WEST PEARL RIVER BRIDGE HAER No. LA-31
(Bridge Recall No. 058710)
Carries U.S. Route 90 (US 90) over West Pearl River
Slidell
St. Tammany Parish
Louisiana

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED & INTERPRETIVE DRAWINGS

FIELD RECORDS

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street, NW
Washington, DC 20240

HISTORIC AMERICAN ENGINEERING RECORD
WEST PEARL RIVER BRIDGE
(Bridge Recall No. 058710)

HAER No. LA-31

Location: Carries U.S. Route 90 (US 90) over West Pearl River near the city of Slidell, St. Tammany Parish, Louisiana.

The West Pearl River Bridge (Bridge Recall No. 058710) is located at latitude 30.231204 north, longitude -89.668732 west.[1] The coordinate represents the center of the bridge. It was obtained in 2016 by plotting its location in Google Earth. The location has no restriction on its release to the public.

Present Owner: State of Louisiana.

Present Use: Vehicular and pedestrian traffic. When in its open position, the bridge allows for marine traffic on the West Pearl River.

Significance: The West Pearl River Bridge possesses significance as one of four bridges constructed to carry US 90/Old Spanish Trail over the Pearl River in St. Tammany Parrish in the early 1930s. The bridge is an essential part of the Rigolets-Pearlington highway shortcut connecting New Orleans to the Mississippi Gulf Coast. Construction of the shortcut created a more direct and efficient route between Louisiana and Mississippi and made a significant contribution to the broad patterns of Louisiana's transportation history.

The West Pearl River Bridge is also significant as an important variation within the vertical lift bridge type and is one of the earliest remaining examples of this type within Louisiana. The bridge is vertical lift span-drive bridge with a Waddell and Harrington configuration. This variation is demonstrated in the location of the drive machinery on the movable span that operates uphaul and downhaul ropes to raise and lower the span. The West Pearl River Bridge was determined eligible for listing in the National Register of Historic Places (National Register) in 2012 under *Criterion A: Transportation* and *Criterion C: Design/Engineering* at the state level of significance.[2]

Historian(s): Shannon Dolan, Cultural Resource Specialist, and Robert M. Frame, Senior Cultural Resource Specialist; Mead & Hunt, Inc.; 2017.

Project Information: This documentation was prepared as mitigation to fulfill Stipulation IX.5 of 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*

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[1] The bridge is also known as Structure No. 62520060705291.

[2] Coastal Environments, Inc., "Determination of Eligibility for the Pearl River Bridges, Route US 90, St. Tammany Parish, Louisiana," February 2012.

Historic Preservation Officer Regarding Management of Historic Bridges in Louisiana, dated August 18, 2015, and executed September 21, 2015. The Louisiana Department of Transportation and Development (LADOTD) retained Mead & Hunt to prepare this document. It was prepared by cultural resource specialist Shannon Dolan and senior cultural resource specialist Robert M. Frame of Mead & Hunt. Dietrich Floeter completed the photography.

Part I. Historical Information

A. Physical History:

1. Date(s) of construction: 1933.

2. Engineer: Louisiana Highway Commission (LHC).

3. Builder/Contractor/Supplier: W. Horace Williams Company, New Orleans.

4. Original plans and construction: Copies of the plan sheets are available in the General Files room at the Louisiana Department of Transportation and Development's (LADOTD's) Baton Rouge headquarters. The West Pearl River Bridge plans were approved in October 1932. The truss, towers, counterweights, operator's house, deck, and approach spans were constructed using LHC Standard Plan S-L-2, "110-Foot Vertical Lift Span 24-Foot Roadway Double Curbs"; "Standard Plan Operator's House 110'-0-Foot Vertical Lift Span 24-Foot Roadway"; and "(C-G-32) for 7 28-Foot Reinforced Concrete Deck Girder Spans."[3]

5. Alterations and additions: The bridge has had minimal alterations and retains good integrity with the original moveable truss configuration, towers, operator house, counterweights, sheaves, concrete piers, and concrete approaches and substructure. According to LADOTD records, the lights and gates on the structure were converted to electrical operation in 1954. The bridge was also repaired in 1956 after being struck by a tugboat. Traffic warning lights were installed in 1964 and by 1968 new electrical service was installed. The truss was sandblasted and painted in 1978.[4] Additional alterations include the removal of lighting on the bridge approach spans and the replacement of the traffic gates.[5]

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[3] Louisiana Highway Commission, "Standard Plan: General Layout 110'-0 Vertical Lift Span 24'-0 Roadway Double Curbs," October 1932, available in the General Files room, Louisiana Department of Transportation and Development, Baton Rouge, La.

[4] Louisiana Department of Transportation and Development, "Project 006-07-0017," *trns.Port Systems Database*, available at the Louisiana Department of Transportation and Development, Baton Rouge, Louisiana.

[5] Coastal Environments, Inc., "Determination of Eligibility for the Pearl River Bridges, Route US 90, St. Tammany Parish, Louisiana," February 2012, 13.

B. Historical Context:

Historical background

Since the LHC's inception in 1921 (replacing the State Highway Department), the agency's Bridge Department was responsible for the design and construction of many of Louisiana's bridges, including the development of standard plans for timber, steel, and concrete structures.[6] However, the Bridge Department prepared unique design plans as needed for specific projects, which resulted in the construction of such notable bridges as the Mermentau River Bridge, East and West Pearl River Bridges, and Pass Manchac Bridge.[7] Projects with only bridges were handled by the Bridge Department and those with both roads and bridges were completed by the office engineer with assistance from the bridge engineer.[8]

Under Huey Pierce Long's governorship in the late 1920s and early 1930, Louisiana's infrastructure improved significantly as a result of his ambitious road and bridge program. He reorganized the LHC shortly after he took office in 1928 and implemented several small- and large-scale bridge-building programs and roadway improvement projects.[9] It was during this time the LHC entered a period of rapid growth and building across Louisiana. A program to fill in the gaps of the fledgling State Highway System was adopted, along with long-term goals of crossing major rivers such as the Mississippi and the Pearl. The programs became increasingly popular with the public because they created many jobs and visible progress during the Great Depression.[10]

Construction of the West Pearl River Bridge

The West Pearl River Bridge was built under Long's tenure as part of the Rigolets-Pearlington shortcut connecting Louisiana and Mississippi. It was designed and constructed by the LHC in 1932 and 1933, respectively.[11] The shortcut eliminated expensive ferry crossings and created a direct route between New Orleans and Pearlington, Mississippi, and ultimately the gulf coast by realigning US 90 (Old Spanish Trail) through what was once perceived as impenetrable swamps and bayous.[12] In September 1932 the

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[6] Louisiana Highway Commission, *Biennial Report of the Louisiana Highway Commission of the State of Louisiana 1922-1924* (Baton Rouge, La.: Louisiana Highway Commission, 1924), 93, 95.

[7] Louisiana Highway Commission, *Biennial Report of the Louisiana Highway Commission of the State of Louisiana 1922-1924*, 93, 95.

[8] Louisiana Highway Commission, *Biennial Report of the Louisiana Highway Commission of the State of Louisiana 1922-1924*, 93.

[9] Louisiana Highway Commission, *Fifth Biennial Report of the Louisiana Highway Commission* (Baton Rouge, La.: Louisiana Highway Commission, 1930), 9.

[10] William Ivy Hair, *The Kingfish and His Realm: The Life and Times of Huey P. Long* (Baton Rouge, La.: Louisiana State University Press, 1991), 192.

[11] Recall No. 058750 (extant).

[12] Recall No. 058750 (extant).

LHC held a public hearing to solicit input regarding proposed plans to construct the shortcut.[13] The BPR approved the plans in October 1932, and one month later the LHC had accepted bids for the project.[14] Construction of the roadway and bridges was made possible by regular and emergency federal aid. According to the LHC's seventh biennial report:

> In the fall of 1932 and the spring of 1933, an Emergency Federal Aid appropriation was made available which was used in part by the Commission in constructing the so-called Rigolets-Pearlington shortcut, involving the bridges over West Pearl River, West Middle River, Middle Middle River, East Middle River, and East Pearl River.[15]

Based on the title page of the plan sheets, the West Pearl River Bridge was constructed under Federal Aid Project (F.A.P.) E-202-D.[16] It was constructed using LHC Standard Plan S-L-2, "110-Foot Vertical Lift Span 24-Foot Roadway Double Curbs"; "Standard Plan Operator's House 110'-0-Foot Vertical Lift Span 24-Foot Roadway"; and "(C-G-32) for 7 28-Foot Reinforced Concrete Deck Girder Spans."[17] Harry Henderlite was the construction supervisor who oversaw construction of the shortcut, which ran along portions of the Old Spanish Trail to the Mississippi state line, where it was continued by the Mississippi Highway Commission to the gulf.[18] The contract for construction of all five bridges was awarded to the W. Horace Williams Company of New Orleans for $404,652. [19] Construction of the West Pearl River Bridge was completed in the fall of 1933. The 1933 US 90 Bridge over the East Pearl River provided the final link in this 22-mile shortcut.[20]

Engineering background

The West Pearl River Bridge is an example of a Waddell-Harrington vertical lift bridge. In 1872 Squire Whipple patented the first design for short vertical lift bridges that required minimal vertical movement. However, it was not until John Alexander Low Waddell designed the South Halsted Street Bridge in Chicago in 1894 that the first large-scale vertical lift bridge was constructed in the U.S. His design ushered in a new era in movable bridge design by minimizing river-channel obstructions inherent in

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[13] "Engineer Plans Hearing on Span Proposals Today: Louisiana Highway Board's Bridge Application Get Attention," *Times-Picayune*, September 23, 1932.

[14] Coastal Environments, Inc., "Determination of Eligibility for the Pearl River Bridges, Route US 90, St. Tammany Parish, Louisiana," February 2012, 6–7.

[15] Louisiana Highway Commission, *Seventh Biennial Report of the Louisiana Highway Commission* (Baton Rouge, La.: Louisiana Highway Commission, 1934), 149.

[16] Louisiana Highway Commission, "Plans of Proposed State Highway F.I.-75(9) & F.I.-116(11) State Project No. 1-03-21 & 1-04-17 Fillmore - McIntyre Hwy. Bossier & Webster Parish," March 1954, 1, available in the General Files Room, Louisiana Department of Transportation and Development, Baton Rouge, La.

[17] Louisiana Highway Commission, "Standard Plan: General Layout 110'-0 Vertical Lift Span 24'-0 Roadway Double Curbs," October 1932, available in the General Files room, Louisiana Department of Transportation and Development, Baton Rouge, La.

[18] "Louisiana Ready," *Biloxi Daily Herald* (Mississippi), 19 September 1932.

[19] 24-Mile Reduction in Distance Assured on Completing Task, *Times-Picayune*, Sunday, 7 May 1933, B-2.

[20] Recall No. 058750 (extant).

swing-span bridges and improving the speed of bridge movement. In 1907 Waddell entered into a partnership with John Lyle Harrington, and the pair designed several vertical lift bridges that became the foundation for vertical lift bridge design in the twentieth century.[21]

As one of the three basic types of moveable bridges (along with swing span and bascule), vertical lift bridges are commonly found in flat terrain where the cost of long approaches to gain high-level, fixed-span crossings is prohibitive. Advantages of this bridge type included rapidity of operation, adjustable openings depending on the size of the vessel, the ability to build in congested areas adjacent to other bridges, and a clear navigation channel. This type of bridge consists of a rigid, horizontal, movable span supported between two towers. The movable span remains horizontal at all times, whether fully opened, fully closed, or anywhere in between. The movable span is balanced by large counterweights, which are connected to the span on each end by heavy steel counterweight ropes that are carried over the tops of the two towers on large sheaves, which are grooved steel wheels. The combined weight of the two counterweights (one at each tower or span end) equals the weight of the lift span, providing balance in order to reduce the force needed to move it vertically up and down. To move the counterweighted span, the drive machinery needs to provide only enough force to overcome friction and wind resistance.[22]

Vertical lift bridges come in three variations based on the configuration of the drive mechanism: the span drive, tower drive, and tower drive with connected towers. The names come from the location of the machinery used to raise and lower the span. Tower drives have the machinery at the top of each tower, while span drives have the machinery on the movable span. Tower drive with connected tower vertical lift spans have machinery located on a fixed span between the two towers.[23]

The West Pearl River Bridge is a span-drive type. In the span-drive configuration, the driving mechanism is separate from the counterweight ropes, which are carried on free-turning sheaves that are not powered. Instead of powered sheaves, separate sets of wire ropes are installed to provide force to move the span in an upward or downward direction. These are termed “uphaul” and “downhaul” ropes. Since the span is balanced by the two counterweights, the uphaul and downhaul ropes provide only minimal force. They are powered by the lift machinery located on the movable span itself and guided from the motor and gears to the span by a series of small wheels and pulleys.

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[21] Parsons Brinckerhoff and Engineering and Industrial Heritage, *A Context for Common Historic Bridge Types* (prepared for The National Cooperative Highway Research Program, Transportation Research Council, and National Research Council, October 2005), 3–120, http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(15)_FR.pdf.

[22] Parsons Brinckerhoff and Engineering and Industrial Heritage, *A Context for Common Historic Bridge Types*, 3–121; Mead & Hunt, Inc., *Historic Context for Louisiana Bridges* (prepared for the Louisiana Department of Transportation and Development, December 2013), 75–78.

[23] Mead & Hunt, Inc., *Historic Context for Louisiana Bridges*, 75–78.

Part II. Structural/Design Information

A. General Statement:

1. Character: The West Pearl River Bridge is a vertical lift bridge and an integral part of the Rigolets-Pearlington shortcut between Louisiana and the Mississippi Gulf Coast.

2. Condition of fabric: Good.

B. Description: The West Pearl River Bridge is located approximately 30 miles northeast of New Orleans and carries two lanes of US 90 on an east/west alignment over the West Pearl River in St. Tammany Parish, Louisiana. Constructed in 1933 using LHC's standard plans, the overall length of the bridge is 568'-0." The bridge's main span is a 110'-0" vertical lift main span with operator house and a 33'-0"-long lift tower span on each end. The bridge has seven 28'-0" reinforced-concrete approach spans on each side totaling 196'-0". The bridge has a posted load of 35 tons, vertical roadway clearance of 14'-7", and a vertical clearance of 18'-0" above the waterway.

Main span
The bridge is a Waddell-Harrington-type, span-drive, vertical lift bridge with the drive machinery and operator's house mounted on the top of the lift span. The 110'-0" lift span is a riveted, five-panel, Pratt truss modified to accommodate a lifting girder added to each end. The upper chord is built up with rolled channels riveted with a cover plate on top and V-lacing on the bottom. The extensions of the top chord to the lift girders on each end are rolled channels with batten plates on top and bottom. The lifting girder is a transverse rolled I-beam. The truss verticals and diagonals are rolled I-beams with the exception of the center diagonals, which are angles with batten plates.

The operator's house and lift machinery for the main span are mounted on a platform constructed of rolled I-beams centered between the upper chords. Steel-plate walkways surround the four sides of the operator's house and extend along the centerline of the span to each end, where they provide access to machinery at the span ends above the lift girder. The walkways are carried on top of the upper truss bracing, which is comprised of angles and V-lacing.

Operating machinery includes two geared drums, one on each side of the operator's house. The drums store the uphaul and downhaul ropes that extend from the drums to the end of the truss in each direction, passing through vertical steel guides midway between the operator's house and the lifting girder. At the girder the ropes pass through deflector sheaves located at each corner of the truss. The deflector sheaves provide a 90-degree turn up or down for each rope. The uphaul ropes extend to the top of the lift towers and the downhaul ropes extend to the base of the towers. To lift the span, the uphaul ropes are wound back on the drums and the downhaul ropes let out. To lower the span, the action is reversed.

The weight of the lift span is balanced by two large concrete counterweights, one in each lift tower. By keeping the lift span balanced, it can be moved up and down by the uphaul and downhaul ropes with very little power. Sets of six counterweight ropes are connected at each corner of the span to the lift girder. The other ends of the counterweight ropes are connected to the concrete counterweights in the lift

towers. The counterweight ropes extend up and over the large sheaves at the tops of the lift towers. When the span is in the closed or down position, it is locked in place to avoid movement while carrying traffic. The locks are controlled from the operator's house by a longitudinal shaft that is located underneath the upper chord of the truss, parallel to the walkway. The longitudinal shaft secures the end locks mounted on the lift tower column.

Lift towers

Located adjacent to the lift span are the two lift towers that contain the concrete counterweights, and the vertical tracks that guide the list span as it moves. The towers are built from an LHC standard plan. Each tower is 75'-6" tall and comprised of built-up members with a wide base that tapers up towards the sheaves. The 30'-0" length of each tower base constitutes a span (spans 8 and 10) on each side of the lift span (span 9). Each tower supports two cast steel sheaves at the top and a narrow steel work platform surrounded with gas pipe railing with ball fittings. The sheaves and platform are accessed by a metal ladder mounted on the tower. The west tower has a steel-cage ladder and the east tower ladder is open. A single-rail metal railing is mounted on the parapets of the tower and lift spans. [24]

Operator's house

The operator's house follows the S-L-2 standard plan. It is a one-story frame building with rectangular plan that is 16'-0" north-south by 20'-0" east-west. It is clad in clapboard, has a low-pitched hip roof, and rests on a platform comprised of rolled I-beams. The low gable roof is covered with standing-seam metal with a simple wood cornice. The east facade features paired, one-over-one, double-hung, sash windows with simple surrounds with one visible entrance door and one door or window, covered with plywood. The entrance is a slightly recessed wood-panel door that appears to have had the window opening downsized and replaced with a smaller, single-pane, fixed light. The west facade has a slightly recessed wood panel entrance door at the southwest corner. The door appears to be original, with a large fixed-light window. Three, one-over-one, double-hung, sash windows with simple wood surrounds are also located on this facade. The north and south facades are identical and each features three, one-over-one, double-hung, sash windows with simple surrounds. The walkway outside the house has non-skid plates.

According to the plans, the interior of the operator's house originally had two gas engines; an end lock drive; control panel; reducer; Kohler plant, two-kilowatt, 110-volt direct current; span position indicator; and tile floor on top of concrete. A filler pipe for a 150-gallon gasoline tank is suspended from beams below the floor.[25] The bridge was converted from gas to electric power by October 1968.[26]

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[24] Louisiana Highway Commission, "Standard Plan: General Layout 110'-0' Vertical Lift Span 24'-0' Roadway Double Curbs," Sheets 28-31.

[25] Louisiana Highway Commission, "Standard Plan Operator's House 110'-0' Vertical Lift Span 24'-0' Roadway," 1932, 32, 35.

[26] State of Louisiana, Department of Highways, "S.P.# 6-07-24 West Pearl River Bridge U.S. 90," 1968, n.p., available in the General Files Room, Louisiana Department of Transportation and Development, Baton Rouge, La.

Substructure
Each of the two lift towers is supported on two reinforced-concrete piers. Each pier is comprised of two cylindrical concrete columns with a full-height concrete web wall between columns. Vertically, the piers are constructed in two levels, with a reduction in column and wall dimensions at the upper level. The piers are built on concrete foundations on timber pilings. The pier tops have concrete caps with rounded ends to complement the pier columns. The lift-tower columns at the lift span, on the two center piers (piers 2 and 3), have fixed bearings. The rear lift-tower columns on the outside piers (piers 1 and 4) have rocker expansion bearings. When closed, the lift span rests on bearing seats adjacent to the lift-tower fixed bearings on the pier cap.

Approach spans
According to the as-built plans, the approach spans consist of seven reinforced-concrete deck girder spans of approximately 28' on each end. Expansion joints were added to the concrete deck above the bents and piers. The approach spans have a concrete post and single rail configuration mounted on the parapets.

The approach spans are supported on precast concrete pile bents with square piles and simple rectangular concrete caps. End bents are used in place of abutments. Small concrete parapets with single railing segment rest on each end of the pier caps. Located on the approach spans on both sides of the lift towers are pairs of drop-arm crossing barriers to stop traffic when the bridge is open to navigation. With the crossing barriers are signal lights to control traffic movement.

Other features
A timber fender system in the river on each side of the bridge provides for a 93'-2"-wide navigation channel. Modern navigational lights are mounted on the fenders. A concrete curb and concrete parapet extend the length of the bridge along both sides. On the tower spans and lift span, a single-rail metal railing is mounted on the parapets.

C. Site Information: The West Pearl River Bridge spans the Pearl River in St. Tammany Parish, Louisiana. It is located approximately 30 miles northeast of New Orleans and carries US 90 over the West Pearl River. The river originates from the confluence of the two creeks located in Neshoba County, Mississippi, and winds its way south into St. Tammany Parish before emptying into the Rigolets. The surrounding landscape consists of deciduous trees and vegetation, with some commercial recreational development on the west side of the river.

Part III. Sources of Information

A. Primary Sources:

Coastal Environments, Inc. "Determination of Eligibility for the Pearl River Bridges, Route US 90, St. Tammany Parish, Louisiana," February 2012.

———. "Determination of Eligibility for the Pearl River Bridges, Route US 90, St. Tammany Parish, Louisiana," February 2012.

"Engineer Plans Hearing on Span Proposals Today: Louisiana Highway Board's Bridge Application Get Attention." *Times-Picayune*, September 23, 1932.

Hair, William Ivy. *The Kingfish and His Realm: The Life and Times of Huey P. Long*. Baton Rouge, La.: Louisiana State University Press, 1991.

Louisiana Highway Commission. *Biennial Report of the Louisiana Highway Commission of the State of Louisiana 1922-1924*. Baton Rouge, La.: Louisiana Highway Commission, 1924.

———. *Fifth Biennial Report of the Louisiana Highway Commission*. Baton Rouge, La.: Louisiana Highway Commission, 1930.

———. "Plans of Proposed State Highway F.I.-75(9) & F.I.-116(11) State Project No. 1-03-21 & 1-04-17 Fillmore - McIntyre Hwy. Bossier & Webster Parish," March 1954. Available in the General Files Room, Louisiana Department of Transportation and Development, Baton Rouge, La.

———. *Seventh Biennial Report of the Louisiana Highway Commission*. Baton Rouge, La.: Louisiana Highway Commission, 1934.

———. "Standard Plan: General Layout 110'-0' Vertical Lift Span 24'-0' Roadway Double Curbs," October 1932. Available in the General Files Room, Louisiana Department of Transportation and Development, Baton Rouge, La.

———. "Standard Plan Operator's House 110'-0' Vertical Lift Span 24'-0' Roadway," 1932.

Parsons Brinckerhoff and Engineering and Industrial Heritage. *A Context for Common Historic Bridge Types*. Prepared for The National Cooperative Highway Research Program, Transportation Research Council, and National Research Council, October 2005. http://onlinepubs.trb.org/onlinepubs/archive/NotesDocs/25-25(15)_FR.pdf.

State of Louisiana, Department of Highways. "S.P.# 6-07-24 West Pearl River Bridge U.S. 90," 1968. Available in the General Files Room, Louisiana Department of Transportation and Development, Baton Rouge, La.

B. Secondary Sources:

Bridge Inspection Report, February 20, 2013. Available in Bridge Maintenance and Inspection Division, Louisiana Department of Transportation and Development, Baton Rouge, Louisiana.

Mead & Hunt, Inc. *Crossing the Bayou: Louisiana's Historic Bridges*. Prepared for the Louisiana Department of Transportation and Development, 2015.

Mead & Hunt, Inc. *Historic Context for Louisiana Bridges*. Prepared for the Louisiana Department of Transportation and Development, December 2013.

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St. Tammany Parish
Louisiana

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Dietrich G. Floeter, photographer, February and March 2016
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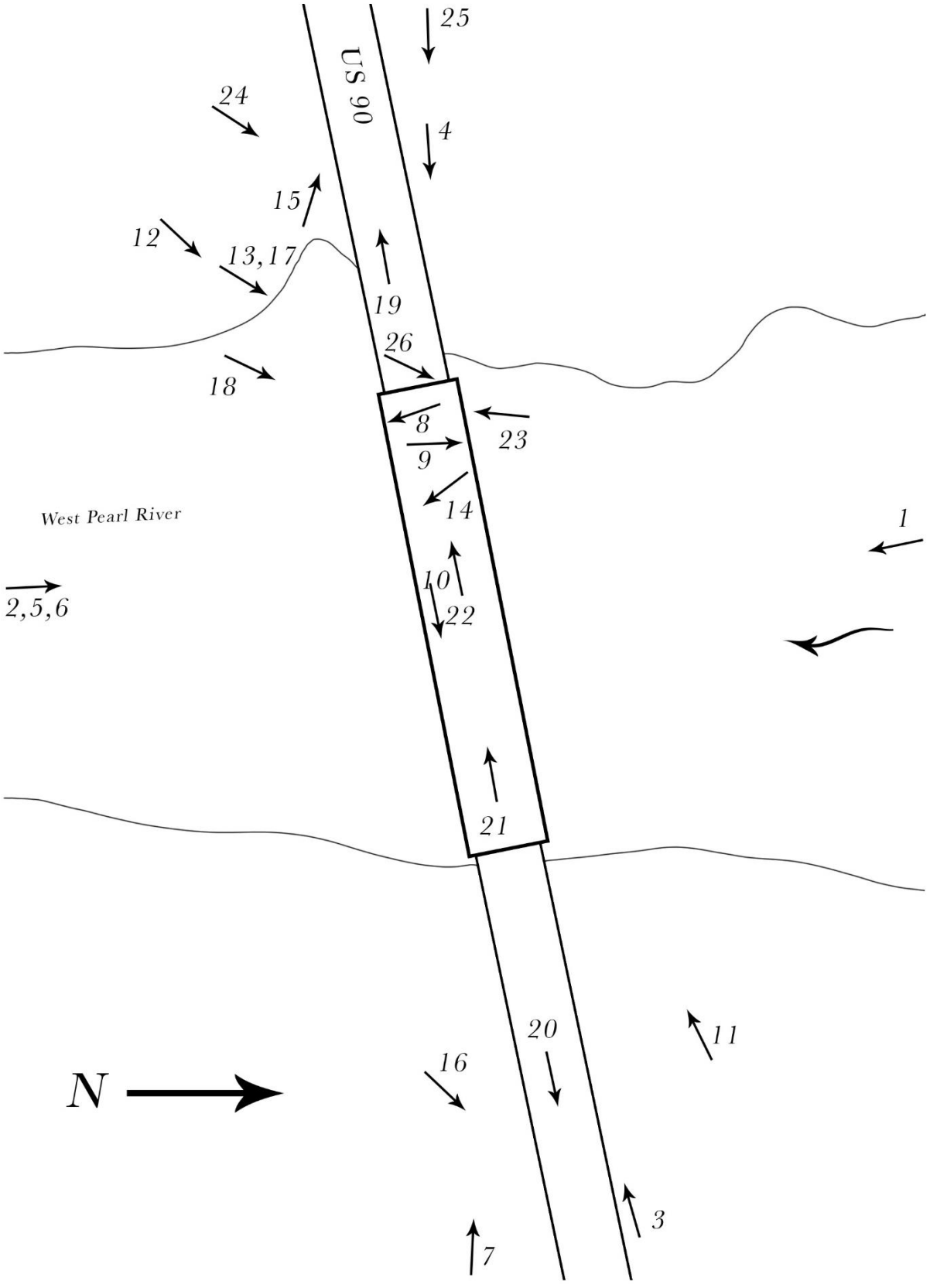

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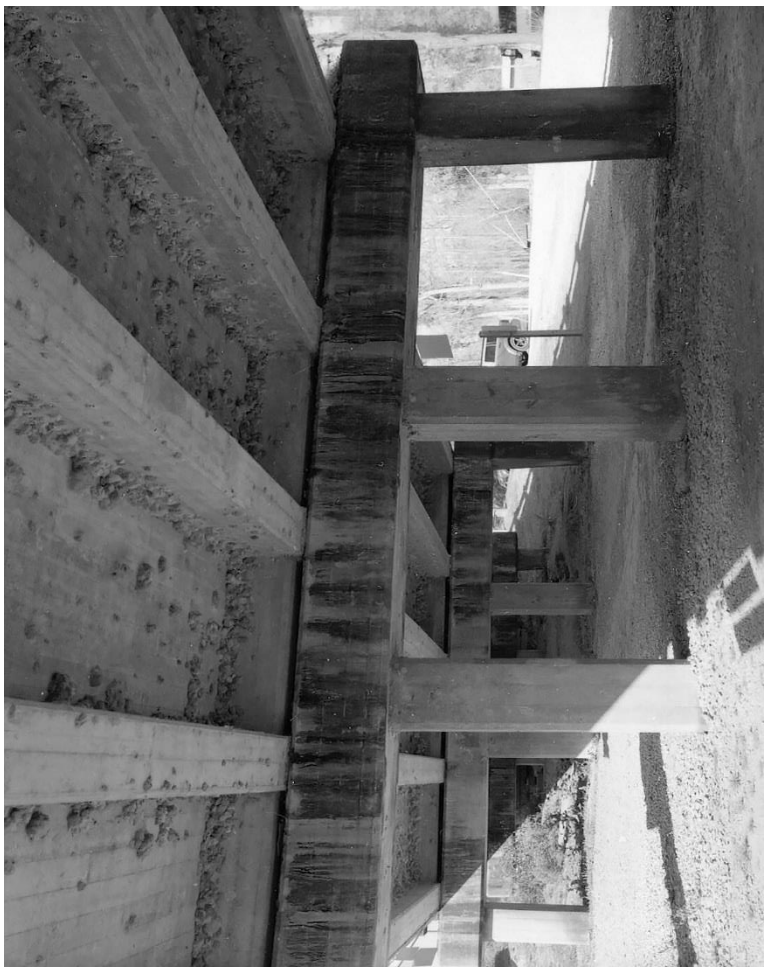

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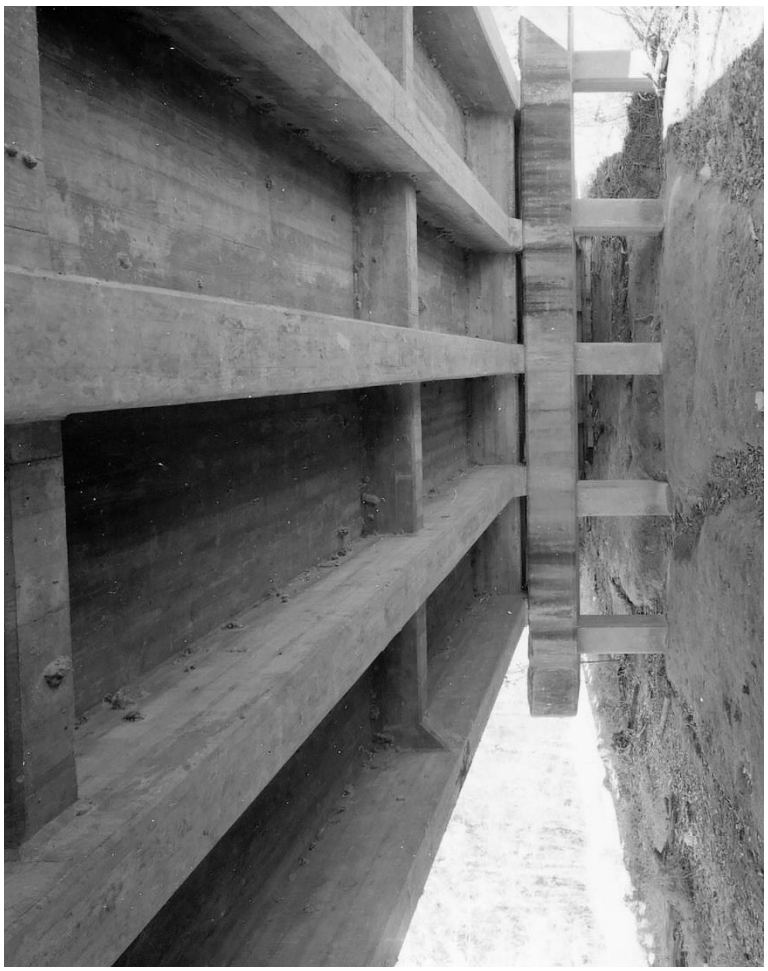

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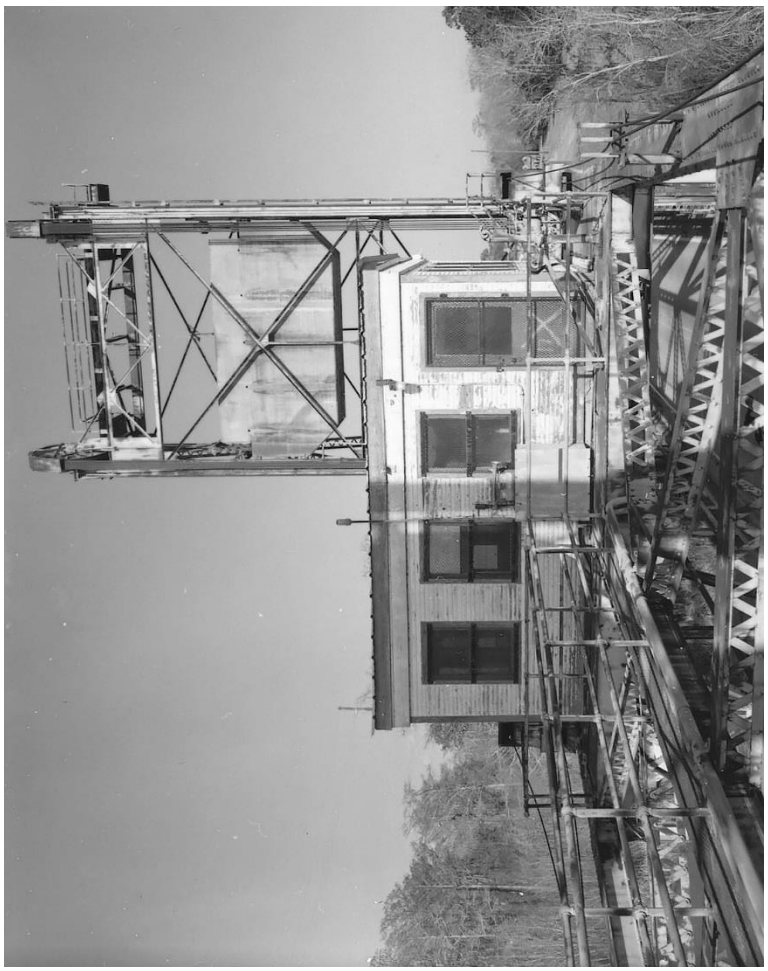

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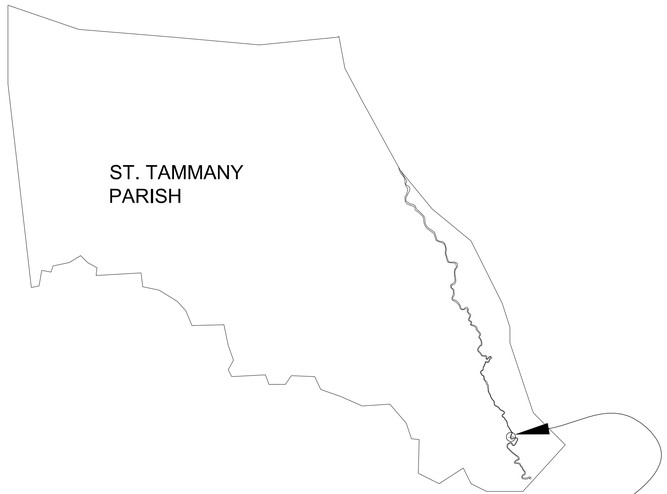
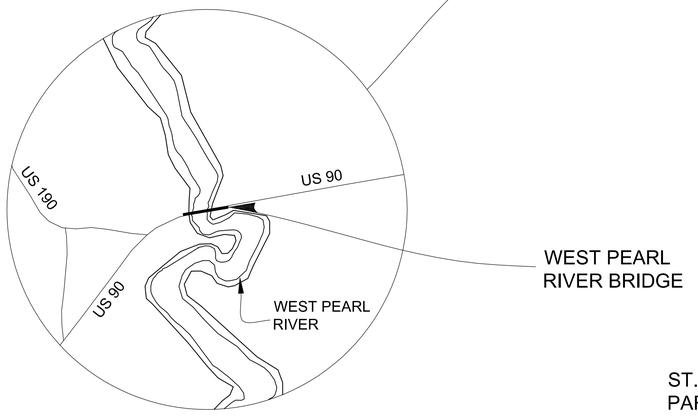
See Index to Photographs for Caption
HAER NO. LA-31-24

HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-31-25

HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-31-26

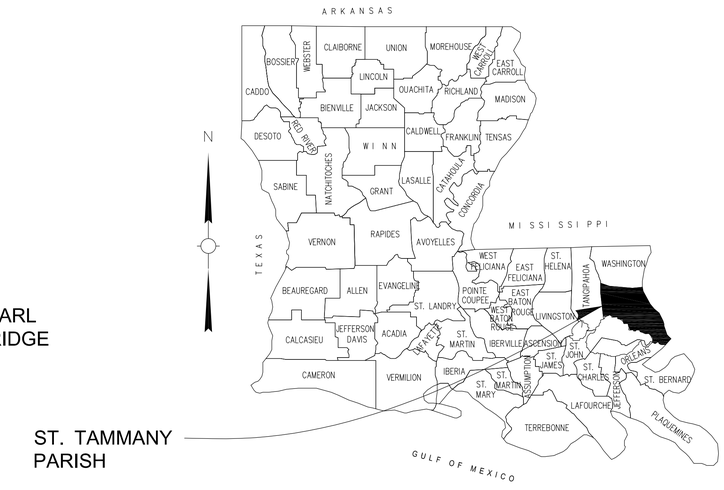
WEST PEARL RIVER BRIDGE





SLIDELL

LOCATION MAP
Latitude: 30.23075 North
Longitude: -89.670333 West



LOUISIANA

The West Pearl River Bridge (Bridge Recall No. 058710), designed by the Louisiana Highway Commission and completed in 1933, is significant as one of four bridges constructed to carry US 90/Old Spanish Trail over the Pearl River in St. Tammany Parrish in the early 1930s. The bridge is an essential part of the Rigolets-Pearlington highway shortcut connecting New Orleans to the Mississippi Gulf Coast. Construction of the shortcut created a more direct and efficient route between Louisiana and Mississippi and made a significant contribution to the broad patterns of Louisiana's transportation history.

The West Pearl River Bridge is also significant as an important variation within the vertical lift bridge type - a vertical lift span-drive bridge with a Waddell and Harrington configuration. This variation is demonstrated in the location of the drive machinery on the movable span that operates uphaul and downhaul ropes to raise and lower the span. The West Pearl River Bridge was determined eligible for listing in the National Register of Historic Places in 2012 under Criterion A: Transportation and Criterion C: Design/Engineering at the state level of significance.

This documentation was prepared to fulfill Stipulation IX.5 of 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, dated August 18, 2015 and executed September 21, 2015. The Louisiana Department of Transportation and Development (LADOTD) retained Mead & Hunt to prepare this document. It was prepared by Shannon Dolan, Cultural Resource Specialist, of Mead & Hunt, Stephen V. Estopinal, P.E., P.L.S. and Trenton Iglehart, Geodetic Analyst, of SJB Group, LLC. Dietrich Floeter completed the photography. These measured drawings were prepared based on a site visit to complete laser scanning of the bridge, with selective hand measuring in the field to verify measurements.

These measured drawings were prepared based on a site visit to complete laser scanning of the bridge, with selective hand measuring in the field to verify measurements.

DELINEATED BY: T. IGLEHART, SJB GROUP, LLC., 2017

LOUISIANA HISTORIC
BRIDGE INVENTORY
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

SLIDELL

WEST PEARL RIVER BRIDGE
CARRIES U.S. ROUTE 90 (US 90) OVER THE WEST PEARL RIVER
ST. TAMMANY PARISH

LOUISIANA

SHEET 1 OF 5

HISTORIC AMERICAN ENGINEERING RECORD
LA-31

LIBRARY OF CONGRESS INDEX NUMBER

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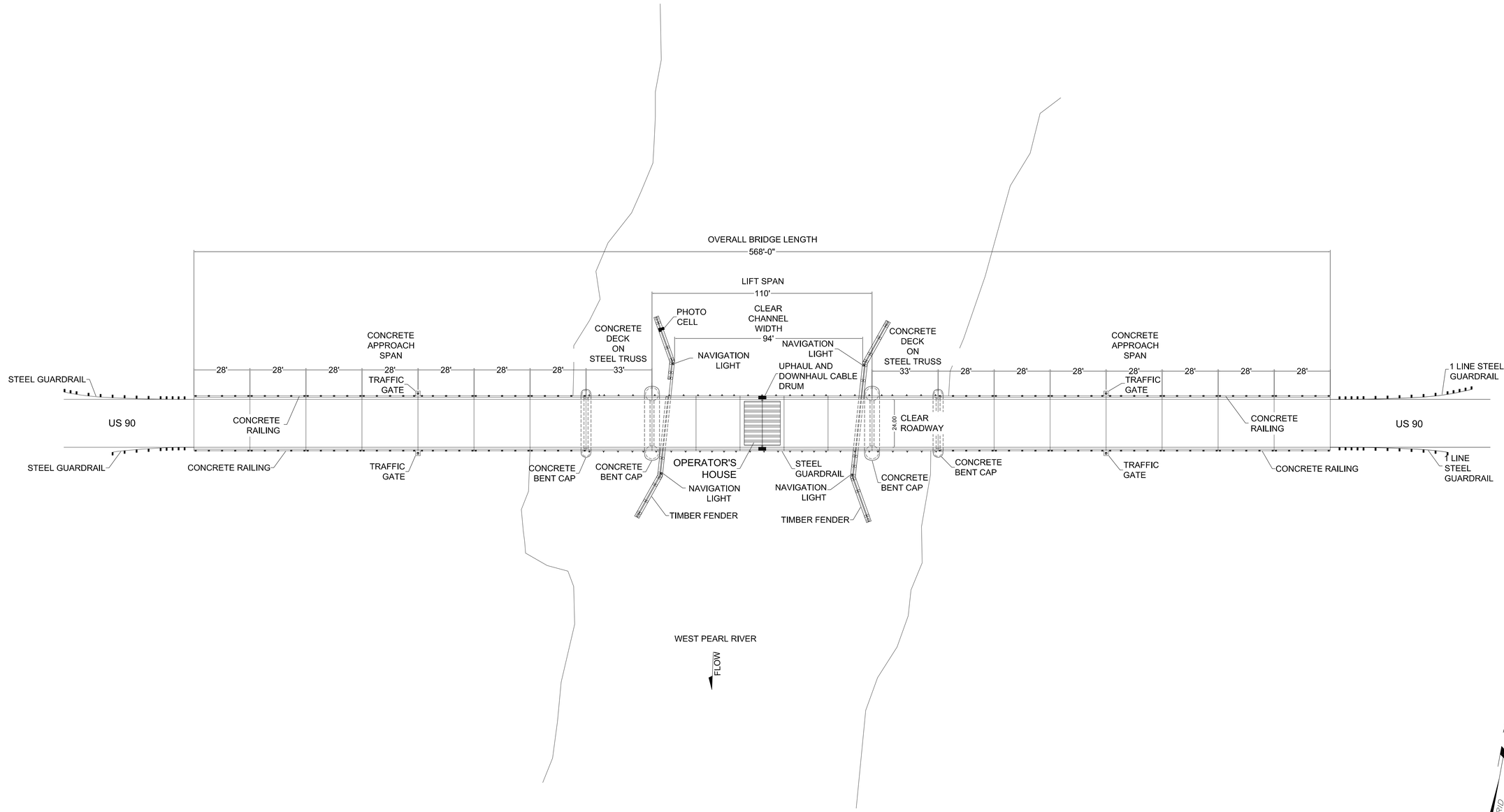

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LOUISIANA HISTORIC BRIDGE INVENTORY
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

SLIDELL

WEST PEARL RIVER BRIDGE
CARRIES U.S. ROUTE 90 (US 90) OVER THE WEST PEARL RIVER
ST. TAMMANY PARISH

LOUISIANA

SHEET 2 OF 5

HISTORIC AMERICAN ENGINEERING RECORD
LA-31

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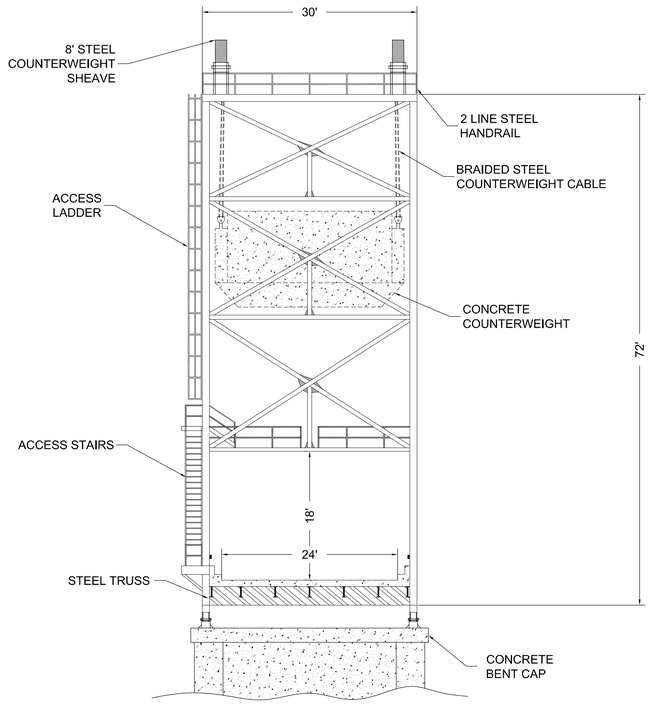

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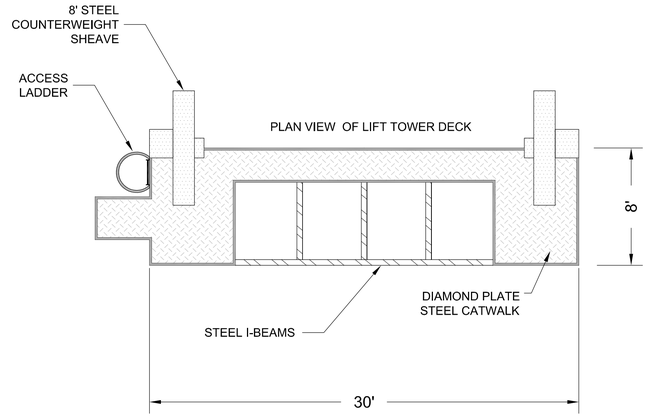

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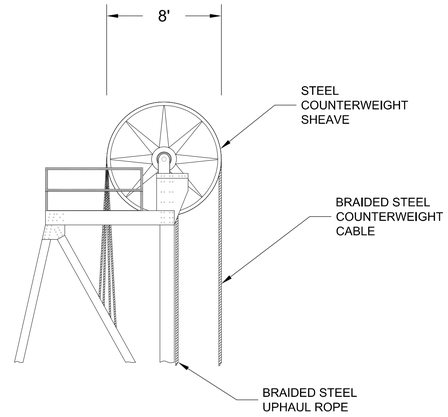

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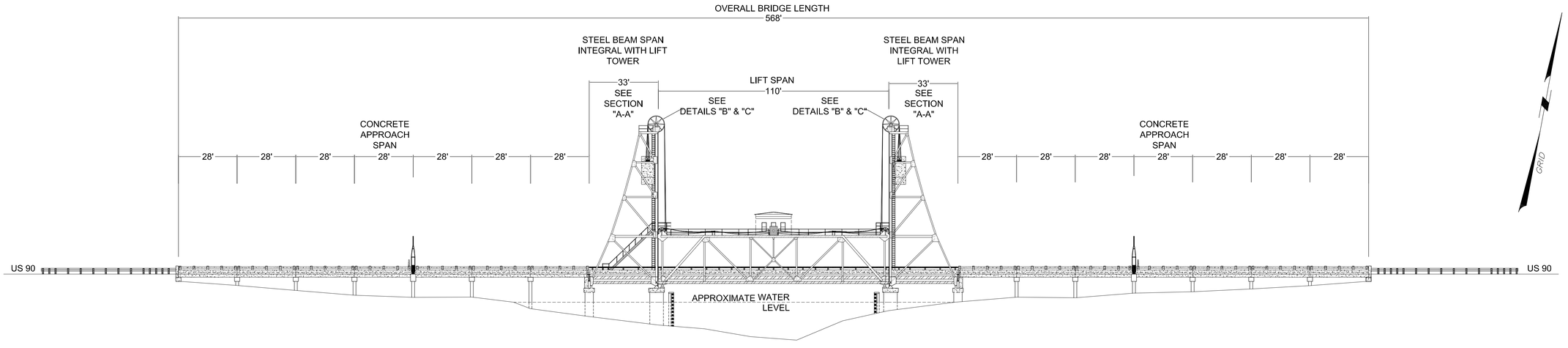

PROFILE VIEW

25' 0 25'

DELINEATED BY: T. IGLEHART, SJB GROUP, LLC., 2017

LOUISIANA HISTORIC BRIDGE INVENTORY
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

WEST PEARL RIVER BRIDGE
CARRIES U.S. ROUTE 90 (US 90) OVER THE WEST PEARL RIVER
ST. TAMMANY PARISH

SLIDELL

LOUISIANA

SHEET 3 OF 5

HISTORIC AMERICAN ENGINEERING RECORD
LA-31

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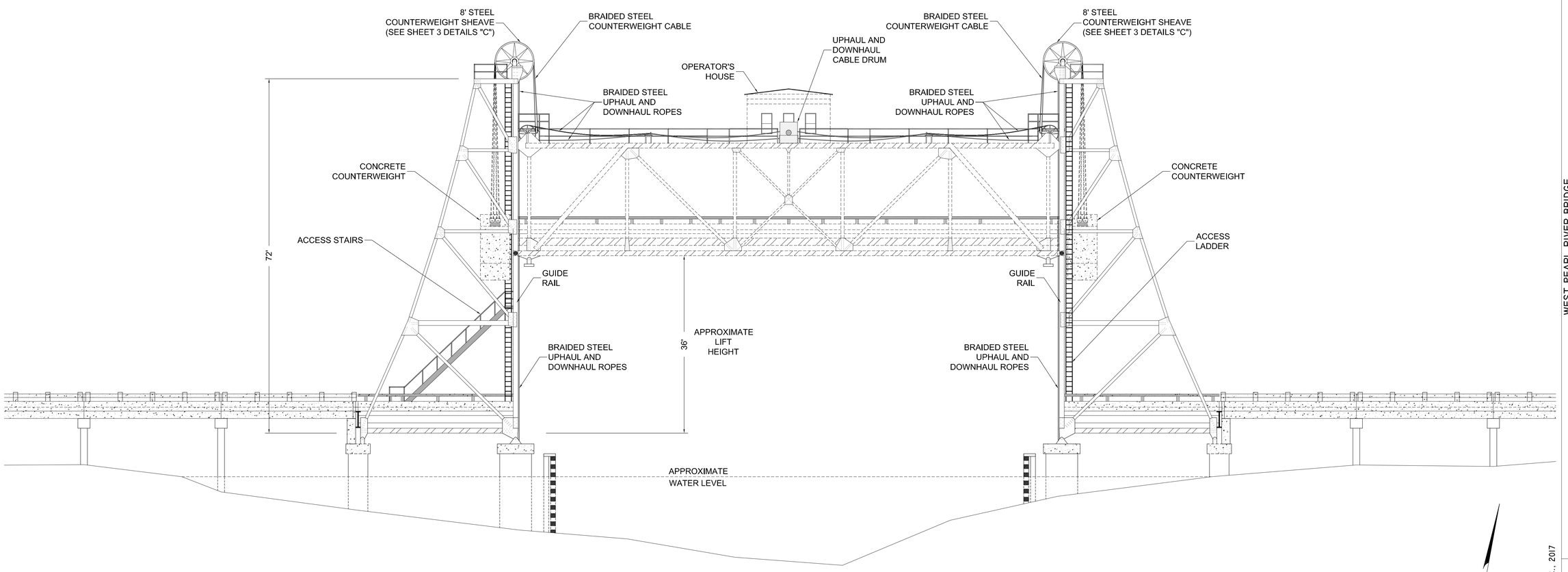

OPERATIONAL VIEW

DELINEATED BY: T. IGLEHART, SJB GROUP, LLC., 2017

LOUISIANA HISTORIC
BRIDGE INVENTORY
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

SLIDELL

WEST PEARL RIVER BRIDGE
CARRIES U.S. ROUTE 90 (US 90) OVER THE WEST PEARL RIVER
ST. TAMMANY PARISH

LOUISIANA

SHEET 4 OF 5

HISTORIC AMERICAN
ENGINEERING RECORD
LA-31

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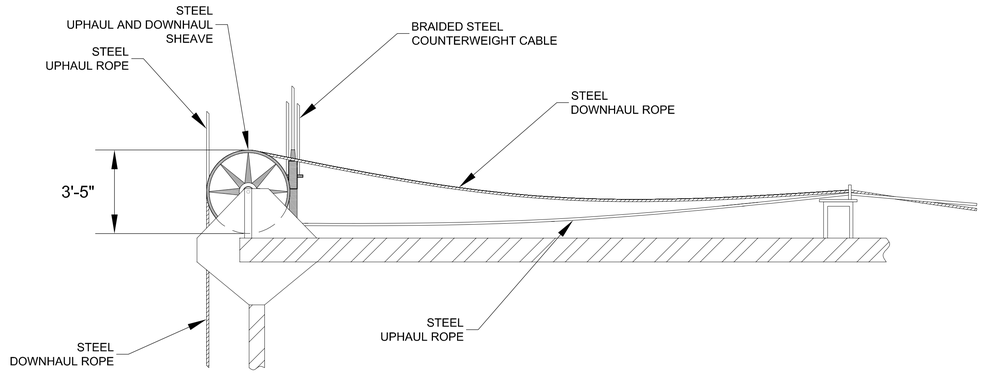

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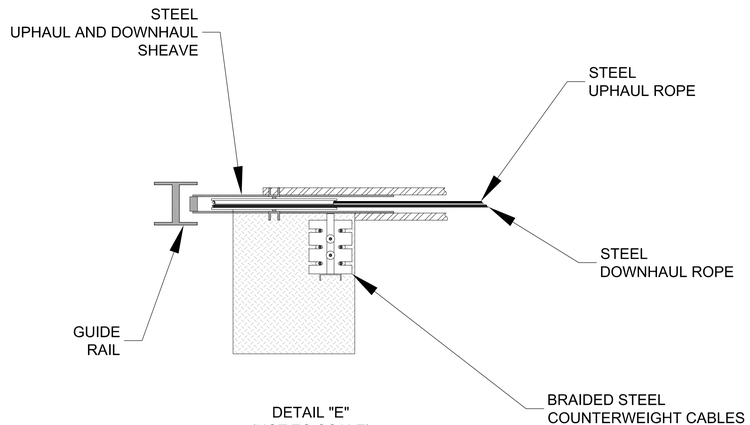

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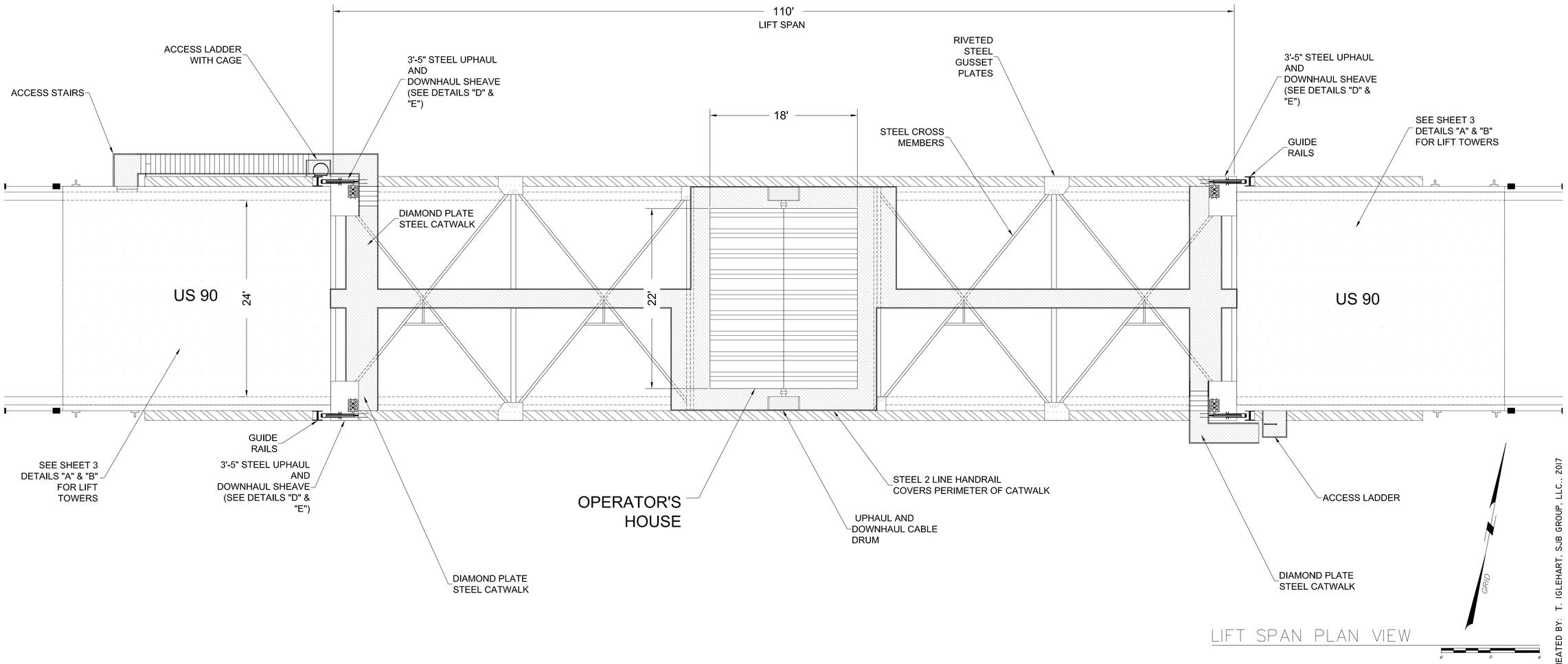

LIFT SPAN PLAN VIEW

DELINEATED BY: T. IGLEHART, SJB GROUP, LLC., 2017

LOUISIANA HISTORIC
BRIDGE INVENTORY
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

WEST PEARL RIVER BRIDGE
CARRIES U.S. ROUTE 90 (US 90) OVER THE WEST PEARL RIVER
ST. TAMMANY PARISH

SLIDELL

LOUISIANA

SHEET 5 OF 5

HISTORIC AMERICAN
ENGINEERING RECORD
LA-31

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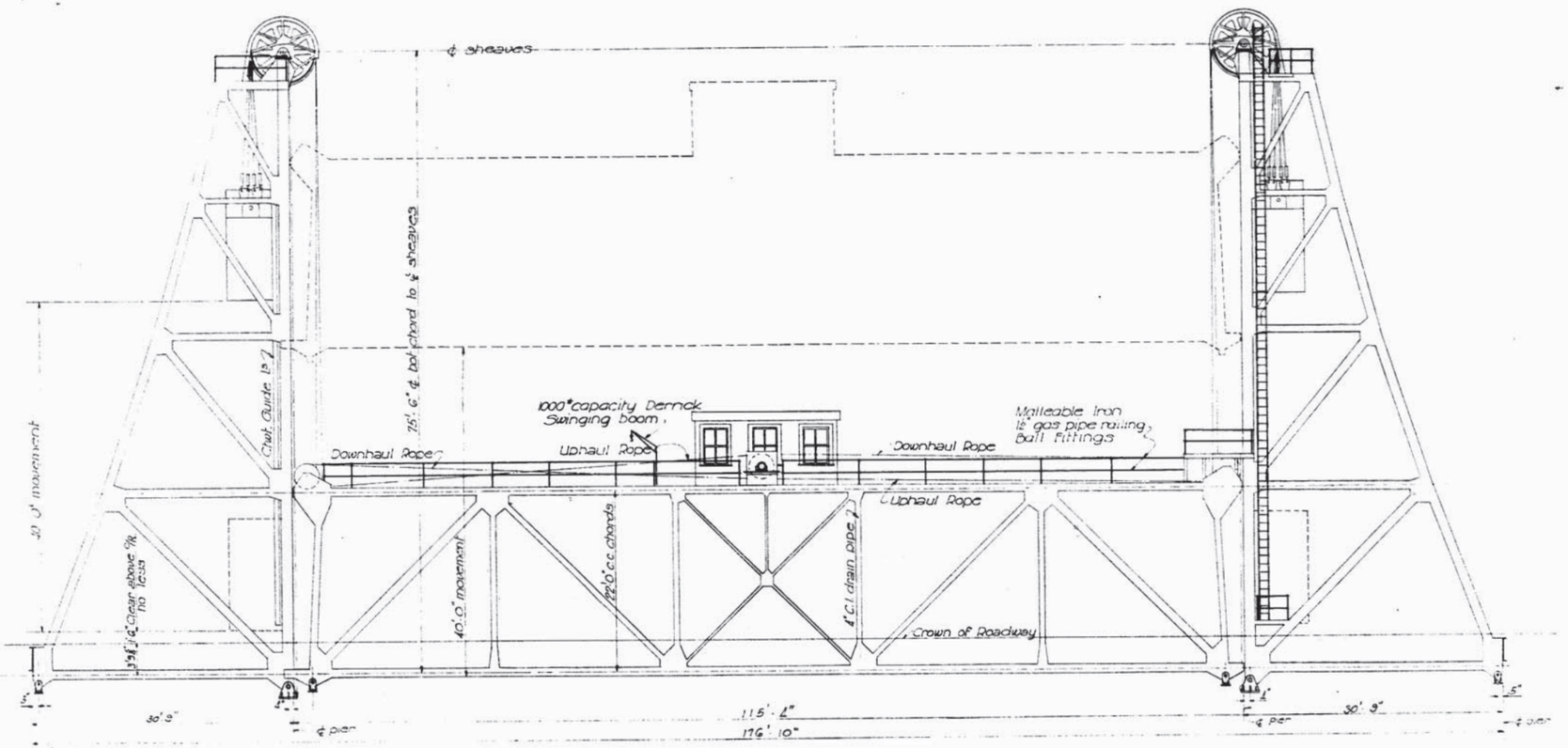
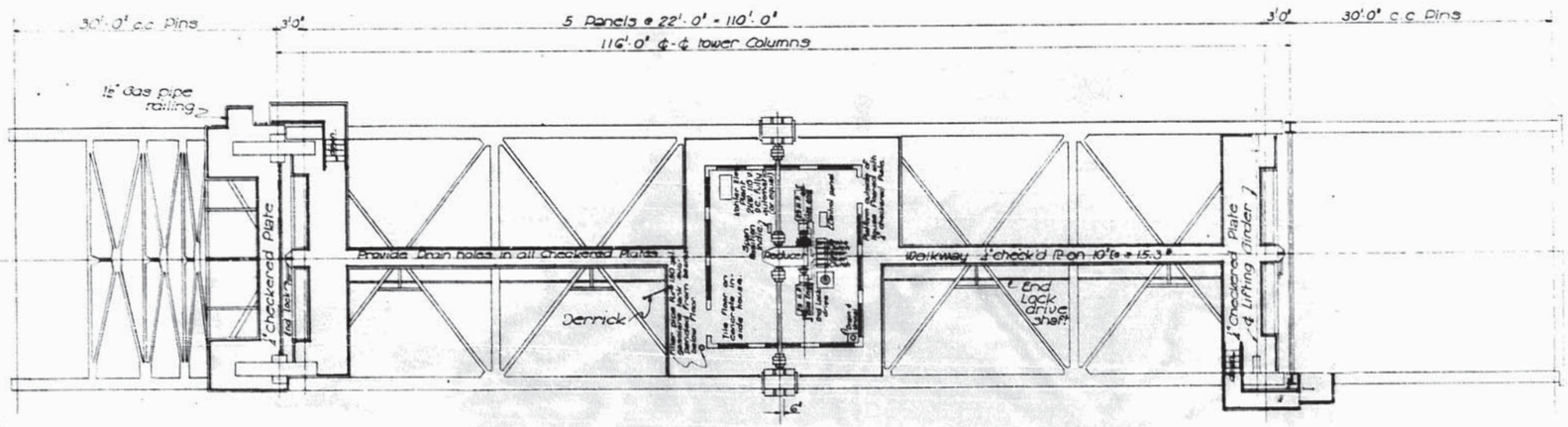
29





Note: Navigation Lights to be oil burning.

FINAL QUANTITIES
ESTIMATED QUANTITIES

Structural Steel	~~452,457~~ # 456,889#
Class AA Conc	113.39 cu yd ✓
Class A conc (CNT.)	~~139.62 cu yd~~ 141.68 CY.
Reinf Steel	34,349 # ✓

NOTE:
FOR STRUCTURAL STEEL WEIGHTS SEE MR. LANT'S LETTER - OCT. 10, 1933.
ADDITIONAL "AA" CONC. SEE OPR'S. HOUSE FLOOR PLAN SHEET NO. 6
COUNTERWEIGHT CL'A" CONC. SEE "AS BUILT" PLAN SHEET NO. 15

STANDARD PLAN
GENERAL LAYOUT
110'-0" VERTICAL LIFT SPAN
24'-0" ROADWAY
DOUBLE CURBS

LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. OCT. 1932

Designed L. Duclos Detailed L. Duclos Traced [illegible]
Checked [illegible] Checked [illegible] Checked L. Duclos
In Charge of [illegible] Bridge Designing Engineer

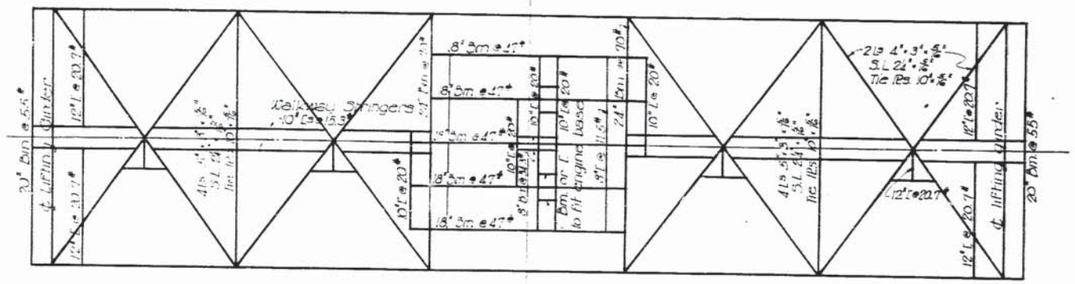
Sheet 1 of 3

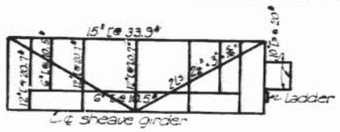
S·L·2

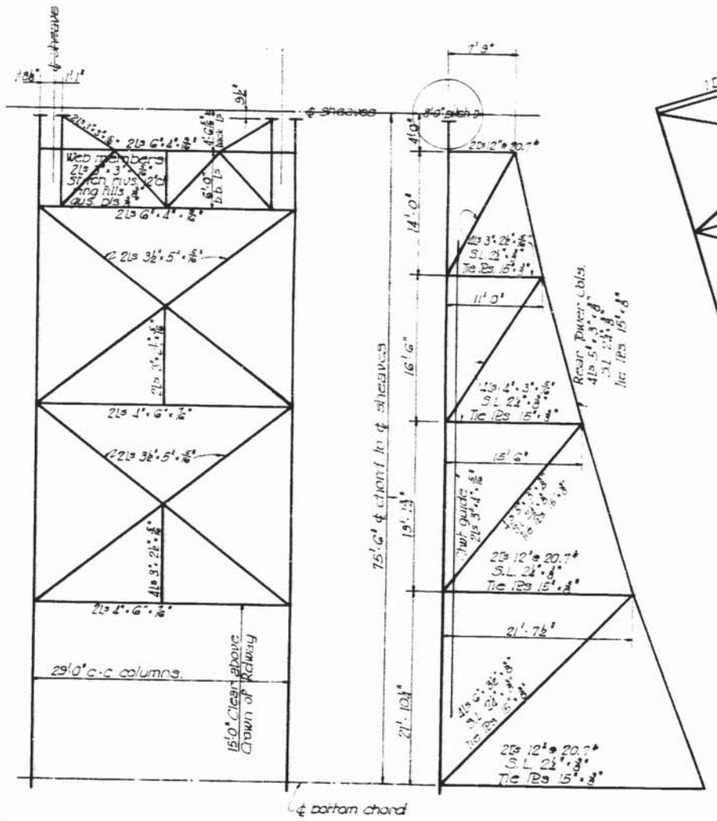
AS BUILT PLANS

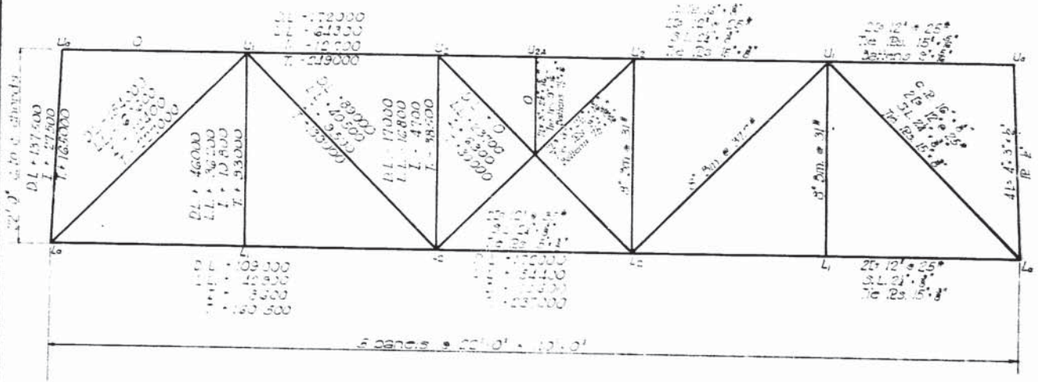
30

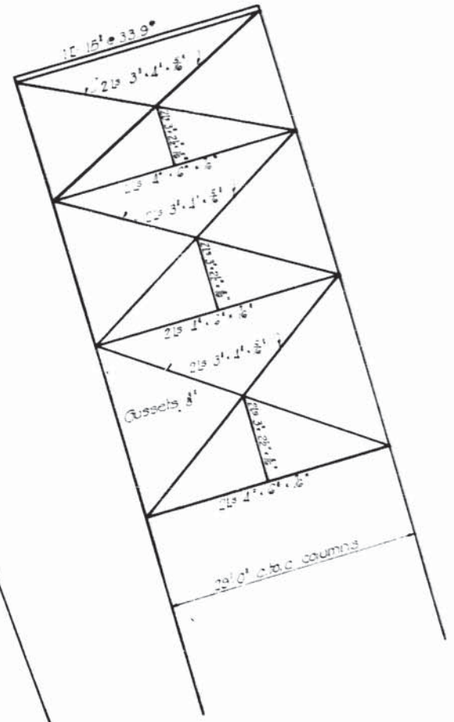
SHEET 28

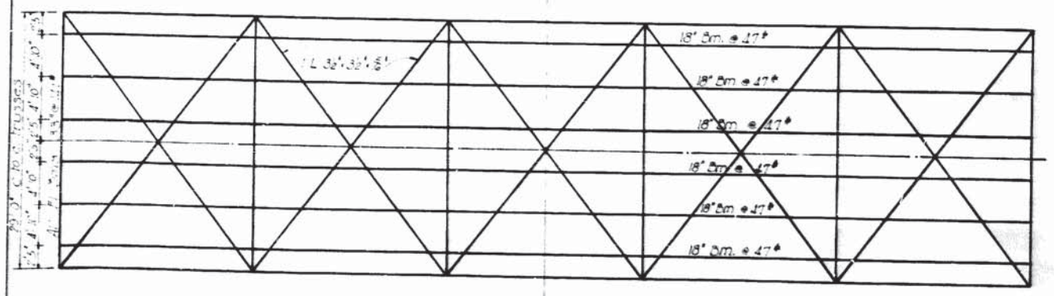


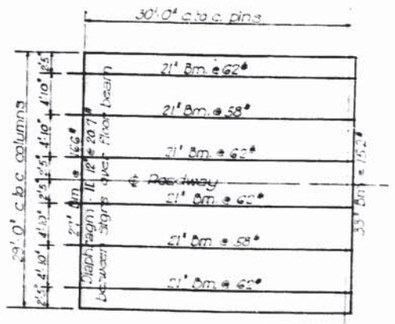












General Notes:
Specifications: Louisiana Highway Commission.
Live loading: H15. Dead load: Calculated weight of concrete and steel. All material structural steel unless noted. Rivets to be ⅞" ø and open holes 1⅛" ø unless noted. Ends of Floor Beams to be milled after connection angles are riveted in place. Stringers not to be riveted to Floor beams until after Lift span has been swung. Trusses to be cambered so that bottom chord will have ½" permanent camber under dead load. If trusses are to be used on a vertical curve, geometric lengths of members to be figured so that the bottom chord and tops of floor beams will conform to vertical curve, then trusses cambered for dead load only. Length of bottom chord under full dead load to be 110'0" c.to c. of end pins. Towers to be cambered so that front legs will be vertical under dead load. All cast steel shoes to be paid for as structural steel. Cost of cast iron drains and all expansion or contraction joint material, except structural steel, to be included in unit price bid for concrete in floor slab. Structural Steel machinery supports to be paid for as Structural Steel. Floor slabs & curbs to be Cl. AA conc. Counterweight concrete to be Class A. Net weight of each piece of machinery to be marked plainly thereon. Stringer lengths to be detailed so that all floor beams will be straight after span has been swung. Gas Pipe Hand rail to be paid for as Fab. Structural Steel.

STANDARD PLAN
110 FT. VERTICAL LIFT SPAN
24' 0" ROADWAY
STRESSES AND SECTIONS
LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. OCT. 1932
Designed by C. Castle Drawn by C. Castle Traced by C. Castle
Checked by [illegible] Checked by [illegible] Approved by [illegible]
In charge of Plan & Design Bridge Engineer

Traced Jan. 1933
W. L. Hampton

S-L-2

AS BUILT PLANS

Diagonals 2 Ls 3½"x3½"x⅜" Chord Angle 2 Ls 4"x3½"x⅜" Web Plate 36"x⅜"

Column Section 14" Rm @ 167#

4 Ls 3"x2½"x⅜"

See details of chord face

2 Ls 4"x3½"x⅜"

Counterweight Guide

4 Ls 4"x3"x⅜" S.L. 2½"x⅜" Tie Pls 15"x⅜"

Mill

15'-6"

Brackets for chd. guide Ls @ ladder not over 6'0" ctrs.

3"x3"x⅜" Ls

⅜" Pl

Stop Ls other side of tower

Continuous Weld

⅜" bent Pl

Span Guides 5"x½" Pls.

Reqd. U.S. one tower only. At gus. Pls cope plates to clear

SEC. A-A

32'-7⅜" L for ladder.

LADDER SECTION

2 bars ⅜"x1½"

¾" Ø rungs, ends upset, shouldered & riveted.

Rungs not over 12" ac.

21'-7½"

2 Ls 12"@ 20.7# S.L. 2½"x⅜" Tie Pls 15"x⅜"

Note: Ladder & Platform at one side of tower only

Stop ladder & chd. guide Ls

2 Ls 6"@ 10.5#

Gusset Pls ⅜" unless noted Rivets ¾" Ø

DETAILS LADDER PLATFORM

15"x⅜" Tie Pl.

4"x4"x½" Ls

6"@ 10.5# Pipe Railing

2 Ls 12"@ 20.7# S.L. 2½"x⅜" Tie Pls 15"x⅜"

30'-0"

Shackle & eye turnbuckle to provide 24" takeup. Breaking strength of turnbuckle not less than 50,000#

Bore for 7" pin

Shoes to be annealed cast steel. 4-1½"Ø-1'6" Anchor bolts each shoe.

DETAILS OF C.S. BEARING BLOCK

C.S. bearing block

3"x1½" Slot

Top of Pier

1" Anchor bolt

1" Ø washer

DETAILS EXPANSION SHOE

Shoes to be annealed cast steel

Shop: All members (excl. Rivets, Ring Fills, Conn. Pls) 1" ctrs

Field: Rivets, Ring Fills, Conn. Pls ¾" ctrs

Sequence of Erection: All spans Lift Span, Anchor Arm, Back Span, Tower, Counterweight, Operating House, Machinery, Cable, Operator's House, Counterweight Guide, Ladder, Platform, Railing, Roadway, Sidewalk, Curb, Railing.

Roadway slab same as for Lift Span. Slab dapped 8" over stringers

12"@ 20.7#

Fill 18"

Mill

2 Ls 8"x6"x⅝" Bm @ 20"

21" Bm @ 58"

2 Ls 8"x6"x⅝" Bm @ 52"

4'-10"

273" Bm @ 165"

Drill rib for pin for turnbuckle

4 bottom chord

3'-0"

Centre rib of shoe

½" sheet lead

Top of Pier

drain hole

2'-4"

29'-0" c to c columns

75'-6" to ¢ sheaves

16'-6"

19'-11"

21'-10½"

¢ downhaul rope

O.H.F.S.

¢ Roadway

¢ Pin

¢ Fl. Bm.

¢ Column

2'-5"

4'-10"

Top of Slab

2'-0"

Top of Slab

¢ Roadway

336" Bm @ 150"

Stringer Details

6'-6"

Bore for 3" pin

Holed for 3" pin

4" sheet lead

5'-9"

Shoes to be annealed cast steel

STANDARD PLAN

110'-0" VERTICAL LIFT SPAN 24'-0" ROADWAY

LOWER SECTION OF TOWERS FOR 40'-0" MOVEMENT

LOUISIANA HIGHWAY COMMISSION

BATON ROUGE, LA.

Designed by ... Drawn by ... Traced by ...

Checked by ... Checked by ... Approved by ...

In Charge of ... Engineer ... Bridge Engineer

November 20, 1933

W. L. Hampton

S-L-2

AS BUILT PLANS

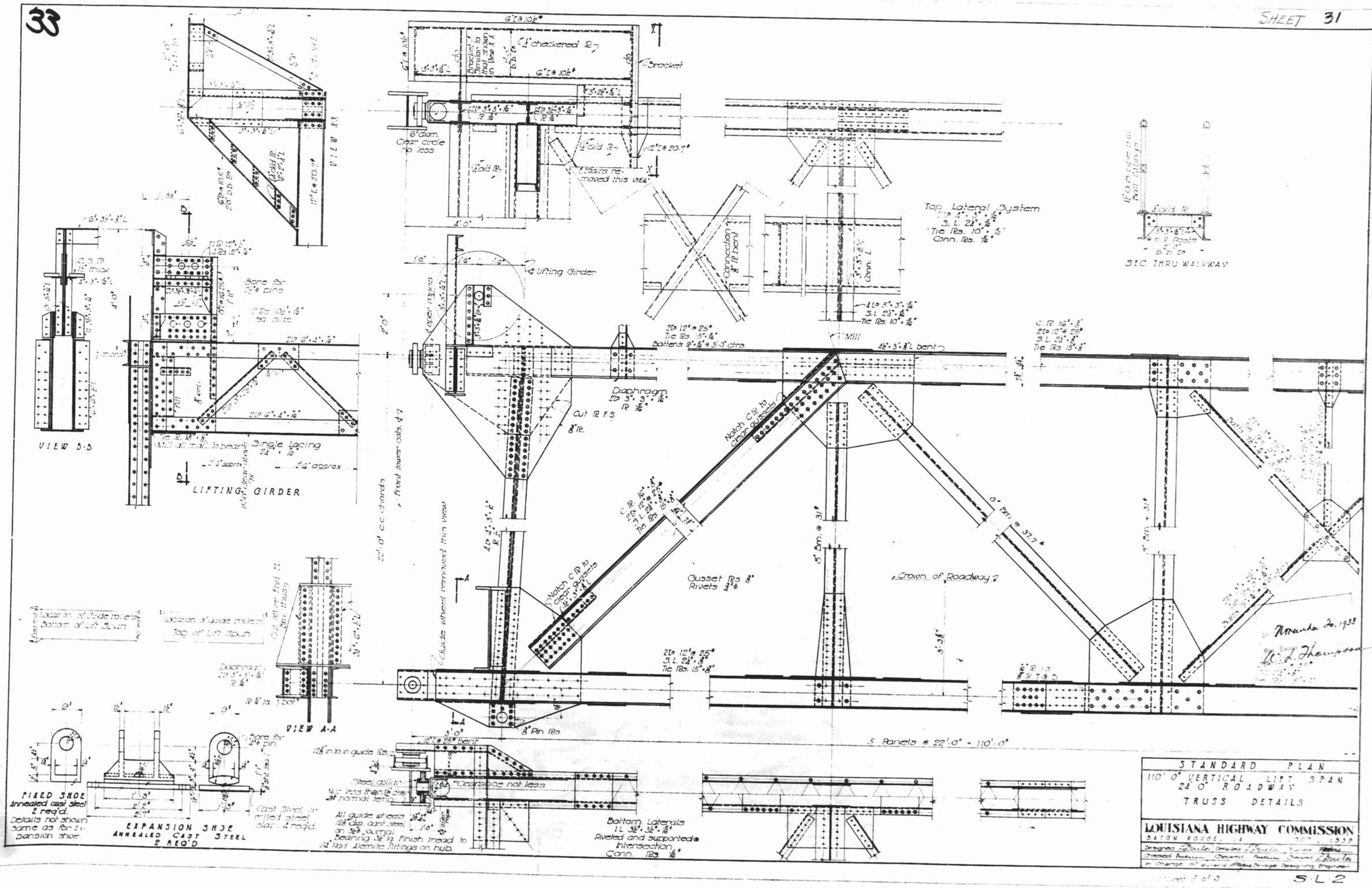
32

Railing
Checkered plate
Open
Railing
Railing
Checkered Plate
Railing
Note: Platform and ladder all one side of tower only.
Open
Open
Mill all mat'l.
SECTION A-A
Mill all mat'l.
Fills
Fills
Mill all mat'l.
Open
Mill all mat'l.
Main Members
Stitch Rivets @ 12" centres
& Ring Fills.
Gussets
Diagonals
Stitch Rivets @ 12" ctrs.
& Ring Fills.
Column Sec.
Span guides not shown
Ladder
2 bars
Rungs ends upset, shouldered and riveted. Rungs not over 12" on centres
Open Rivets for Side only
Uphaul ropes
RIVETS
Chan. built to
Tie Bars
Bear Column Section
Tie Bars
Small
Bear Column Section
Tie Bars
bend line
bend line
Bearing Plate
DETAILS NOT SHOWN SAME AS FOR PANEL ABOVE
Monroe La. 1933
W. L. Henderson

STANDARD PLAN
110'-0" VERTICAL LIFT SPAN
24'-0" ROADWAY
UPPER SECTION OF TOWERS FOR 40'-0" MOVEMENT
LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA.

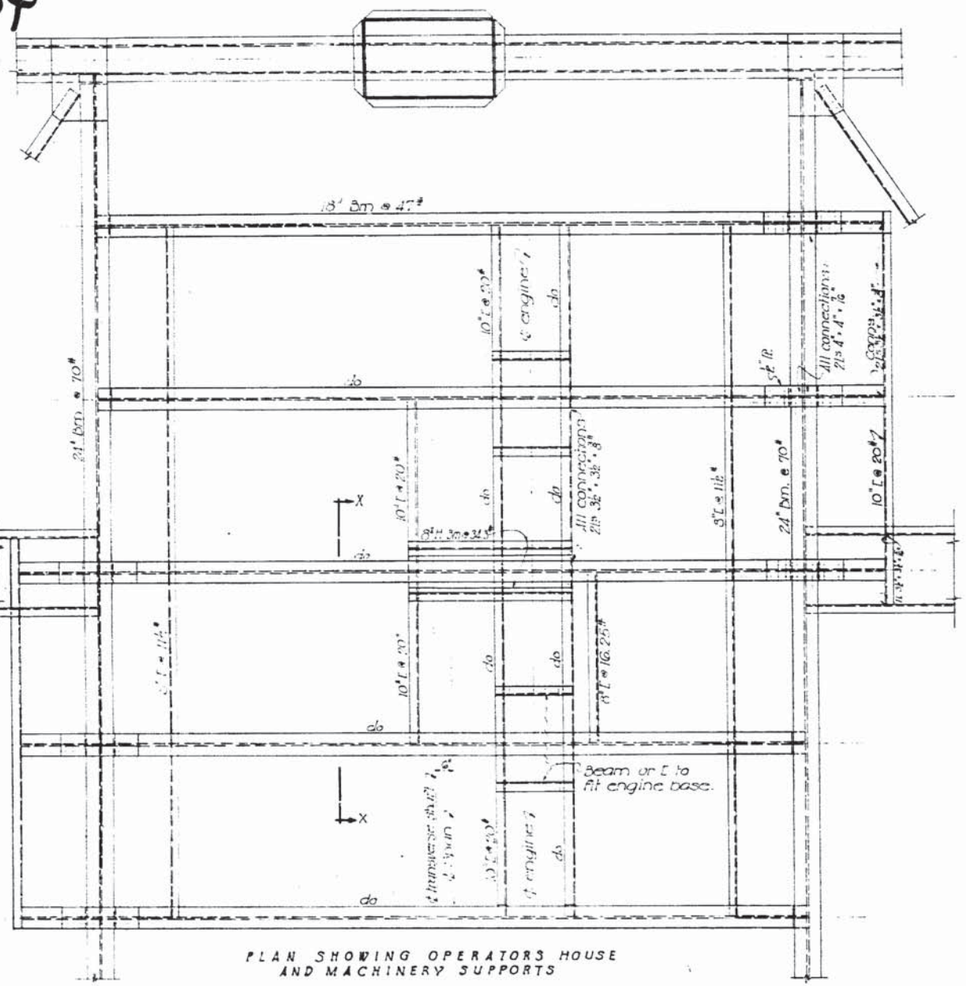
SL 2

AS BUILT PLANS

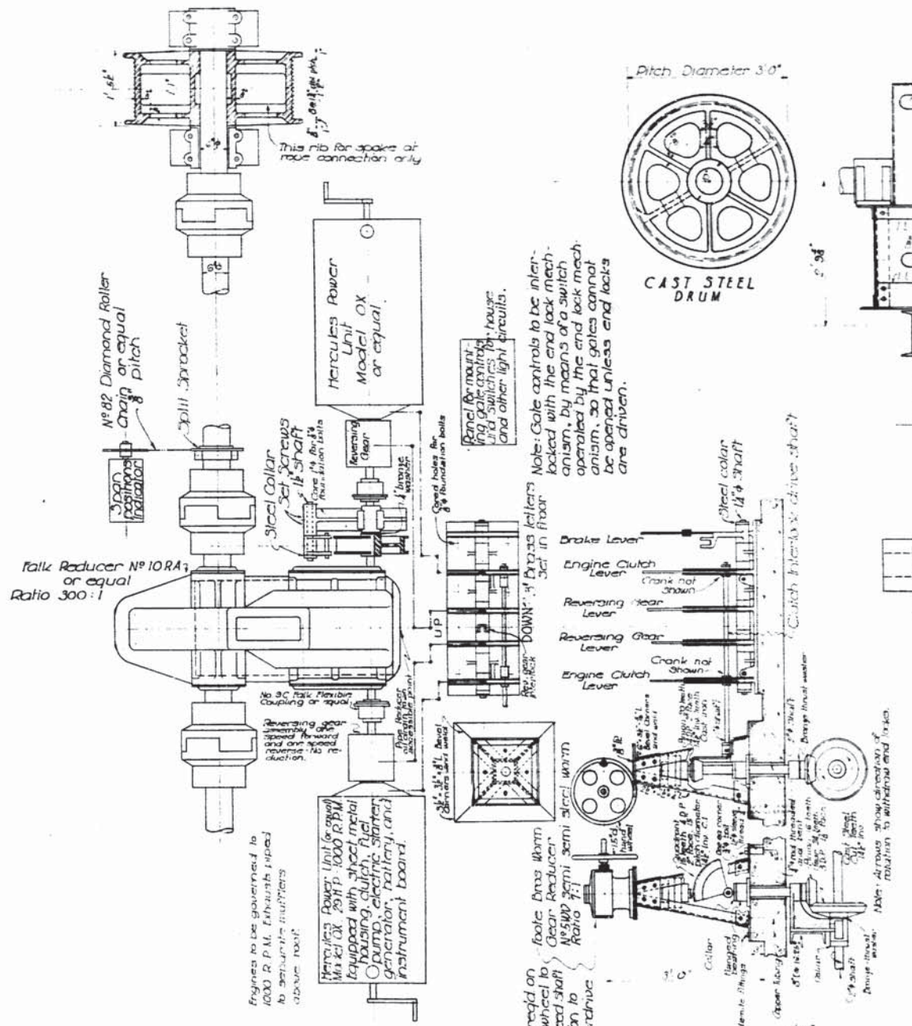


AS BUILT PLANS

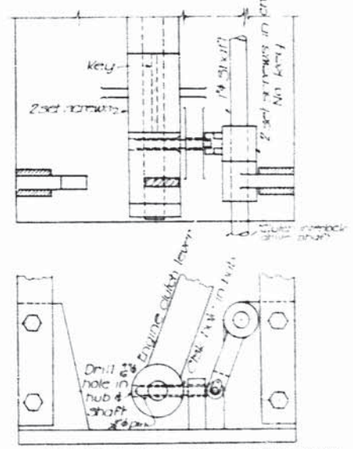
34



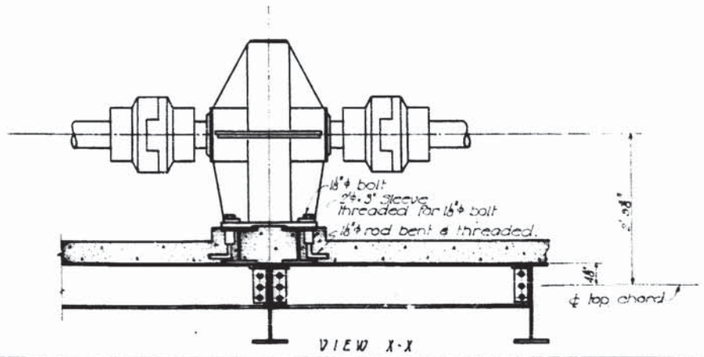
PLAN SHOWING OPERATORS HOUSE AND MACHINERY SUPPORTS



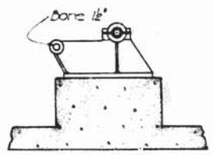
November 30. 1933
W. L. Thompson



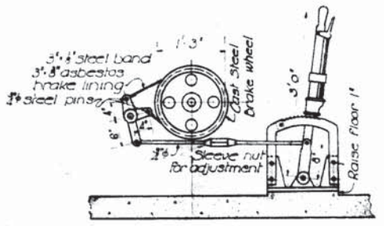
DETAILS OF CLUTCH INTERLOCK
Dead shows clutch disengaged and end locks driven



VIEW X-X



DETAILS HIGH SPEED SHAFT BEARING



DETAILS HAND BRAKE

SPAN POSITIONS INDICATOR

STANDARD PLAN
110'-0" VERTICAL LIFT SPAN
24'-0" ROADWAY
MACHINERY DETAILS

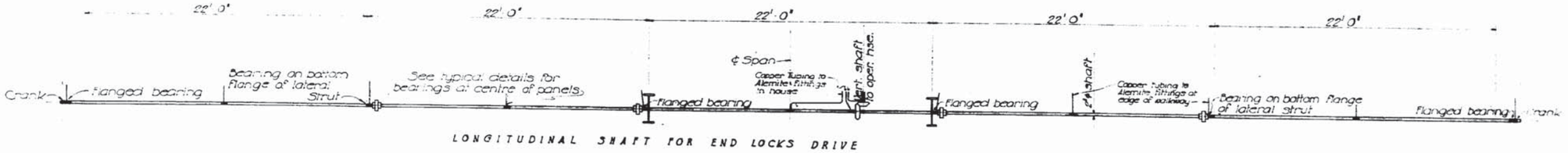
LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. OCT. 1933
Designed by Chas. Date Traced by Thos.
Checked by Chas. Division Engineer
In Charge of Bridge Work Supervising Engineer

S-L 2

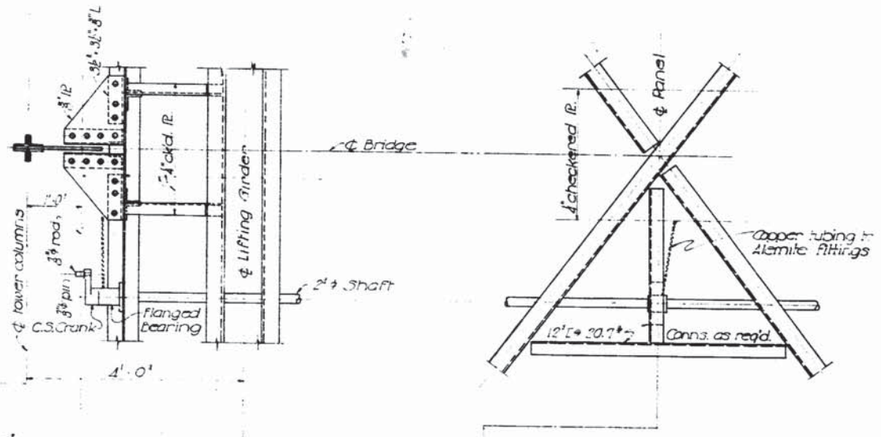
AS BUILT PLANS

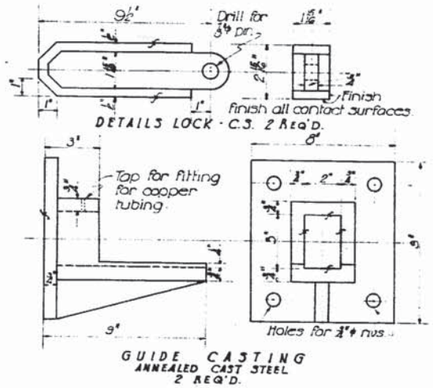
35

SHEET 33



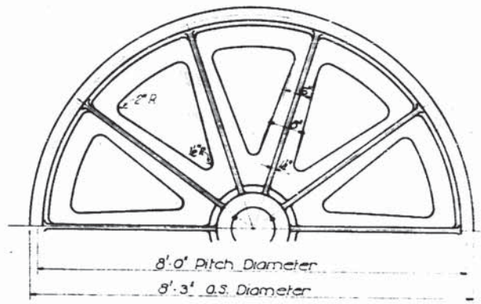
LONGITUDINAL SHAFT FOR END LOCKS DRIVE



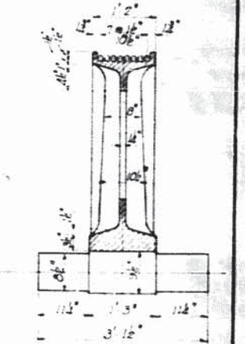


DETAILS LOCK - C.S. 2 REQ'D.

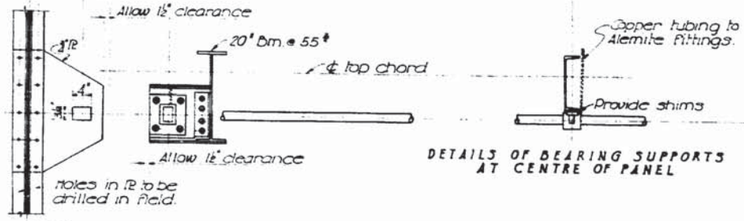
GUIDE CASTING
ANNEALED CAST STEEL
2 REQ'D.



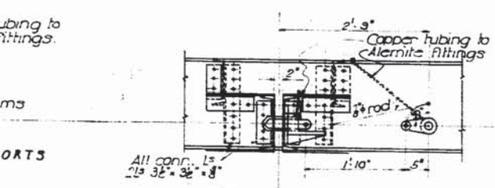
TOWER SHEAVE
4 REQ. ANNEALED CAST STEEL



TOWER SHEAVE TRUNNION
4 REQ'D. HEAT TREATED CARBON FORGING CLASS G A-18-21

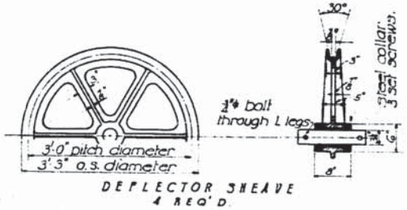


DETAILS OF END LOCK



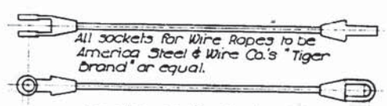
DETAILS OF BEARING SUPPORTS AT CENTRE OF PANEL

DETAILS END LOCK



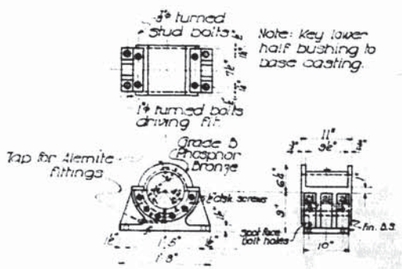
DEFLECTOR SHEAVE
4 REQ'D.

Note: Counterweight ropes to have length stamped on each socket

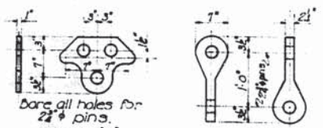


COUNTERWEIGHT ROPES
32 - G - 19 - 1⅛" ϕ IMPROVED PLOW STEEL, HEMP CENTRE. ULTIMATE STRENGTH 148000# per rope

OPERATING ROPES
6 REQ'D.
ULTIMATE STRENGTH 46000# per rope

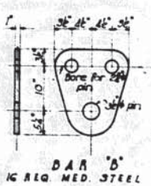


TOWER SHEAVE BEARING
6 REQ. ANNEALED C.S. WITH BUSHINGS

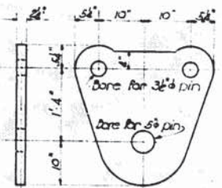


BAR "A"
32 REQ. MED. STEEL

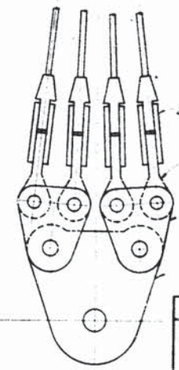
LINK
16 REQ. STEEL FORGING



BAR "B"
16 REQ. MED. STEEL



BAR "C"
4 REQ. MED. STEEL



November 20, 1933
W. L. Hampton

STANDARD PLAN
110'-0" VERTICAL LIFT SPAN — 24'-0" ROADWAY
MACHINERY DETAILS

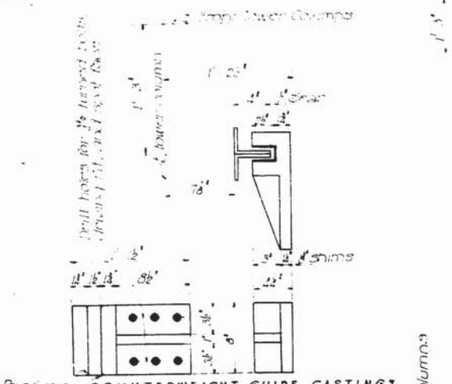
LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. OCT. 1932

Designed by ... Detailed by ... Traced by ...
Checked by ... Checked by ... Passed by ...
In charge of ... Highway Bridge Designing Engineer

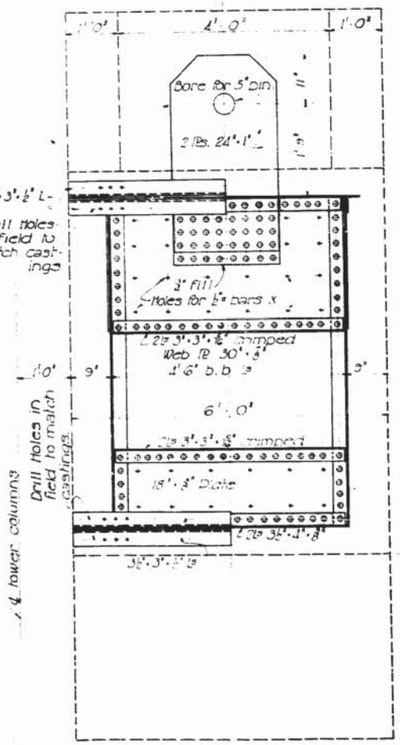
S-L-2

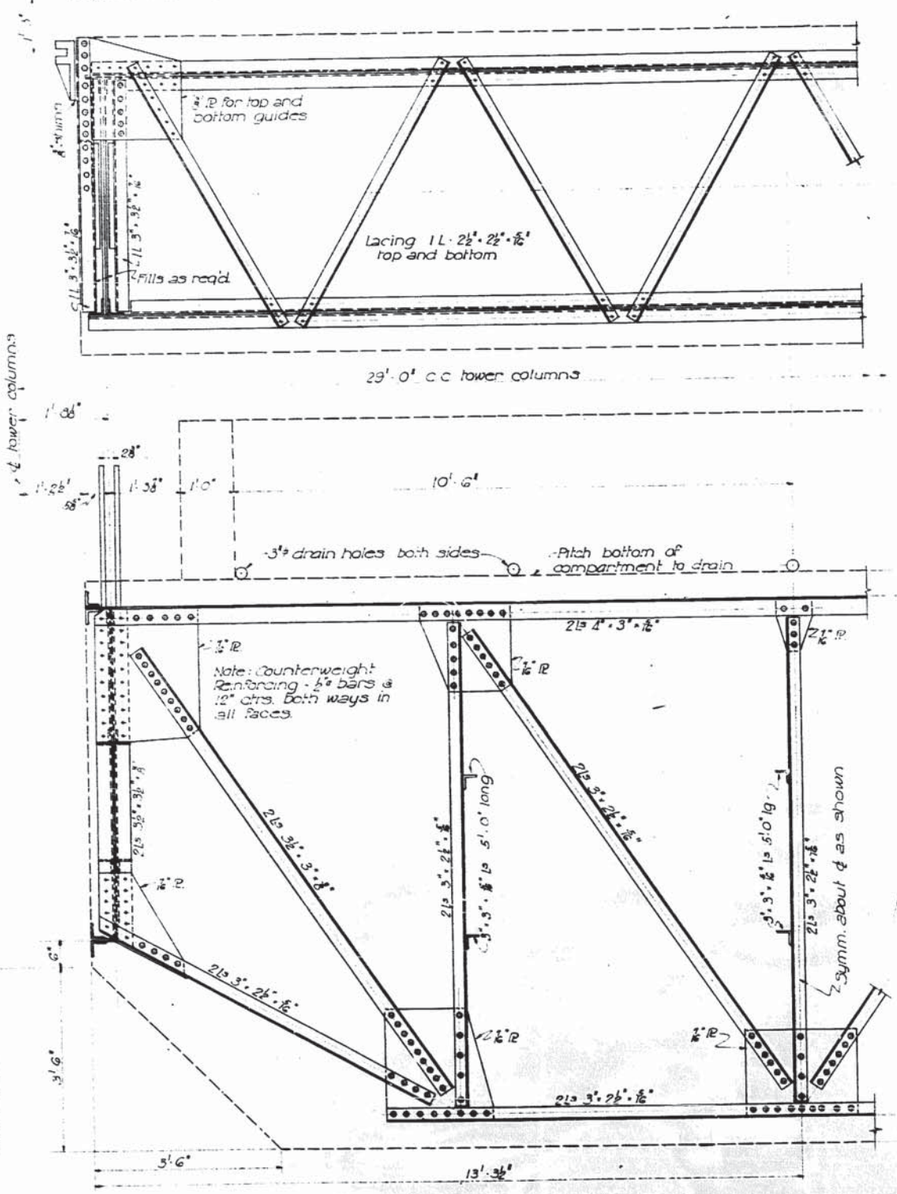
AS BUILT PLANS

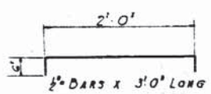
HAER No. LA-31

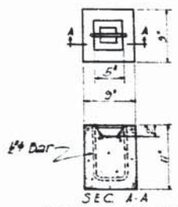


COUNTERWEIGHT GUIDE CASTINGS
8 REQ'D. CAST STEEL

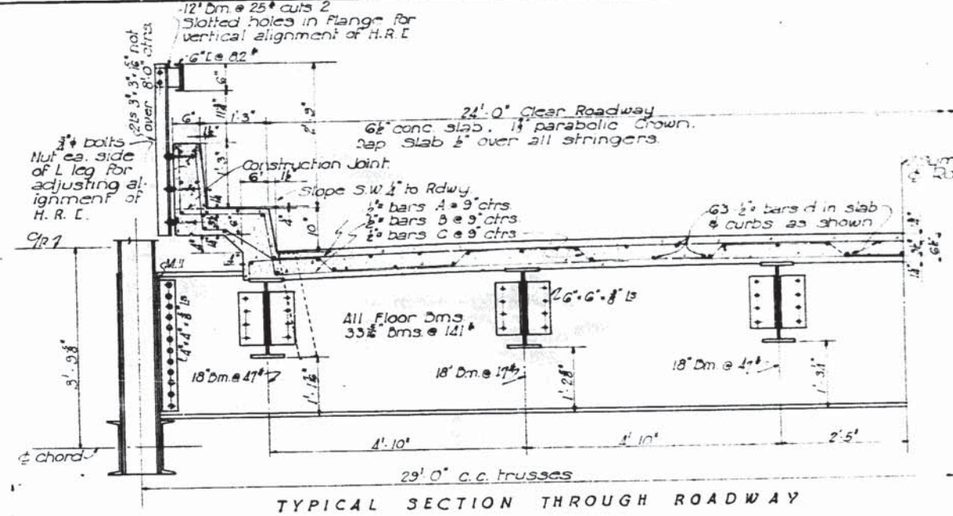




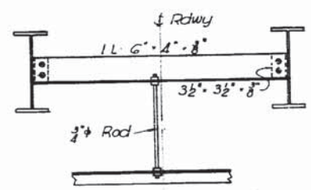




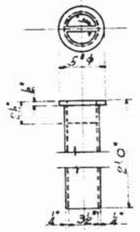
DETAILS OF BLOCKS
TOO REQ'D. FOR 2 CTWTS.

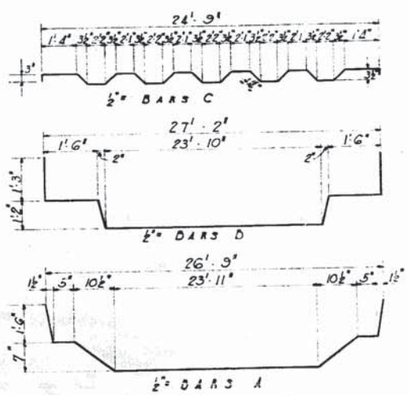


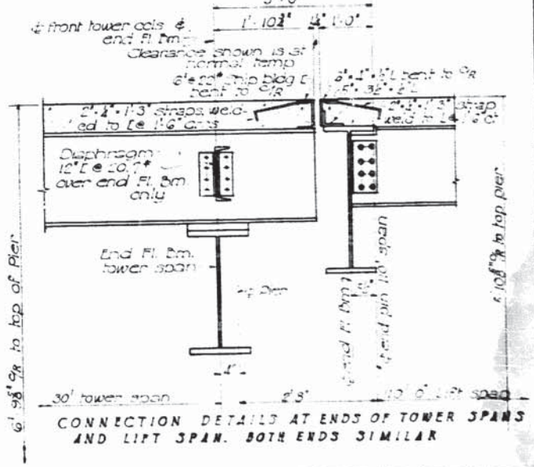
TYPICAL SECTION THROUGH ROADWAY



DETAIL OF LATERAL HANGER
1 PER PANEL







CONNECTION DETAILS AT ENDS OF TOWER SPANS AND LIFT SPAN. BOTH ENDS SIMILAR

Date November 20, 1933
W. L. Hampton

STANDARD PLAN
110'-0" VERTICAL LIFT SPAN
COUNTERWEIGHT, ROADWAY, AND MISCELLANEOUS DETAILS
(24'-0" ROADWAY)

LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. OCT. 1932.

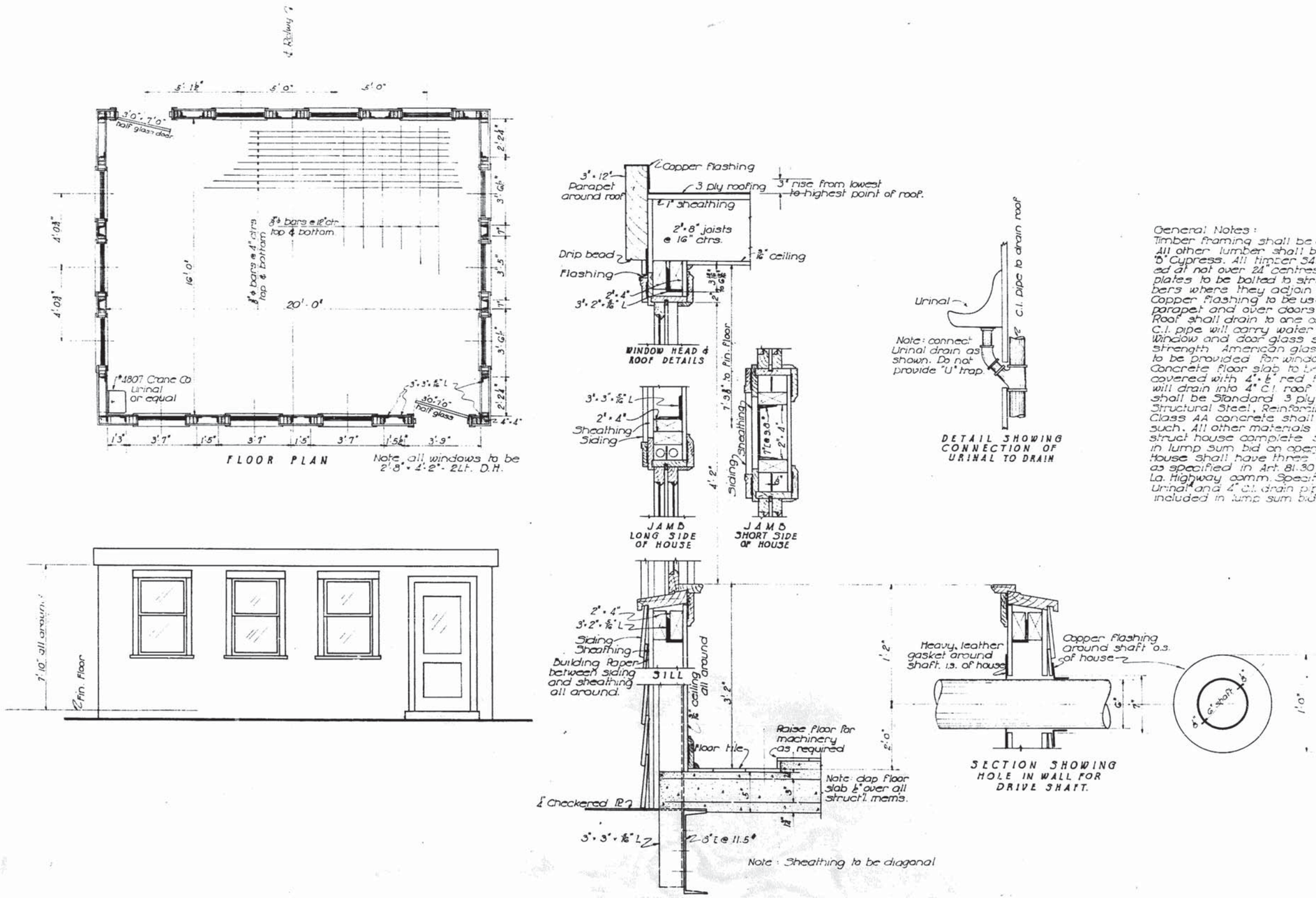
Designed Brucks | Drawn Brucks | Traced Hughes
Checked Peterson | Checked Hutchins | Checked Brucks
In Charge of Design & Maps Bridge Designing Engineer

Sheet 2 of 19

S.L. 2

AS BUILT PLANS

HAER No. LA-31



General Notes:
Timber framing shall be of heart cypress. All other lumber shall be Grade "B" Cypress. All timber 343. Studs to be spaced at not over 24" centres. 2" × 4" Studs and plates to be bolted to structural steel members where they adjoin such members. Copper flashing to be used around roof on parapet and over doors and windows. Roof shall drain to one corner where a 4" C.I. pipe will carry water below low steel. Window and door glass shall be double strength American glass. Copper screens to be provided for windows and doors. Concrete floor slab to be Class AA conc covered with 4" × ½" red floor tile. Urinal will drain into 4" C.I. roof drain. Roofing shall be Standard 3 ply built up roofing. Structural Steel, Reinforcing Steel and Class AA concrete shall be paid for as such. All other materials required to construct house complete shall be included in lump sum bid on operators house. House shall have three coats of paint as specified in Art. 81.30, Pamphlet "N" La. Highway comm. Specifications. Urinal and 4" C.I. drain pipe to be included in lump sum bid for house

FINAL QUANTITIES.

SUMMARY OF QUANTITIES

Class AA conc.	7.35 CU. YDS.
~~Struct'l Steel~~	~~[illegible] LBS.~~
Reinf. Steel	~~1050 LBS.~~ 990 LBS.

NOTE:
FOR STRUCTURAL STEEL SEE MR. LANT'S LETTER - OCT 10, 1933.
CL. "AA" CONC. AND REINF. STEEL SEE "AS BUILT" PLAN - SHEET NO. 16

November 20, 1933

W. L. Thompson

STANDARD PLAN
OPERATORS HOUSE
110'-0" VERTICAL LIFT SPAN
24'-0" ROADWAY

LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. OCT 2 1932

Designed [illegible] Checked Duclos
Designed [illegible] Checked Duclos
Traced [illegible] Checked Duclos
In Charge of [illegible] Designing Engineer

Sheet 3 of 3

S·L·2

AS BUILT PLANS

40

·FLOOR · PLAN·

·ISOMETRIC · VIEW·
Showing framing at all corners, doors, and windows, unless otherwise noted.

·HOUSE · ANCHORAGE · TO · PILES · EXCEPT · CENTRE · PILE··

·PILE · PLAN·

·FRONT · · ELEVATION·

·RIGHT · SIDE · ELEVATION·

·HEAD·

·JAMB·

·MEETING · RAIL·

·SILL·

·D · H · WDW ·
·DETAILS·

·DOOR · DETAILS

ROOF FRAMING AT CHIMNEY

FLASHING AT CHIMNEY

SECTION X-3

·DETAIL · OF · FRONT · PORCH · ROOF

BACK · PORCH · AND · CLOS · DETAILS·

SECTION THRU CORNICE

·STANDARD · PLAN·
·1 · ROOM·
·OPERATORS · COTTAGE·
·LOUISIANA · HIGHWAY · COMMISSION·
Baton Rouge · · Sept. 1931

(D-2-35)

APPROXIMATE · QUANTITIES · OF · PRINCIPAL · ITEMS · (Quantities not exceed)

3800 sq. ft sheathing (shiplap)	280 lin. ft 2"x10"	Cypress Shingles to cover 300 Sq. Ft.			
2100 sq. ft 4"-6" drop siding	72 lin. ft 1"x6"				
1060 sq. ft 1x4 Fin. Floor (flat edge)	270 lin. ft 2"x8"	3-500 ft rolls 36" sheathing (bldg.) paper. (36" roll) "Rosin Sized"			
872 lin. ft 3"-4½ cas. & baseboard	20 lin. ft 1"x8"				
200 lin. ft 6"-4" o.s. casing	25 lin. ft 1"x6"				
800 lin. ft spec. bark band mould	15 lin. ft 2"-2"	"Neoduroo" or equal slate surface prepared roofing to cover 100 sq. ft. Wgt 85 lbs per square.			
600 lin. ft ½ round mouldings	22 lin. ft 2"x6"				
40 lin. ft 2"x2" grd moulding	200 lin. ft 8"-8"				
1200 lin. ft 2"x6"	Celotex or equal wall board to cover 3000 square feet				
3960 lin. ft 2"x4"					

"Crescent Copper Bonds" or equal screening in front and back porches

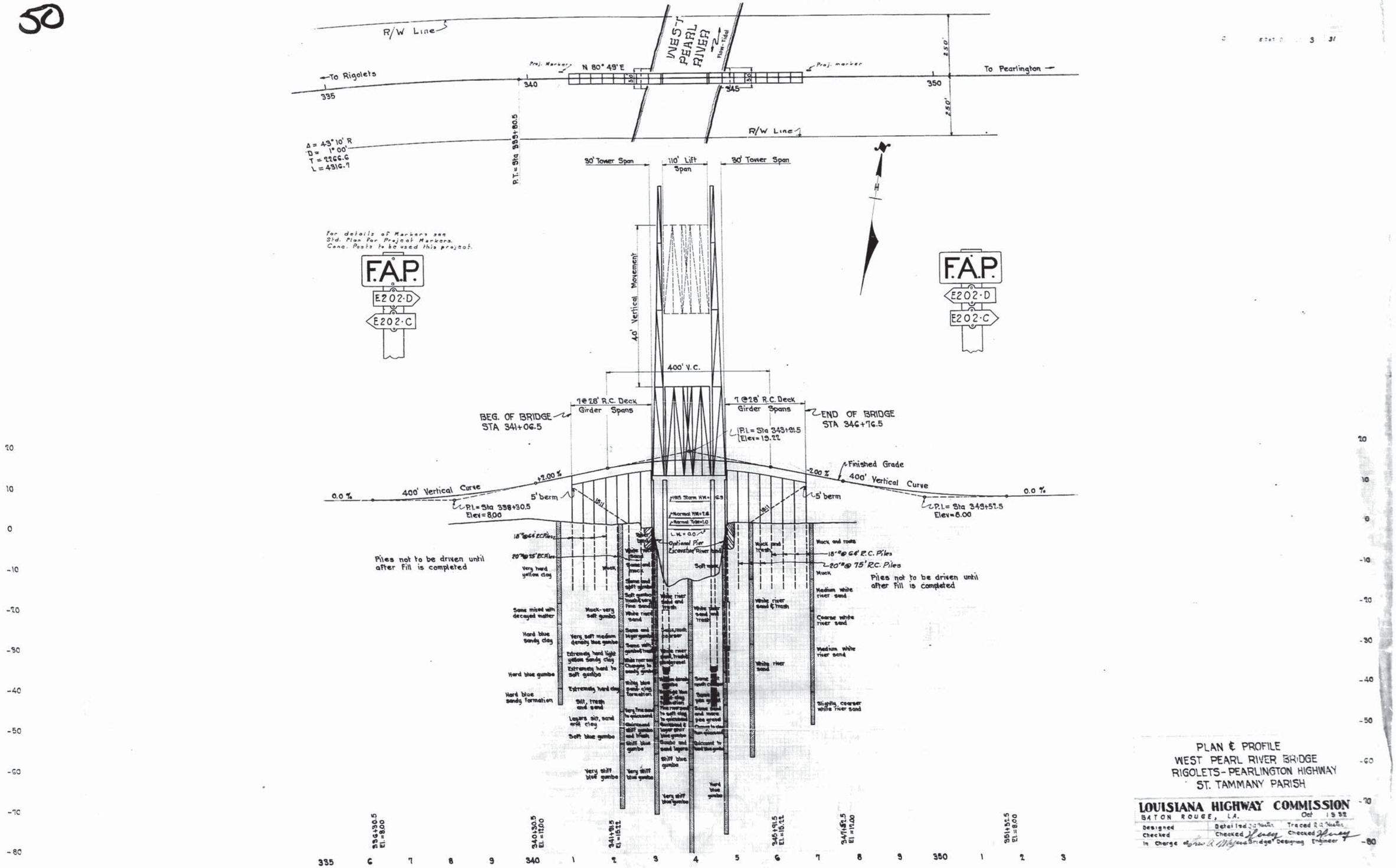
Holes cut and sheet metal covered with 4"x4" angle iron on similar size 16" Cypress shutters with cypress cover and jute hinges

Note: Doors and Doors in Schedules above 15" wide & adm. screens to be screened with 18 mesh "Crescent Copper" wire cloth or equal

AS BUILT PLANS

HAER No. LA-31

50



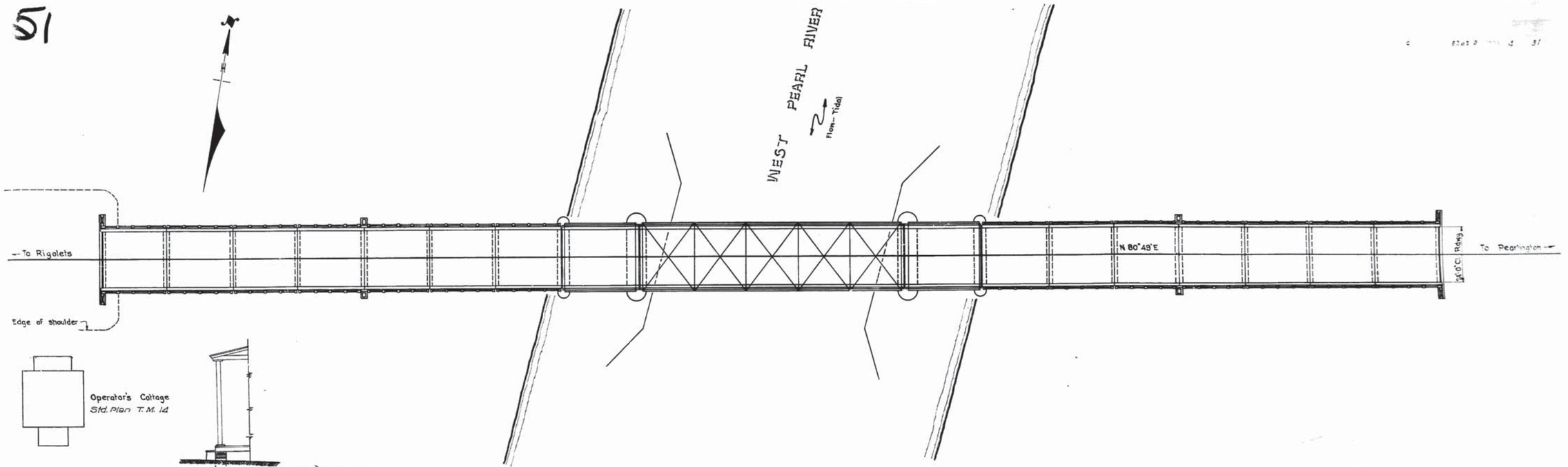
PLAN & PROFILE
WEST PEARL RIVER BRIDGE
RIGOLETS-PEARLINGTON HIGHWAY
ST. TAMMANY PARISH

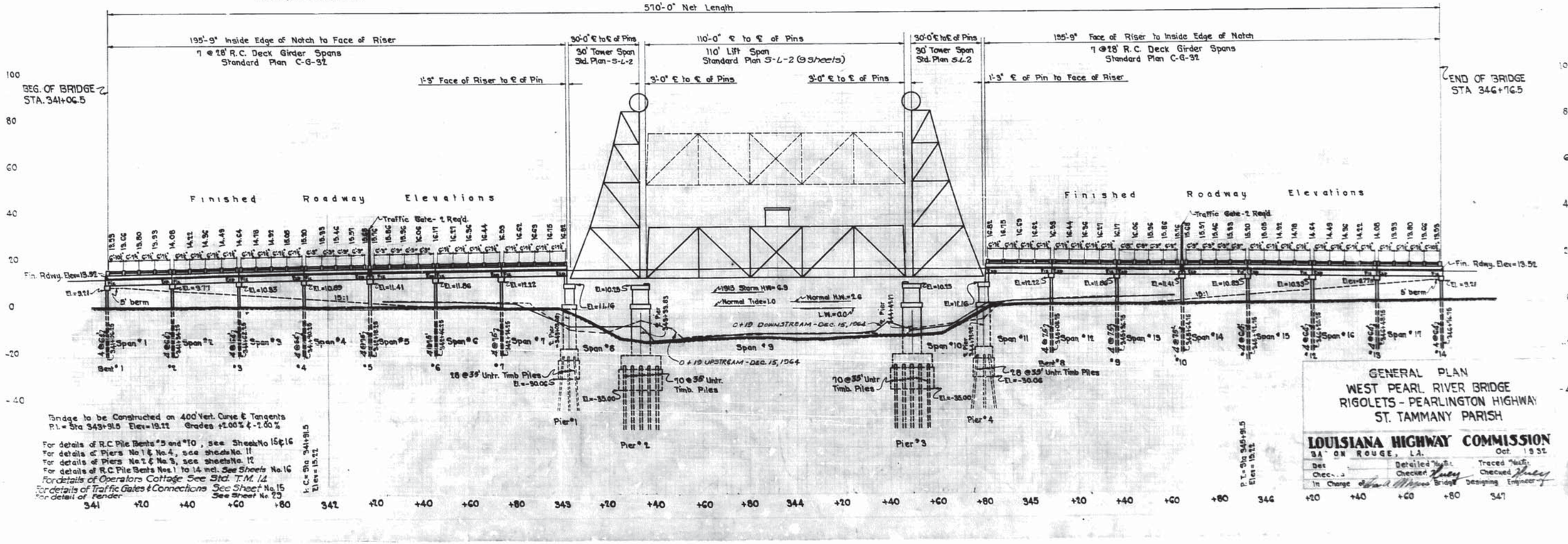
LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA. Oct 1932

Designed	Detailed	Traced
Checked	Checked	Checked
In Charge of	Bridge Designing Engineer	

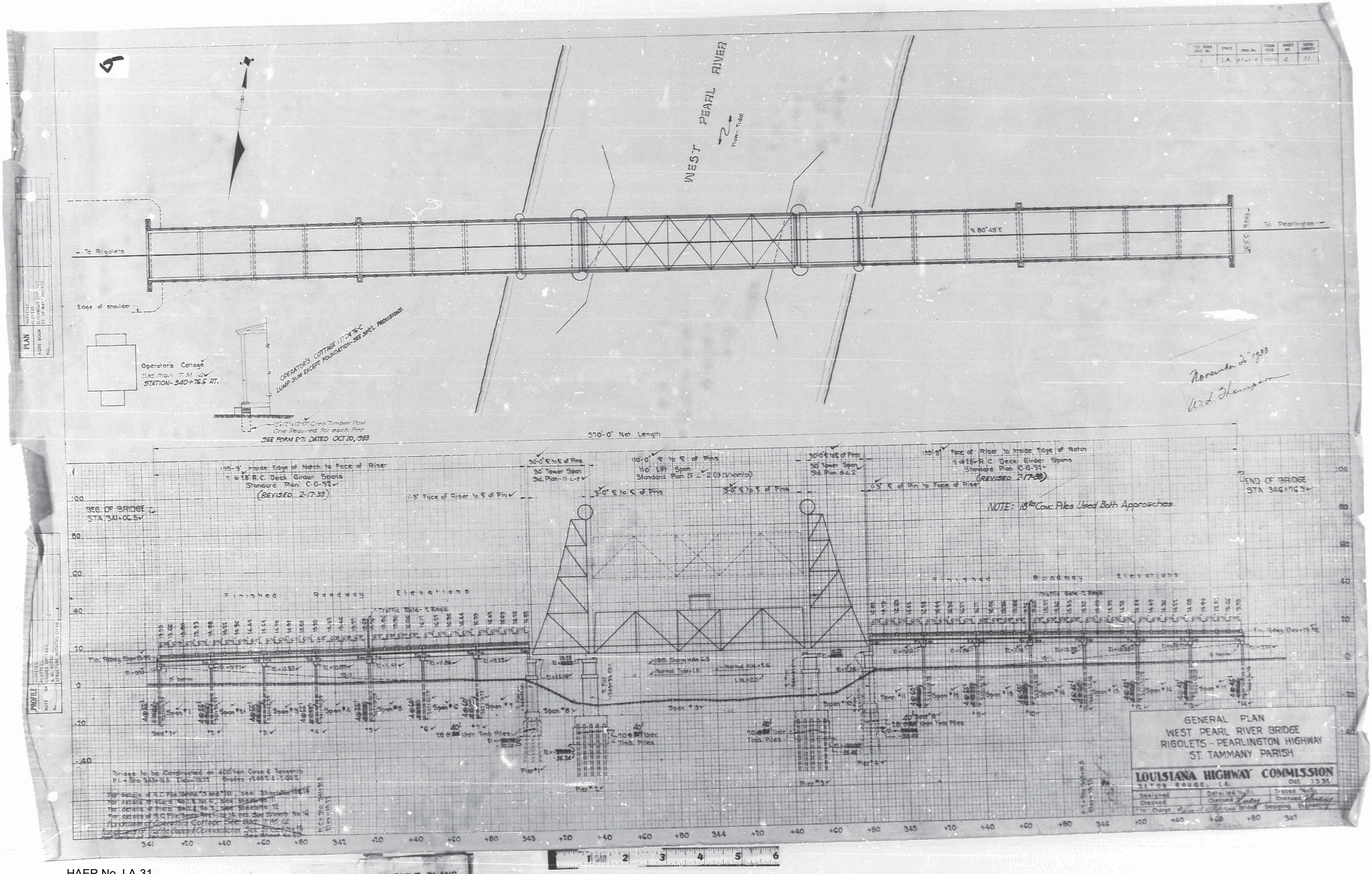
FINAL TRACINGS

51





FINAL TRACINGS



WEST PEARL RIVER
Flow - Tidal
To Rigolets
To Pearlington
N 80°49' E
Edge of shoulder
Operator's Cottage
Std. Plan T.M. 14
STATION - 340+76.5 RT.
OPERATOR'S COTTAGE: 17 EM 76-C
LUMP SUM EXCEPT FOUNDATION - SEE SPL'L. PROVISIONS.
12"x12"x12'-0" Creo. Timber Post
One Required for each Pier
SEE FORM E-71 DATED OCT 20, 1933.
570'-0" Net Length
195'-9" Inside Edge of Notch to Face of Riser
7 @ 28' R.C. Deck Girder Spans
Standard Plan C-G-32
(REVISED 2-17-33)
30'-0" ℄ to ℄ of Pins
30' Tower Span
Std. Plan - S-L-2
110'-0" ℄ to ℄ of Pins
110' Lift Span
Standard Plan S-L-2 (9 Sheets)
1'-3" Face of Riser to ℄ of Pin
3'-0" ℄ to ℄ of Pins
BEG. OF BRIDGE
STA. 341+06.5
END OF BRIDGE
STA. 346+76.5
NOTE: 18" Conc. Piles Used Both Approaches.
Finished Roadway Elevations
Traffic Gate - 2 Req'd
Span #1
Span #2
Span #3
Span #4
Span #5
Span #6
Span #7
Span #8
Span #9
Span #10
Span #11
Span #12
Span #13
Span #14
Span #15
Span #16
Span #17
Pier #1
Pier #2
Pier #3
Pier #4
Bridge to be Constructed on 400' Vert. Curve & Tangents
GENERAL PLAN
WEST PEARL RIVER BRIDGE
RIGOLETS - PEARLINGTON HIGHWAY
ST. TAMMANY PARISH
LOUISIANA HIGHWAY COMMISSION
BATON ROUGE, LA.
Oct. 1932
PLAN
PROFILE
AS BUILT PLANS

HAER No. LA-31

31435

Louisiana Historic Bridge

Bridge 058710

Base @ Modem

31435c5092216 Modem

Processed by A.M.B 9/23/16

	FS	Desc
	500, 501	PK nail set
	502 - 504	60d set

Scan 1 (Tripod)

Sta	504	BS CK	500, 503

Scan 2 (Tripod)

Sta	502	BS CK	503, 504.

Scan 3 (Tripod)

Sta	503	Bs CK	501, 504

Scan 4 (Tripod)

Sta	501	BS CK	500, 503

Scan 5 (Tripod)

Sta	500	BS CK	504, 501

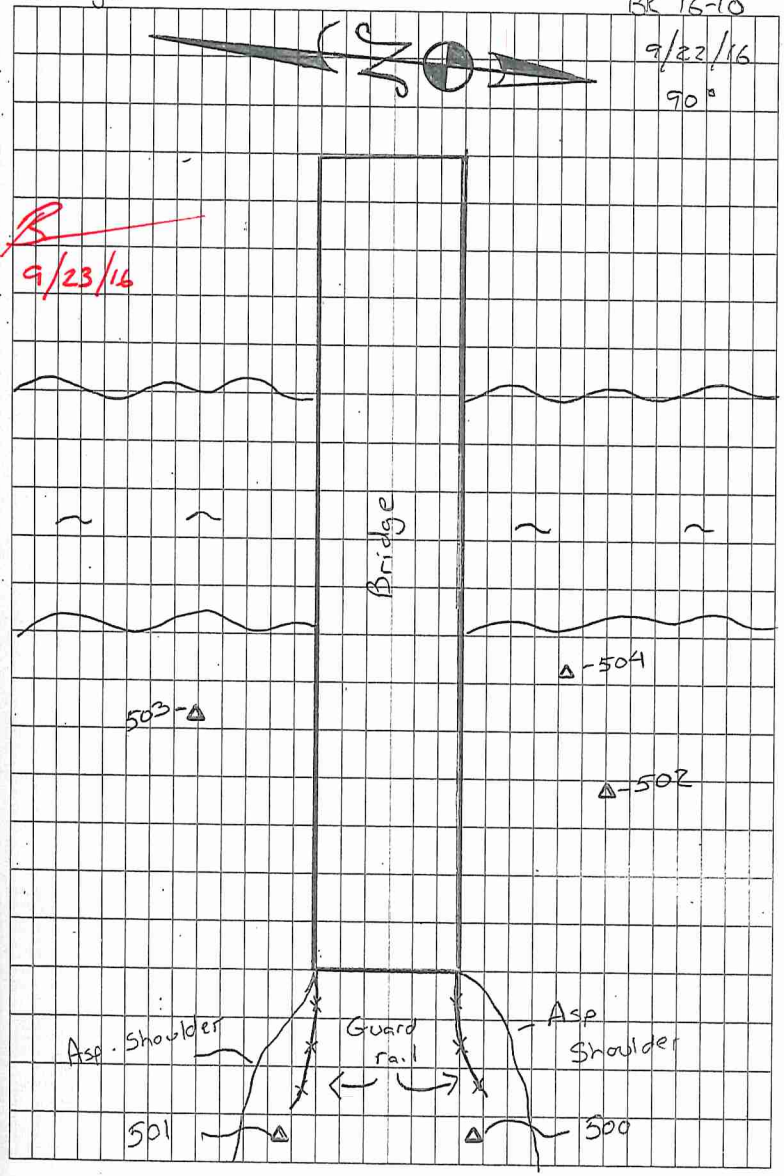
A. Burns
R. Broden
R. Dugas

(5)

BK 16-10

9/22/16

90°



A.M.B

HAER No. LA-31

31435

Louisiana Historic Bridge

Bridge 058710

Base @ Modem

FS	Desc
505	60d set
506	60d set
507, 508	PK nail set
509, 510	60d set
502, 504	60d nail

A Burns
R. Braden
R. Dugas

6

BK 16-10

9/26/16

9:00

Processed by A.M.B

9/27/16

31435

Louisiana Historic Bridge

Bridge 058710

Scan 1 (Tripod)

Sta = 505 BS CK - 509, 510

Scan 2 (Tripod)

Sta = 506 BS CK = 509, 510

Scan 3 (Tripod)

Sta = 509 BS CK = 506, 505

Scan 4 (Tripod)

Sta 508 BS CK = 506, 507

Scan 5 (Tripod)

Sta 507 BS CK = 508, 510

Scan 6 (Resection)

Targets = 505, 506, 510, 504

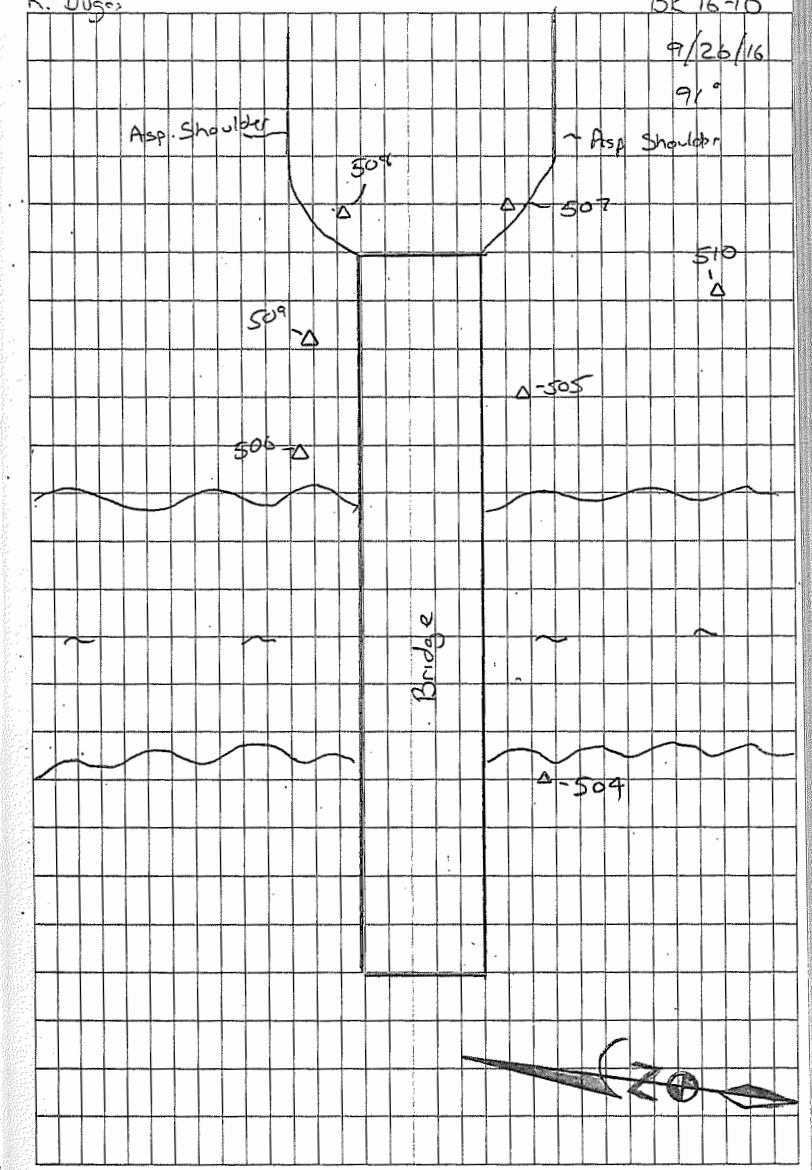
A. Burns
R Braden
R. Dugas

(7)

BK 16-10

9/26/16

91°



503
506
509
508
507
505
501
510
500
502
504

Status: VALID Registration

Mean Absolute Error:

for Enabled Constraints = 0.038 ft

for Disabled Constraints = 0.000 ft

Date: 2017.10.05 10:32:06

Database name : BRIDGE 058710

ScanWorlds
31435c5092216ModemCNT.TXT (Leveled)
500: SW-005 (Leveled)
501: SW-004 (Leveled)
502: SW-002 (Leveled)
503: SW-003 (Leveled)
504: SW-001 (Leveled)
505: SW-001 (Leveled)
506: SW-002 (Leveled)
509: SW-003 (Leveled)
508: SW-004 (Leveled)
507: SW-005 (Leveled)
Station-001: SW-001

Constraints

Name	ScanWorld	ScanWorld	Type	On/Off	Weight	Error	Error Vector	Horz	Vert
502	31435c5092216ModemCNT.TXT (Leveled)	502: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.088 ft	(-0.001, -0.009, -0.087) ft	0.010 ft	-0.087 ft
501	31435c5092216ModemCNT.TXT (Leveled)	501: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.050 ft	(-0.007, -0.002, 0.049) ft	0.007 ft	0.049 ft
501	31435c5092216ModemCNT.TXT (Leveled)	503: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.055 ft	(-0.001, 0.000, 0.055) ft	0.001 ft	0.055 ft
503	31435c5092216ModemCNT.TXT (Leveled)	501: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.017 ft	(0.006, 0.004, -0.015) ft	0.007 ft	-0.015 ft
503	31435c5092216ModemCNT.TXT (Leveled)	502: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.019 ft	(0.003, 0.005, 0.018) ft	0.006 ft	0.018 ft
503	31435c5092216ModemCNT.TXT (Leveled)	503: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.020 ft	(0.001, 0.003, -0.020) ft	0.003 ft	-0.020 ft
504	31435c5092216ModemCNT.TXT (Leveled)	500: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.045 ft	(0.002, -0.018, 0.040) ft	0.019 ft	0.040 ft
504	31435c5092216ModemCNT.TXT (Leveled)	504: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.043 ft	(-0.004, -0.019, 0.039) ft	0.019 ft	0.039 ft
504	31435c5092216ModemCNT.TXT (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.046 ft	(0.005, -0.037, 0.027) ft	0.037 ft	0.027 ft
505	31435c5092216ModemCNT.TXT (Leveled)	505: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.049 ft	(-0.032, 0.037, -0.006) ft	0.049 ft	-0.006 ft
505	31435c5092216ModemCNT.TXT (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.088 ft	(-0.057, 0.066, 0.009) ft	0.087 ft	0.009 ft
506	31435c5092216ModemCNT.TXT (Leveled)	506: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.048 ft	(0.006, 0.048, -0.001) ft	0.048 ft	-0.001 ft
506	31435c5092216ModemCNT.TXT (Leveled)	509: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.048 ft	(0.005, 0.047, 0.000) ft	0.048 ft	0.000 ft
506	31435c5092216ModemCNT.TXT (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.094 ft	(0.005, 0.094, -0.006) ft	0.094 ft	-0.006 ft
507	31435c5092216ModemCNT.TXT (Leveled)	507: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.032 ft	(-0.006, -0.014, -0.028) ft	0.015 ft	-0.028 ft
508	31435c5092216ModemCNT.TXT (Leveled)	508: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.046 ft	(0.013, 0.000, 0.044) ft	0.013 ft	0.044 ft
509	31435c5092216ModemCNT.TXT (Leveled)	506: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.016 ft	(-0.008, -0.001, -0.014) ft	0.009 ft	-0.014 ft
509	31435c5092216ModemCNT.TXT (Leveled)	509: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.017 ft	(-0.007, -0.001, -0.015) ft	0.008 ft	-0.015 ft
509	31435c5092216ModemCNT.TXT (Leveled)	508: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.026 ft	(-0.010, -0.001, -0.024) ft	0.010 ft	-0.024 ft
510	31435c5092216ModemCNT.TXT (Leveled)	505: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.058 ft	(0.020, -0.052, 0.015) ft	0.056 ft	0.015 ft
510	31435c5092216ModemCNT.TXT (Leveled)	507: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.054 ft	(0.020, -0.047, 0.016) ft	0.051 ft	0.016 ft
510	31435c5092216ModemCNT.TXT (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.108 ft	(0.034, -0.103, 0.007) ft	0.108 ft	0.007 ft
500	31435c5092216ModemCNT.TXT (Leveled)	500: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.053 ft	(0.002, 0.000, -0.053) ft	0.002 ft	-0.053 ft
500	31435c5092216ModemCNT.TXT (Leveled)	504: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.051 ft	(0.011, 0.001, -0.050) ft	0.011 ft	-0.050 ft
500	500: SW-005 (Leveled)	504: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(0.009, 0.000, 0.003) ft	0.009 ft	0.003 ft
504	500: SW-005 (Leveled)	504: SW-001 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(-0.007, 0.000, -0.002) ft	0.007 ft	-0.002 ft
504	500: SW-005 (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.023 ft	(0.002, -0.018, -0.013) ft	0.019 ft	-0.013 ft
501	501: SW-004 (Leveled)	503: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.008 ft	(0.006, 0.002, 0.006) ft	0.006 ft	0.006 ft
503	501: SW-004 (Leveled)	502: SW-002 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.033 ft	(-0.003, 0.001, 0.033) ft	0.003 ft	0.033 ft
503	501: SW-004 (Leveled)	503: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.006 ft	(-0.004, -0.001, -0.004) ft	0.005 ft	-0.004 ft
503	502: SW-002 (Leveled)	503: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.037 ft	(-0.001, -0.003, -0.037) ft	0.003 ft	-0.037 ft
504	504: SW-001 (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.023 ft	(0.009, -0.018, -0.011) ft	0.020 ft	-0.011 ft
505	505: SW-001 (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.041 ft	(-0.025, 0.030, 0.015) ft	0.039 ft	0.015 ft
510	505: SW-001 (Leveled)	507: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.006 ft	(0.000, 0.005, 0.002) ft	0.005 ft	0.002 ft
510	505: SW-001 (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.053 ft	(0.013, -0.050, -0.008) ft	0.052 ft	-0.008 ft
506	506: SW-002 (Leveled)	509: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.002 ft	(-0.001, 0.000, 0.001) ft	0.001 ft	0.001 ft
506	506: SW-002 (Leveled)	Station-001: SW-001	Coincident: Vertex - Vertex	On	1.0000	0.046 ft	(-0.001, 0.046, -0.004) ft	0.046 ft	-0.004 ft
509	506: SW-002 (Leveled)	509: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.002 ft	(0.001, 0.000, -0.001) ft	0.001 ft	-0.001 ft
509	506: SW-002 (Leveled)	508: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.011 ft	(-0.001, 0.001, -0.011) ft	0.001 ft	-0.011 ft
509	509: SW-003 (Leveled)	508: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.010 ft	(-0.002, 0.000, -0.009) ft	0.002 ft	-0.009 ft

506 509: SW-003 (Leveled) Station-001: SW-001 Coincident: Vertex - Vertex On 1.0000 0.047 ft (0.000, 0.046, -0.006) ft 0.046 ft -0.006 ft
510 507: SW-005 (Leveled) Station-001: SW-001 Coincident: Vertex - Vertex On 1.0000 0.058 ft (0.013, -0.056, -0.010) ft 0.057 ft -0.010 ft

ScanWorld Transformations
31435c5092216ModemCNT.TXT (Leveled)
translation: (0.000, 0.000, 0.000) ft
rotation: (0.0000, 1.0000, 0.0000):0.000 deg

500: SW-005 (Leveled)
translation: (3806168.441, 633312.063, 18.012) ft
rotation: (-0.0000, -0.0000, -1.0000):-124.214 deg

501: SW-004 (Leveled)
translation: (3806171.341, 633350.185, 17.285) ft
rotation: (-0.0000, -0.0000, -1.0000):59.639 deg

502: SW-002 (Leveled)
translation: (3806301.085, 633302.778, 8.614) ft
rotation: (0.0000, 0.0000, 1.0000):-131.618 deg

503: SW-003 (Leveled)
translation: (3806313.032, 633393.269, 8.272) ft
rotation: (0.0000, 0.0000, 1.0000):88.266 deg

504: SW-001 (Leveled)
translation: (3806354.168, 633322.204, 8.319) ft
rotation: (-0.0000, -0.0000, -1.0000):-153.584 deg

505: SW-001 (Leveled)
translation: (3806701.457, 633395.784, 9.317) ft
rotation: (-0.0000, -0.0000, -1.0000):44.969 deg

506: SW-002 (Leveled)
translation: (3806598.676, 633434.381, 7.550) ft
rotation: (-0.0000, -0.0000, -1.0000):80.802 deg

509: SW-003 (Leveled)
translation: (3806696.861, 633457.274, 9.775) ft
rotation: (0.0000, 0.0000, 1.0000):11.982 deg

508: SW-004 (Leveled)
translation: (3806777.191, 633454.323, 17.411) ft
rotation: (-0.0000, -0.0000, -1.0000):-145.069 deg

507: SW-005 (Leveled)
translation: (3806782.274, 633423.572, 17.465) ft
rotation: (0.0000, 0.0000, 1.0000):-169.572 deg

Station-001: SW-001
translation: (3806593.032, 633381.283, 6.948) ft
rotation: (0.0007, 0.0124, 0.9999):145.005 deg

Unused ControlSpace Objects
Station-001: SW-001:
Vertex : unlabeled

Status: VALID Registration

Mean Absolute Error:

for Enabled Constraints = 0.019 ft

for Disabled Constraints = 0.071 ft

Date: 2017.10.05 10:32:28

Database name : BRIDGE 058710

ScanWorlds
31435c5092216ModemCNT.TXT (Leveled)
Station-003: SW-003 (Leveled)
Station-004: SW-004 (Leveled)
Station-005: SW-005 (Leveled)
Station-006: SW-006 (Leveled)
Station-007: SW-007 (Leveled)
Station-008: SW-008 (Leveled)
Station-009: SW-009 (Leveled)

Constraints

Name	ScanWorld	ScanWorld	Type	On/Off	Weight	Error	Error Vector	Horz	Vert
503	31435c5092216ModemCNT.TXT (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.069 ft	(-0.013, 0.006, 0.068) ft	0.014 ft	0.068
505	31435c5092216ModemCNT.TXT (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.038 ft	(-0.002, -0.028, 0.025) ft	0.028 ft	0.025
506	31435c5092216ModemCNT.TXT (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.021 ft	(-0.004, 0.015, -0.014) ft	0.015 ft	-0.014
507	31435c5092216ModemCNT.TXT (Leveled)	Station-003: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.025 ft	(0.015, -0.008, -0.018) ft	0.017 ft	-0.018
507	31435c5092216ModemCNT.TXT (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.025 ft	(0.017, -0.011, -0.015) ft	0.020 ft	-0.015
507	31435c5092216ModemCNT.TXT (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.029 ft	(0.017, -0.009, -0.022) ft	0.019 ft	-0.022
507	31435c5092216ModemCNT.TXT (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.029 ft	(0.019, -0.015, -0.017) ft	0.024 ft	-0.017
507	31435c5092216ModemCNT.TXT (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.025 ft	(0.014, -0.014, -0.016) ft	0.020 ft	-0.016
507	31435c5092216ModemCNT.TXT (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.019 ft	(0.015, -0.007, -0.010) ft	0.016 ft	-0.010
508	31435c5092216ModemCNT.TXT (Leveled)	Station-003: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.054 ft	(0.040, 0.024, 0.027) ft	0.047 ft	0.027
508	31435c5092216ModemCNT.TXT (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.053 ft	(0.039, 0.029, 0.020) ft	0.049 ft	0.020
508	31435c5092216ModemCNT.TXT (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.051 ft	(0.039, 0.026, 0.020) ft	0.047 ft	0.020
508	31435c5092216ModemCNT.TXT (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.054 ft	(0.038, 0.034, 0.019) ft	0.051 ft	0.019
508	31435c5092216ModemCNT.TXT (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.054 ft	(0.037, 0.031, 0.022) ft	0.049 ft	0.022
509	31435c5092216ModemCNT.TXT (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.036 ft	(-0.001, -0.005, -0.036) ft	0.005 ft	-0.036
500	31435c5092216ModemCNT.TXT (Leveled)	Station-003: SW-003 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.048 ft	(-0.047, -0.010, -0.006) ft	0.048 ft	-0.006
500	31435c5092216ModemCNT.TXT (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.049 ft	(-0.048, -0.010, -0.003) ft	0.049 ft	-0.003
500	31435c5092216ModemCNT.TXT (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.049 ft	(-0.048, -0.010, 0.004) ft	0.049 ft	0.004
500	31435c5092216ModemCNT.TXT (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.050 ft	(-0.049, -0.010, 0.000) ft	0.050 ft	0.000
500	31435c5092216ModemCNT.TXT (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.045 ft	(-0.044, -0.009, -0.004) ft	0.045 ft	-0.004
500	31435c5092216ModemCNT.TXT (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.038 ft	(-0.037, -0.007, -0.007) ft	0.038 ft	-0.007
501	31435c5092216ModemCNT.TXT (Leveled)	Station-003: SW-003 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.141 ft	(-0.062, -0.024, 0.124) ft	0.067 ft	0.124
501	31435c5092216ModemCNT.TXT (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.151 ft	(-0.062, -0.019, 0.137) ft	0.064 ft	0.137
501	31435c5092216ModemCNT.TXT (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.120 ft	(-0.042, -0.025, 0.110) ft	0.049 ft	0.110
502	31435c5092216ModemCNT.TXT (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.040 ft	(0.001, -0.014, -0.038) ft	0.014 ft	-0.038
501	Station-003: SW-003 (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.013 ft	(0.001, 0.005, 0.012) ft	0.005 ft	0.012
501	Station-003: SW-003 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.025 ft	(0.020, -0.001, -0.015) ft	0.020 ft	-0.015
500	Station-003: SW-003 (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.003 ft	(-0.001, 0.000, 0.003) ft	0.001 ft	0.003
500	Station-003: SW-003 (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.011 ft	(-0.001, 0.000, 0.011) ft	0.001 ft	0.011
500	Station-003: SW-003 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(-0.002, 0.000, 0.006) ft	0.002 ft	0.006
500	Station-003: SW-003 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.004 ft	(0.003, 0.001, 0.002) ft	0.003 ft	0.002
500	Station-003: SW-003 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.010 ft	(0.010, 0.003, 0.000) ft	0.010 ft	0.000
507	Station-003: SW-003 (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(0.001, -0.004, 0.003) ft	0.004 ft	0.003
507	Station-003: SW-003 (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(0.002, -0.001, -0.005) ft	0.002 ft	-0.005
507	Station-003: SW-003 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.008 ft	(0.004, -0.007, 0.001) ft	0.008 ft	0.001
507	Station-003: SW-003 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(-0.001, -0.006, 0.002) ft	0.006 ft	0.002
507	Station-003: SW-003 (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(0.000, 0.001, 0.007) ft	0.001 ft	0.007
508	Station-003: SW-003 (Leveled)	Station-004: SW-004 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(-0.001, 0.004, -0.007) ft	0.005 ft	-0.007
508	Station-003: SW-003 (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(-0.001, 0.002, -0.007) ft	0.002 ft	-0.007
508	Station-003: SW-003 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.013 ft	(-0.002, 0.009, -0.009) ft	0.009 ft	-0.009
508	Station-003: SW-003 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(-0.003, 0.007, -0.005) ft	0.007 ft	-0.005
507	Station-004: SW-004 (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.008 ft	(0.000, 0.002, -0.008) ft	0.002 ft	-0.008
507	Station-004: SW-004 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(0.002, -0.004, -0.002) ft	0.004 ft	-0.002
507	Station-004: SW-004 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.004 ft	(-0.002, -0.003, -0.001) ft	0.004 ft	-0.001

507	Station-004: SW-004 (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(-0.002, 0.005, 0.004) ft	0.005 ft	0.004
508	Station-004: SW-004 (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.003 ft	(0.000, -0.003, 0.000) ft	0.003 ft	0.000
508	Station-004: SW-004 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(-0.001, 0.005, -0.001) ft	0.005 ft	-0.001
508	Station-004: SW-004 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.004 ft	(-0.002, 0.002, 0.002) ft	0.003 ft	0.002
500	Station-004: SW-004 (Leveled)	Station-005: SW-005 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.008 ft	(0.000, 0.000, 0.008) ft	0.000 ft	0.008
500	Station-004: SW-004 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.003 ft	(-0.001, 0.000, 0.003) ft	0.001 ft	0.003
500	Station-004: SW-004 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.004 ft	(0.004, 0.001, -0.001) ft	0.004 ft	-0.001
500	Station-004: SW-004 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.012 ft	(0.011, 0.003, -0.003) ft	0.011 ft	-0.003
501	Station-004: SW-004 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.034 ft	(0.019, -0.006, -0.027) ft	0.020 ft	-0.027
500	Station-005: SW-005 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(-0.001, 0.000, -0.004) ft	0.001 ft	-0.004
500	Station-005: SW-005 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.010 ft	(0.004, 0.001, -0.009) ft	0.004 ft	-0.009
500	Station-005: SW-005 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.016 ft	(0.011, 0.003, -0.011) ft	0.011 ft	-0.011
507	Station-005: SW-005 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(0.002, -0.006, 0.006) ft	0.006 ft	0.006
507	Station-005: SW-005 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(-0.003, -0.005, 0.007) ft	0.006 ft	0.007
507	Station-005: SW-005 (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.012 ft	(-0.002, 0.003, 0.012) ft	0.003 ft	0.012
unlabeled	Station-005: SW-005 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	Off	1.0000	0.012 ft	(0.005, -0.009, 0.006) ft	0.010 ft	0.006
508	Station-005: SW-005 (Leveled)	Station-006: SW-006 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.008 ft	(-0.001, 0.007, -0.002) ft	0.007 ft	-0.002
508	Station-005: SW-005 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.006 ft	(-0.002, 0.005, 0.002) ft	0.005 ft	0.002
500	Station-006: SW-006 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(0.005, 0.001, -0.004) ft	0.005 ft	-0.004
500	Station-006: SW-006 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.014 ft	(0.012, 0.003, -0.007) ft	0.012 ft	-0.007
507	Station-006: SW-006 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(-0.005, 0.001, 0.001) ft	0.005 ft	0.001
507	Station-006: SW-006 (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.011 ft	(-0.004, 0.009, 0.006) ft	0.010 ft	0.006
508	Station-006: SW-006 (Leveled)	Station-007: SW-007 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.005 ft	(0.000, -0.003, 0.004) ft	0.003 ft	0.004
507	Station-007: SW-007 (Leveled)	Station-009: SW-009 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.009 ft	(0.001, 0.007, 0.005) ft	0.007 ft	0.005
500	Station-007: SW-007 (Leveled)	Station-008: SW-008 (Leveled)	Coincident: Vertex - Vertex	On	1.0000	0.007 ft	(0.007, 0.002, -0.002) ft	0.007 ft	-0.002

ScanWorld Transformations
31435c5092216ModemCNT.TXT (Leveled)
translation: (0.000, 0.000, 0.000) ft
rotation: (0.0000, 1.0000, 0.0000):0.000 deg

Station-003: SW-003 (Leveled)
translation: (3806361.727, 633358.098, 20.667) ft
rotation: (-0.0000, -0.0000, -1.0000):-149.304 deg

Station-004: SW-004 (Leveled)
translation: (3806457.349, 633373.007, 21.391) ft
rotation: (0.0000, 0.0000, 1.0000):7.613 deg

Station-005: SW-005 (Leveled)
translation: (3806556.668, 633391.661, 21.218) ft
rotation: (0.0000, 0.0000, 1.0000):-171.484 deg

Station-006: SW-006 (Leveled)
translation: (3806556.672, 633391.652, 21.223) ft
rotation: (0.0000, 0.0000, 1.0000):-171.470 deg

Station-007: SW-007 (Leveled)
translation: (3806650.002, 633410.103, 20.223) ft
rotation: (0.0000, 0.0000, 1.0000):-174.443 deg

Station-008: SW-008 (Leveled)
translation: (3806435.251, 633374.169, 39.912) ft
rotation: (0.0000, 0.0000, 1.0000):-146.794 deg

Station-009: SW-009 (Leveled)
translation: (3806538.575, 633391.212, 40.032) ft
rotation: (0.0000, 0.0000, 1.0000):-98.693 deg

Unused ControlSpace Objects
31435c5092216ModemCNT.TXT (Leveled):
    Vertex : TargetID : 504
    Vertex : TargetID : 510

Station-003: SW-003 (Leveled):
    Vertex : unlabeled

Station-004: SW-004 (Leveled):
    Vertex : unlabeled

Station-007: SW-007 (Leveled):
    Vertex : unlabeled

Station-008: SW-008 (Leveled):
    Vertex : unlabeled

Station-009: SW-009 (Leveled):
    Vertex : unlabeled

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State Project No. H.007020
Historic Bridge Inventory

SJB Group performed terrestrial laser scanning and created deliverables in accordance with HAER 4.0 Measured Drawings for six bridges throughout Louisiana. The six bridges surveyed under this contract were bridge numbers 008970, 009130, 014900, 058710, 200865 and 200896. The following sections are a description of the equipment and procedures used for this project.

Section I – Equipment

The equipment used in the establishment of the primary control network for this project was manufactured by Leica. Real-time kinematic GPS observations were collected using a Leica GS15 Smart Antenna "Performance" and CS15 3.5G Field Controller. Figure 12 is an image of the equipment used.

Figure 1: Photograph of Leica TS15 Total Station and Leica CS/GS15 GPS uni

Below is a table of the serial numbers for the equipment used for this project.

Description	Model Number	Serial Number
Leica ScanStation	C10	1260997
Leica Base	GS15	1508955
Leica Rover	GS15	1509134
Leica Controller	CS15	25022556

Section II – Field Procedures

Marks set via real-time kinematic GPS observations were established through a series of ten (10) second observations. Each mark was occupied three (3) times throughout the day from at least two (2) different base stations for a total of six (6) observations. Primary control marks were periodically cross checked throughout the day to ensure an accurate basis of measurement.

Section III – Equipment

Scanning was performed with the Leica ScanStation C-10, serial number 120997, in conjunction with HDS 6 inch circular planar fixed height (1.472 meters) targets

Figure 2: Photograph of Leica ScanStation C10

Section IV – Field Procedures

Scanning observations were made by independent instrument locations which included a minimum of four HDS targets on Secondary Control Marks. At each scanning location the C10 collects observed data relative to the instrument and builds a data set which identifies the HDS target marks. Each data set is called a "Scan World" for the purposes of computation.

Section V – Data Processing

The separate Scan Worlds were "registered" using Leica Cyclone Version 8.0 software which merges the independent observations by resection and statistical comparison of the State Plane values associated with each of the HDS target locations. The State Plane resolution data set which merges all scanned information is presented in Appendix "E." TopoDOT version 9.0.0.0 was used to extract features from the point cloud registered in Leica Cyclone.