

LOWER GRAND RIVER BRIDGE

HAER No. LA-33

(Bridge Recall No. 054480)

Carries Louisiana Highway 997 (LA 997) over Bayou Pigeon/Lower Grand River

Plaquemine

Iberville 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
LOWER GRAND RIVER BRIDGE
(Bridge Recall No. 054480)

HAER No. LA-33

Location: Carries Louisiana Highway 997 (LA 997) over Bayou Pigeon/Lower Grand River in southern Iberville Parish, Louisiana.¹ The bridge is located approximately 15 miles south of the city of Plaquemine.

The Lower Grand River Bridge (Bridge Recall No. 054480) is located at latitude 30.06924 north, longitude -91.2856 west.² The coordinate represents the southeast corner 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 Bayou Pigeon/Lower Grand River.

Significance: This pontoon swing bridge has significance as a distinctive example of a movable bridge. Its significance is demonstrated by the presence of distinctive engineering and design features of the pontoon swing bridge type, which is characterized by a floating pontoon span, pivot arm, and mechanical systems to operate the movement of the pontoon and approach aprons. The bridge exhibits alterations to the pivot pile, pivot arm, and the control house that result in a minor loss of integrity, but continues to clearly convey the significant features of the pontoon swing bridge type. This bridge was determined eligible for listing in the National Register of Historic Places in 2013 under *Criterion C: Design/Engineering* at the state level of significance.³

Historian(s): Jenna L. Rempfert, Cultural Resource Assistant, and Robert M. Frame, Senior Cultural Resource Specialist; Mead & Hunt, Inc. (Mead & Hunt); 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 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 assistant Jenna L. Rempfert and senior cultural resource specialist Robert M. Frame of Mead & Hunt. Dietrich Floeter completed the photography.

¹ Bayou Pigeon is often spelled as Bayou Pidgeon in newspapers and other documents from the mid-twentieth century. Both spellings for the waterway are used interchangeably today. Bayou Pigeon is the contemporary term used in this report.

² The bridge is also known as Structure No. 61242300309551.

³ Mead & Hunt, Inc., *National Register Eligibility Determination Report: Pre-1971 Louisiana Highway Bridges* (prepared for the Louisiana Department of Transportation and Development, September 2013).

Part I. Historical Information

A. Physical History:

1. Date(s) of construction: 1957-1958.

2. Engineer: Bridge Design Section, Louisiana Department of Highways.

3. Builder/Contractor/Supplier: The general contractor was Coastal Contractors, Inc. of Baton Rouge, Louisiana. The Link Belt Company of Philadelphia, Pennsylvania, supplied the motor located in the operator's house.⁴ Superior-Lidgerwood-Mundy Corporation of Superior, Wisconsin, assembled the motor.⁵ Iron for the cable towers and sheave system was supplied by St. Mary Iron Works of Franklin, Louisiana.⁶ Wiring and electrical outlines were supplied by D.W. Onon and Sons Inc. of Minneapolis, Minnesota.⁷

4. Original plans and construction: Plan sheets for the construction of the Lower Grand River Bridge along LA 997 are available in the General Files room at the Louisiana Department of Transportation and Development's Baton Rouge headquarters. Plan sheets for the project were approved on February 8, 1956, as a part of State Project No. 230-03-07. The project was completed in the Louisiana Department of Highways 1957-1958 fiscal year.⁸

5. Alterations and additions: Bridge alterations include the 1998 removal and 1999 replacement of the operator's house, repair of the pivot pile and pivot arm in 2003, and repair of the floating span in 2009.⁹

⁴ Link Belt Company, "Project 230-03-07," 1957, Shop drawings, available at the Louisiana Department of Transportation and Development, Baton Rouge, La.

⁵ Superior-Lidgerwood-Mundy Corporation, "State Project 230-03-07, Grand River Pontoon Bridge, Iberville Parish," 1956, Shop drawings, available at the Louisiana Department of Transportation and Development, Baton Rouge, La.

⁶ St. Mary Iron Works, "State Project 230-03-07, Grand River Pontoon Bridge Over Intracoastal Waterway," 1956, Shop drawings, available at the Louisiana Department of Transportation and Development, Baton Rouge, La.

⁷ D.W. Onan & Sons, Inc., "Project 230-03-07, Grand River Pontoon Bridge, Iberville Parish," 1956, Shop drawings, available at the Louisiana Department of Transportation and Development, Baton Rouge, La.

⁸ Louisiana Department of Highways, *Financial and Statistical Report, Fiscal Year Ended 1958* (Baton Rouge, La.: Louisiana Department of Highway, 1958), 47.

⁹ Louisiana Department of Transportation and Development, "Const. Br. Tenders House @ Bayou Pigeon Bridge, Project 230-03-0019," "Bayou Pigeon Pivot Cluster Repair on STR#61242300309551, Project 230-03-0028," "Bayou Pigeon Barge Repair, Project 230-03-0031," *trns.Port Systems Database*. In 1998 the LADOTD hired contractor C.E.C., Inc. to raze the original operator's house and construct a new concrete block house in its place. The new tender's house was completed in 1999, along with an adjacent shed for a generator.

B. Historical Context:

Historical background

Since the Louisiana Highway Commission's (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 some of the largest and most significant examples. 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.¹⁰ The Bridge Department designed and often served a supervisory role in projects, eliminating the need for a general contractor during construction of State-owned bridges.¹¹ The LHC was reorganized as the Louisiana Department of Highways (LDH) in the 1940s, which designed the Lower Grand River Bridge. LDH biennial reports from the 1950s and 1960s indicate that in the period following World War II economic growth and government funding combined to not only increase investment on a grand scale, but also improve and increase road and bridge construction statewide.¹² In 1952 the LDH surveyed the conditions of every stretch of highway in Louisiana as a part of a larger initiative to improve the condition of the network of roads. By 1955 Louisiana's highway system saw increased growth through the categorization of primary, secondary, and "Farm-to-Market" highways.¹³

Bridge engineering practices of the Bridge Department/Bridge Design Section in the 1950s and 1960s became an increasingly scientific discipline that stressed a calculated approach to the rapidly increasing demand for plentiful, affordable, and efficient bridge designs and construction methods. Standardization and cost analysis accompanied the use of early computer programs and automated work to aid engineers in new approaches and innovations.¹⁴

Construction of the Lower Grand River Bridge

The Lower Grand River is connected to the Mississippi River through Bayou Plaquemine, a westward flowing distributary. Before construction of the Lower Grand River Bridge, the only way to cross the Lower Grand River at the Bayou Pigeon community was a small ferry.¹⁵ Traffic on the river increased after the Gulf Intracoastal Waterway (GIWW), which provides boats and barges with a navigable channel protected from wave action, was expanded to reach Bayou Plaquemine in 1934.¹⁶ The Lower Grand

¹⁰ 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.

¹¹ Louisiana Highway Commission, *Biennial Report of the Louisiana Highway Commission of the State of Louisiana, 1922-1924*, 93 and 95; Mead & Hunt, Inc., *Historic Context for Louisiana Bridges* (prepared for the Louisiana Department of Transportation, 2013), 17.

¹² Mead & Hunt, Inc., *Historic Context for Louisiana Bridges*, 27.

¹³ Louisiana Department of Highways, *Louisiana Highways: Two Years of Progress, 1954-1955*, n.p.

¹⁴ Mead & Hunt, Inc., *Historic Context for Louisiana Bridges*, 97.

¹⁵ "2 Cross-River Links Promised Iberville Soon," *Baton Rouge Public Advocate*, July 30, 1955.

¹⁶ Lynn Alperin, *History of the Gulf Intracoastal Waterway, Navigation History NWS-83-9* (National Waterways Study, U.S. Army Corps of Engineers Institute for Water Resources, 1983), 32.

River Bridge is situated on the Morgan City-Port Allen Waterway, which currently provides the most direct access to the GIWW from the Mississippi River. The Morgan City-Port Allen Waterway was authorized in 1946 to accommodate increased traffic from the GIWW. Before it was completed, marine traffic traveled 160 miles further south to New Orleans in order to enter the GIWW.¹⁷ The waterway was officially opened to traffic in 1961 and helped facilitate trade from the Atchafalaya Basin to the Mississippi and the GIWW on a national scale.¹⁸

Necessitated by the increased marine traffic, plans were developed in 1955 to carry LA 997 over the Lower Grand River via a new bridge. LA 997 joins LA 75 to the northwest of the bridge, crosses the Lower Grand River, and travels nominally south.¹⁹ The Lower Grand River Bridge was constructed in 1957-1958 at a total cost of \$300,156.07.²⁰ The bridge handled the above-average marine traffic in the navigable channel to the GIWW while still providing a connection for two secondary highways.

Engineering background

A pontoon swing bridge, such as the Lower Grand River Bridge, is a type of movable bridge that combines features of both the fixed or stationary pontoon bridge and the swing-span movable bridge. It consists of a floating span—a pontoon, sometimes referred to as a barge—that can swing or float out of position to open a clear navigation channel through the bridge alignment. The floating span is situated between the approach spans when in the closed position, allowing vehicular traffic to drive over it by means of hinged ramps or aprons on the approach spans. With their free ends resting on the pontoon deck, the aprons accommodate the changing elevation of the pontoon as the river level rises and falls. When the bridge is opened, the apron ends are raised, allowing the pontoon to be floated sideways, opening the navigable channel to vessels. One corner of the pontoon is connected by a beam or arm to a pivot pile fixed in the river, constraining the pontoon's sideways swing to an arc as it opens and closes. Ropes or cables attached to the sides of the pontoon and controlled from an operator's house pull the pontoon in one direction or the other to open or close the bridge.²¹

The pontoon swing bridge differs from the typical swing-span bridge in both construction and design, despite being conceptually similar. In the swing-span bridge, the span rotates on a fixed pivot pier located beneath the center of the span. The swing span rotates to open and close rather than having the entire span move out and away from the bridge as in the pontoon's movement.

¹⁷ U.S. Army Corps of Engineers, "Port Allen Lock: Navigation Crossroad of the Nation," <http://www.mvn.usace.army.mil/Portals/56/docs/PAO/Brochures/FinalPALBrochure.pdf> (accessed August 12, 2016).

¹⁸ Alperin, *History of the Gulf Intracoastal Waterway*, 35.

¹⁹ *Compilation of Highway Acts 1921-1955 Passed by the Legislature of the State of Louisiana* (N.p., n.d.), 122.

²⁰ Louisiana Department of Highways, *Financial and Statistical Report, Fiscal Year Ended 1957* (Baton Rouge, La.: Louisiana Department of Highway, 1957), 49; Louisiana Department of Highways, *Financial and Statistical Report, Fiscal Year Ended 1958*, 47.

²¹ Mead & Hunt, Inc., *Historic Context for Louisiana Bridges*, 72.

Compared to a conventional swing-span bridge or a costly fixed bridge with adequate vertical navigation clearance, the floating swing pontoon bridge provides a low-cost solution for crossing small channels with limited vehicular and marine traffic.²²

The earliest identified example of a pontoon swing bridge in the U.S. was built in 1874 to carry the Milwaukee and St. Paul Railway over the Mississippi River between Marquette, Iowa, and Prairie du Chien, Wisconsin. The bridge consisted of stationary timber pile approach spans and two timber pontoons that extended across the east and west channels of the Mississippi, which are separated by an island at mid-river. Each pontoon was 408'-0" long. A steam engine powered the movement of the pontoons to swing open, providing a 408'-0" clearance in each channel. When closed, the bridge formed a continuous railroad track across the river. The aprons were lifted and lowered by counterweights powered by hydraulic jacks, allowing the bridge to adapt to variable water depths and heavy freight trains to pass over. Although it was rebuilt several times, it was an operating pontoon-swing bridge until it was dismantled in 1961.²³

In the modern era, pontoon swing bridges are uncommon nationally, with surviving examples limited to navigable channels in Texas and Louisiana. One of the last examples outside those states was the Sunset Beach Pontoon Bridge in North Carolina, which was recently removed and replaced with a high clearance, fixed-span structure. Erected in 1961, it operated in a swing-pontoon mode similar to the Louisiana and Texas pontoon bridges, but the bridge deck was built as a continuous structure raised several feet above a series of eight steel barges pinned together in a cluster for a movable span length of 115'-0". The apron ramps were attached to the barge spans instead of the approach spans.²⁴ In Texas, five pontoon swing bridges were constructed on the Gulf Intracoastal Waterway in the early 1940s.²⁵ The only surviving example is the Sargent Swing Bridge, which is scheduled for replacement by a fixed-span structure in 2017. In 2012 there were nine extant pontoon swing bridges in Louisiana, accounting for less than one percent of the state's pre-1971 bridge population.²⁶

²² Parsons Brinckerhoff and Engineering and Industrial Heritage, *A Context for Common Historic Bridge Types* (Washington D.C.: National Cooperative Highway Research Program, 2005), 3–115, 3–118.

²³ Alden E. Miller, "The Prairie Du Chien Pontoon Bridge," *The Railway & Locomotive Historical Society Bulletin* 58 (May 1942): 46–54; Anita Lindeman, "The Pontoon Bridge at Marquette," *The Annals of Iowa* 37, no. 7 (Winter 1965): 615–18; W.M. Wilson, "Types of Movable Bridges," *Journal of the Western Society of Engineers* 19, no. 6 (June 1914), 553-554.

²⁴ Jo O'Keefe, "Sunset Beach, North Carolina, Pontoon Bridge," n.p., http://www.okeefes.org/Barrier_Islands/Sunset_Beach/Sunset_Beach_NC_Pontoon_Bridge/Sunset_Beach_NC_Pontoon_Bridge.htm (accessed August 15, 2016).

²⁵ Mead & Hunt, *Intensive-Level Historic Resources Survey Report FM 457 at Gulf Intracoastal Waterway, Matagorda County, Texas TxDOT Yoakum District* (prepared for the Texas Department of Transportation, 2012), 9.

²⁶ Mead & Hunt, Inc., *Historic Context for Louisiana Bridges*, 87

Part II. Structural/Design Information

A. General Statement:

1. **Character:** The Lower Grand River Bridge is a swing pontoon bridge and is a representative example of this uncommon movable bridge type.
2. **Condition of fabric:** Good.

B. Description: The Lower Grand River Bridge is a pontoon swing bridge located near the Bayou Pigeon community in southern Iberville Parish, Louisiana, and carries LA 997 (known locally as Bayou Pigeon Road) over the Lower Grand River/Bayou Pigeon. LA 997 starts approximately 100' north of the Lower Grand River Bridge at the junction of LA 75 and runs nominally south for 13 miles to connect to LA 70 in Belle River. The bridge is aligned on a northeast-southwest axis over the Lower Grand River. The Lower Grand River is aligned from northwest to southeast at the bridge location. Construction on the Lower Grand River Bridge was started in 1957 and completed in 1958 as a part of State Project No. 230-03-07.

The bridge consists of 12 spans including the floating pontoon or barge main span (floating span), two apron lift approach spans on either side of the pontoon span, and nine minor approach spans on either side of the apron lift spans. The overall structure length is 341'-3", the roadway width is 24'-0", and the overall bridge width is 26'-0". The floating main span is 130'-1" long, and adjacent to the floating span are two apron lift spans, each 15'-6" long, with a 1" between each end of the main span and the apron lift spans. Beyond the apron lift spans are four concrete-slab approach spans on the north and five concrete-slab approach spans on the south, each measuring 20'-0".

In order to swing horizontally to open the bridge for navigation, the floating span is connected to a fixed pivot pile on the northeast shoreline by a pivot arm. A system of cables originating in the control house moves the span. The apron lift spans are raised to allow the floating span to move out of the closed position. Machinery attached to the cable towers and the control house lift the apron spans when the floating span is in the open position to allow for passage of the navigable channel.

Main span

The floating span is 130'-1" long and 26'-0" wide. It is constructed of welded steel panels and framing members. The interior is divided into watertight compartments by multiple transverse bulkheads and one longitudinal bulkhead. The deck and the curbs are clad in skid-resistant steel plates and fitted with six circular hatch openings with covers for access to the interior. There are tall metal poles on the northwest and southwest corners that carry elevated navigation lights. Each pole has horizontal metal rungs for climbing and accessing the light.

Apron lift spans

Adjacent to the floating span are two apron lift spans, each 15'-6" long and 26'-0" wide. The apron lift spans are raised and lowered by cables and counterweights powered by electric machinery. The cables

and associated lifting equipment are mounted on adjacent cable towers. The apron lift spans act as ramps. When the floating span is in the closed position, the front end of the apron span rests on an extended steel lip at each end of the floating span. In that position, vehicles can drive on and off the floating span deck. The back ends of the aprons are hinged to the approach spans, facilitating a 45-degree lift. Each apron is constructed of 20 steel stringers that are anchored to a steel-plate deck. A 33'-0" transverse welded steel-box lifting beam is mounted below the stringers on the front end of the apron, extending beyond the apron sides. Lifting cables from the cable towers are attached to the extended ends of the lifting beam.

Cable towers

Paired on each side of the two apron spans are four cable towers that are 18'-10-5/6" in height. Each cable tower is a free-standing structure that is rectangular in plan and attached to a poured concrete foundation on pilings. Each cable tower is comprised of four steel angles braced with angled members on four sides. At its top, each tower carries a longitudinal 8'-6" beam compromised of back to back channels. The channels are separated enough to carry two sheaves, one at each end of the beam. The sheave located at the back or toward the shore carries the cable end connected to four 18" by 18" by 13" cast-iron blocks that act as a counterweight. The sheave at the front end carries the cable connected to the lifting beam at the front of the apron. Smaller cables pass through a sheave on the apron beam that connects to an idler sheave with two hoist sheaves at the center of the cable tower. The entire cable system is designed to lower the iron counterweight blocks and simultaneously lift the apron end to a 45-degree angle, freeing the floating span to swing on the pivot arm.

Approach spans

Beyond the apron lift spans are four concrete-slab approach spans on the north and five concrete-slab approach spans on the south. All nine of the slabs measure 20'-0" long. The concrete slab spans are carried on pile bents with concrete caps.

Pivot arm and cables/sheaves

The floating span moves horizontally via a pivot arm that is welded to its north and east sides at the northeast corner. The pivot arm is comprised of a single extended steel box beam that is fitted with a configuration of I-beam braces and struts to create a rigid connection with the floating span. At the opposite end, the pivot arm is connected to a turning sleeve on a vertical pivot. The connection between the pivot arm and the sleeve is hinged to accommodate any change in elevation of the floating span caused by rise and fall of the water level. The pivot itself is mounted on a steel plate that is supported by four steel I-beam piles. This pivot unit appears to be a replacement for the original pivot system as shown in the original plans. The cluster piles for the original installation appear to be intact within the four new piles. The replacement was made at an unknown date.

The pivot arm allows the floating span to move in an arc from its closed or open position through a system of cables and sheaves. The cables are attached to the floating span at the southwest and southeast corners. The cables connect to the double-drum winch located at the control house adjacent to the northwest corner of the bridge. The cable is moved through sheaves located on the southwest timber fender and to the northeast shoreline. The cable system is operated by an electric compressor motor that

turns a cable drum spool. To move the floating span, one cable is winched in while the opposing cable is fed out. To move in the opposite direction, the cables are winched in the opposite direction. A submarine cable runs underneath the Lower Grand River to provide electric power.

Railings

The bridge has a railing that is comprised of a horizontal metal pipe rail mounted on I-beam posts on the outside of the spans, including the floating span and apron spans. A guardrail is mounted on the inside face of the railing on the approach span, supported by vertical timber posts. Additionally, two curved concrete endposts for the railing are located on either end of the north approach span. The endposts are inscribed with "1957" and "Grand River." Electrically operated traffic gates are paired on either side of the approach spans to control vehicular access when the bridge is in its open position.

Operator's house

The one-story concrete-block operator's house, erected in 1999, rests on a poured concrete foundation supported by concrete-filled steel pilings. The house features a flat roof with a wide overhang with ribbon windows underneath. Other windows include picture and one-over-one, double-hung sash. The operator's house was replaced in 1999, but the original equipment was removed and installed in the new structure. The operator's house also contains the controls to operate the cables to lift and lower the apron spans. Adjacent to the operator's house is small metal utility shed erected at the same time to house a generator.

Fender system

A timber fender system and two pontoon bumpers prevent marine traffic from straying from the navigable channel. There are four timber fenders, constructed of timber piles and timber boards, paired on both sides of the Lower Grand River. Both pontoon bumpers are located only on the eastern side of the bridge and are comprised of timbers piles clad in a steel covering.

C. Site Information: The Lower Grand Bridge spans the Lower Grand River/Bayou Pigeon in southern Iberville Parish, Louisiana. The bridge carries LA 997, also called Bayou Pigeon Road, over the Lower Grand River/Bayou Pigeon. LA 997 starts approximately 100' north of the Lower Grand River Bridge at the junction of LA 75 and runs nominally south for 13 miles to connect to LA 70 in Belle River.

The Lower Grand River Bridge is located in the Bayou Pigeon community, approximately 20 miles south of the parish seat of Plaquemine, in a moderately developed area. Widely spaced commercial properties and single-family residences line LA 997 and LA 75 in the surrounding vicinity. LA 997 runs between Bayou Pigeon and the Lower Grand River (Port Allen Lock) in the Atchafalaya River floodplain. The Lower Grand River flows into Bayou Plaquemine, providing a connection with the Mississippi River.

Part III. Sources of Information

A. Primary Sources:

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Iberville Parish

Louisiana

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Dietrich G. Floeter, photographer, February and March 2016

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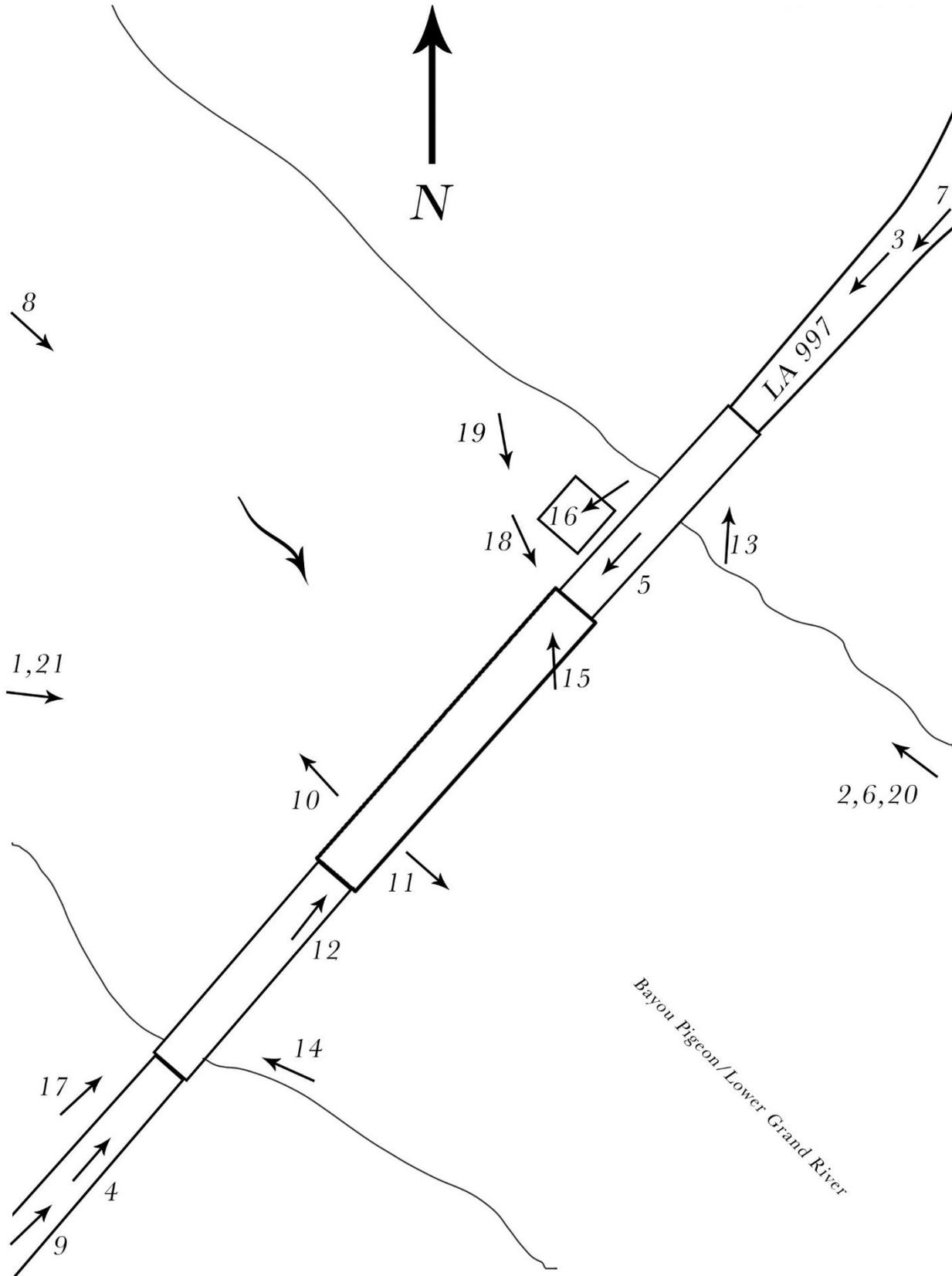
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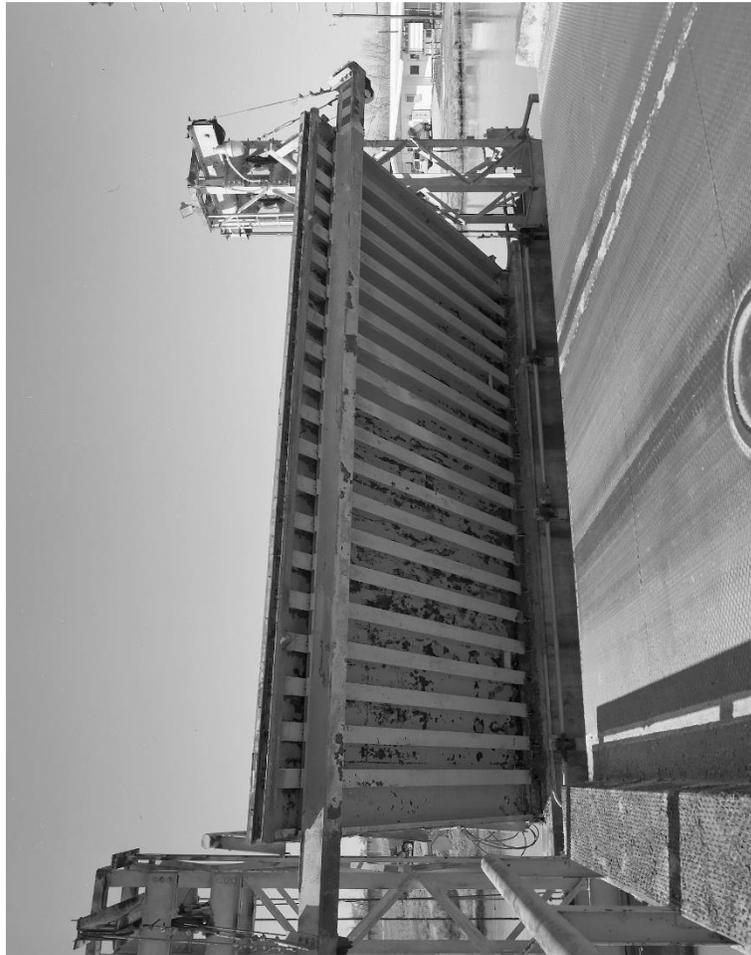
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HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-9



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-10



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-11



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-12



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-13



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-14



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-15



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-16



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-17



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-18



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-19



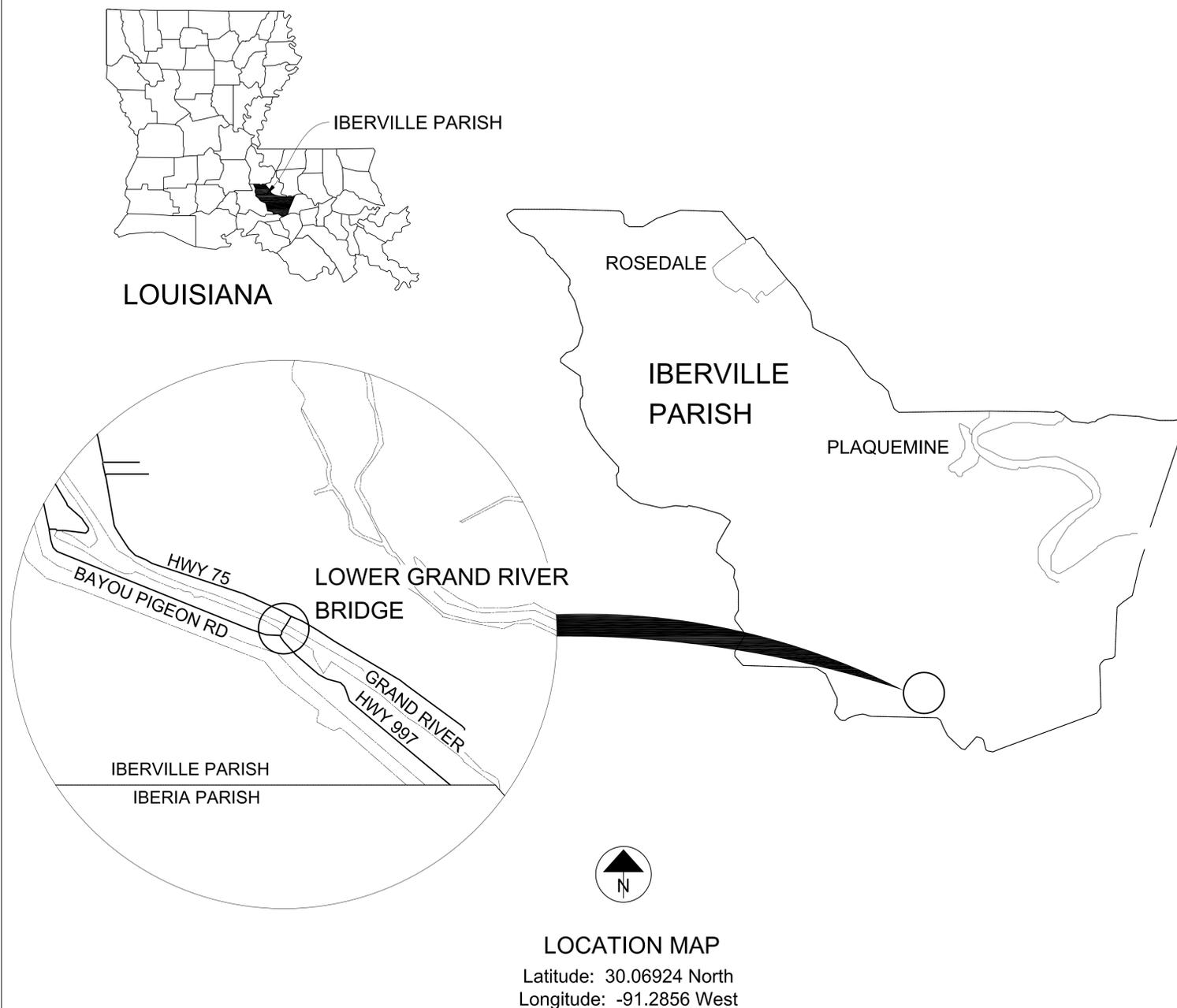
HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-20



HISTORIC AMERICAN ENGINEERING RECORD
See Index to Photographs for Caption
HAER NO. LA-33-21



LOWER GRAND RIVER BRIDGE



The Lower Grand River Bridge (Bridge Recall No. 054480), designed by the Louisiana Department of Highways and constructed in 1957-1958, is a distinctive example of a movable bridge type. Its significance is demonstrated by the presence of distinctive engineering and design features of the pontoon swing bridge type, which is characterized by a floating pontoon span, pivot arm, and mechanical systems to operate the movement of the pontoon and approach aprons. This bridge was determined eligible for listing in the National Register of Historic Places in 2013 under *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 Jenna L. Rempfert and Robert M. Frame, Cultural Resource Specialists, and Justin Duffie, Design Technician, of Mead & Hunt. Dietrich Floeter completed the photography.

The measured drawings were prepared based on a site visit to the bridge to confirm as-built plans and perform selective hand measuring in the field to verify measurements.

DELINEATED BY: J. DUFFIE, MEAD & HUNT, INC., 2017

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

LOWER GRAND RIVER BRIDGE CARRIES LA 997 OVER BAYOU PIGEON / LOWER GRAND IBERVILLE PARISH

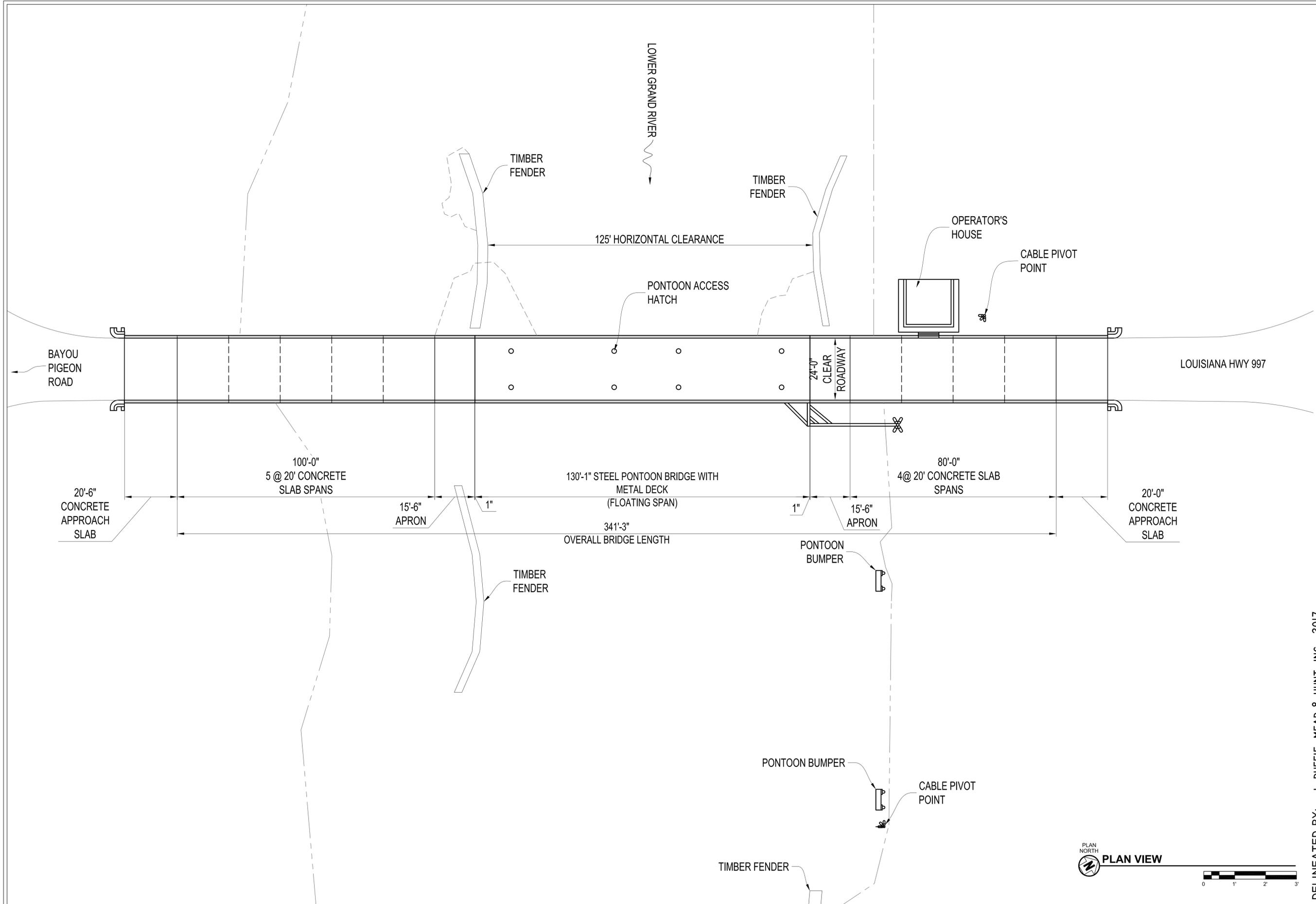
LOUISIANA

SHEET 1 OF 4

HISTORIC AMERICAN ENGINEERING RECORD LA-33

LIBRARY OF CONGRESS INDEX NUMBER

REPRODUCED, PLEASE CREDIT THE HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF DRAWING



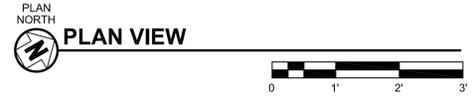
DELINEATED BY: J. DUFFIE, MEAD & HUNT, INC., 2017
 LOUISIANA HISTORIC BRIDGE INVENTORY
 NATIONAL PARK SERVICE
 UNITED STATES DEPARTMENT OF THE INTERIOR

PLAQUEMINE
 LOWER GRAND RIVER BRIDGE
 CARRIES LA 997 OVER BAYOU PIGEON / LOWER GRAND
 IBERVILLE PARISH

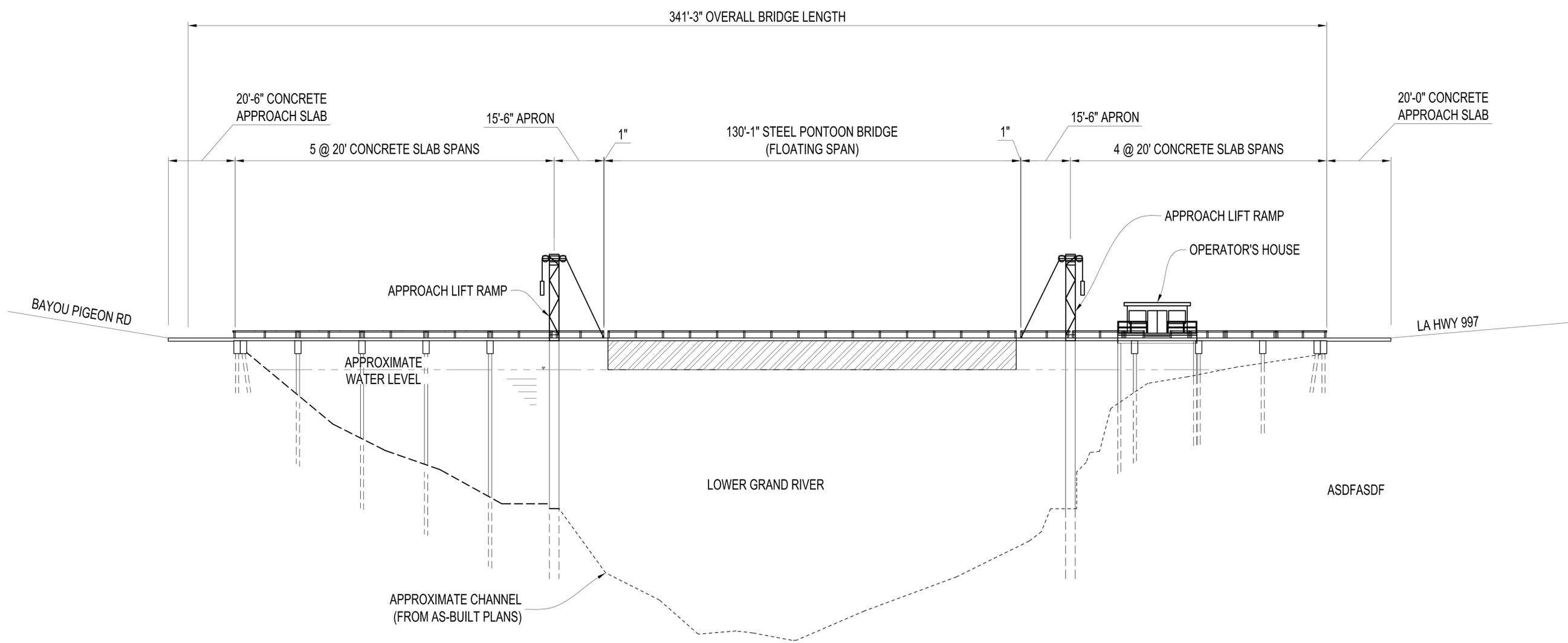
LOUISIANA
 HISTORIC AMERICAN
 ENGINEERING RECORD
 LA-33

SHEET
 2 OF 4

LIBRARY OF CONGRESS
 INDEX NUMBER



IF REPRODUCED, PLEASE CREDIT THE HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF DRAWING



DELINEATED BY: J. DUFFIE, MEAD & HUNT, INC., 2017

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

PLAQUEMINE

LOWER GRAND RIVER BRIDGE
 CARRIES LA 997 OVER BAYOU PIGEON / LOWER GRAND
 IBERVILLE PARISH

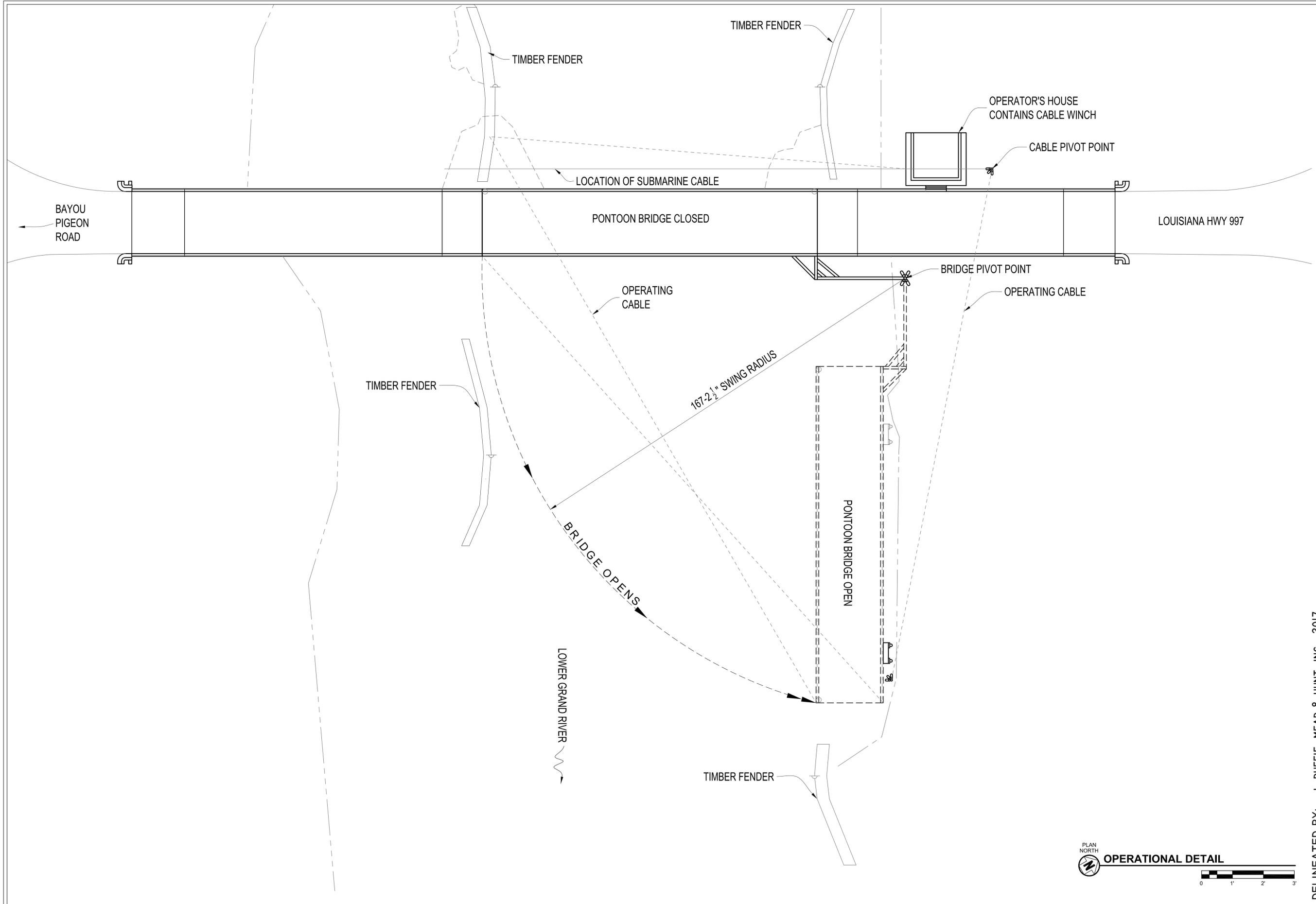
LOUISIANA

SHEET 3 OF 4

HISTORIC AMERICAN
 ENGINEERING RECORD
 LA-33

LIBRARY OF CONGRESS
 INDEX NUMBER

IF REPRODUCED, PLEASE CREDIT THE HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF DRAWING



DELINEATED BY: J. DUFFIE, MEAD & HUNT, INC., 2017

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

PLAQUEMINE

LOWER GRAND RIVER BRIDGE
 CARRIES LA 997 OVER BAYOU PIGEON / LOWER GRAND
 IBERVILLE PARISH

LOUISIANA

SHEET 4 OF 4

HISTORIC AMERICAN
 ENGINEERING RECORD
 LA-33

LIBRARY OF CONGRESS
 INDEX NUMBER

IF REPRODUCED, PLEASE CREDIT THE HISTORIC AMERICAN ENGINEERING RECORD, NATIONAL PARK SERVICE, NAME OF DELINEATOR, DATE OF DRAWING

53

INDEX TO SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND LAYOUT MAP
2	TYPICAL SECTIONS OF ROADWAY
3	CORE BORINGS AND TEST PILES
4	GENERAL PLAN
5	BENTS 1 THRU 4 & 7 THRU 11
6 & 7	BENTS 5 & 6
8	SPANS THRU 4 & 6 THRU 10
9	TOWER DETAILS
10	PONTOON DETAILS
11 & 12	PONTOON BARGE DETAILS
13	PONTOON PIVOT ARM
14	OPERATING HOUSE
15	SHEAVE PLATFORM BENEATH OPERATING HOUSE
16	MACHINERY HOUSE
17-24	ELECTRICAL SYSTEM
25-28A	MACHINERY DETAILS
29 & 30	FENDER SYSTEM
31	CONCRETE APPROACH SLABS
32	SUMMARY OF QUANTITIES
201-207	CROSS SECTIONS
401	PRECAST CONCRETE PILES
402	PROJECT ENGINEER'S OFFICE
403	ALPHABET
404	YEAR PLATE
405	FENCES AND GATES
406	RIGHT OF WAY MARKERS
407	SLUMP TEST MOULD
408 & 409	CONSTRUCTION SIGNS & BARRICADES

TOTAL SHEETS WITH X-SECTIONS & STDS. = 49
 TOTAL SHEETS WITHOUT X-SECTIONS = 43
 TOTAL SHEETS WITHOUT X-SECTIONS & STDS. = 33

BOOKS

39-338 & 40-143	ALIGNMENT TOPOGRAPHY & X-SECTIONS
41-108	DRAINAGE, FIT & EMBANKMENT X-SECTIONS
41-036	CONSTRUCTION BOOK
41-942	PLC. LISTS
41-117	DIARY
44-355	FINAL ESTIMATE BOOK

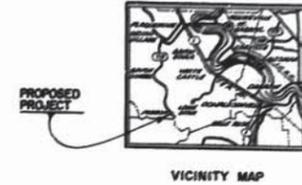
LAYOUT MAP ONLY

SURVEYED BY	DATE
PLOTTED	8/12/56
CHECKED	

STATE OF LOUISIANA
 DEPARTMENT OF HIGHWAYS
 PLANS OF PROPOSED
STATE HIGHWAY

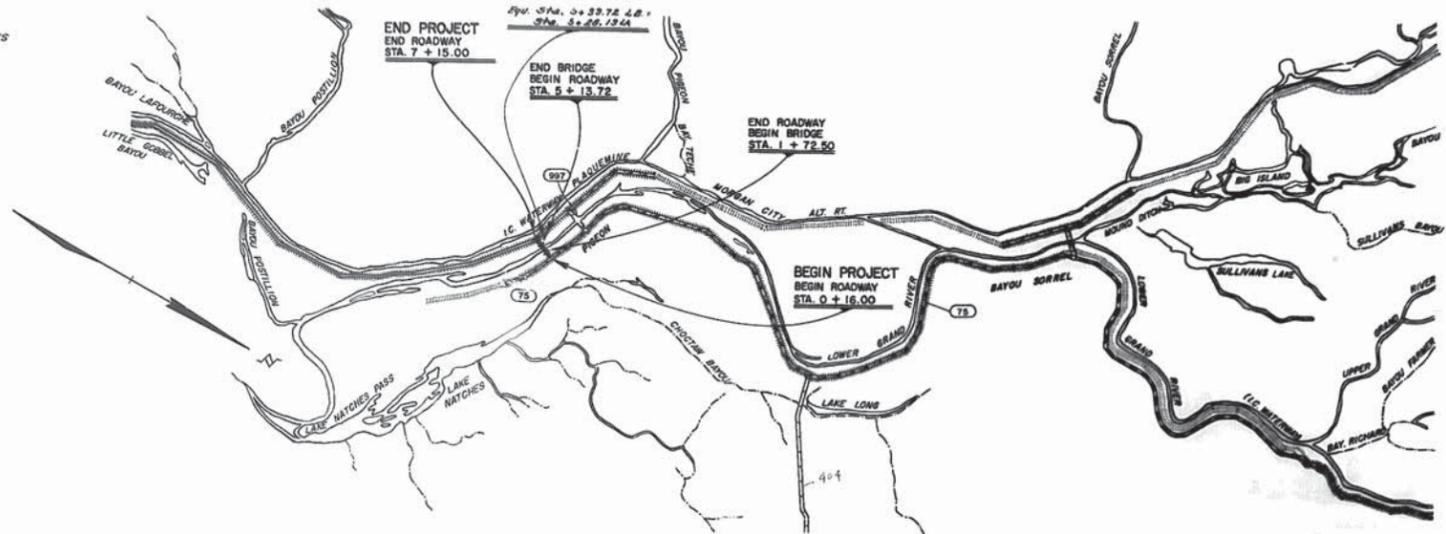
GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
 (PIGEON)
 ROUTE LA. 997
 IBERVILLE PARISH
STATE PROJECT N° 230-03-07

THE TRACINGS FOR THIS PROJECT HAVE BEEN REVISED TO INCLUDE ALL "AS BUILT" FEATURES AS SHOWN BY H.W. Biggs THE PROJECT ENGINEER ON THE "AS BUILT" DRAWINGS.
 J.B. CARTER,
 BRIDGE DESIGN ENGINEER.
 BY *J. McKee* DATE 1-27-59



AS BUILT PLAN

NOTE:
 Specifications adopted by the DEPARTMENT OF HIGHWAYS, May 4, 1955, and approved by the BUREAU OF PUBLIC ROADS, May 23, 1955, shall govern on this project.



See Sheet N° 25 For Accepted Quantities.

RECOMMENDED FOR APPROVAL
 TRAFFIC & PLANNING ENGINEER

RECOMMENDED FOR APPROVAL
 ROAD DESIGN ENGINEER

RECOMMENDED FOR APPROVAL
J.B. Carter 2-8-56
 BRIDGE DESIGN ENGINEER

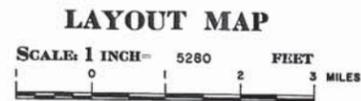
SCHEDULE OF REVISIONS

DATE	REVISION	DATE	RECOMMENDED	DATE	APPROVED
3-19-56	Change 107				
4-10-56	Change 108				
4-10-56	Change 109				
4-10-56	Change 110				
4-10-56	Change 111				
4-10-56	Change 112				

TYPE OF CONSTRUCTION:
 HIGHWAY PONTOON BRIDGE
 SHELL SURFACED APPROACHES

DELIVERY POINTS:
 INDIAN WILLS, LA. - VIA T&P RWY.
 OR
 PROJECT SITE - VIA BARGE

DATUM USED: M.G.L.
 MAG. VAR:
 BEARINGS ARE MAGNETIC
 TRANSIT BOOKS: } 39-338
 LEVEL BOOKS: }
 PLAN:
 SCALES PROFILE: HOR.
 VERT.



LENGTH OF PROJECT

DESCRIPTION	ALGEBRAIC SUM OF ALL EQUATIONS	GROSS LENGTH	EXCEPTION	BRIDGE LENGTH		ROADWAY LENGTH	
				FEET	MILES	FEET	MILES
STA. TO STA.							
0 + 16 - 1 + 72.50						156.90	0.029
1 + 72.50 - 5 + 13.72				341.22	0.064	244.47	0.046
5 + 13.72 - 7 + 15	+ 0.59					40.29	0.008
TOTAL LENGTH OF BRIDGES				341.22	0.064	244.47	0.046
TOTAL LENGTH OF ROADWAY						40.29	0.008
TOTAL MILES (NET) OF BRIDGE					0.128		

APPROVED
C. J. Jensen 2-8-56
 CHIEF ENGINEER

RECOMMENDED FOR APPROVAL DATE

DISTRICT ENGINEER
 DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS

APPROVED DATE

DIVISION ENGINEER
 DEPARTMENT OF COMMERCE
 BUREAU OF PUBLIC ROADS

AS BUILT PLANS



56

AS BUILT COMPLETED:

CLEARING & GRASSING:
Sta 0+12 to Sta 2+30
Sta 4+40 to Sta 7+45
To be paid for as "Clearing and
Grubbing" Item 3-1 per Lump

NOTE:

Out slip for Pontoon barge
in open position. Bottom
of slip to begin of Sta
2+33 and continue at
EL. 15.0 to channel bank
and end slopes to natural
ground to be 1:1.
(See Ex. 11981, 11982, 11983)

NOTE:

Unwater Barram Canal
prior to constructing
embankment.

IN PLACE:

NEW CONC. MESH & B.N. FENCE:
Sta 4+80 to Sta 6+28 L.I.E.
On 12' High
1 Single Swing Drive Gate
See Sta. Plan A-7-12.

TO BE MOVED:

Sta. 5+11 B
2" x 2" Frame Sign (Camp)
To be moved beyond limits of A/R
(Approx. 70' S.W. of Sta. 5+11)

AS BUILT CONSTRUCTED:

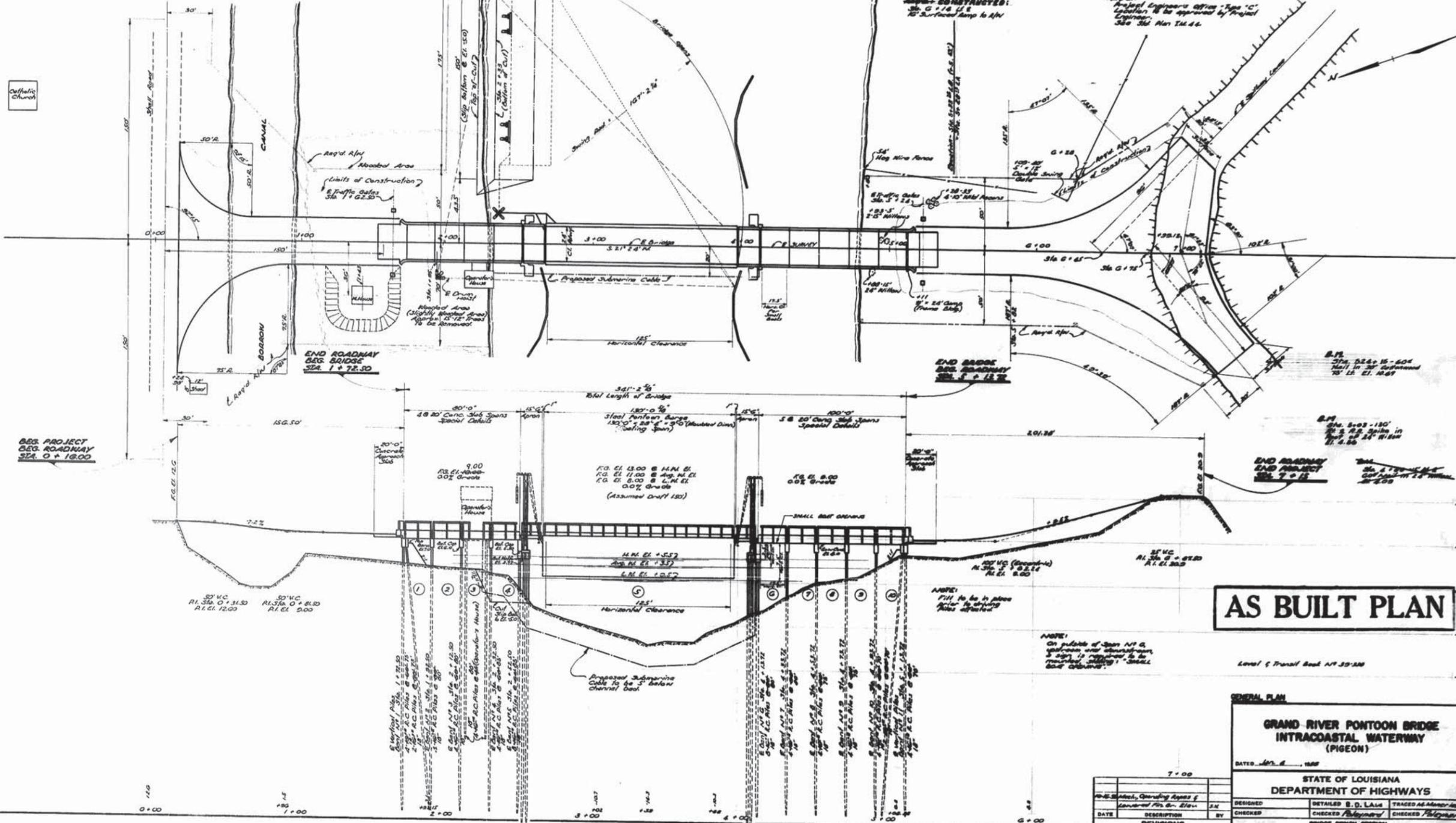
Sta. 6+18 L.I.E.
12' Surfaced Ramp to A/R

NOTE:
Name of Highway and Date of Construction
Required each end of Bridge.
See Sta. Plan C.M.S. & C.M.S.2

NOTE:
5' Wide Black Traffic Stripes to be
placed on Concrete Deck of Bridge,
on Concrete Approach Slabs, and on
Deck of Barram Canal at Station,
as directed by Engineer.

NOTE:
As per Engineer's Office "See 'C'
Location to be approved by Project
Engineer.
See Sta. Plan T.M. 4-6

Sheet	Part	Scale
182-08-07	Plan	1" = 40'



AS BUILT PLAN

GENERAL PLAN

**GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)**

DATE: July 6, 1968

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	BY	TRACED AS SHOWN BY
CHECKED	BY	CHECKED

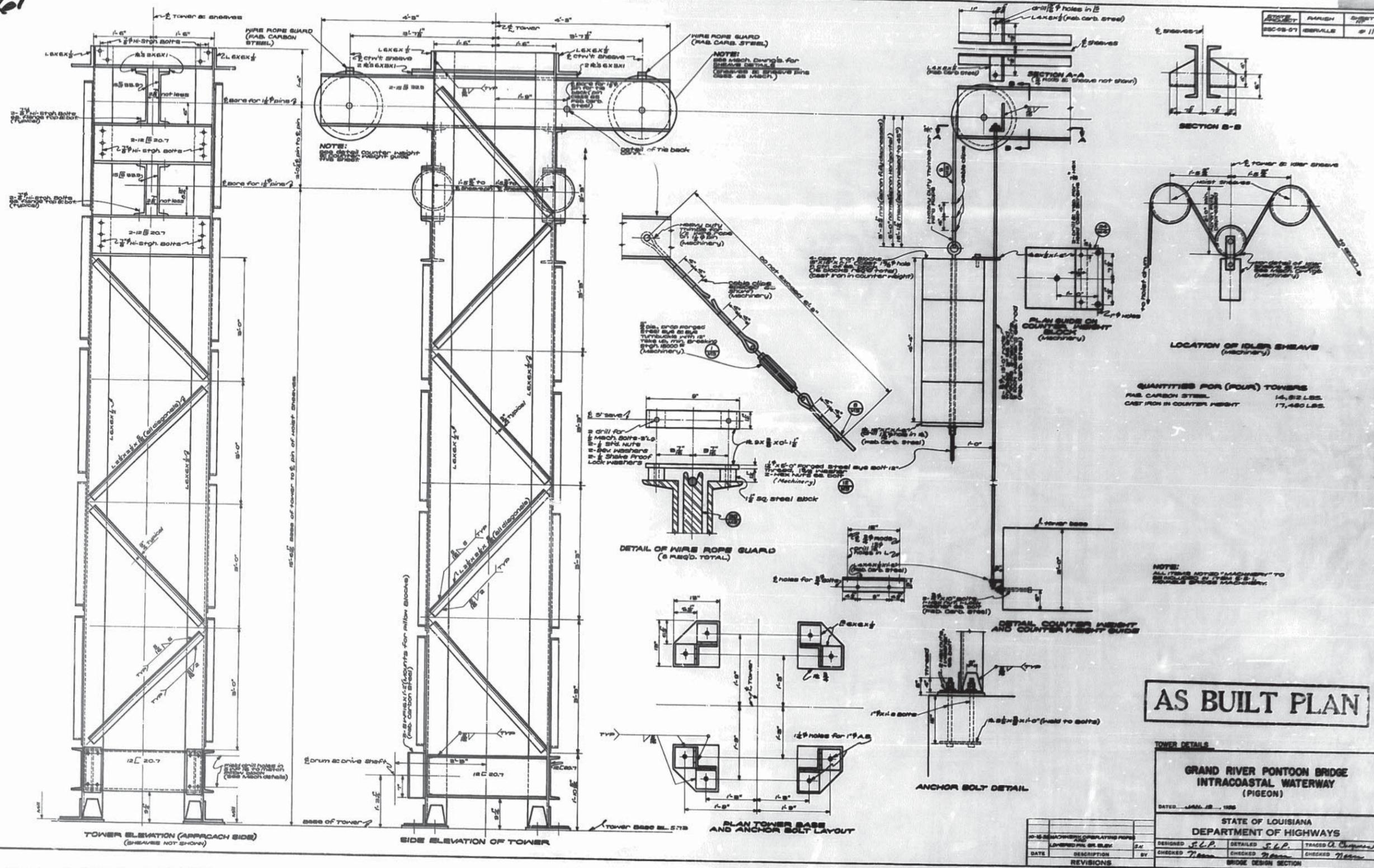
BRIDGE DEBRIS SECTION

DATE	DESCRIPTION	BY

AS BUILT PLANS



61



AS BUILT PLAN

TOWER DETAILS

GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)

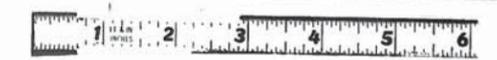
DATE: APR. 12, 1935

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	S.L.P.	DETAILED	S.L.P.	TRACED	A. Chapman
CHECKED	T. Brown	CHECKED	T. Brown	CHECKED	T. Brown

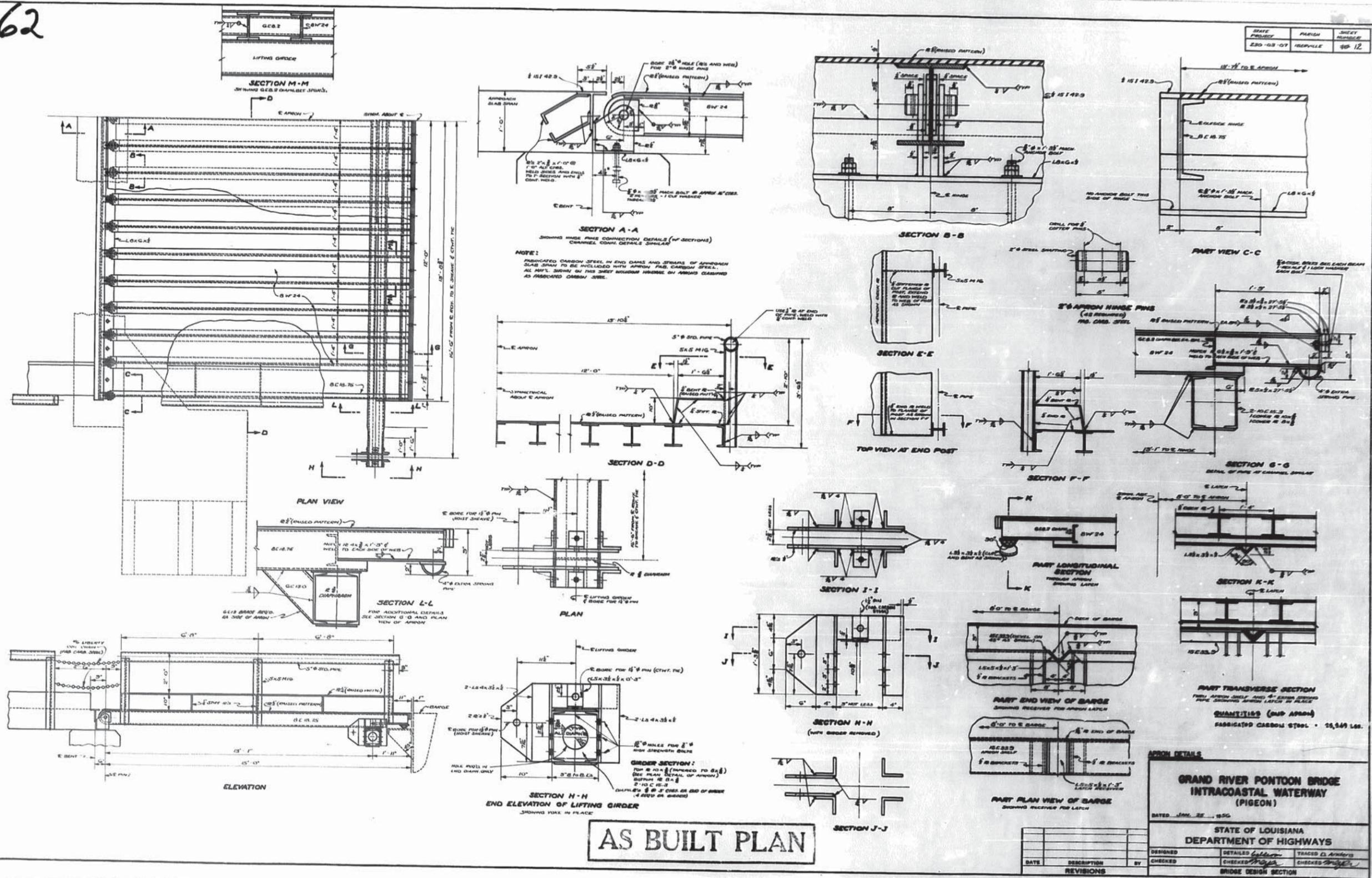
BRIDGE DESIGN SECTION

AS BUILT PLANS



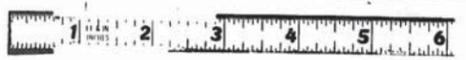
62

DATE PROJECT	DESIGNER	CHECKED	DATE
ESD-03-07	REDFLE	99-12	



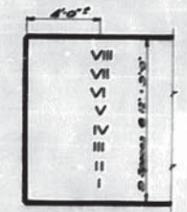
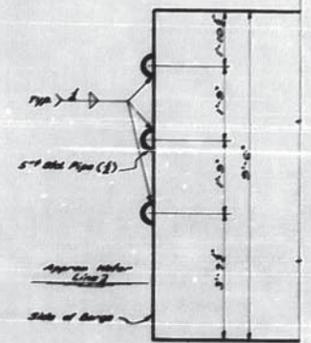
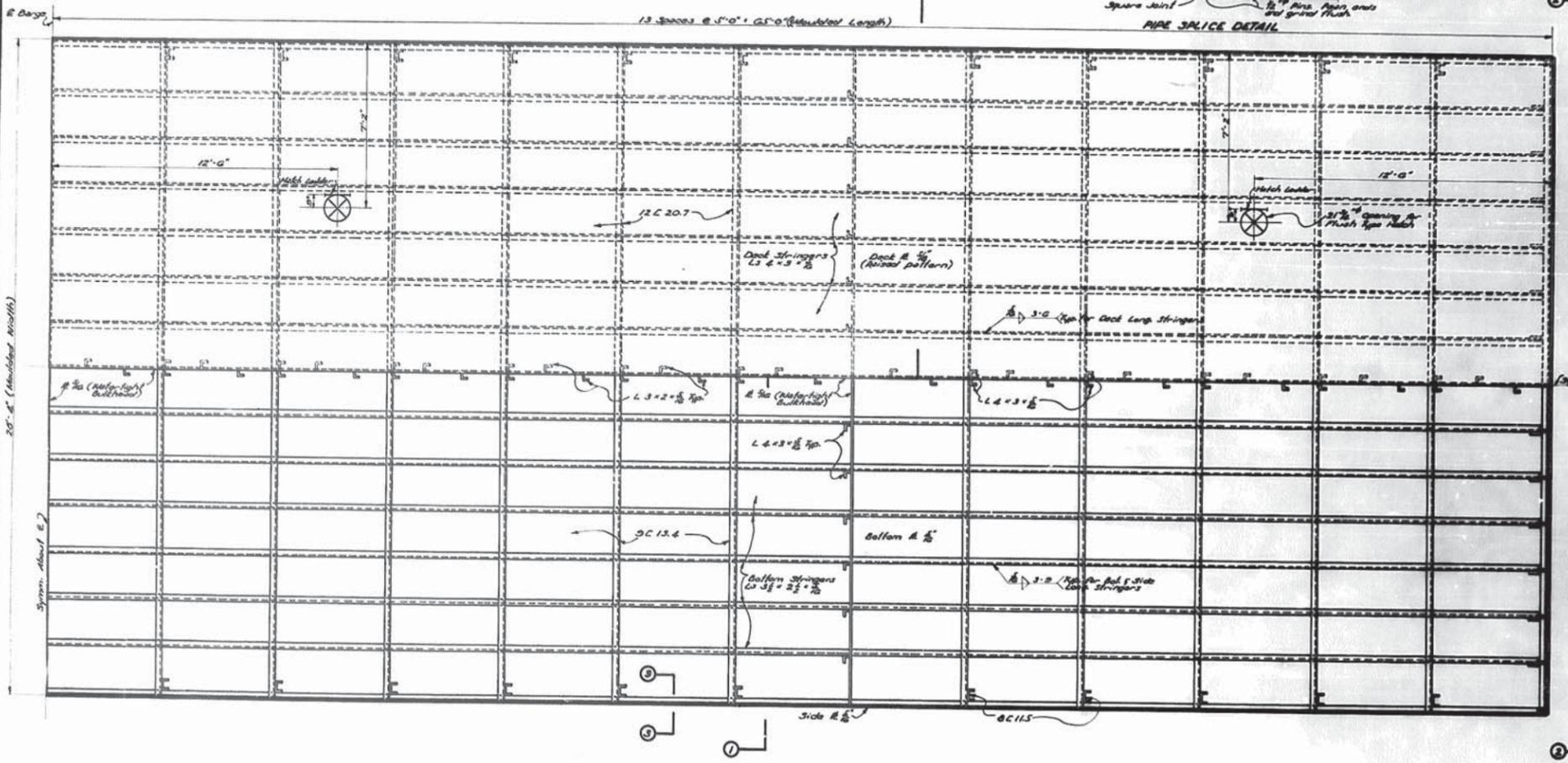
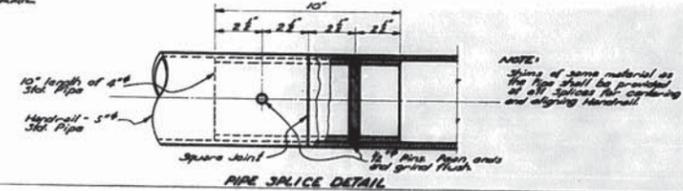
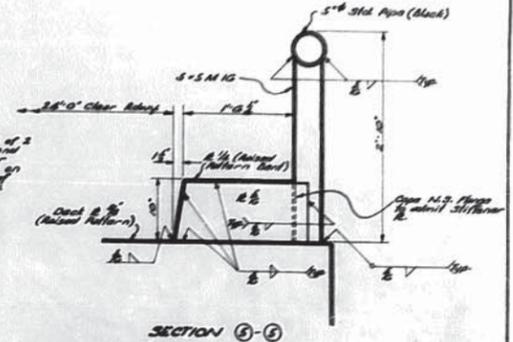
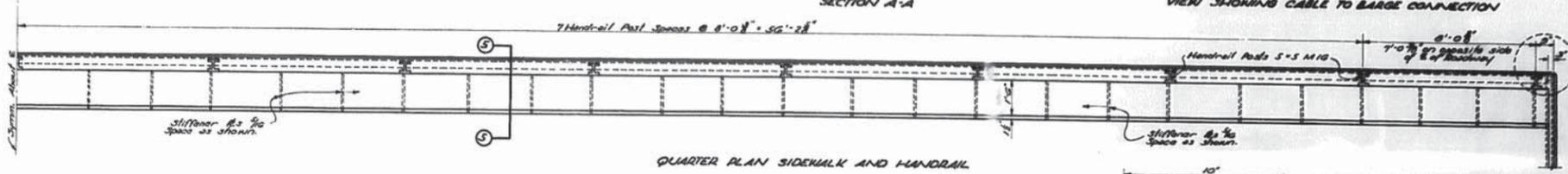
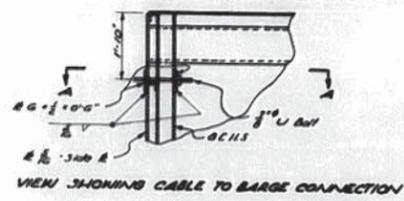
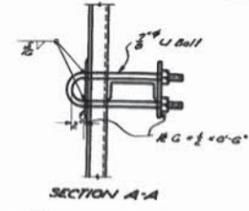
AS BUILT PLAN

AS BUILT PLANS



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State Project	Parish	Sheet
230-03-07	Iberville	13



AS BUILT PLAN

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)

DATE: MAR 12, 1962

DESIGNED	BY	DATE
CHECKED	BY	DATE
TRACED	BY	DATE

BRIDGE DESIGN SECTION

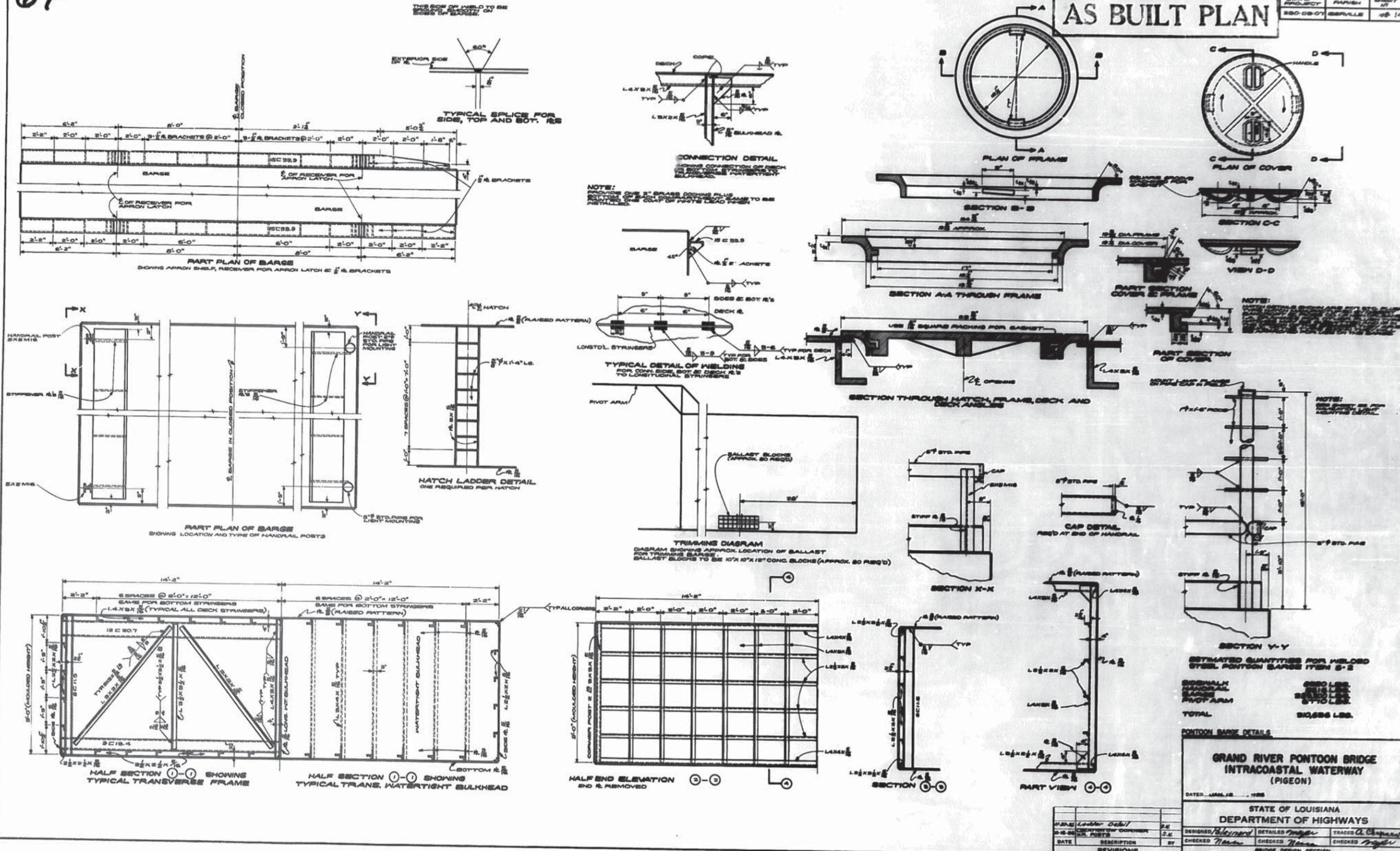
AS BUILT PLANS



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AS BUILT PLAN

STATE PROJECT	PARISH	SHEET #
280-08-07	IBERALE	# 14



NOTE: PROVIDE ONE 2" BRASS DRUMMING NAIL BOTTOM OF EACH SIDE OF EACH JOINT TO BE INSTALLED.

NOTE: SEE SPEC. 201 FOR DETAILS OF WELDING.

NOTE: SEE SPEC. 201 FOR DETAILS OF WELDING.

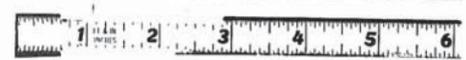
ESTIMATED QUANTITIES FOR WELDED STEEL PONTON BARGE (75% S-2)

SIGNAL	8000 LBS.
MANUAL	1000 LBS.
LAGER	1000 LBS.
PROP ARM	500 LBS.
TOTAL	10500 LBS.

PONTON BARGE DETAILS

GRAND RIVER PONTON BRIDGE INTRACOASTAL WATERWAY (PIGEON)		
DATED JAN 12, 1985		
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS		
DESIGNED	BY	CHECKED
DATE	DESCRIPTION	REVISIONS

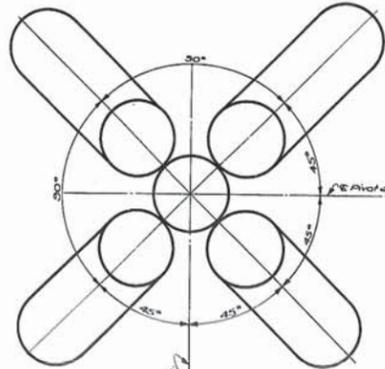
AS BUILT PLANS



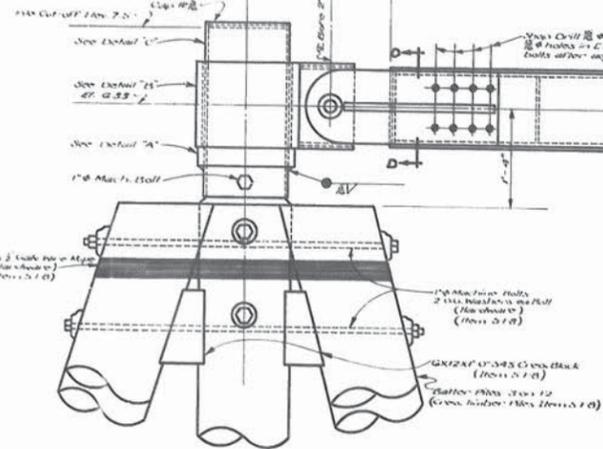
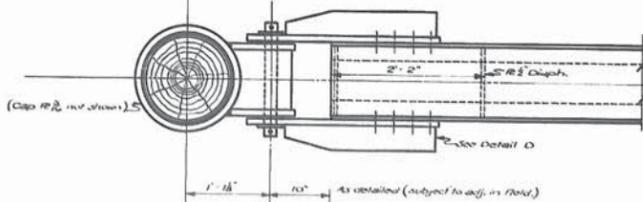
65

24" x 24" Cap ANIMAL NO 248 Cut
2 Layers of Heavy Cap and
distrubuted with 1/2" Asphalt
over Top of Piles. Place ANIMAL
Sixth and Third Channels Above

METAL COVERS
TOPS OF ALL PILES



VIEW SHOWING BATTER PILES
SPACED AROUND PIVOT PILE



PART END ELEVATION OF BARGE
SHOWING CHAIN DETAIL OF 12 C. 30
TO BARGE SUPPORT 12 C. 30
(WELDS NOT SHOWN)

SECTION D-D

PART PLAN
(SHOWING PIVOT ARM & PIVOT PILE ASSEMBLY)

PART ELEVATION
(SHOWING PIVOT ARM & PIVOT PILE ASSEMBLY)

DETAIL "D"

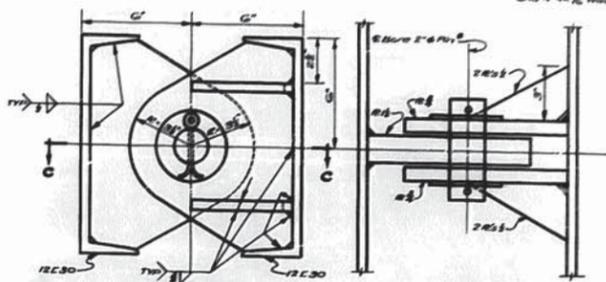
DETAIL "B"

DETAIL "A"

DETAIL "C"

STATE PROJECT	PLANNED	SHEET NUMBER
230-03-07	MOBILE	487 15

6 Piles to be built rubber lined,
provide 2" of Cutler Pile
and 4 1/2" of Massena on Pile.



SECTION A-A

NOTE:
Pile Cluster & Marked Hardware to
be paid for under Item 5-1-B.
All other Mark, this sheet, to be included in Item
5-2 Installed Steel Hardware Range 24" x 24" x 12" x
12" x 12"

AS BUILT PLAN

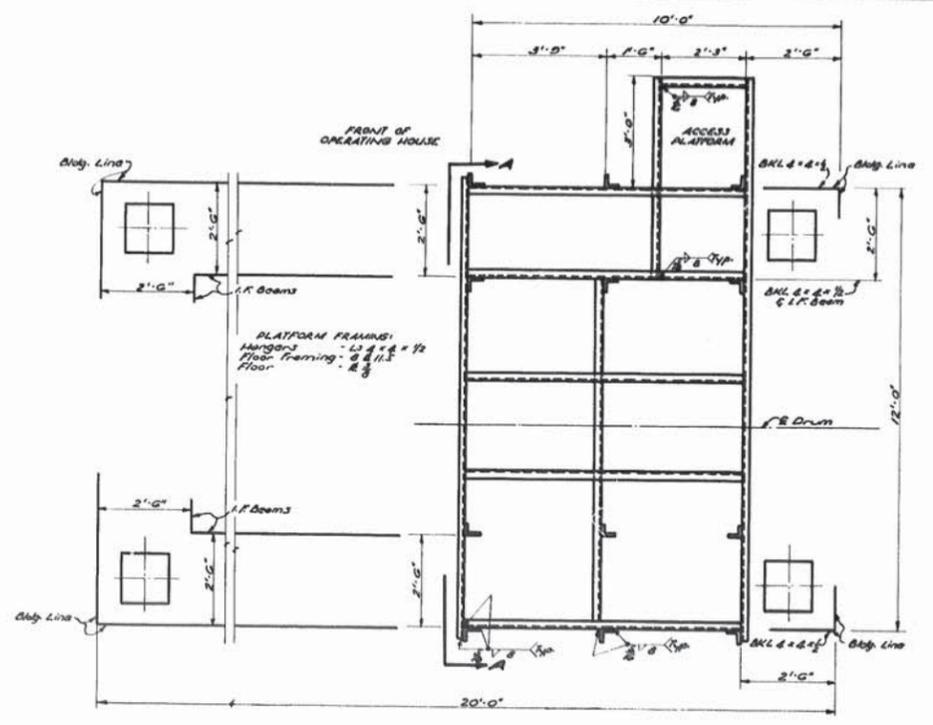
PONTON PIVOT ARM		
GRAND RIVER PONTON BRIDGE INTRACOASTAL WATERWAY (PIGEON)		
DATED Feb. 17, 1956		
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS		
DESIGNED <i>S.L.P.</i>	DETAILED <i>S.L.P.</i>	TRACED <i>C. Andrey</i>
CHECKED <i>Thoma</i>	CHECKED <i>Thoma</i>	CHECKED <i>S.L.P.</i>
BRIDGE DESIGN SECTION		

AS BUILT PLANS

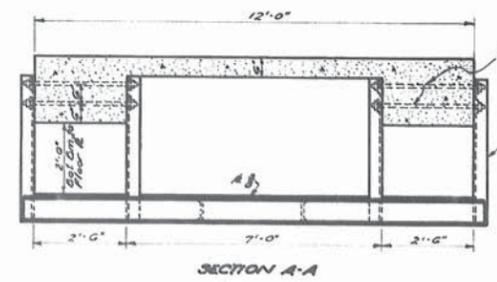


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State Project 280-0307	Artist Barville	Sheet 17 of 17
------------------------------	--------------------	----------------------



STRUCTURAL FRAMING PLAN OF SHEAVE PLATFORM BENEATH OPERATING HOUSE (FLOOR 2 REMOVED)



SECTION A-A

NOTE:
Location of Bolt Holes to be determined by Contractor.



TYPICAL WELDING DETAILS FOR CONNECTING FLOOR 2 TO G.D. ILS

NOTE:
The Contractor shall determine the final dimensions of the Holes and other commercial products from certified dimension outlines of the operating house or shop drawings of the sheave platform beneath the operating house.
All material shown on this sheet to be classified as FABRICATED CARBON STEEL.

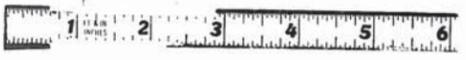
FABRICATED CARBON STEEL 5026 LBS.

AS BUILT PLAN

SHEAVE PLATFORM BENEATH OPERATING HOUSE		
GRAND RIVER PONTOON BRIDGE INTRACOASTAL WATERWAY (PIGEON)		
DATE: 2/26/70, 045		
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS		
DESIGNED S.L.P.	DETAILED S.L.P.	TRACED/MONITORED
CHECKED P.H.	CHECKED P.H.	CHECKED P.H.
BLDG DESIGN SECTION		

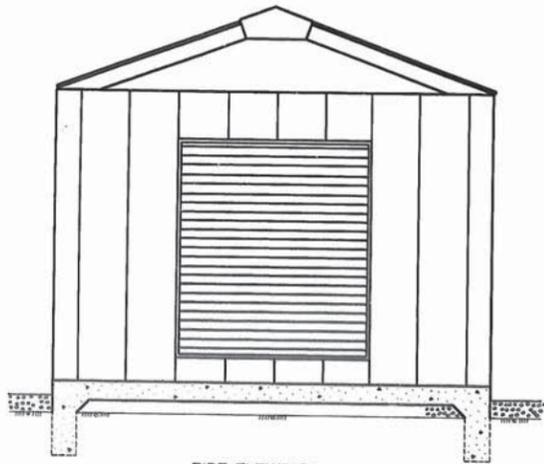
DATE	REVISION	BY

AS BUILT PLANS

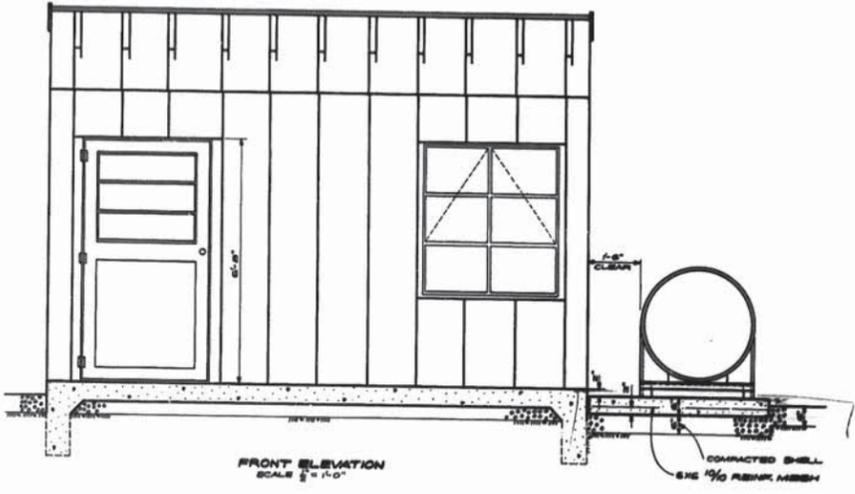


68

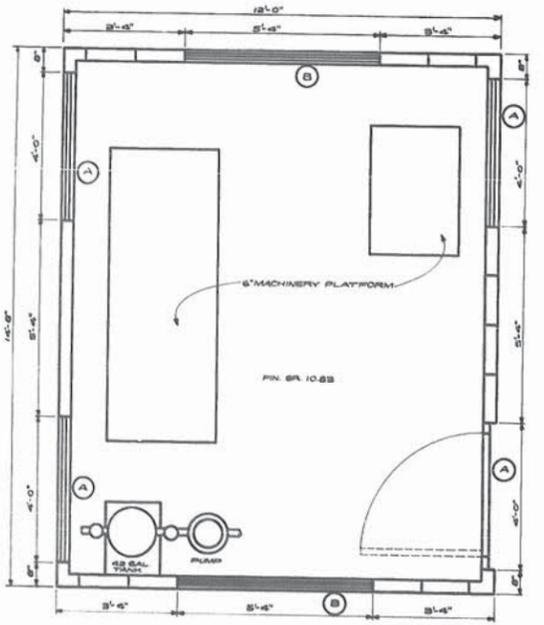
STATE PROJECT	PARISH	SHEET OF
280-0109	IBERVILLE	37/13



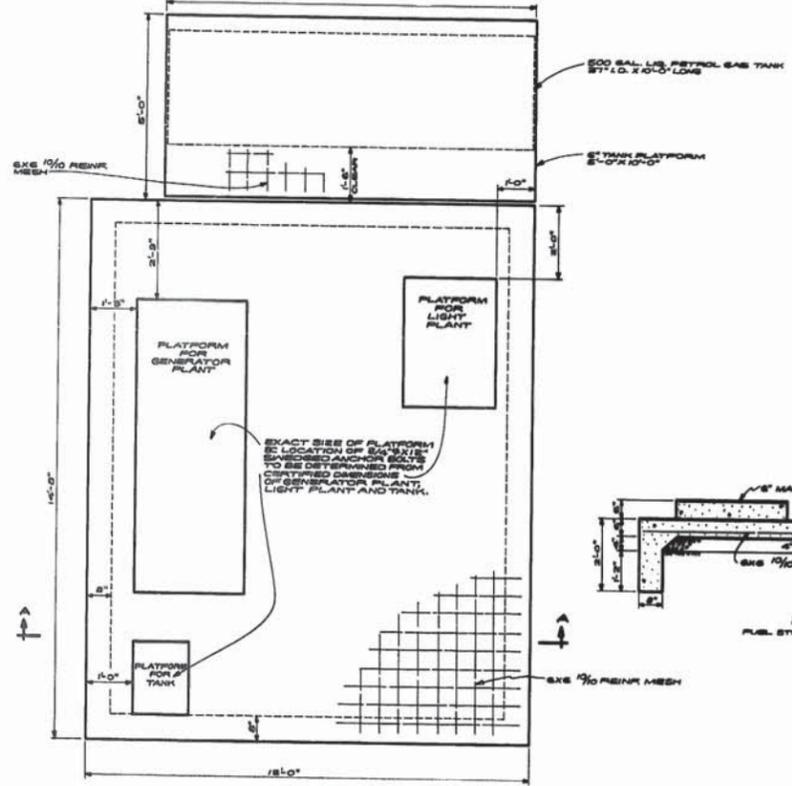
SIDE ELEVATION
SCALE 1/2" = 1'-0"



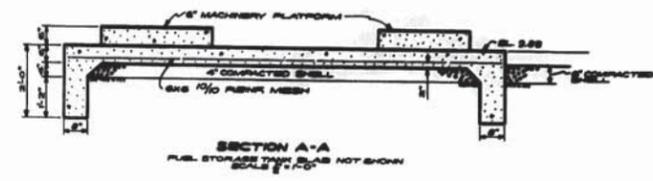
FRONT ELEVATION
SCALE 1/2" = 1'-0"



FLOOR PLAN
SCALE 1/2" = 1'-0"

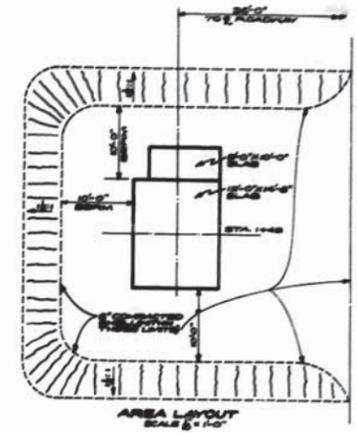


FOUNDATION PLAN
SCALE 1/2" = 1'-0"



SECTION A-A
FUEL STORAGE TANK SHALL NOT SHOW
SCALE 1/2" = 1'-0"

AS BUILT PLAN



AREA LAYOUT
SCALE 1/2" = 1'-0"

GENERAL NOTES:
FRAMING:
 MANUFACTURED STEEL PANEL GABLE ROOF STRUCTURE WITH 1/2" G-20 GAUGE ROOF SHEET AND 1/2" G-20 GAUGE WALL PANELS. CONTROLS SHALL BE INSTALLED EXTERIOR TO THE HOUSE. SEE MANUFACTURER'S SPECIFICATIONS.
DOORS:
 THE ENTRANCE DOOR SHALL BE 3'-0" X 6'-0" STEEL WITH 3" HORIZONTAL LAMINATE GLASS TO BE GLAZED WITH 1/4" CLEAR GLASS. LOCK SHALL BE INSTALLED WITH 1/2" BUSHING AND 1/2" BUSHING. LOCK SHALL BE INSTALLED WITH 1/2" BUSHING AND 1/2" BUSHING.
WINDOWS:
 ALL WINDOWS SHALL BE 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL. OPERABLE WINDOW SHALL BE 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL. OPERABLE WINDOW SHALL BE 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL. OPERABLE WINDOW SHALL BE 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL.
PAINTING:
 ALL METAL SURFACES SHALL BE PRIMED AND PAINTED WITH 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL. OPERABLE WINDOW SHALL BE 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL. OPERABLE WINDOW SHALL BE 1/2" G-20 GAUGE COMMERCIAL PROJECTED STEEL.
ELECTRICAL:
 THE HOME ELECTRICAL SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC).
BASE:
 METAL A 600 GAL. DIESEL FUEL STORAGE TANK SHALL BE COMPLETE WITH HOUSE, ITEM 2-2-4, EXCEPT FOR OTHER ITEMS WHICH ARE TO BE PROVIDED BY THE CONTRACTOR TO HAVE THEM BUILT.
 ALL MATERIALS REQUIRED TO COMPLETE HOUSE TO BE PROVIDED FOR AS NOTED FOR AS NOTED.

MACHINERY HOUSE

**GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)**

DATED: FEB. 2, 1956

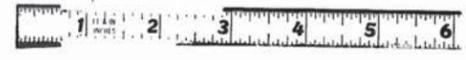
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	TRACED & CHECKED
CHECKED	CHECKED
BY	BY

BRIDGE DESIGN SECTION

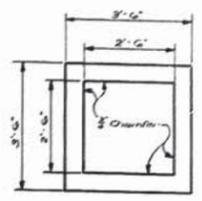
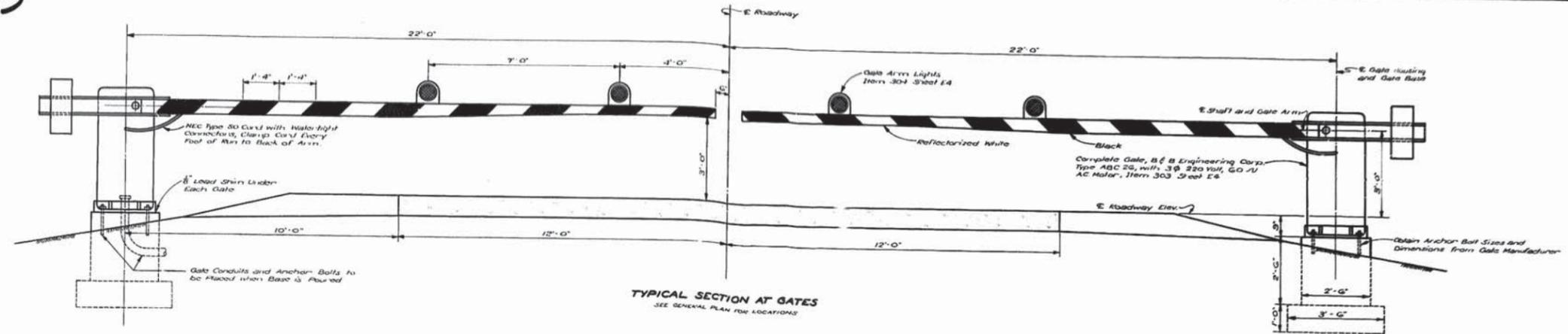
NO.	DATE	DESCRIPTION	BY

AS BUILT PLANS

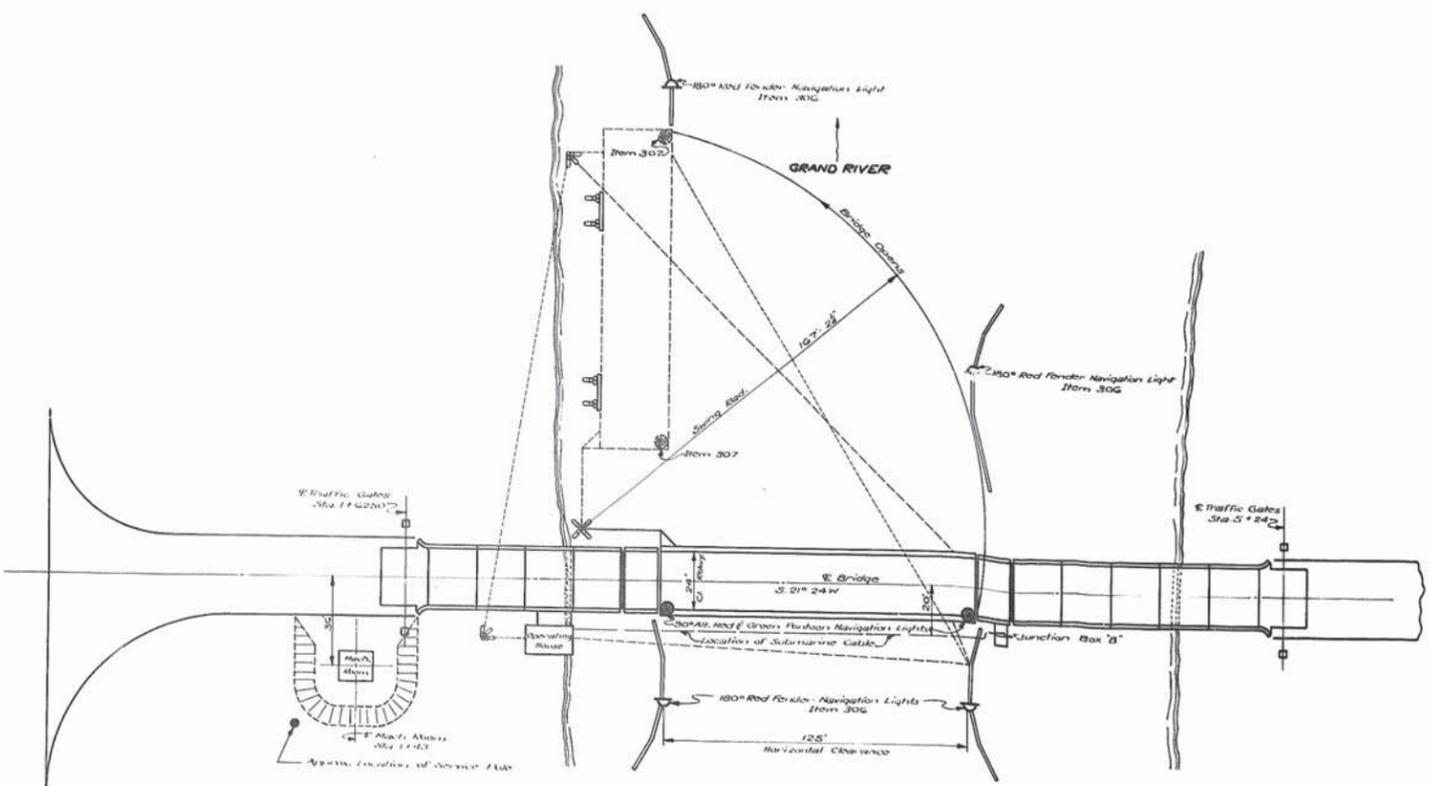


73

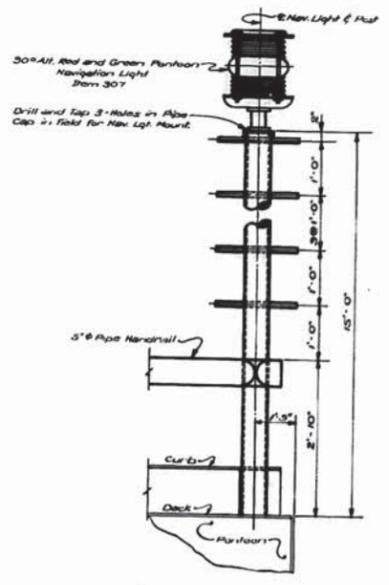
STATE PROJECT	PARISH	SHEET NUMBER
280-03-07	IBERVILLE	27-23



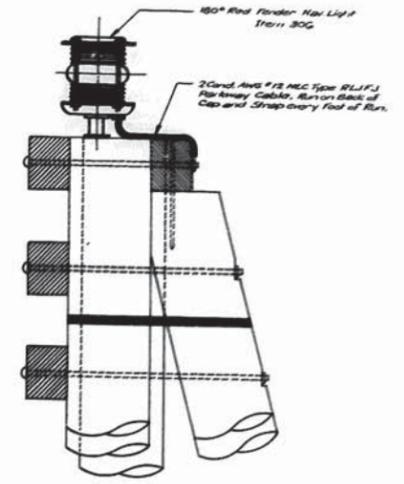
TRAFFIC GATE BASE
103 CUYD. CLASS 'A' CONCRETE
REQUIRED EACH BASE (2 REQ'D.)
TO BE INCLUDED UNDER ITEM 5-B-2
POWER PLANT



LOCATION OF NAVIGATION LIGHTS, SUBMARINE CABLE AND SERVICE POLE



PONTON NAVIGATION LIGHT MOUNTING DETAIL



FENDER NAVIGATION LIGHT MOUNTING DETAIL

AS BUILT PLAN

TRAFFIC GATES AND NAVIGATION LIGHTS MOUNTING DETAILS **E5**

GRAND RIVER PONTOON BRIDGE INTRACOASTAL WATERWAY (PIGEON)

DATED: Dec. 2, 1956

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	LEWIS	DETAILED	LEWIS	TRACED	D. ANDERSON
CHECKED	WF	CHECKED	WF	CHECKED	WF

BRIDGE DESIGN SECTION

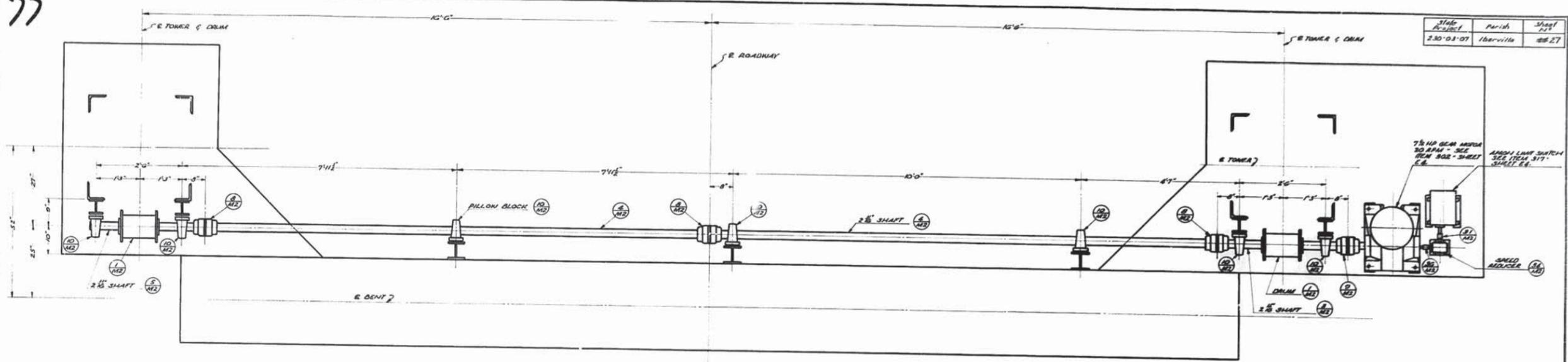
DATE	DESCRIPTION	BY

AS BUILT PLANS

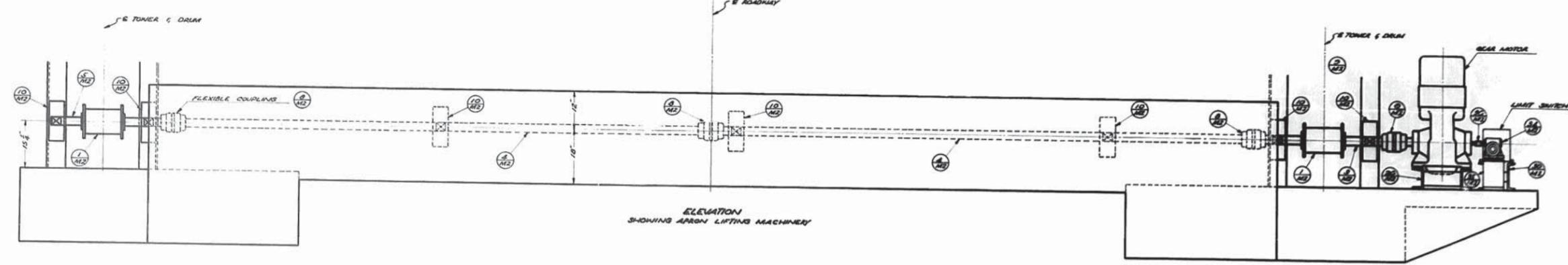


77

Sheet	Parish	Sheet
230-03-07	Iberville	25-27



PLAN
SHOWING APRON LIFTING MACHINERY



ELEVATION
SHOWING APRON LIFTING MACHINERY

PAINTING NOTE:
ALL UNFINISHED SURFACES OF MACHINERY SHALL BE PAINTED ONE THICK COAT OF RED LEAD AND OIL. ALL FINISHED SURFACES SHALL BE COATED WITH WHITE LEAD AND TALLOW BEFORE SHIPMENT AND SHALL BE PROTECTED BY WOODEN CASINGS.

LUBRICATION NOTE:
UNLESS OTHERWISE SHOWN ON DETAIL DRAWINGS, LUBRICANT SHALL BE AS FOLLOWS OR APPROVED EQUAL:
PILLOW BLOCKS, COUPLINGS & TRUSSION BEARINGS - "E-330 FINE GREASE "C"
EXPOSED TEETH - MEDIUM HARD OILS
ENCLOSED SPEED REDUCERS - STD. OIL "TEREZO 85" VISC. SAE 30
WIRE ROPE - STD. OIL CO. SURETTE COMPOUND NY 1500.

THICKNESS & NUMBER OF SHIMS TO BE FURNISHED	DIA.		
	1/2"	3/4"	1"
1/2"	2	2	3
3/4"	4	2	4
1"	6	5	5

AS BUILT PLAN

ASSEMBLY OF APRON LIFTING MECHANISM

**GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)**

DATED Jan. 22, 1932

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED BY <u>Brewer</u>	DETAILED BY <u>Brewer</u>	TRACED BY <u>Hammond</u>
CHECKED BY <u>Kuzel</u>	CHECKED BY <u>Kuzel</u>	CHECKED BY <u>Kuzel</u>

BRIDGE DESIGN SECTION

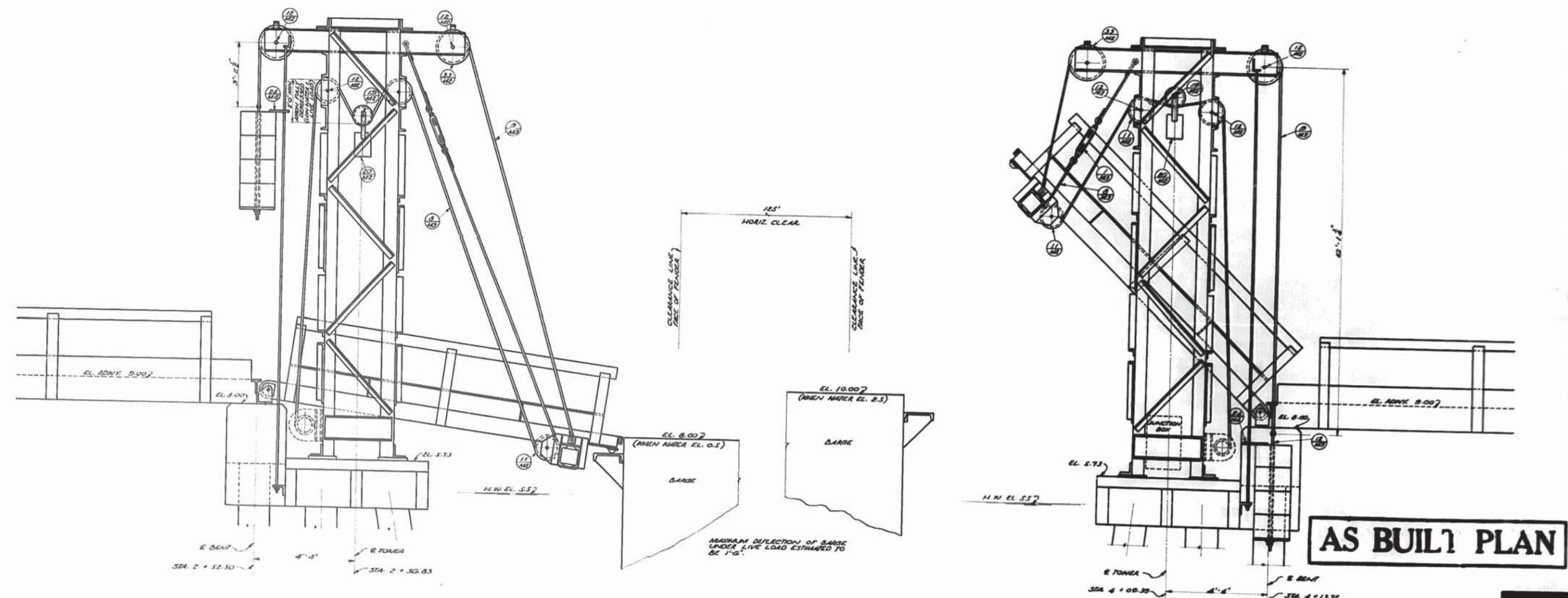
NO.	DESCRIPTION	DATE	BY

AS BUILT PLANS



78

State Project	Parish	Sheet No.
230-03-07	Iberville	2028



ELEVATION SHOWING ARROW FULLY DEPRESSSED

NOTE:
1. HEAD OF ROPE ON DRUMS (10)
WITH ARROW IN THIS POSITION.

PART OUTSIDE ELEVATION SHOWING TOWER ASSEMBLY

ELEVATION SHOWING ARROW RAISED TO 45°

AS BUILT PLAN

MIA

TOWER SHEAVE ARRANGEMENT

**GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)**

DATED Feb. 12, 1950

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	DETAILED	TRACED/AMENDED
CHECKED	CHECKED	CHECKED

BRIDGE DESIGN SECTION

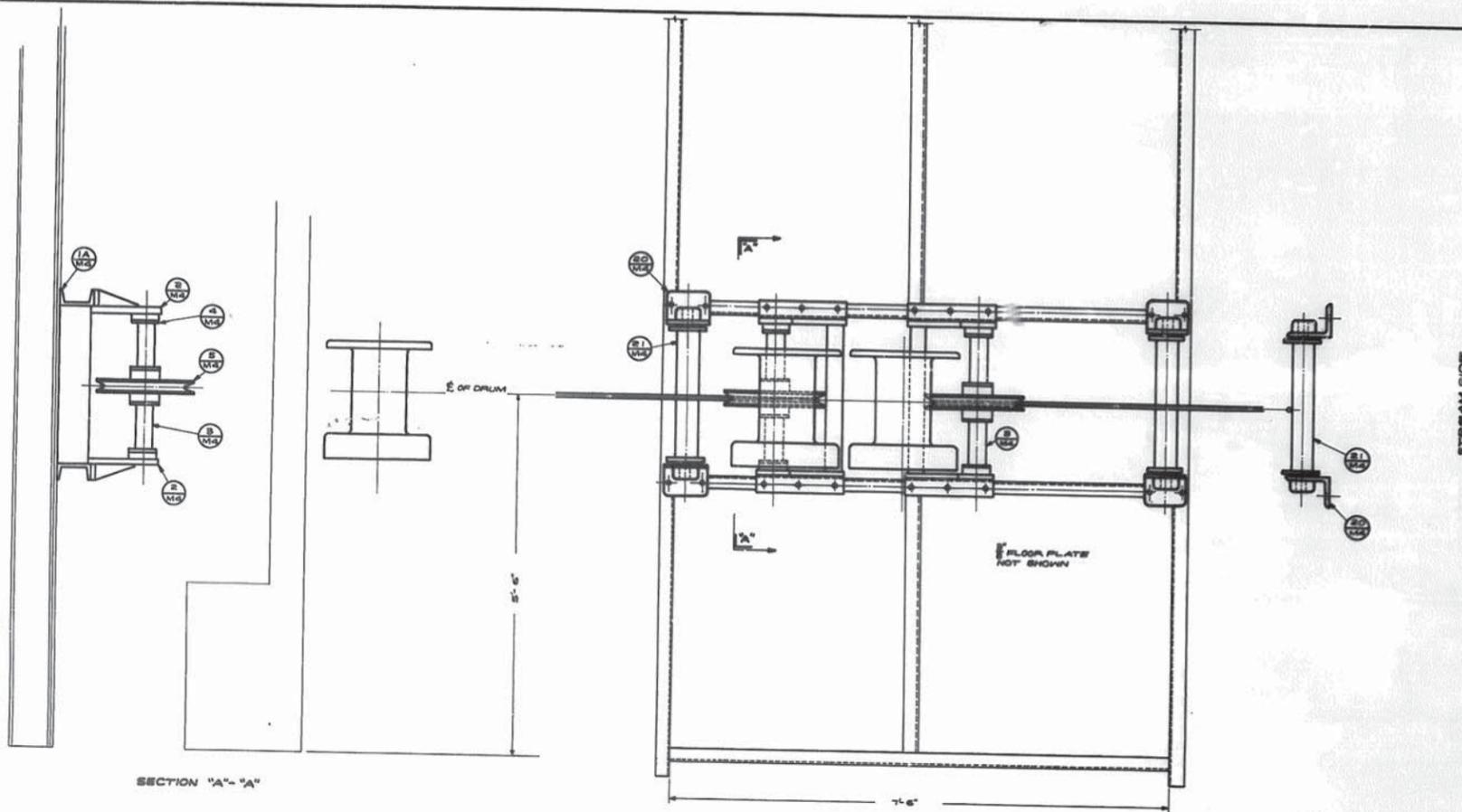
DATE	DESCRIPTION	BY

AS BUILT PLANS

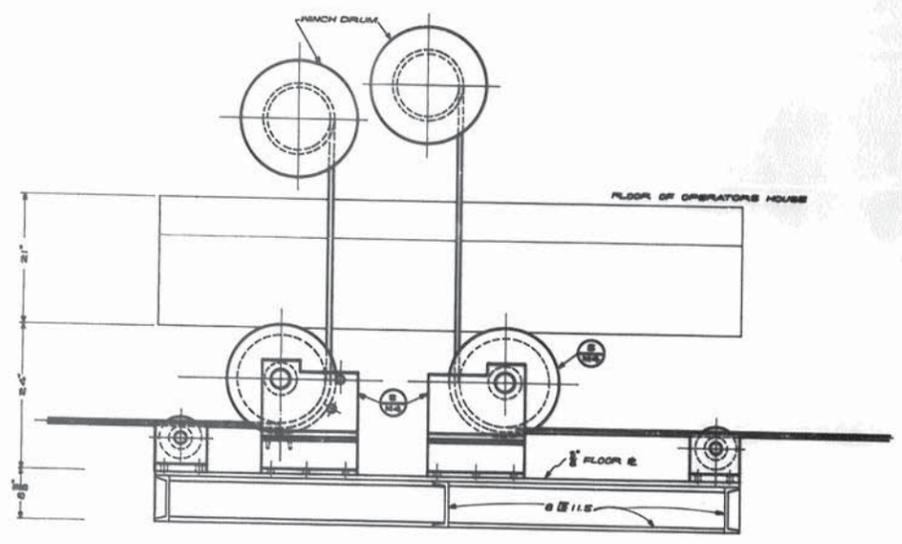


80

STATE PROJECT	PARISH	SHEET NO.
BOSSCOT	IBERVILLE	4830



SECTION "A"-"A"



BILL OF MATERIAL FOR ONE PONTOON BRIDGE

PART	QUAN	DESCRIPTION		
1	4	1/2" DIA. 18" TAKE-UP 8" BY 8" BY 18000 LBS. MIN. BREAK. STEEL TURNBUCKLE - DROP FORS.	STEEL	COMM.
2	25	3/8" DIA. ROPE CLIP FOR 1/2" ROPE	STEEL-DROP FORS.	COMM.
3	6	3/8" DIA. ROPE CLIP FOR 1/2" ROPE	STEEL-DROP FORS.	COMM.
4	24	3/8" DIA. ROPE CLIP FOR 1/2" ROPE	STEEL-DROP FORS.	COMM.
5	12	HEAVY DUTY THIMBLE FOR 1/2" ROPE	STEEL-DROP FORS.	COMM.
6	2	HEAVY DUTY THIMBLE FOR 1/2" ROPE	STEEL	COMM.
7	8	HEAVY DUTY THIMBLE FOR 1/2" ROPE	STEEL	COMM.
8	BUT	1/2" DIA. 6'x7" 1/2" MIN. FLOW STEEL WIRE ROPE 18000 LBS. FOR APPROX OPERATING CABLE	STEEL	COMM.
9	70	1/2" DIA. 6'x7" 1/2" MIN. FLOW STEEL WIRE ROPE 18000 LBS. FOR CO-HESITANT CABLE	STEEL	COMM.
10	8	1 1/2" x 1 1/2" x 1/2" MODROD EXTRA HEAVY PATTERNS DIAMOND BLOCK FOR 1/2" ROPE CAT # 66-18	STEEL	COMM.
11	BUT	1/2" DIA. 6'x7" 1/2" MIN. FLOW STEEL WIRE ROPE 18000 LBS. FOR APPROX OPERATING CABLE	STEEL	COMM.
12	4	1/2" DIA. 5" FT. BY 5" BOLT - 18 THD WITH 1" WASHER & 2 HEX. NUTS	STEEL	

SEE SHEET # 29 FOR LOCATION OF PART # 10

HOIST UNIT:
 THE APPROVED EQUAL OF SUPERIOR-LOCKWOOD-HANDY CORP., SUPERIOR, MFG. MODEL NO. S-40 DOUBLE DRUM HOIST EQUIPPED WITH LIMIT SWITCHES, ELECTROCONTROLLED OPERATOR DRIVE WITH RATIO TO PRODUCE LINE SPEED OF 100 FEET PER MINUTE AT SYNCHRONOUS SPEED OF MOTOR, AND WITH 15 HP NEMA DESIGN C (NEW STARTING TORQUE - 150% STARTING CURRENT) 230 VOLTS, 3 PHASE, 60 CYCLES A.C. DRUM PROOF SCROLL CASE MOTOR, HEATHINGUSS LANSBURY CLASS 2 OR SEVERAL ELECTRIC TYPE RE COMPLIES HOIST UNIT INCLUDES ELECTROCONTROLLED OPERATOR DRIVE AND ELECTRIC MOTOR TO BE INCLUDED IN ITEM 2-8-1, MOVABLE BRIDGE MACHINERY

NOTES:
 THE CONTRACTOR SHALL DETERMINE THE FINAL DIMENSIONS OF THE HOIST AND OTHER COMMERCIAL PRODUCTS FROM CERTIFIED DIMENSIONS OUTLINES OF THE OPERATOR'S HOUSE AND SHEAVE PLATFORM BELOW THE OPERATOR'S HOUSE. ALL PARTS LISTED ON THIS SHEET TO BE INCLUDED IN ITEM 2-8-1 MOVABLE BRIDGE MACHINERY, INCLUDING ALL NECESSARY BRIMS. ALL BOLTS TO HAVE ONE NUT AND ONE HEAVY SAE LOCKWASHER, UNLESS NOTED, OR OTHER MEANS OF LOCKING NUT ARE SHOWN ON DETAILS.

AS BUILT PLAN

M3

ARRANGEMENT OF FLOATING DEFLECTOR SHEAVE

**GRAND RIVER PONTOON BRIDGE
 INTRACOASTAL WATERWAY
 (PIGEON)**

DATED OCT. 18, 1956

STATE OF LOUISIANA
 DEPARTMENT OF HIGHWAYS

DESIGNED *Kuehl* DETAILED *Kuehl* TRACED *A. Chastain*
 CHECKED *Brown* CHECKED *Brown* CHECKED *Brown*

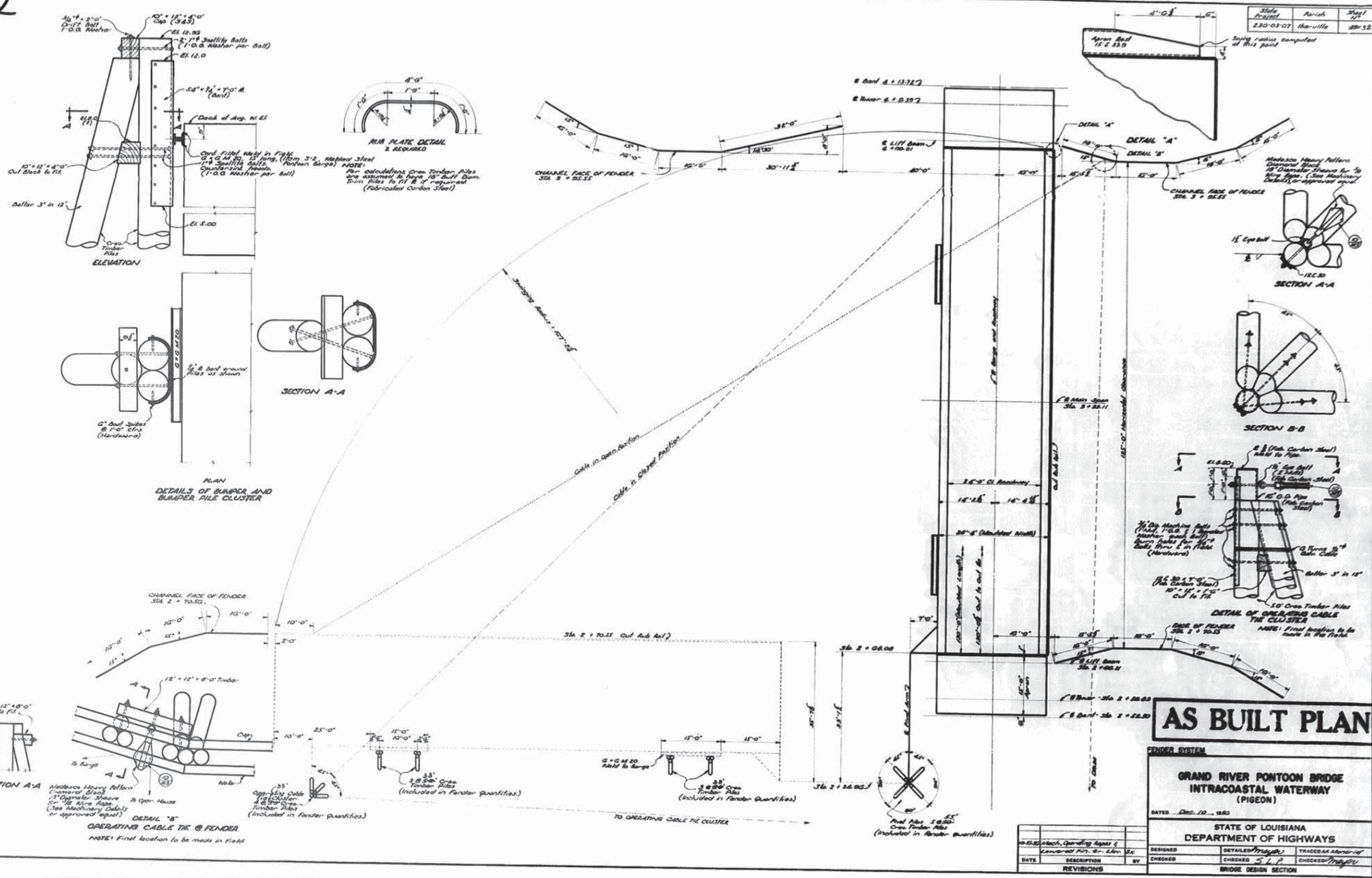
BRIDGE DESIGN SECTION

DATE	DESCRIPTION	BY

AS BUILT PLANS



22

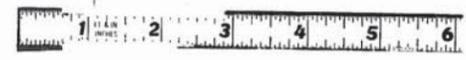


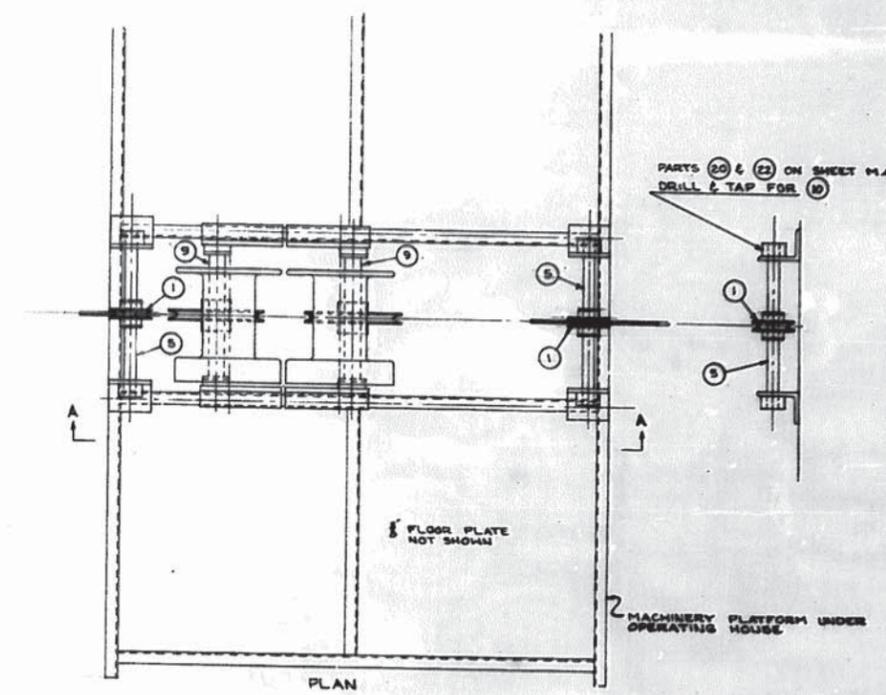
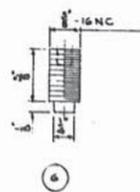
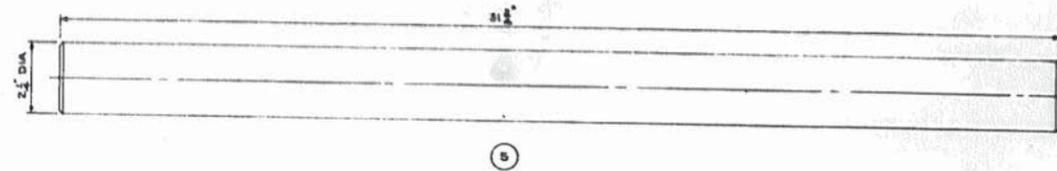
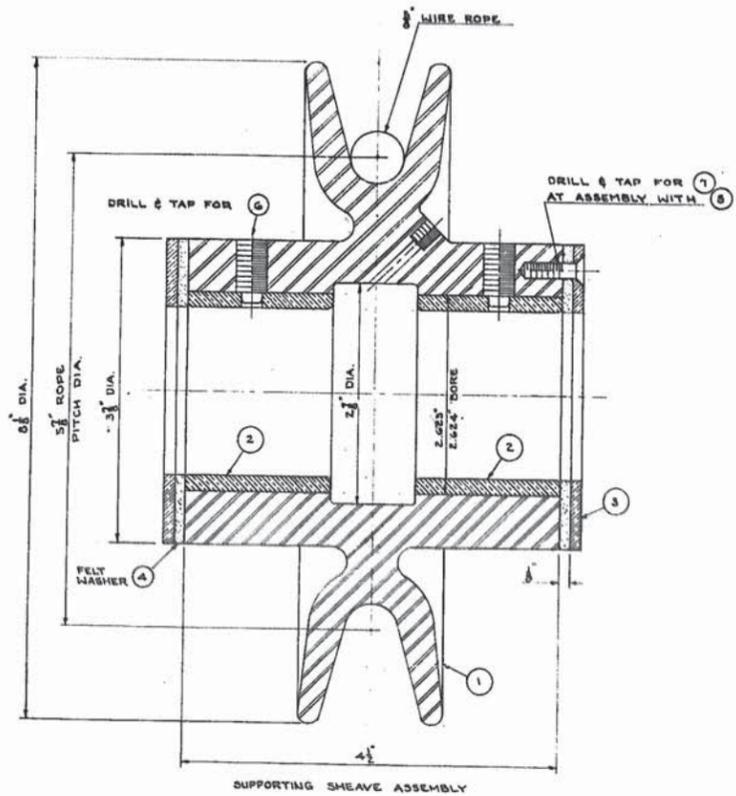
State Project	Parish	Sheet
230-03-07	the-ville	289.32

AS BUILT PLAN

GRAND RIVER PONTOON BRIDGE INTRACOASTAL WATERWAY (PIGEON)			
DATED - Dec. 10, 1962			
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS			
DESIGNED	TRACED BY	TRACED BY	
CHECKED	CHECKED	CHECKED	
BRIDGE DESIGN SECTION			

AS BUILT PLANS

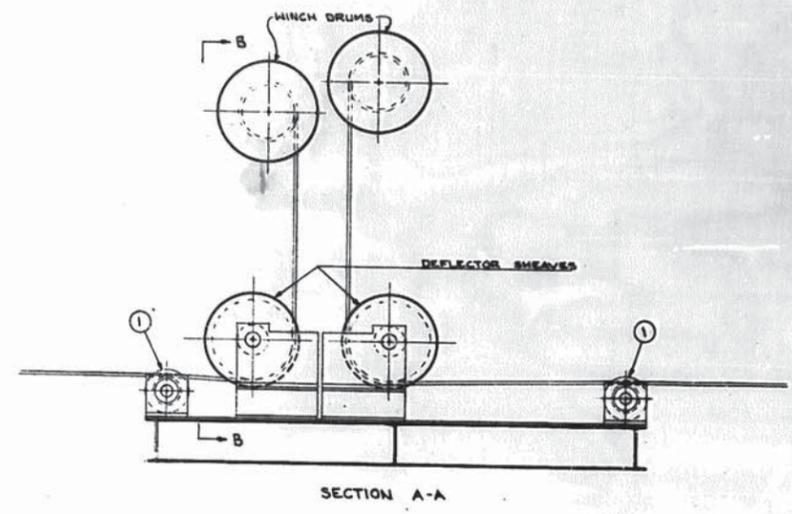
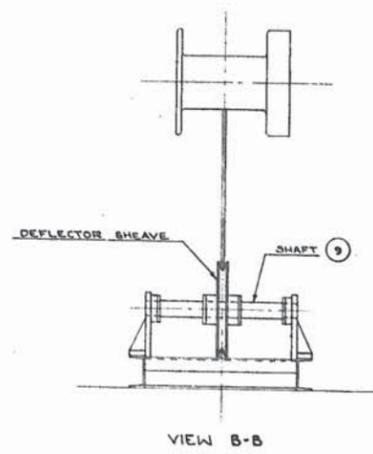
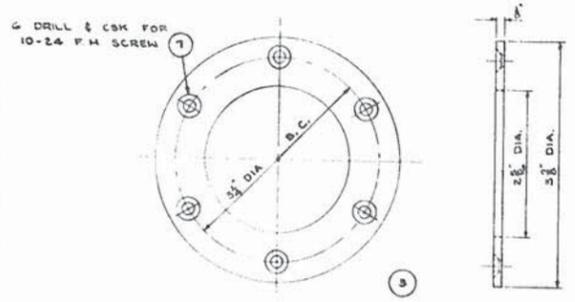
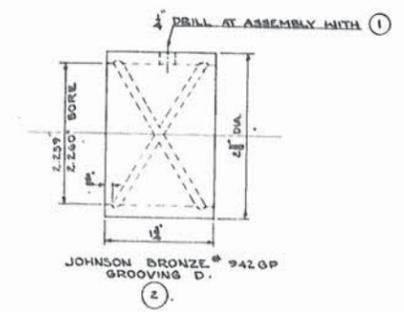




BILL OF MATERIAL FOR ONE SUPPORTING SHEAVE

PART	QTY	DESCRIPTION	MATERIAL
1	1	SHEAVE	STEEL CAST OR WELDM.
2	2	BUSHING	BRONZE COMM.
3	2	RETAINER FOR FELT WASHER	BRASS
4	2	WASHER - 3/8\"/>	
5	1	SHAFT	MONEL OR STAINLESS ST.
6	2	1/2\"/>	
7	12	10-24 NC FLAT HEAD SCREW - 1/2\"/>	
8	1	ALUMITE HYDRAULIC FITTING #1607	COMM.
9	1	SHAFT FOR FLOATING DEFLECTOR SHEAVE	MONEL OR STAINLESS ST.
10	2	1/2\"/>	

NOTE:
 SHEAVE (1) & SHAFT (5) REPLACE ROLLER (22) ON SHEET M-4
 SHAFT (9) REPLACES SHAFT (8) ON SHEET M-4



AS BUILT PLAN

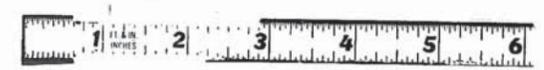
DETAILS AND ASSEMBLY OF FLOATING SUPPORTING SHEAVE

**GRAND RIVER PONTOON BRIDGE
 INTRACOASTAL WATERWAY
 (PIGEON)**

DATE: May 24, 1951

STATE OF LOUISIANA
 DEPARTMENT OF HIGHWAYS

DESIGNED	BY	TRACED
CHECKED	BY	CHECKED
REVISIONS	BY	BRIDGE DESIGN SECTION





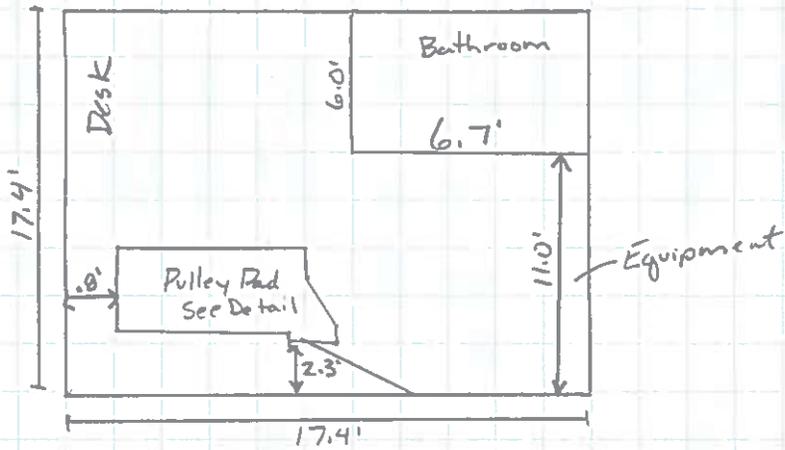
Job No. _____ Sheet _____ of _____

Job Name 054480

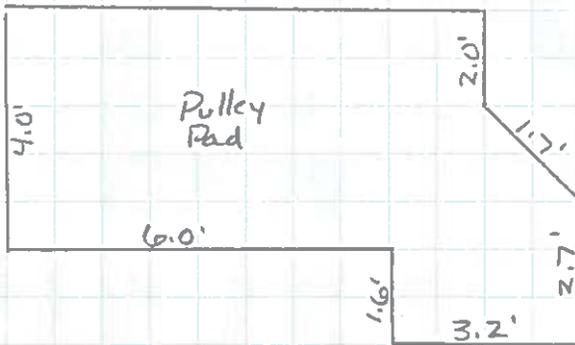
Task New Guard Shack Inside

Calculated by _____ Date _____

Checked by _____ Date _____



Detail





Job No. _____ Sheet _____ of _____

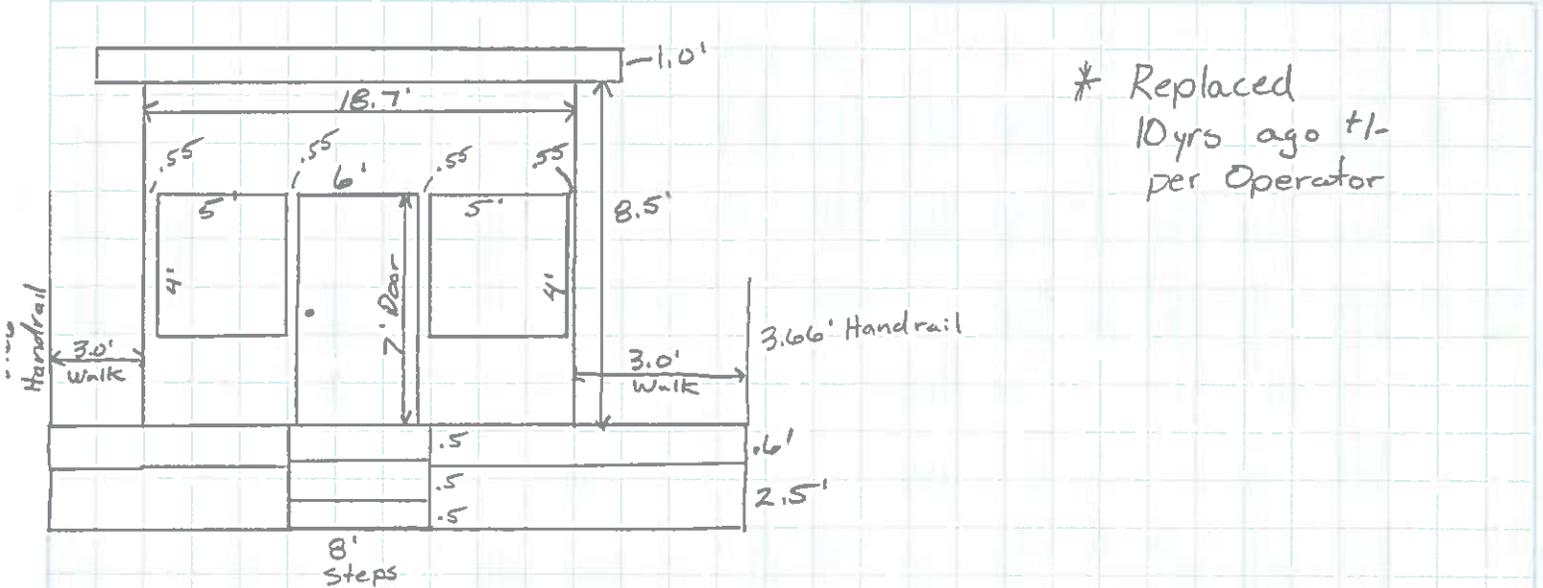
Job Name 054480

Task New Operator Shack

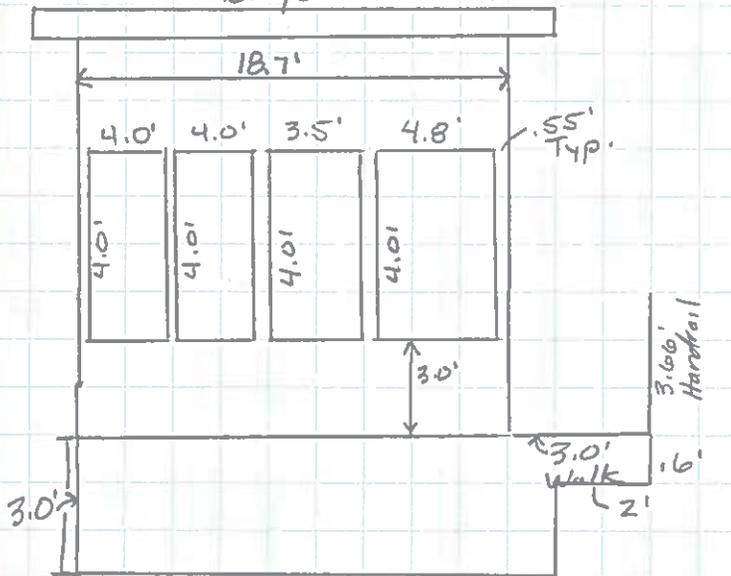
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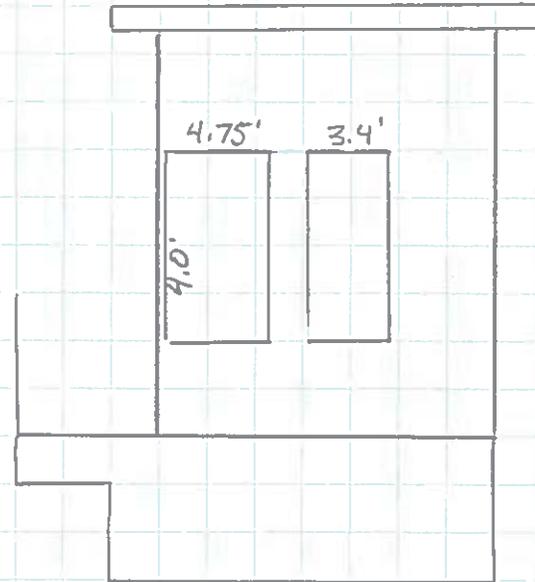
Front Elevation



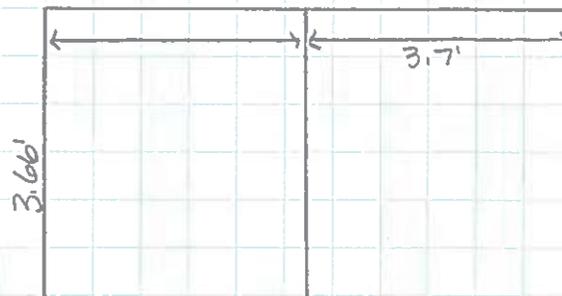
Bayou Side



Road Side



Handrail





Job No. _____ Sheet _____ of _____

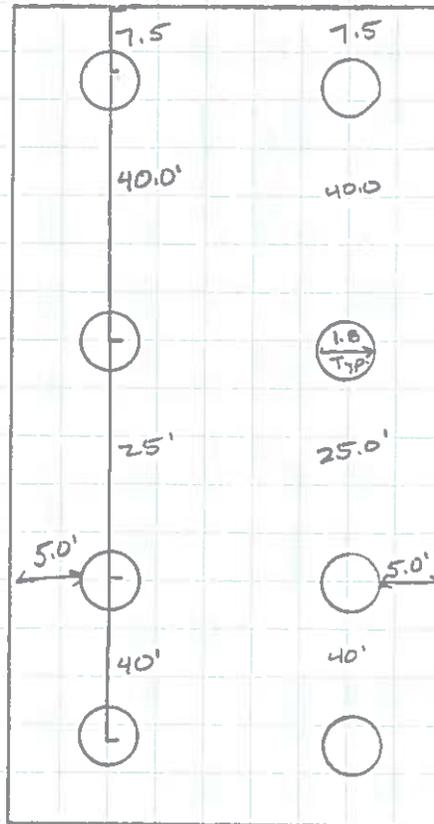
Job Name 054480

Task Manhole Location Detail

Calculated by _____ Date _____

Checked by _____ Date _____

Guard Shack





Job No. _____ Sheet _____ of _____

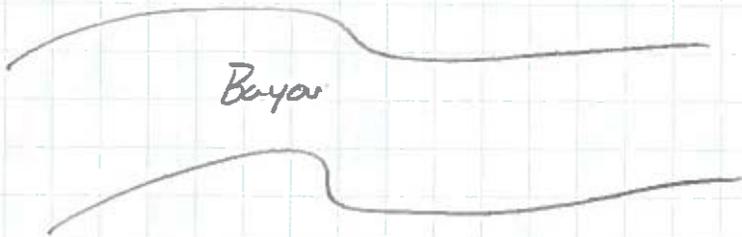
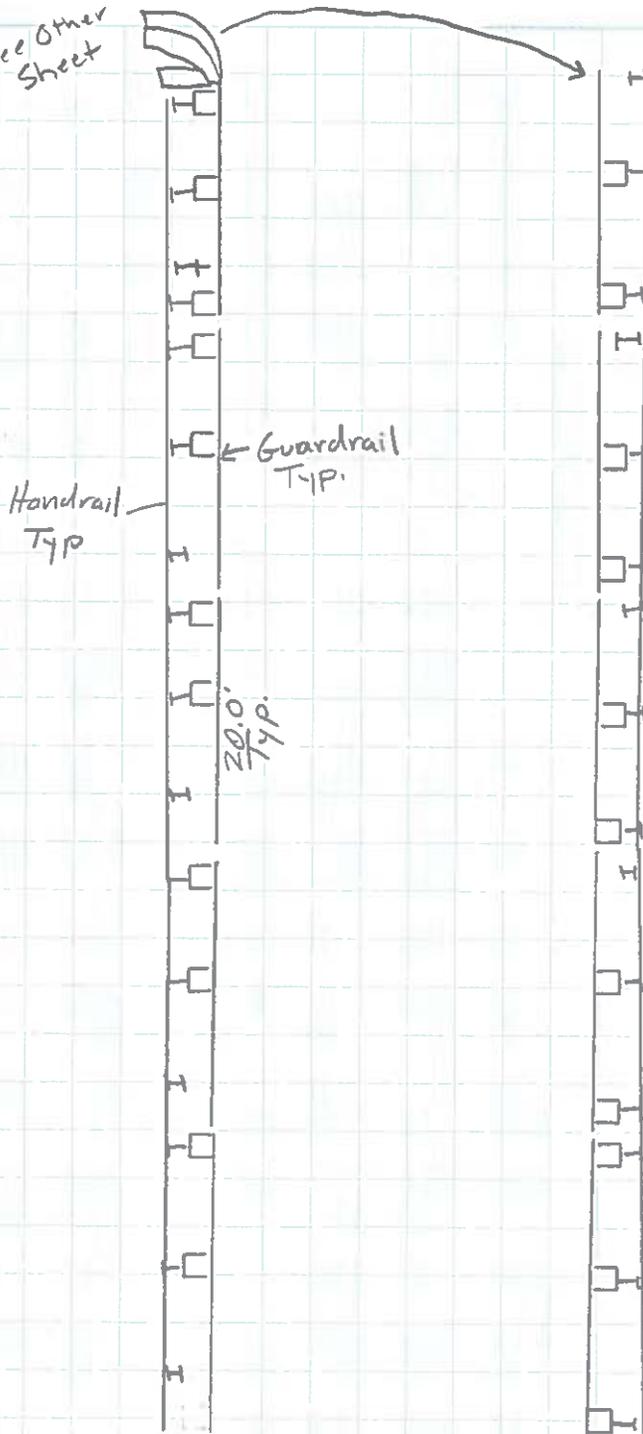
Job Name 054480

Task Railing Detail

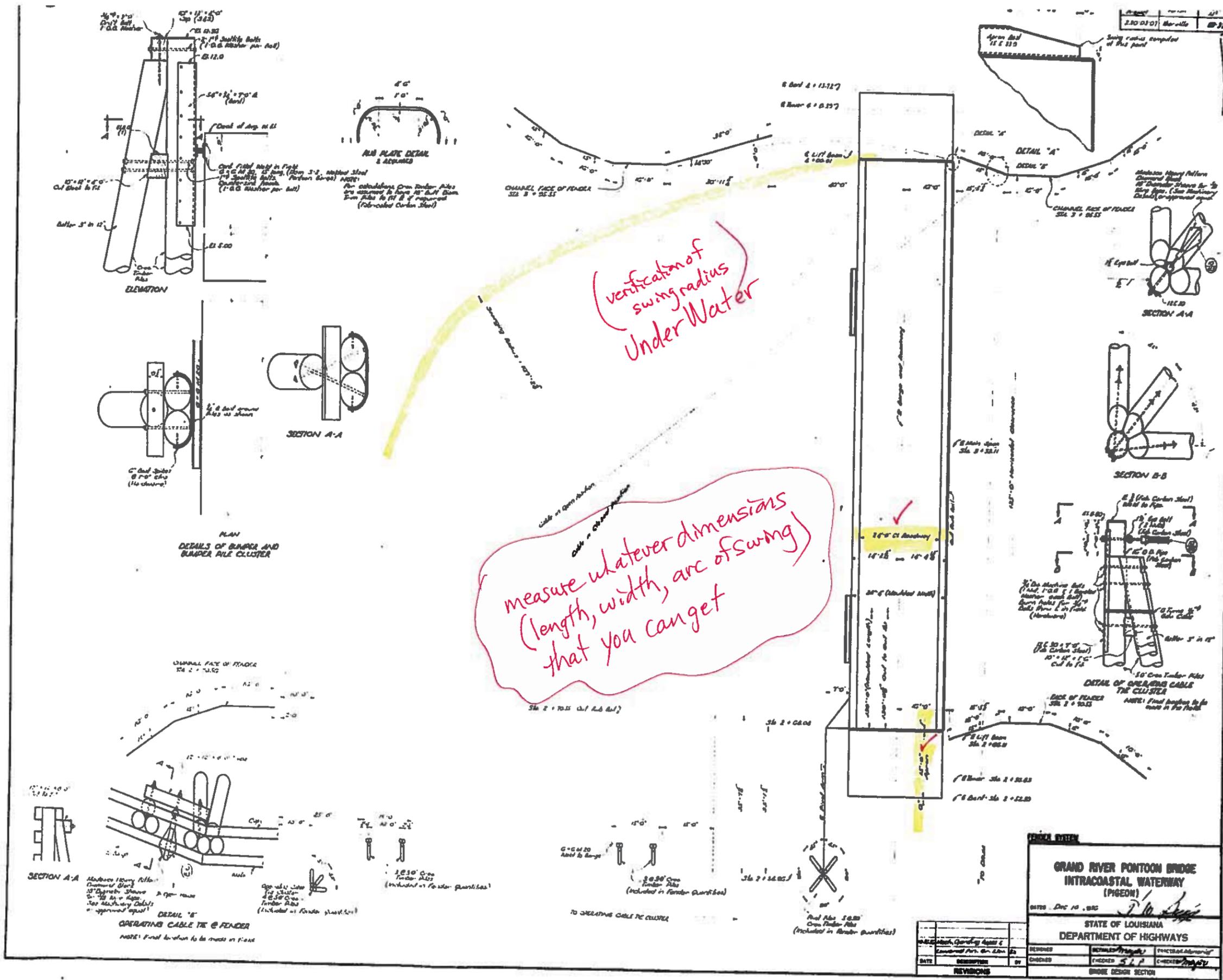
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Checked by _____ Date _____

See Other Sheet

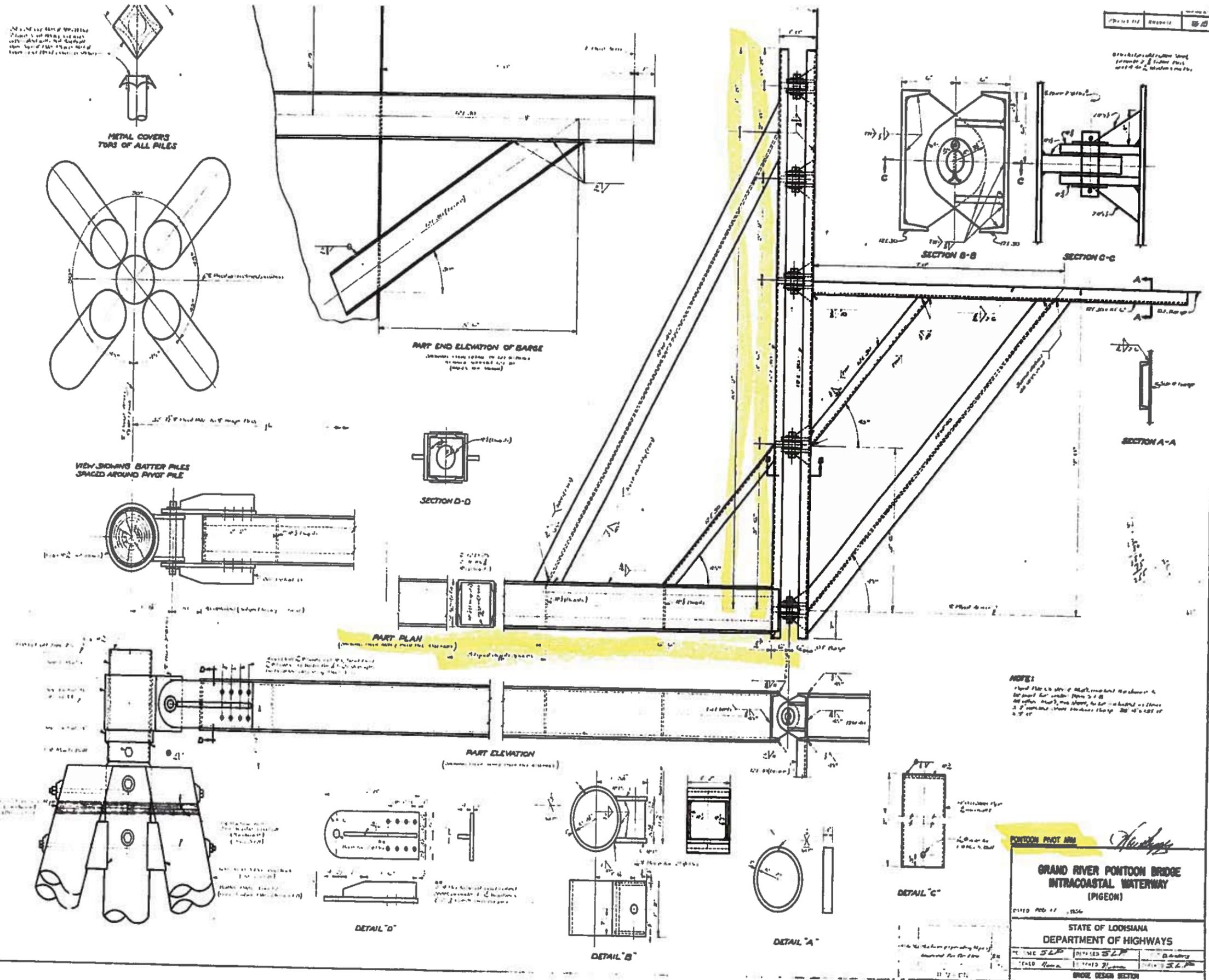


05480
Sheet 6 of 4



GRAND RIVER PONTOON BRIDGE INTRACOASTAL WATERWAY (PIGEON) DATE: Dec 10, 1955			
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS			
DESIGNED BY CHECKED BY DATE	DRAWN BY CHECKED BY DATE	PROJECT NO. SHEET NO.	BRIDGE DESIGN SECTION

NO.	DESCRIPTION	DATE



054480
Sheet 9 of 14

CONTOUR PHOTO

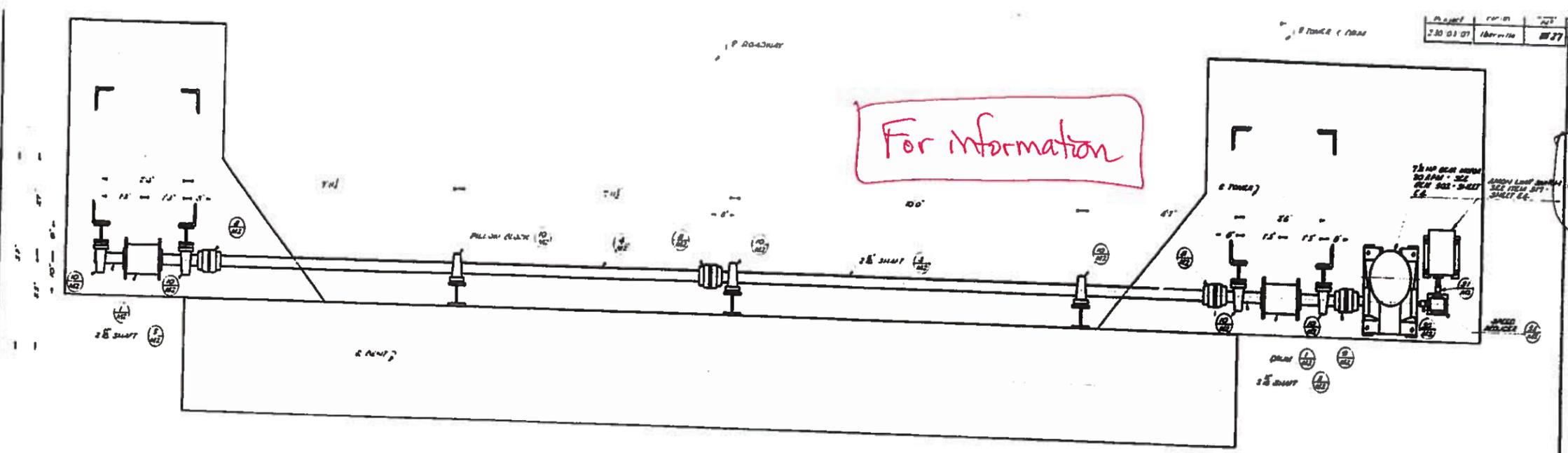
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**GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)**

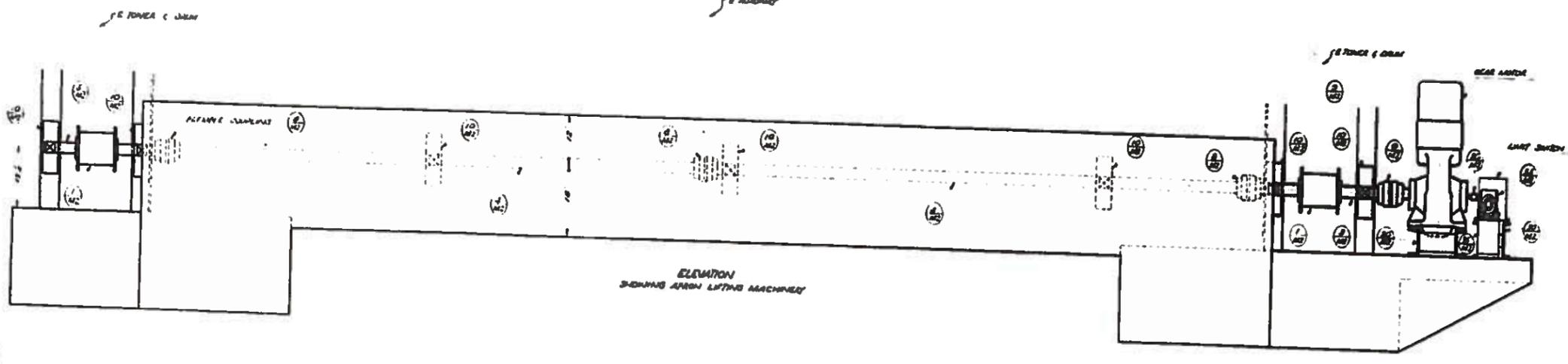
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED BY	DRAWN BY	CHECKED BY
DATE	DATE	DATE

BRIDGE DESIGN SECTION



PLAN
SHANNON ARMOR LIFTING MACHINERY



ELEVATION
SHANNON ARMOR LIFTING MACHINERY

REWORKING NOTE:
ALL UNFINISHED SURFACES OF CASTINGS SHALL BE FINISHED AND SHOWN AS SUCH ON ALL VIEWS. FINISHED SURFACES SHALL BE FINISHED WITH THE PROPER FINISH AS SHOWN ON THE DRAWING.

LUBRICATION NOTE:
ALL FITS OTHERWISE SHOWN ON THIS DRAWING SHALL BE AS FOLLOWS: ALL UNFINISHED SURFACES SHALL BE FINISHED WITH THE PROPER FINISH AS SHOWN ON THE DRAWING. ALL FITS SHALL BE AS SHOWN ON THE DRAWING.

THICKNESS & GRADE OF SHIMS TO BE PLACED	GRADE		
	1/2"	3/4"	1"
1/2"	2	2	2
3/4"	4	2	1
1"	6	5	3

054480
Sheet 10 of 14

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

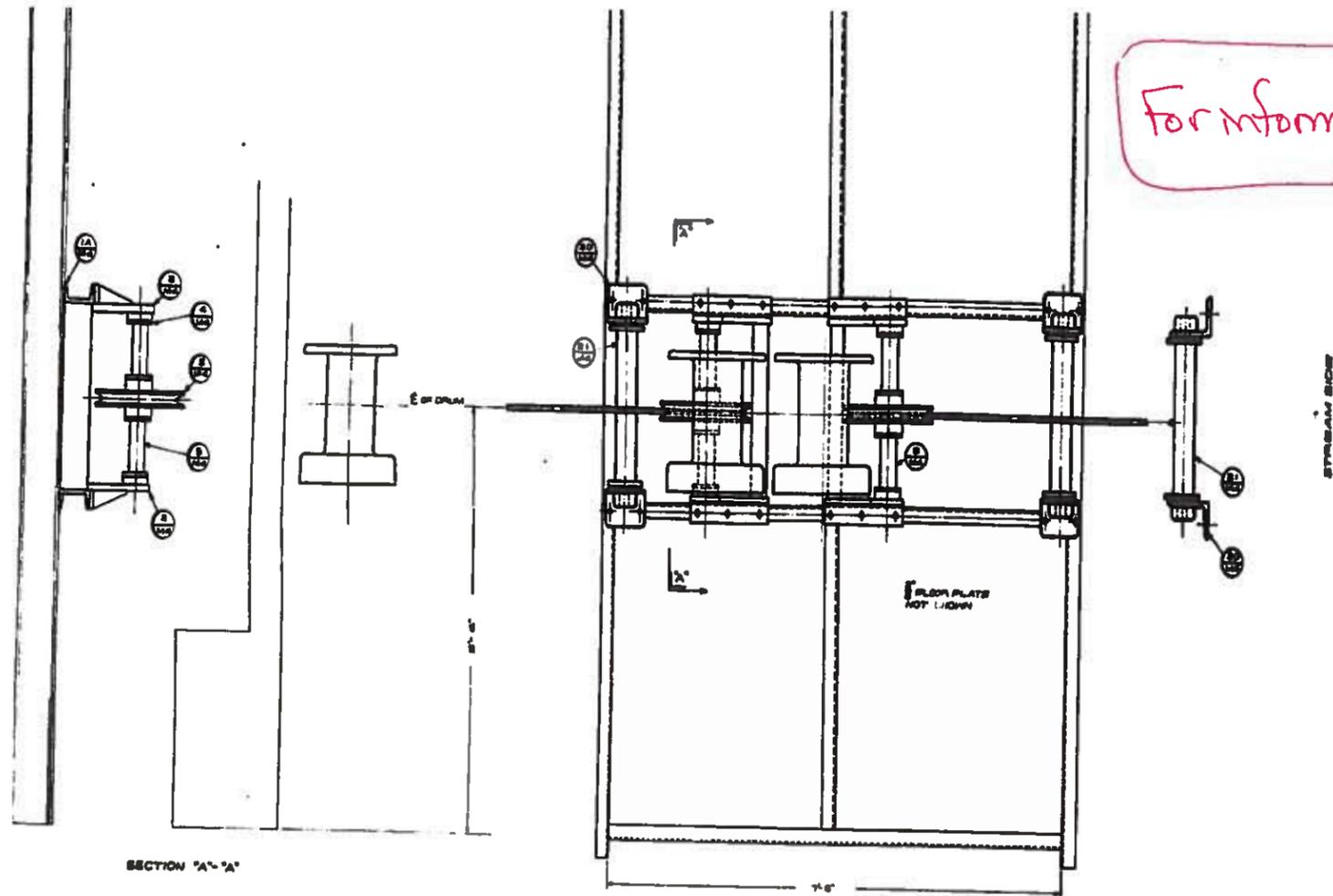
GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)

DRAWN BY: [Signature]
CHECKED BY: [Signature]

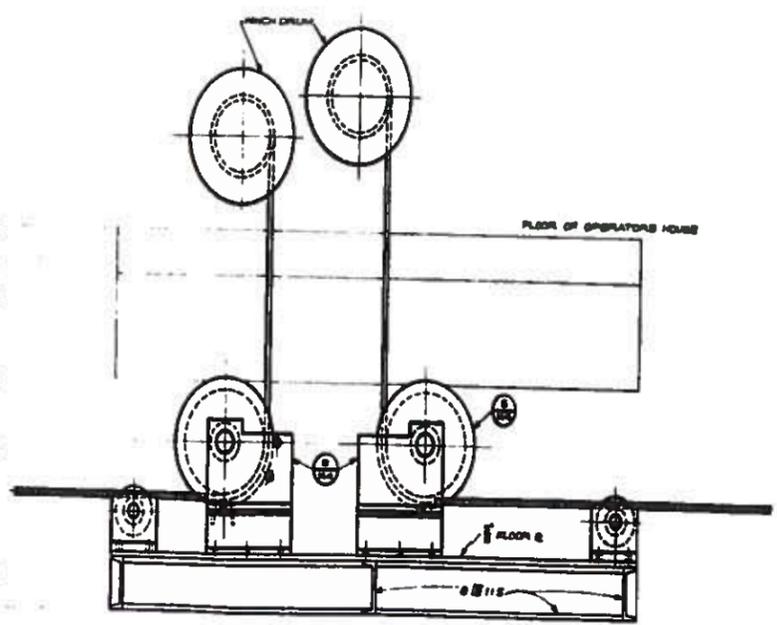
BRIDGE DESIGN SECTION

DATE	DESCRIPTION	BY
REVISIONS		

For information



SECTION 'A-A'



ITEM	QUANTITY	DESCRIPTION	UNIT	REMARKS
1	4	3/4" DIA. 1/2" THICK STEEL BELLS WOOD LUGS AND SPEAK. STEEL TURNBUCKLES - BRASS PINS	STEEL	CONG.
2	24	3/8" DIA. 1/2" THICK STEEL BELLS	STEEL	CONG.
3	6	3/8" DIA. 1/2" THICK STEEL BELLS	STEEL	CONG.
4	24	3/8" DIA. 1/2" THICK STEEL BELLS	STEEL	CONG.
5	12	HEAVY DUTY THUMB FOR ROPE	STEEL	CONG.
6	2	HEAVY DUTY THUMB FOR ROPE	STEEL	CONG.
7	8	HEAVY DUTY THUMB FOR ROPE	STEEL	CONG.
8	2	3/4" DIA. 1/2" THICK STEEL BELLS WOOD LUGS AND SPEAK. STEEL TURNBUCKLES FOR ANCHOR STRAPING CABLE	STEEL	CONG.
9	2	3/4" DIA. 1/2" THICK STEEL BELLS WOOD LUGS AND SPEAK. STEEL TURNBUCKLES FOR ANCHOR STRAPING CABLE	STEEL	CONG.
10	8	3/4" DIA. 1/2" THICK STEEL BELLS WOOD LUGS AND SPEAK. STEEL TURNBUCKLES FOR ANCHOR STRAPING CABLE	STEEL	CONG.
11	2	3/4" DIA. 1/2" THICK STEEL BELLS WOOD LUGS AND SPEAK. STEEL TURNBUCKLES FOR ANCHOR STRAPING CABLE	STEEL	CONG.
12	4	3/4" DIA. 1/2" THICK STEEL BELLS WOOD LUGS AND SPEAK. STEEL TURNBUCKLES FOR ANCHOR STRAPING CABLE	STEEL	CONG.

054480
Sheet 11 of 14

REMARKS: SEE FOR LOCATION OF PART AT 10

NOTE: THE APPROVED MODEL OF SUPERIOR-LOOKING-MADE COOR, SUPERIOR, INC. MODEL NO. 240 DOUBLE DRUM HOIST EQUIPPED WITH LAMP-BELT OR 88 ELECTROPLATED CHARACTER DRIVE WITH SYNCHRONOUS SPEED OF MOTOR AND WITH 15 HP 115V 60 HZ 3 PHASE, 60 CYCLES A.C. DRIVE MOTOR EQUIPPED. CASE MOTOR PROTECTIVE LABELS CLASS E OR GENERAL ELECTRIC TYPE NO. COMPLETE HOIST UNIT INCLUDES ELECTROPLATED CHARACTER DRIVE AND ELECTRIC MOTOR TO BE INCLUDED IN ITEM 8-1, AVAILABLE BRIDGE MACHINERY.

NOTE: THE CONTRACTOR SHALL DETERMINE THE FULL DIMENSIONS OF THE HOIST AND OTHER MECHANICAL PRODUCTS FROM SUPPLIER DIMENSIONS OUTSIDE OF THE OPERATING HOIST AND SHOWN PLATFORMS WITHIN THE OPERATING HOIST. ALL PARTS LISTED ON THIS SHEET TO BE INCLUDED IN ITEM 8-1 AVAILABLE BRIDGE MACHINERY, INCLUDING ALL NECESSARY BOLTS. ALL BOLTS TO HAVE ONE NUT AND ONE HEAVY DUTY LOCKWASHER, BOLTS NOTED OR OTHER MEANS OF LOCKING NUT ARE SHOWN ON DETAILS.

M. K. King

ARRANGEMENT OF FLOATING DEFLECTOR BEAMS

M 3

GRAND RIVER PONTOON BRIDGE
INTRACOASTAL WATERWAY
(PIGEON)

DATE: OCT. 10, 1958

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED: *K. K. King* CHECKED: *G. W. King* DRAWN: *G. W. King*
 CHECKED: *G. W. King* CORRECTED: *G. W. King* CHECKED: *G. W. King*

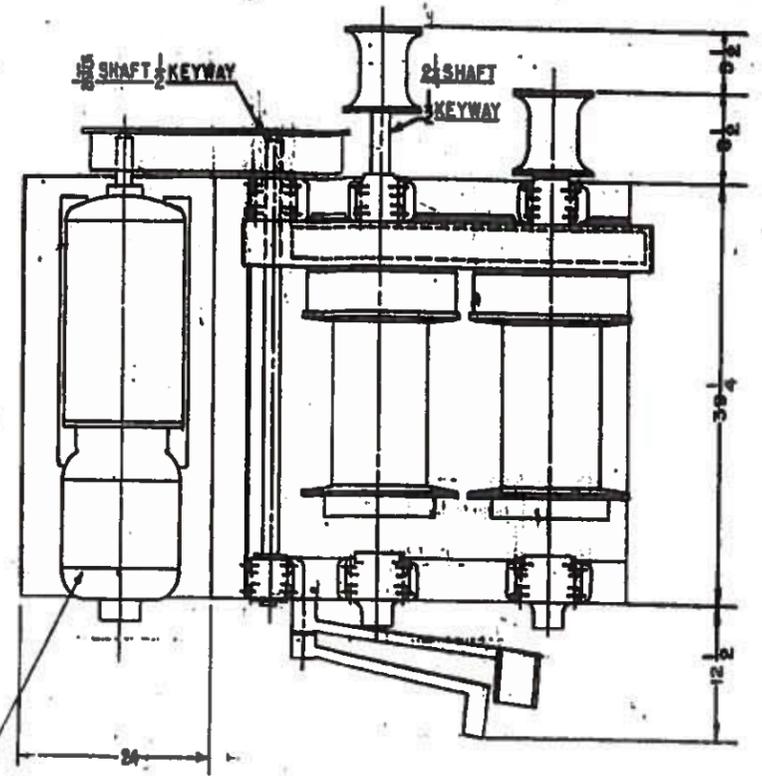
BRIDGE DESIGN SECTION

DATE	DESCRIPTION	BY

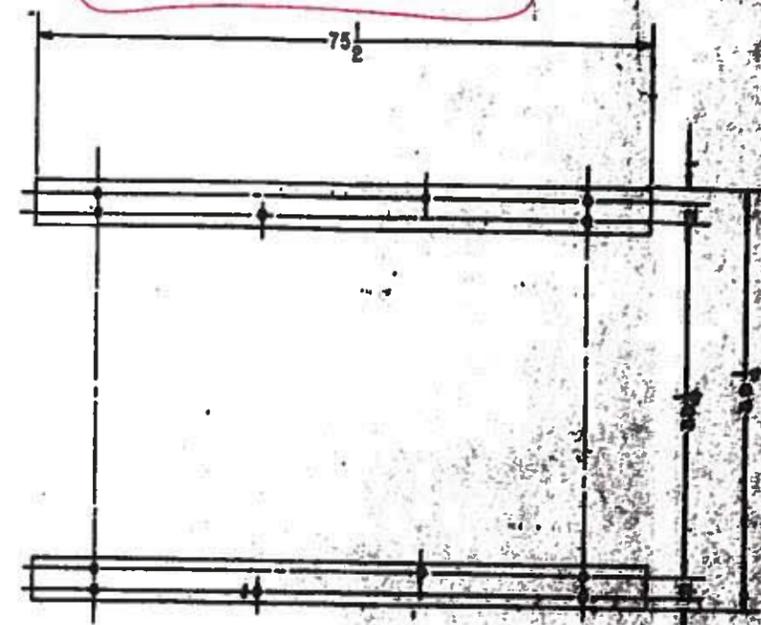
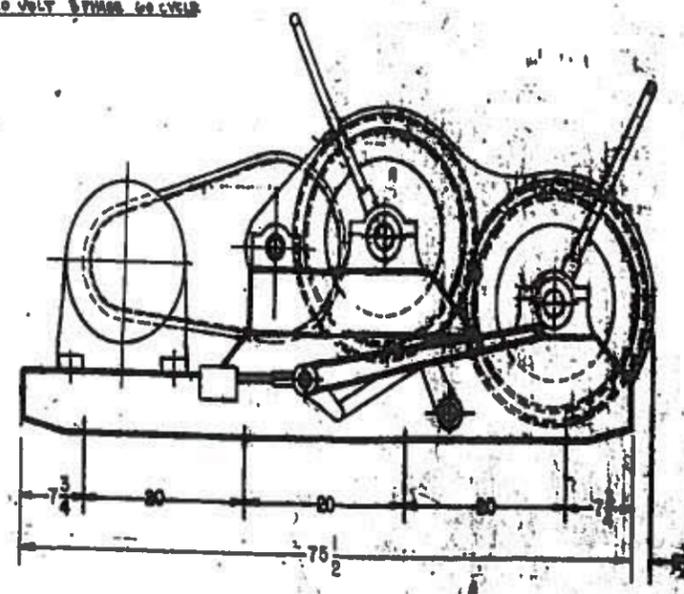
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For information

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LINK-BELT MODEL BG-40 ELECTROFLUID
 GRAB MOTOR DRIVE WITH (BIPOLAR FRAME 100V)
 1750 RPM 220 VOLT 3 PHASE 60 CYCLE
 D.C. MOTOR



LINK-BELT MODEL BG-40 ELECTROFLUID
 GRAB MOTOR DRIVE WITH (BIPOLAR FRAME 100V)
 1750 RPM 220 VOLT 3 PHASE 60 CYCLE
 D.C. MOTOR

