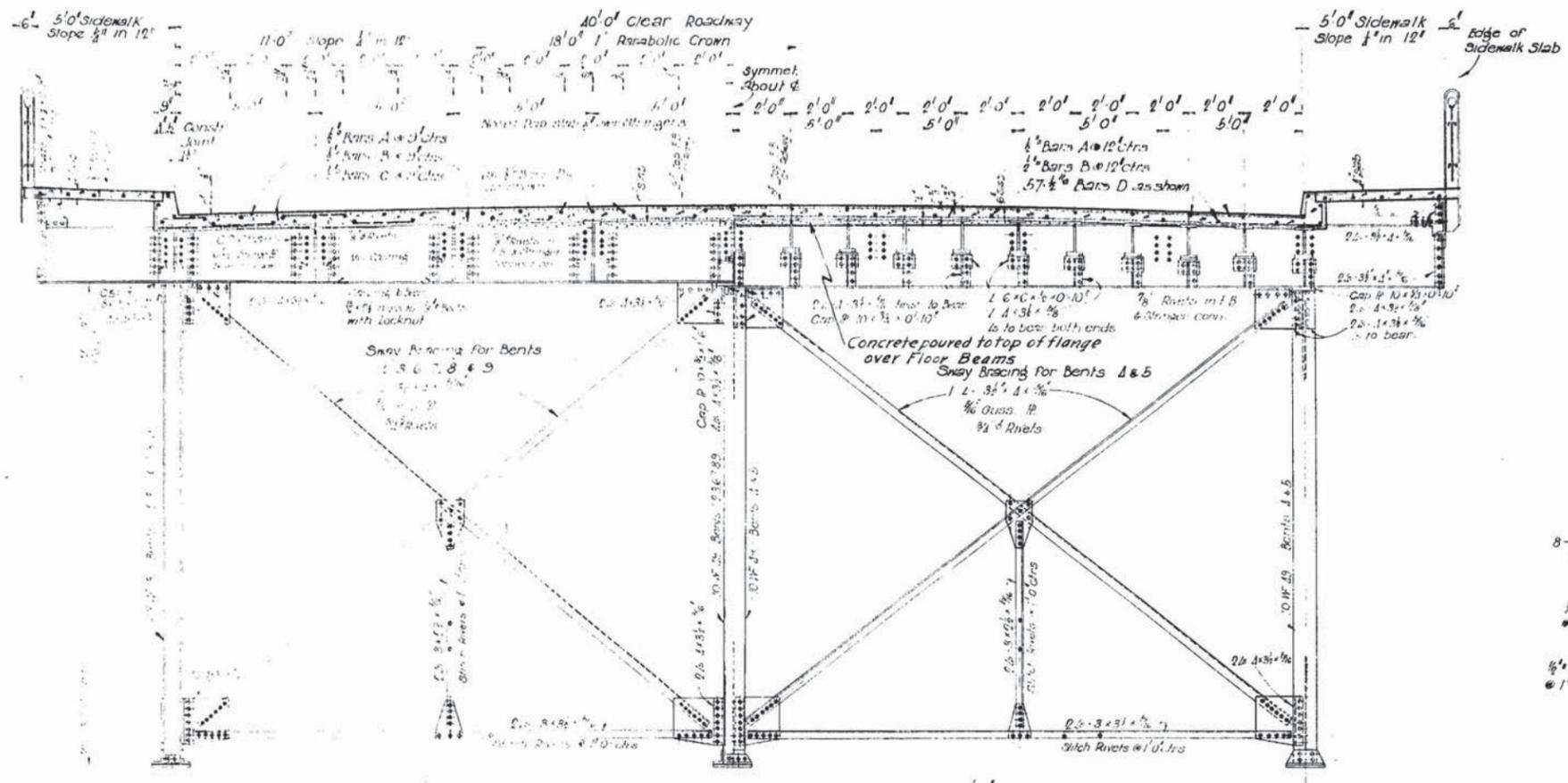
SECTION CC

**ABUTMENT NO. 2**  
"As Constructed"  
**SPRING STREET OVERPASS**  
OVER  
I. C. R. R.      SHREVEPORT, LA.

**LOUISIANA HIGHWAY COMMISSION**  
BATON ROUGE, LA.

DESIGNED	DRAWN	CHECKED	IN CHARGE OF
BY <i>R. D. Shaw</i>	BY <i>Shaw</i>	BY <i>Shaw</i>	BY <i>Shaw</i>
DATE	DESCRIPTION	REVISIONS	





FOOTING - CENTER COLUMN

No	Length	No	Length	QTY	WEIGHT
1	7'0"	8	6'0"	7	6'6"
2	8'0"	9		7'6"	7'15"
3	8'9"	9		8'3"	7'9"
4	8'0"	9		7'6"	7'15"
5	8'0"	9		7'6"	7'15"
6	8'9"	9		8'3"	7'9"
7	8'0"	9		7'6"	7'15"
8	7'0"	8		6'6"	6'6"
9	8'0"	9		7'6"	7'15"

FOOTING - OUTSIDE COLUMN

No	Length	No	Length	QTY	WEIGHT
1	5'6"	6	5'0"	4	4'3"
2	6'3"	7		5'9"	4'6"
3	6'3"	7		5'9"	4'6"
4	6'3"	7		5'9"	4'6"
5	6'3"	7		5'9"	4'6"
6	6'3"	7		5'9"	4'6"
7	6'3"	7		5'9"	4'6"
8	5'6"	6		5'0"	4'3"
9	5'6"	6		5'0"	4'3"

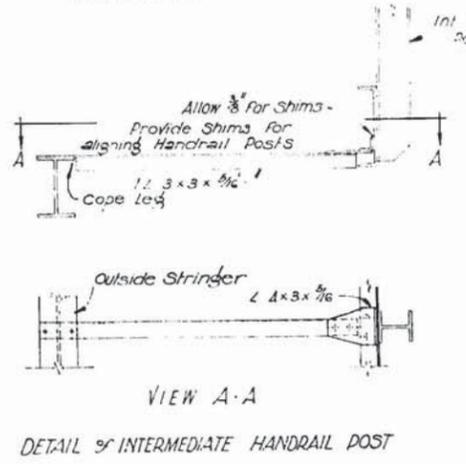
ESTIMATE OF QUANTITIES

Concrete Class A	148.15	Cu Yds.
Concrete Class A-A	240.14	241.00
Reinforcing Steel	47301	54,000 Pounds
Structural Steel - Carbon	211,000	195,017 Lbs.
Structural Steel - Silicon	46,000	79,390
Structural Excavation	416.1	435.0 Cu Yds.
Length of Handrail (± to ± of End Posts)	469.1	465.42 Ft. Both Sides

HALF TRANSVERSE SECTION F-F AT BENT 1 & TYPICAL DETAILS OF TRANSVERSE BRACING FOR BENTS 2, 3, 6, 7, 8, 9

HALF TRANSVERSE SECTION G-G AT BENT 5 & TYPICAL DETAILS OF TRANSVERSE BRACING FOR BENTS 4 & 5

HALF TRANSVERSE SECTION H-H AT BENT 6 SHOWING STRINGER CONNECTIONS



AS CONSTRUCTED  
*R. D. [Signature]*  
 RESIDENT ENGINEER

TYPICAL TRANSVERSE R/DY SECTIONS & DETAILS OF FOOTINGS  
 SPRING STREET OVERPASS

LOUISIANA HIGHWAY COMMISSION  
 BATON ROUGE, LA. April 1956

DESIGNED	DATE	CHECKED	DATE	TRACED	DATE

