



Historic Bridge Management Plan for the Vermilion River Bridge at Abbeville

Recall Number: 009460

Structure Number: 03570553001081

Parish: Vermilion

Route: LA 14 Bypass

Crossing Description: Vermilion River



Prepared for

**Louisiana Department of
Transportation and
Development**

Prepared by

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June 2017

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Executive Summary

The Vermilion River Bridge at Abbeville (Recall No. 009460) is located in Vermilion Parish, Louisiana, and is owned by the State of Louisiana. The bridge was completed in 1964. The bridge was determined eligible for the National Register of Historic Places (National Register) in 2013. It is significant as a movable bridge that features an important variation within the vertical lift type: a centrally located drive machinery that operates the four sheaves.

The bridge carries four travel lanes of Louisiana Highway (LA) 14 Bypass (Veterans Memorial Highway, also known as W. Summers Drive) across the Vermilion River in the city of Abbeville, Vermilion Parish. Its total length of approximately 353 feet encompasses a 65-foot-long, central, steel I-beam, vertical lift main span flanked by steel I-beam and cast-in-place concrete slab approach spans to the west and east. The operating machinery, which drives the four sheaves on each corner of the lift towers, is located on a platform at the top of the central span. An operator's house is located near the northwest corner of the lift span. A timber fender guide system provides for a 50-foot-wide horizontal navigation channel through the bridge. When the bridge is open, approximately 55 feet of vertical clearance is provided above the high water line for the Vermilion River. The bridge is classified as a complex structure because it contains one vertical lift span unit. It is also classified as fracture critical because of the lift span's steel lift girders at each end of the lift span.

The bridge is in fair condition overall and appears to adequately serve its purpose of carrying vehicular traffic, with the ability to open to allow water navigation traffic to pass under the bridge when it is open. The major deficiency is the paint system on the movable portion of the bridge, including the towers, has completely failed, which as lead to areas of exposed metal with minor surface corrosion. The operation of the bridge is good, as observed in several opening-closing cycles during the field visit, and the machinery and electrical systems are adequately maintained. With proper maintenance and rehabilitation, the Vermilion River Bridge at Abbeville can continue to serve in its present capacity for 20 years or longer.

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

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1. Introduction

This Plan, used in conjunction with the Statewide Historic Bridge Plan, provides guidance on the approach to preservation activities for the Vermilion River Bridge at Abbeville (Recall No. 009460), identified as a Preservation Priority Bridge. Completion of individual management plans for Preservation Priority Bridges and the Statewide Historic Bridge Plan fulfills terms of the PA, which was executed on September 21, 2015.

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

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

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

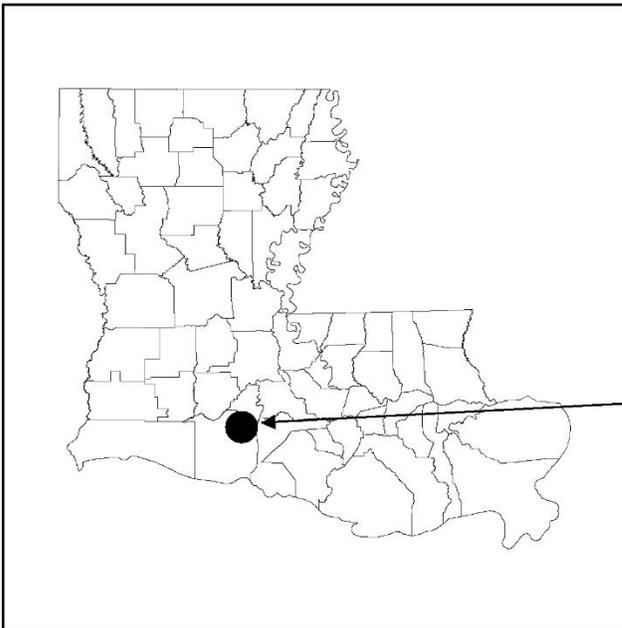
Existing bridge data sources typically available for Louisiana bridges were gathered for this Plan, and field investigation confirmed the general structural condition and character-defining features of the subject bridge. These sources include:

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

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

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

2. Location Map



PROJECT LOCATION
 Bridge Number: 009460
 Structure Number: 03570553001081
 Vermilion Parish
 Route: LA 14BY
 Crossing Description: Vermilion River

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3. Historic Data

A. Identifying information

Structure Number: 03570553001081

Recall Number: 009460

LASHPO Number: 57-00673

Bridge Name: Vermilion River Bridge at Abbeville

Date of Construction: 1964

Main Span Type: Movable: Lift – Span Tower

Contractor: Coastal Contractors Inc., Baton Rouge, La.

Designer/Engineer: Louisiana Department of Highways
Steward Machine Company, Birmingham, Al. (operating machinery)
Earl Gear and Machine Company, Philadelphia, Pa. (clutch assembly)
Orleans Materials & Equipment Company, Inc., New Orleans, La. (fabricator)

B. Description of bridge

The Vermilion River Bridge at Abbeville carries four travel lanes of LA 14 Bypass (Veterans Memorial Drive/W. Summers Drive) across the Vermilion River in the city of Abbeville, Vermilion Parish. The average daily traffic (ADT) is approximately 20,500 vehicles. The approximately 353-foot-long crossing consists of a central, steel I-beam, vertical lift main span flanked by concrete slab and steel I-beam approach spans to the west and east. The bridge is classified as a complex structure because it contains one vertical lift span unit. The bridge is also classified as fracture critical because for the lift span, the longitudinal stringers of the floor system frame into the welded steel I-shaped lift girder at each end of the span. The bridge is not load (weight) posted.

The as-built plans indicate the bridge was designed by the Louisiana Department of Highways and was constructed from 1962 to 1964 by Coastal Contractors, Inc. The Steward Machine Company from Birmingham, Alabama, designed and constructed the operating machinery; Earl Gear and Machine Company from Philadelphia designed and constructed the clutch assembly; and the Orleans Materials & Equipment Company, Inc. from New Orleans fabricated the steel members on the bridge.

The bridge retains nearly all elements of its original construction, including the operator's house. While the bridge has endposts with "1963" inscribed and concrete counterweights with "Vermilion River 1963" inscribed, it was officially completed and accepted by the Louisiana Department of Highways in 1964.

The bridge's main span consists of a 65-foot-long, I-beam, vertical lift span with a dimension of 72 feet, 6 inches as measured from centerline to centerline of sheaves. Two lift towers on either side of the main span consist of steel girders and a central platform with cross-braced, steel I-beams. The operating machinery, which drives the sheaves on each of four corners of the lift towers, is located on a central platform at the top of the lift span. Heavy steel ropes on the sheaves are attached to the movable span below, which is counterweighted at each end. The combined weight of the counterweights is equal to the weight of the lift span; thus, for movement to occur the drive machinery needs to provide only enough force to overcome friction and wind resistance. The superstructure of the main span consists of 12 lines of steel I-beams that frame into a welded steel I-shaped lift girder at each end of the span. It features an open grid steel deck with steel curbs and steel barrier and aluminum tube railings. The lift span rests on cast-in-place concrete piers supported by 30-inch square precast concrete piles.

The west approach spans consist of three 20-foot-long, cast-in-place, reinforced-concrete slabs and one 40-foot-long, steel I-beam span with a cast-in-place, reinforced-concrete deck for a total length of 100 feet. The easterly approach spans consist of seven 20-foot-long, cast-in-place concrete slabs and one 40-foot-long, steel I-beam span with a cast-in-place concrete deck for a total length of 180 feet. The east and west steel I-beam approach spans each consist of seven lines of rolled steel beams. Expansion joints are located in the concrete deck slab above the ends of the steel I-beam spans between spans 3 and 4 and spans 6 and 7. The remainder of the deck joints over the bents are open joints. Reinforced-concrete approach slabs with a length of 20 feet are located at both the ends of the bridge. The substructure for the approach spans consists of cast-in-place concrete end bents and cast-in-place concrete interior bents, all supported on 24-inch-square precast concrete piles.

The bridge deck features a 53-foot clear roadway width as measured between faces of 3-foot-wide sidewalks on either side of the roadway, with 10-inch-high curbs. Sidewalks are constructed of checkered steel plates on the lift span and reinforced concrete for the approach spans. Concrete barrier railings with two lines of aluminum tube railing are located along the entire length of the approach spans except in front of the operator's house. Steel barrier railings with two lines of aluminum tube railing are located along each side of the lift span.

The operator's house is supported by a separate concrete foundation with 24-inch-square precast concrete pilings at the northwest corner of the lift span, outboard of the sidewalk. It has a flat roof with metal banding boxing the eaves and a metal shed roof overhang over the entrance door on the front (south) facade, which are alterations to the original design. The exterior features vertical scribed lines in the concrete at the top four corners of the building with an emblem of the brown pelican, Louisiana's state bird, centered on all facades. Replacement windows wrap around the front facade to the side facades and a metal door and metal screen door are on the front facade. The east facade features a bank of four windows that wrap around to the north (rear) facade. The brown pelican emblem is also found in the center of the outside surface of the concrete counterweight slabs that are located of either side of the movable lift span towers.

There are two steel traffic barrier gates with supporting towers, one on each side of the lift span, and two traffic gates and two traffic signals in place on either end of the bridge.

Under the bridge, a timber fender system provides a 50-foot-wide clear horizontal navigation channel. When the bridge is open, there is approximately 55 feet of vertical clearance above the high water line.

The Vermilion River Bridge in Abbeville is typically unmanned and can only be opened on demand with advance notification.

C. History and significance

The Vermilion River Bridge at Abbeville is located in northeastern Vermilion Parish in the city of Abbeville, Louisiana. The bridge carries four travel lanes of LA 14 Bypass (Veterans Memorial Drive/W. Summers Drive) across the Vermilion River. The Vermilion River flows southward through Lafayette in Lafayette Parish to the north through Abbeville in Vermilion Parish and connects to the Intracoastal Waterway and then flows into Vermilion Bay below Vermilion Parish. LA 14 extends through the middle of Vermilion Parish, travelling east from Gueydan and Kaplan before splitting in Abbeville. LA 14 Bypass extends around the north side of town and merges back into LA 14 to the east of Abbeville, and then continues on to connect the communities of Erath and Delcambre.

The Vermilion River Bridge at Abbeville is the result of post-World War II population growth and trends to provide highway bypasses around communities. Following national trends of the period, the population of Abbeville more than doubled between 1930 and 1950, and grew by 40 percent between 1950 and 1960.¹ In response to the growth of Abbeville, the Vermilion River Bridge was built by the Louisiana Department of Highways as part of the construction of the Abbeville bypass. The project included a loop of LA 14 north, bypassing the city and the existing route of LA 14 to the south. Plans dated 1962 indicate the bypass included State Project 55-30-01 for the construction of a new segment of LA 14 (current LA 14 Bypass) extending east from the intersection with U.S. Highway (US) 167, over the Vermilion River, and ending at the intersection with LA 82, where it connected with Broussard Street, an existing city street. Broussard Street to the east subsequently formed the eastern route of the Abbeville bypass (current LA 14 Bypass). This project included the construction of the roadbed for LA 14 Bypass to the east and west of the bridge and a boat ramp and parking area on the east bank of the Vermilion River to the north and south of the eastern approach spans. Plans for the Abbeville bypass also included State Project 857-63-03 that constructed portions of LA 82 south of LA 14 Bypass into the city of Abbeville.² To complete the crossing over the Vermilion River, the Louisiana Department of Highways awarded a contract to construct the lift bridge to Coastal Contractor's, Inc. of Baton Rouge, for a bid of \$1,027,122 in 1962.³

¹ "Historical Population," *Abbeville, Louisiana*, adapted from U.S. Decennial Census records, August 30, 2017, https://en.wikipedia.org/wiki/Abbeville,_Louisiana#cite_note-DecennialCensus-13.

² Plans for Proposed State Highway, U.S. 197(4), U.S. 589(1); State Projects 55-30-01 and 857-63-03, Abbeville By-Pass, Vermilion River Bridge and Approaches, Vermilion Parish, L.A. 14 and L.A. 82 (Baton Rouge, La.: State of Louisiana Department of Highways, 1962).

³ "Apparent Bids Total \$8,197,029" *The Times-Picayune*, April 26, 1962.

The Vermilion River Bridge at Abbeville is eligible for listing in the National Register under *Criterion C: Engineering* as an important variation within the vertical lift bridge type. This variation is demonstrated in the centrally located drive machinery that operates four sheaves, a configuration that is uncommon nationally and represents a variation based on the small size of the navigation channel and necessary span length. The structure exhibits alterations to the operator's house that result in a minor loss of integrity. However, the bridge's significant features are not affected by this alteration.

D. Character-defining features

Character-defining features are prominent or distinctive aspects, qualities, or characteristics of a historic property that contribute significantly to its physical character. Features may include materials, engineering design, and structural and decorative details. Elements of the bridge that are not identified as character-defining features may be historic fabric. Historic fabric is material in a bridge that was part of original construction. It is important to consider both character-defining features and the bridge's historic fabric when planning any work.

The Vermilion River Bridge at Abbeville has one character-defining feature: its central vertical lift span (described below). Other elements that represent historic fabric but are not considered to be character-defining are the approach spans, including the endposts and aluminum tube railings; substructure elements; traffic barrier gates and their towers; and the operator's house.

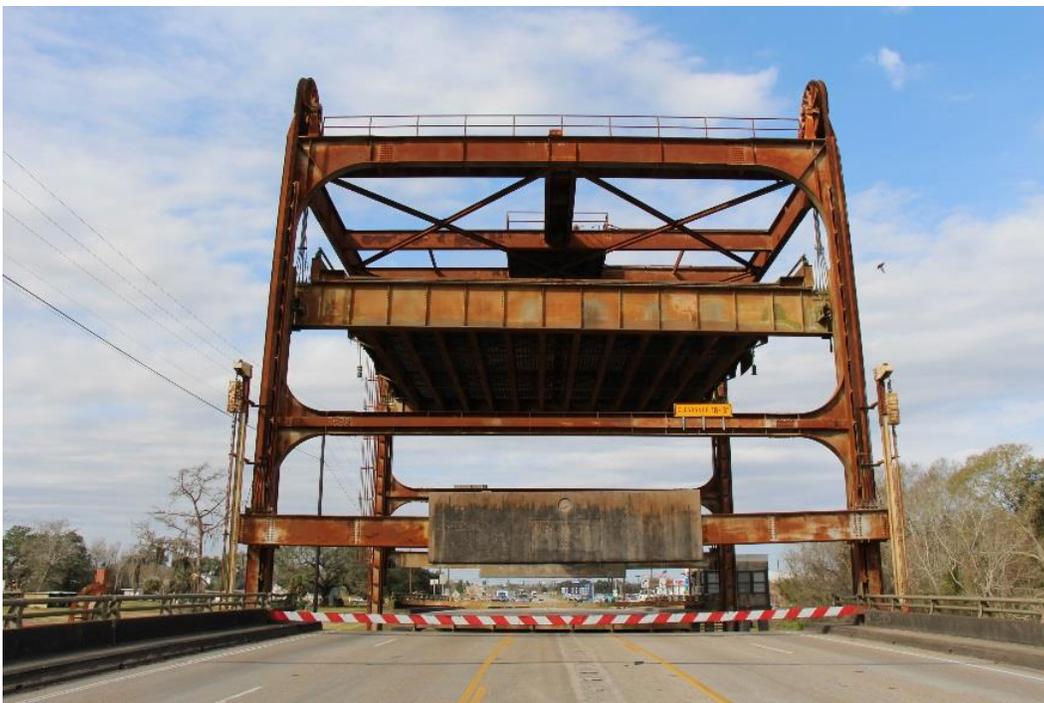
The following items are the character-defining features of this bridge:

Feature 1: Design and construction of a vertical lift span with central drive machinery

This feature includes the entire main span, comprised of a vertical lift span with the operating machinery located on a platform on top of the lift span, and the machinery to drive four sheaves, one sheave located on top of each corner of the lift towers. The superstructure of the lift span consists of 12 lines of steel I-beams that frame into a welded steel I-shaped lift girder at each end of the span, and an open grid steel deck.



Character-defining Feature Photo 1: Design and construction of a vertical lift span with central drive machinery. The operating machinery, located at the center of a platform, drives the four sheaves on each corner of the lift towers. Note the location of the operator's house on the northwest quadrant of bridge, which is part of the historic fabric, not a character-defining feature.



Character-defining Feature Photo 2: Vertical lift span with central drive machinery, with the movable span open, with steel barrier gates and concrete counterweights lowered.

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



Historic Fabric Photo 1: Approach spans on the northeast side of the bridge, including the cast-in-place concrete slabs and steel I-beam spans supported on concrete piers and abutment. The photo also shows the steel traffic barrier gate and supporting towers adjacent to the lift span.



Historic Fabric Photo 2: Detail of endpost and concrete barrier and aluminum tube railing on approach spans.



Historic Fabric Photo 3: Bridge operator's house.

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4. Engineering Data

A. Existing conditions

(1) Structural observations

The Vermilion River Bridge at Abbeville is in fair condition overall and appears to adequately serve its purpose of carrying vehicular and pedestrian traffic over the waterway, with the ability to open to allow water navigation traffic to pass by the bridge. The operation of the bridge is satisfactory as observed in the opening-closing cycle during the field visit, and the operating machinery is adequately maintained. The major deficiency is that the paint system on the moveable portion of the bridge, including the towers, has completely failed, which has led to areas of exposed metal with minor surface corrosion. The bridge is not load posted.

Approach spans (spans 1-3 and 7-13)

The cast-in-place, reinforced-concrete deck slabs of the approach spans are in good condition. They exhibit medium to heavy wear from traffic, fading of the roadway striping and longitudinal and transverse cracking throughout the top side of the slabs. Additionally, on the underside of the slabs there is longitudinal cracking with efflorescence. The sides and underside of the concrete slabs have minor water staining from deck drain holes. The original concrete barrier and aluminum tube railing is in good condition with minor water staining. The sidewalks are also in good condition with minor spalling. The open joints and relief joints are in good condition. The open deck joints are full of debris build up, the relief joints are spalled and have debris build up and the shoulders of the concrete deck spans are full of debris. The concrete substructure units (precast concrete pile-supported concrete bents) are in good condition. The bent caps exhibit typical water staining from the open deck joints above, and in spans 1-3 there is timber debris build-up around the concrete piles. The east corner of the bent 4 riser is cracked and spalled. The left side of end bent 12 has a diagonal crack on the end. Concrete piles on bents 2, 3, and 6 through 11 are coated and appear to be in good condition, although there is graffiti on the concrete piles for bents 10 and 11.

Approach spans (spans 4 and 6)

The cast-in-place, reinforced-concrete decks are in good condition. They exhibit medium to heavy wear from traffic, fading of the roadway striping, and longitudinal and transverse cracking throughout the top side of the slab. Additionally, on the underside of the slabs there is longitudinal cracking with efflorescence. The sides and underside of the concrete slabs have minor water staining from deck drain holes. The steel I-beams are in satisfactory condition, exhibiting paint failure throughout; rust is also beginning to develop. The steel bearings are in good condition, exhibiting no deficiencies. The concrete barrier and aluminum tube railing is in good condition with minor water staining with sections of bent aluminum tube railing on spans 4 and 6. Concrete sidewalks are in good condition with minor spalling. The open joints and relief joints are in good condition. The open deck joints are full of debris build up, the relief joints are spalled and have debris build up, and the shoulders of the concrete deck spans are full of debris.

The expansion joints between spans 3 and 4 and spans 6 and 7 are in fair condition. The joint material is torn and the joints are full of debris, although the steel angles at the joints are in good condition. The concrete substructure units (piers and bents) are in good condition. The pier caps exhibit typical water staining from the open deck joints above. The bent 5 cap is exhibiting minor spalling and cracking, and hairline cracks are present within 1 foot of the cap. Pile 7 on bent 5 is spalled.

Lift span (span 5)

The paint system has failed on all structural steel members of the lift span and towers. The floorbeam at pier 1 has two cracks in the welds, the floorbeam at pier 2 has an area of section loss, and multiple floorbeam stiffeners have up to 100 percent section loss. Additionally, the stringers at pier 1 are exhibiting areas of section loss. The overall structural condition of the steel members is satisfactory. The open metal grid deck is in satisfactory condition. There are numerous areas that have been repaired and areas in which welds have cracked and are making noise. There is minor to moderate debris accumulation with vegetation growing along the east edge of the deck and the roadway striping is faded. The checkered metal plates for the sidewalks between the main span and approach spans 4 and 6 are in fair condition due to paint system failure and rusting throughout. The open joints are in good condition and free of debris. The concrete barrier and aluminum tube railing is in satisfactory condition with minor surface rust forming throughout. The operating machinery is functional and generally in good condition. The sheaves, gears, bearings, and exposed machinery are rusty, but functioning properly. The operating electrical system is functional and generally in good condition. The anchor bolts for the towers are beginning to corrode but are in satisfactory condition.

(2) Non-structural observations

Steel traffic barrier gates and their supporting towers on each side of the vertical lift span are lowered when opened, and are in good functional and structural condition. When the vertical lift span is opened, traffic signals are used and traffic warning gates are lowered. The traffic warning gate on the east side of the bridge has a door hinge broken and the metal arm is bent. The traffic signals are functioning properly.

The horizontal and vertical geometry of the bridge is good. The bridge is posted for a vertical clearance of 18 feet, 3 inches.

The operator's house is in good condition and fully functional. The exterior concrete surface is discolored. The metal door is original and is exhibiting some rust and corrosion and the screen on the screen door is in poor condition. The floor is original and in good condition. The windows have been replaced and are in good condition. The control panel for the operation of the bridge is original and fully functional.

The timber fender system is in fair condition with decay and vegetation growth throughout. The fender system has been maintained to provide its function of protecting the bridge from impact loading from river navigation traffic.

The navigation lights are in fair condition. Three of the six lights attached to the timber fender system are bent and only one of the six lights is working. The navigation lights attached to the underside of the concrete barrier railing in the main vertical lift span, both upstream and downstream, are working.

The mounting system for roadway lighting is in place, extending out from the concrete barrier railing. However, the roadway lighting has been removed or was never put in place. The mounting system is in good condition.

The 20-foot, reinforced-concrete approach slabs at both ends of the bridge are in good condition and provide a smooth transition onto the bridge.

(3) Serviceability observations

The ADT is approximately 20,500 vehicles. There are traffic signal controlled intersections immediately west and east of the bridge. The bridge clear roadway width of 53 feet provides for four lanes of traffic, two in each direction. The bridge appears to adequately handle this traffic volume. The original concrete and aluminum tube railing does not meet current height standards for pedestrian or bicycle use, however, the functionality of the railing is acceptable without modification. The curbs of the sidewalks provide a barrier between the roadway and the railings; therefore, the railings do not need to be structurally crash-test rated. The 3-foot-wide sidewalks do not meet current width standards for pedestrian or bicycle use, but do not need to be widened because of the current and anticipated future use of this bridge.

The Vermilion River Bridge in Abbeville is unmanned and can only be opened on demand with four hours advance notification. Records indicate that this bridge is opened an average of 60 times per month.

B. Sources of information

Plans available:	Yes, available at the LADOTD Bridge Section office
Inspection report date:	May 21, 2015
Fracture critical report date:	May 26, 2013
Underwater inspection report:	March 22, 2014
Date of site visit:	February 4, 2016



Condition Photo 1: Overview of the vertical lift span and roadway looking west from the east roadway approach to the bridge.



Condition Photo 2: Overview of the vertical lift span and roadway looking east from the west roadway approach to the bridge.



Condition Photo 3: Vertical lift span partially opened with traffic barrier railing down. Note the failure of the paint system on components of the lift span.



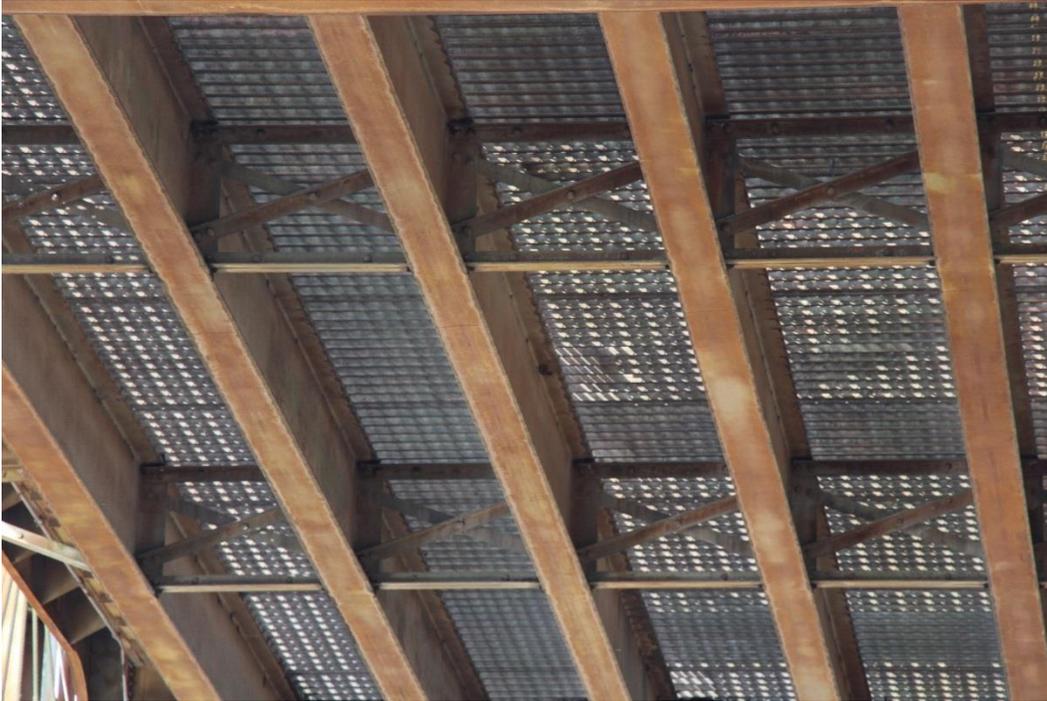
Condition Photo 4: Vertical lift span at lift girder, showing failed paint system as well as the condition of the wire ropes that attach to the lift girder and the condition of the guide tower.



Condition Photo 5: Sheave and wire ropes on the corner of the vertical lift span.



Condition Photo 6: Center platform of bridge supporting the operating machinery.



Condition Photo 7: Stringers and cross bracings of the vertical lift span showing failed paint system. The photo also shows the condition of the underside of the metal grid deck.



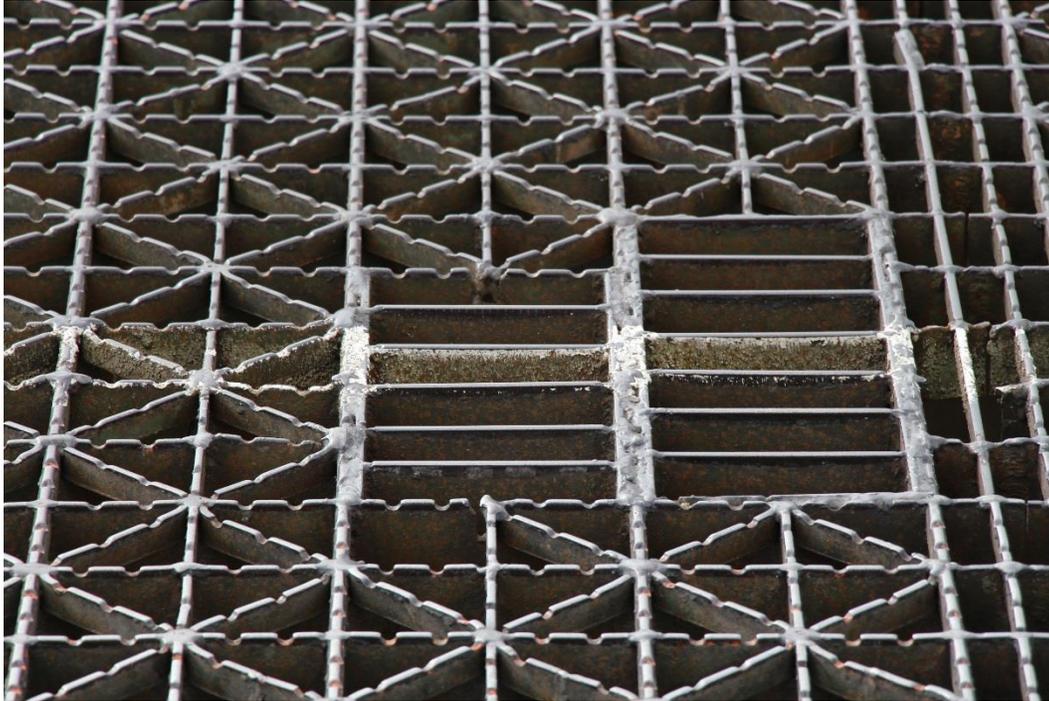
Condition Photo 8: Condition of longitudinal steel stringers framing into the end lift girder.



Condition Photo 9: Corrosion and paint failure on the counterweight and tower for the traffic barrier railing, typical for four towers and counterweights.



Condition Photo 10: Open grid steel deck filled with dirt and vegetation growth at joint between lift span and approach span.



Condition Photo 11: Open grid steel deck showing repaired areas.



Condition Photo 12: Expansion joint in deck of approach spans filled with debris.



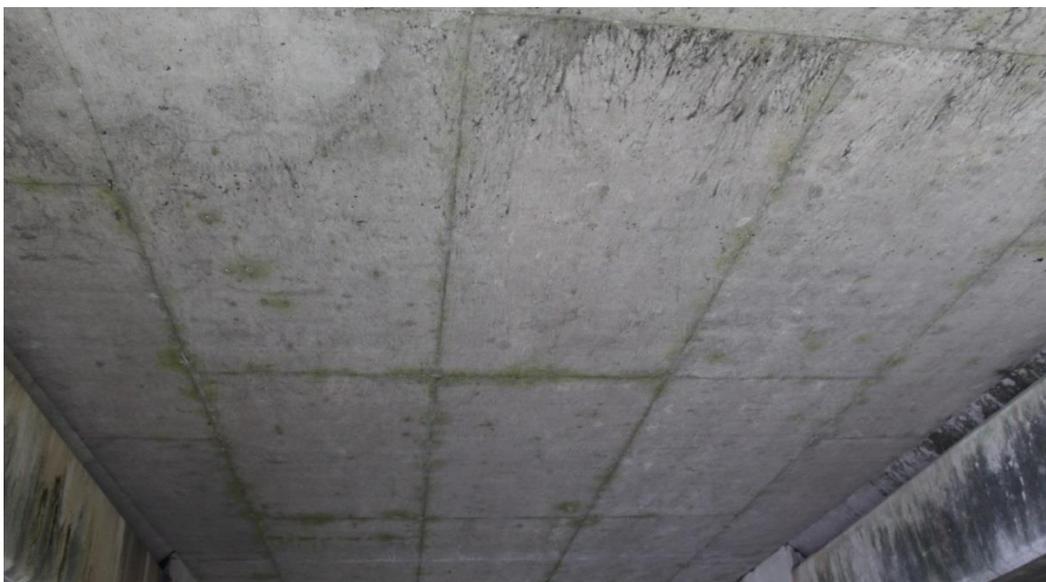
Condition Photo 13: Overview of vertical lift span showing water staining on the substructure units and the concrete piles, several of which are surface-coated.



Condition Photo 14: Bent 2, concrete bent cap, and pile columns showing graffiti, water staining, and coating.



Condition Photo 15: Cracking of the concrete slab haunch at the concrete bent cap. Also note condition of expansion joint in metal conduit for electrical cable.



Condition Photo 16: Cracking and efflorescence of the underside of the cast-in-place concrete approach spans.



Condition Photo 17: Paint system failure on the steel approach spans.



Condition Photo 18: Concrete spalling along relief joint on approach span.



Condition Photo 19: Spalled concrete at an open joint between the lift span and the approach span.



Condition Photo 20: Damaged aluminum tube railing at lift tower in northwest corner of lift span.



Condition Photo 21: Decay and heavy vegetation growth and debris in timber fender system.



Condition Photo 22: Bent navigation light at the end of the timber fender system.



Condition Photo 23: Bent traffic warning gate arm and paint system failure.

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5. Recommendations

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

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

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

A. Preventative maintenance

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

1. Clean out debris in open steel grid deck and sidewalks on the lift span regularly. Clean debris from the open deck joints, sidewalks, and concrete slab bridge deck on approach spans regularly to maintain good condition.
2. Repair broken or loose metal grid deck bars regularly to maintain good condition, as necessary.

3. Remove and replace decayed timber components of the fender protection system regularly to maintain good condition.
4. Remove debris built up around concrete piles at the bents regularly to maintain good condition.
5. Recoat or paint over graffiti on concrete substructure units with a coating that matches the color, consistency, and texture of the existing coating, as needed. The recoating should be limited to the area of graffiti only, and this practice to cover graffiti should not be done elsewhere on the bridge.

B. Rehabilitation

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

1. Clean and paint the entire lift span structural steel framing system, including the structural steel framing system for both towers, in accordance with the current standard cleaning and painting specification.
2. Clean and paint the steel I-beams for spans 4 and 6, in accordance with the current standard cleaning and painting specification.
3. Repair or replace deteriorated structural steel components on lift span and towers.
4. Perform non-destructive testing (NDT) on the cracks on the floorbeams and retrofit the cracked welds or arrest the cracks by drilling holes.
5. Clean, paint, lubricate, and adjust the exposed operating machinery, including sheaves, shafts, speed reducers, bearings, and motors.
6. Remove and replace expansion joint material in concrete roadway decks for approach spans.
7. Clean the operator house and inside (roadway side) of the concrete railings across the entire bridge and substructure concrete units to remove water staining discoloration and algae growth with low-pressure water spray.
8. Repair the exterior screen door of the operator house and clean and paint the inside entrance door.
9. Repair spalls and cracks in the concrete substructure units.
10. Repair spalls and cracks in the concrete deck, railing, and sidewalks.

Bridge Recall No. 009460		Date:	9/30/2016	
Vermilion River Bridge at Abbeville				
Opinion of Probable Costs				
Rehabilitation				
Item	Quantity	Unit	Unit Cost	Total
Clean and paint entire span structural steel framing system, incl. structural steel for both towers, in accordance with the current standard cleaning and painting specification	1	LS	\$850,000	\$850,000
Clean and paint steel I-beams for spans 4 and 6, in accordance with the current standard cleaning and painting specification	1	LS	\$200,000	\$200,000
Repair or replace deteriorated structural steel on lift span and towers	1	LS	\$100,000	\$100,000
Perform non-destructive testing (NDT) on the cracks on the floorbeams and retrofit the cracked welds or arrest the cracks by drilling holes	2	EA	\$1,000	\$2,000
Clean, paint, lubricate, and adjust the exposed operating machinery, including sheaves, shafts, speed reducers, bearings, and motors	1	LS	\$100,000	\$100,000
Remove and replace expansion joint material in concrete roadway decks for approach spans	106	LF	\$50	\$5,300
Clean the operator house and inside (roadway side) of the concrete railings across the entire bridge and substructure units to remove water staining discoloration and algae growth with low-pressure water spray	1	LS	\$100,000	\$100,000
Repair the exterior screen door of the operator house door and clean and paint the inside entrance door	1	LS	\$1,000	\$1,000
Repair spalls and cracks in concrete substructure unit	1	LS	\$150,000	\$150,000
Repair spalls and cracks in concrete deck, railing and sidewalks	1	LS	\$100,000	\$100,000
Traffic control signage, drums and temporary pavement marking for staged construction of items listed above	1	LS	\$30,000	\$30,000
Item Subtotal				\$1,638,300
Contingency			10.00%	\$163,830
Mobilization			7.00%	\$126,149
TOTAL ESTIMATED CONSTRUCTION COST				\$1,928,279
			Round to:	\$1,928,000

C. Identification of any anticipated design exceptions

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

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Appendix A. Historic Inventory Form

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Louisiana Historic Bridge Inventory

Recall Number: 009460

Structure Number: 03570553001081

SHPO Number: 57-00673

Bridge Name: VERMILION R/ABBEVILLE

Location Data:

District: 03

Parish: Vermilion

Feature Crossed: VERMILION R/ABBEVILLE

Facility Carried: LA0014BY

Location: .1 MI WEST OF US 167

City, Village or Town (if applicable): Abbeville

Status: Open

Bridge Owner: State of Louisiana

Latitude: 29.983615

Longitude: -92.136589

Structural Data:

Bridge Type: Steel Vertical Lift Span

Year Built: 1964

Main Span Configuration (if applicable): Tower drive with connected towers

Maximum Span Length (feet): 73

Number of Spans: 1

Overall Structure Length (feet): 353

Approach Span Type (if applicable): Concrete - mixed design

Posted Load:

Current ADT: 020700

Design and Construction Data:

Engineer or Builder:

Unknown

Bridge Plaque:

None

National Register of Historic Places Evaluation:

This tower drive with connected towers vertical lift bridge has significance as a movable bridge and as an important variation within the vertical lift bridge type. This variation is demonstrated in the location of the drive machinery at the center of a fixed span that operates the four sheaves. This configuration is uncommon nationally and represents a variation based on the small size of the navigation channel and necessary span length. The bridge exhibits alterations to the operator's house that result in a minor loss of integrity, but continues to convey the significant design features of this variation within the vertical lift type. This bridge is eligible for listing in the National Register under Criterion C: Design/Engineering.

No evidence was found during research or data collection activities to indicate that this bridge possesses a direct and important association with historical events or trends. This bridge does not possess significance under Criterion A.

Within/Adjacent to Known Historic District: N/A

National Register Historic District Name: N/A

National Register Determination: Eligible

National Register Determination Date: 2013

Surveyor: Mead & Hunt, Inc.

Date Surveyed: 2013



Louisiana Historic Bridge Inventory

Recall Number: 009460

Structure Number: 03570553001081

Bridge Name: VERMILION R/ABBEVILLE

Parish: Vermilion

Bridge Owner: State of Louisiana

Feature Crossed: VERMILION R/ABBEVILLE

Facility Carried: LA0014BY

Photographs:

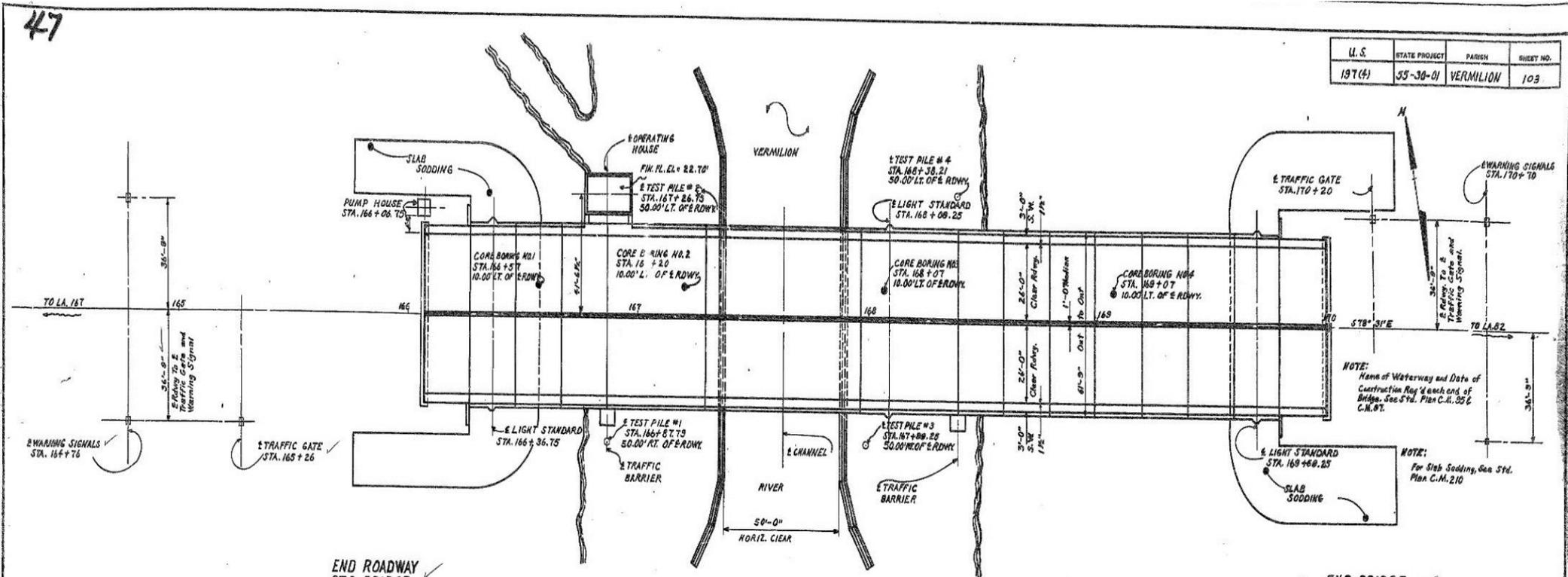


Appendix B. Select Plan Sheets

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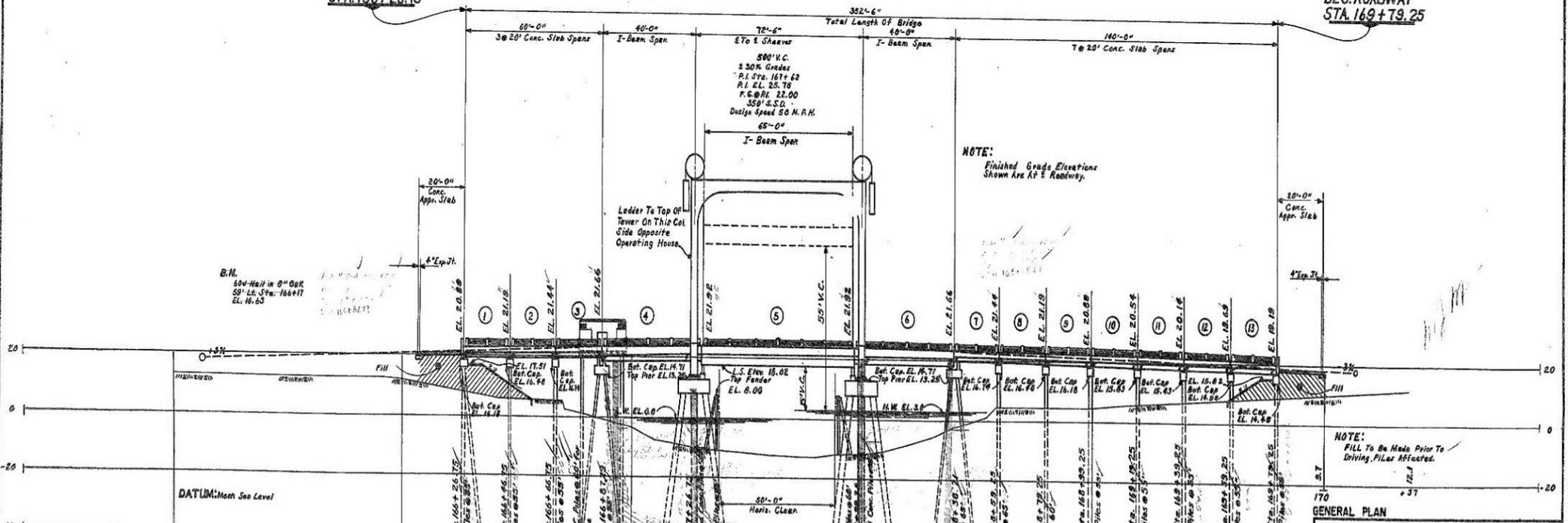
47

U.S.	STATE PROJECT	PARISH	SHEET NO.
197(4)	35-30-0	VERMILION	103



END ROADWAY
BEG. BRIDGE
STA. 166+26.75

END BRIDGE
BEG. ROADWAY
STA. 169+79.25



GENERAL PLAN

**ABBEVILLE BYPASS
VERMILION RIVER BRIDGE
AND
APPROACHES**

DATED FEB. 20 1962

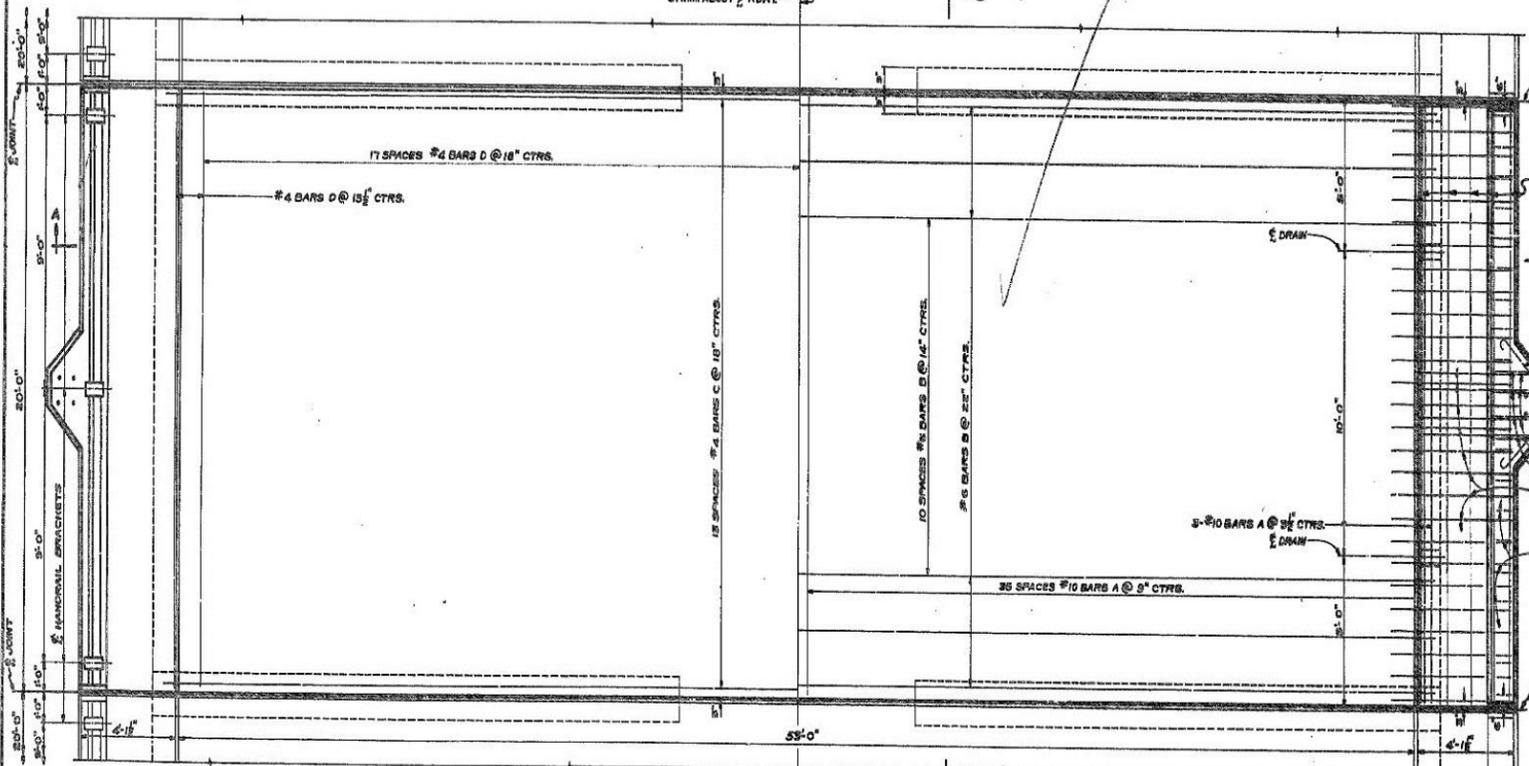
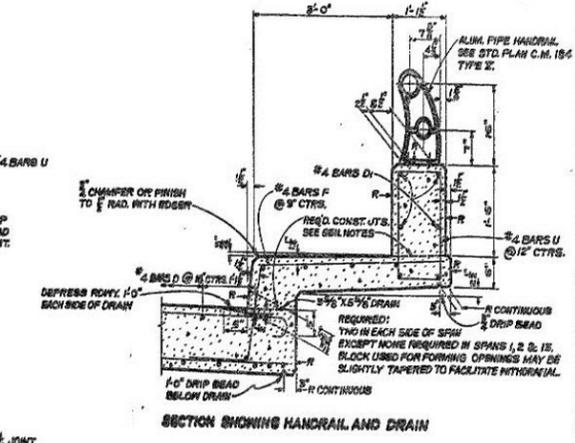
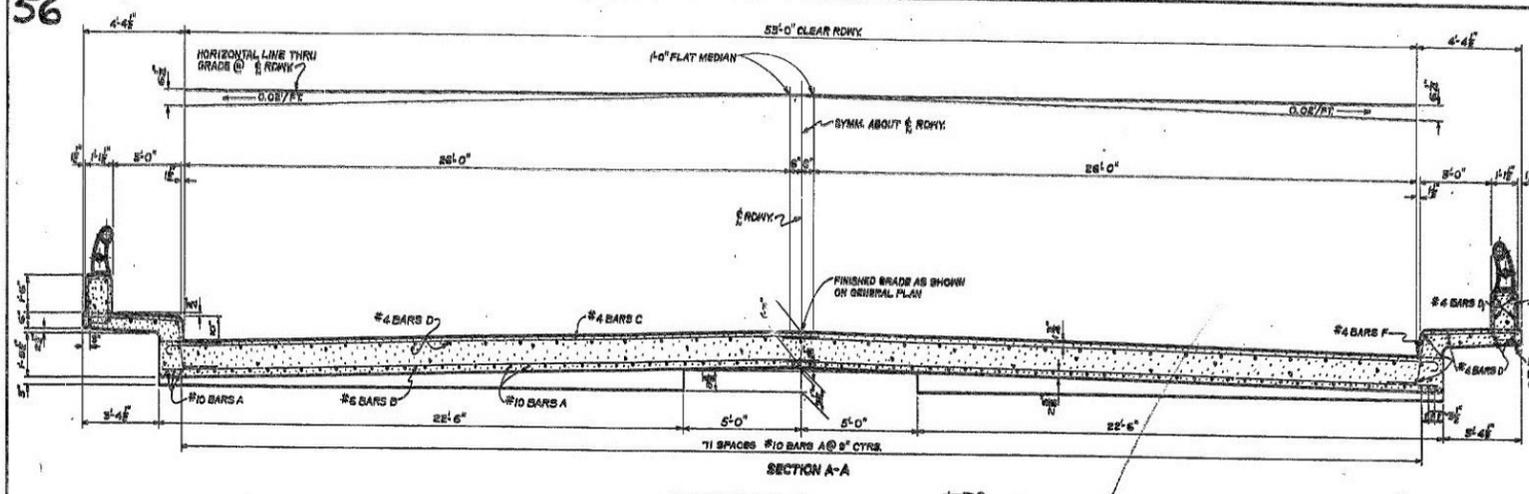
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED	TRACED
CHECKED	CHECKED

BRIDGE DESIGN SECTION

AS BUILT PLANS

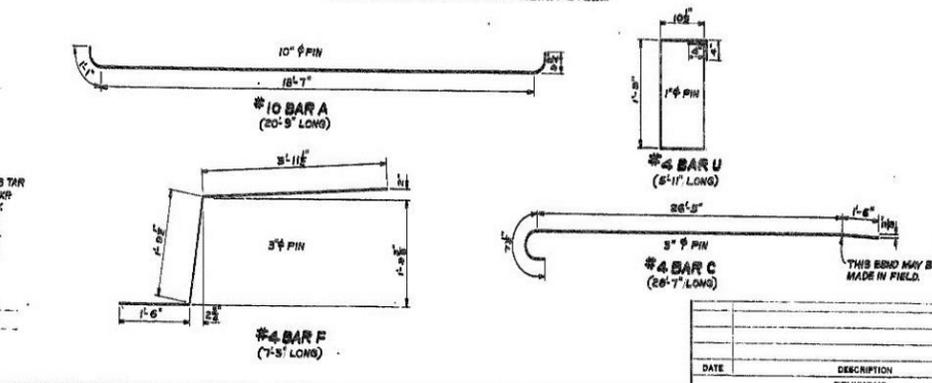
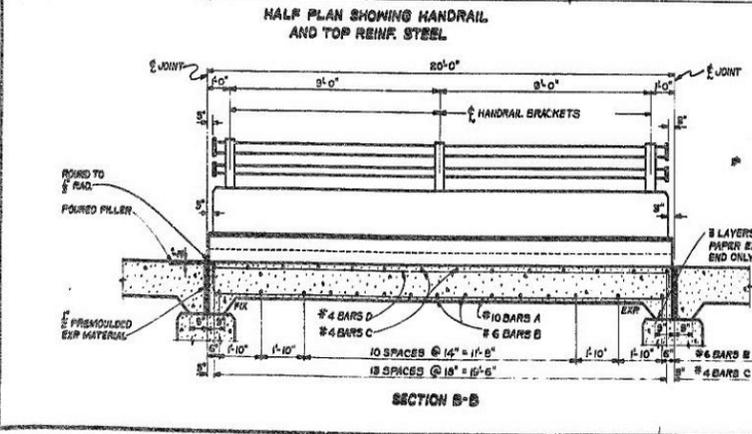




BAR	SIZE	N ^o	UNIT LENGTH	TOTAL LENGTH	LOCATION
A	#10	76	20'-3"	1577'-0"	BOTTOM OF SLAB
TOTAL #10 BARS = 1577'-0" = 470.6 LBS.					
B	#6	20	28'-5"	569'-6"	BOTTOM OF SLAB
TOTAL #6 BARS = 569'-6" = 180.0 LBS.					
C	#4	28	28'-7"	800'-4"	TOP OF SLAB
D	#4	51	18'-7"	998'-9"	TOP OF SLAB & SIDEWALK
D ₁	#4	8	18'-2"	153'-6"	PARAPET WALL
F	#4	54	7'-3"	391'-6"	CURB & SIDEWALK
U	#4	40	5'-11"	235'-8"	STIRRUPS IN PARAPET WALL
TOTAL #4 BARS = 2801'-1" = 874.1 LBS.					
TOTAL REINFORCING STEEL = 9750 LBS.					
TOTAL CLASS "A" CONCRETE = 58.91 CU. YDS.					
ALUMINUM HANDRAIL = 25 LIN. FT.					

NOTE:
LAP #4 BARS C 1'-0" @ 5' ROWY.
LAP #6 BARS B 5'-0" @ 5' ROWY.

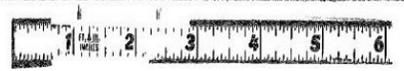
GENERAL NOTES:
CONSTRUCTION SPECIFICATIONS: LA. DEPT. OF HIGHWAYS STD. SPEC., JULY, 1956.
DESIGN SPECIFICATIONS: A.A.S.H.O. STD. SPEC. FOR HIGHWAY BRIDGES, 1951 AS AMENDED TO SEPTEMBER 1961.
LIVE LOAD: HS-20-44.
ALL CONCRETE TO BE CLASS "A".
EXPOSED SURFACES TO BE CHAMFERED UNLESS NOTED.
REINFORCEMENT BARS SHALL BE INTERMEDIATE OR HARD GRADE (ASTM A618, OR EQUAL) STEEL, A.S.T.M. A16, CONFORMING WITH A.S.T.M. A305.
DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO BAR CENTERS.
1/2" PRECASTED EXPANSION MATERIAL, POURED FILLER AND TAP PAPER TO BE INCLUDED IN PRICE BID FOR CONCRETE.
AFTER COMPLETING POUR FOR ROADWAY SLAB, A MINIMUM OF 7 DAYS SHALL ELAPSE (OR CONCRETE IN ROADWAY SLAB SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.) BEFORE BEGINNING POUR FOR SIDEWALK CANTILEVER.
AFTER COMPLETING POUR FOR SIDEWALK CANTILEVER, A MINIMUM OF 7 DAYS SHALL ELAPSE (OR CONCRETE IN SIDEWALK CANTILEVER SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.) BEFORE BEGINNING POUR FOR HANDRAIL, PARAPET.
R-2 DENOTES CLASS 2 RUBBER FINISH.

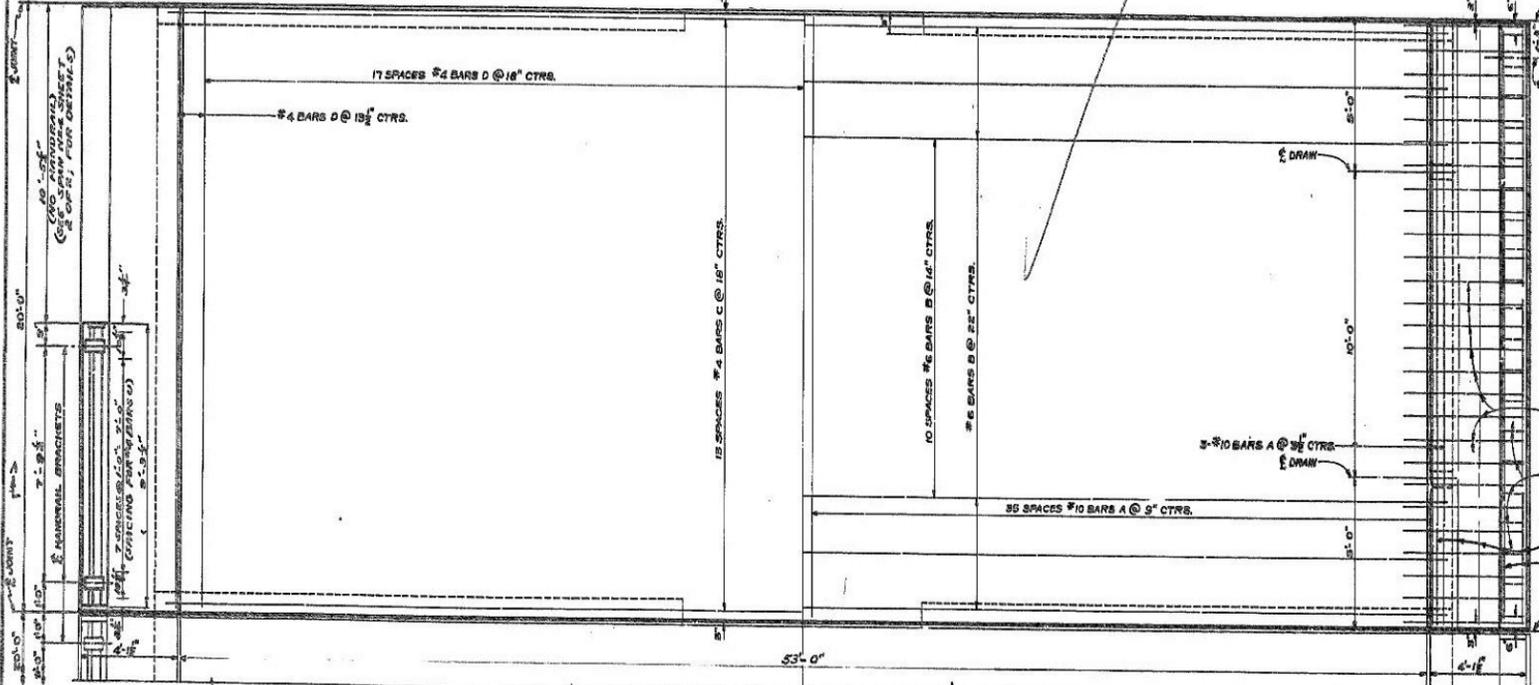
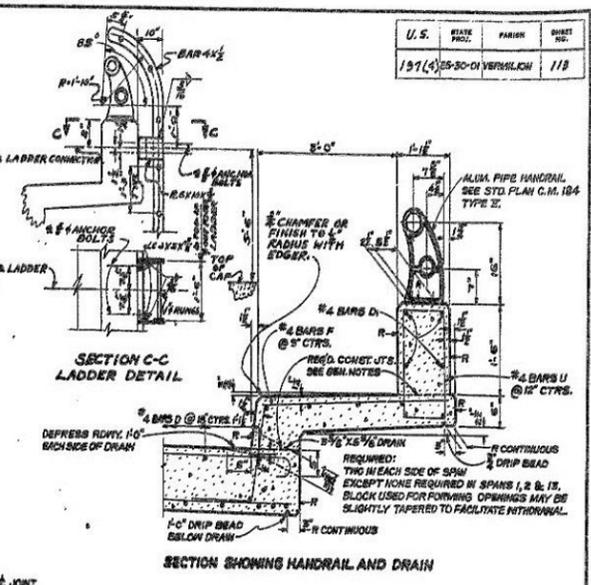
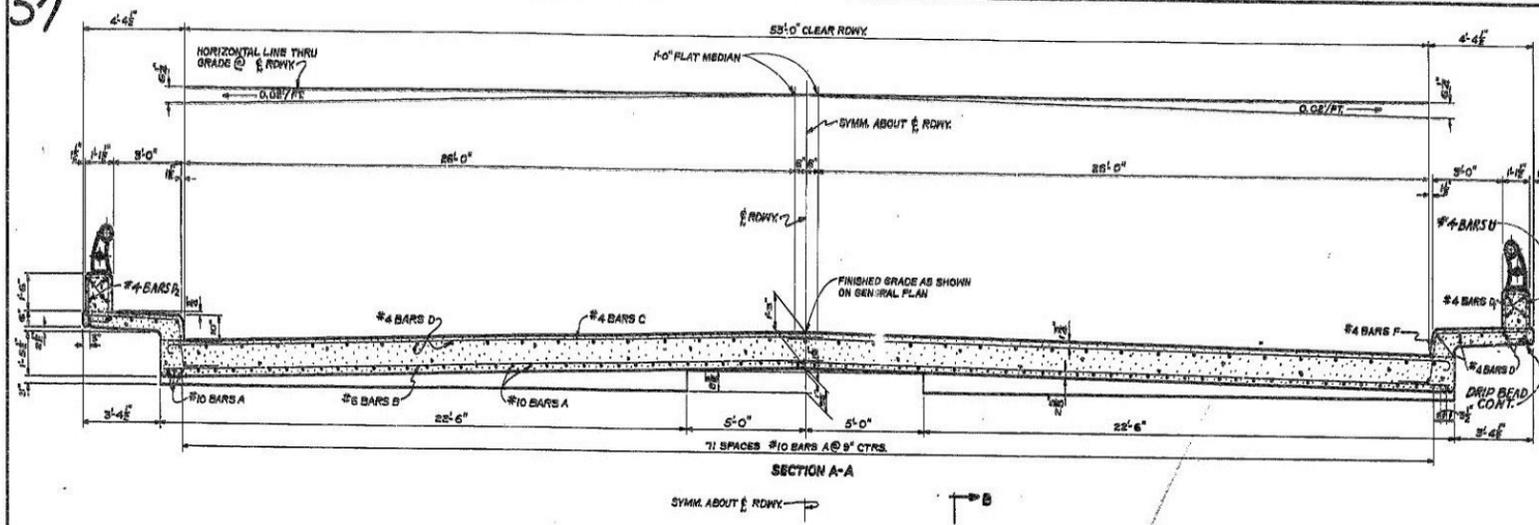


SPANS NO. 1, 2, 8, 9, 10, 11, 20, 15

**ABBEVILLE BYPASS
VERMILION RIVER BRIDGE
AND
APPROACHES**

DESIGNED *[Signature]* DATED JUN. 22 1962
CHECKED *[Signature]* TRACED *[Signature]*
DEPARTMENT OF HIGHWAYS
BRIDGE DESIGN SECTION

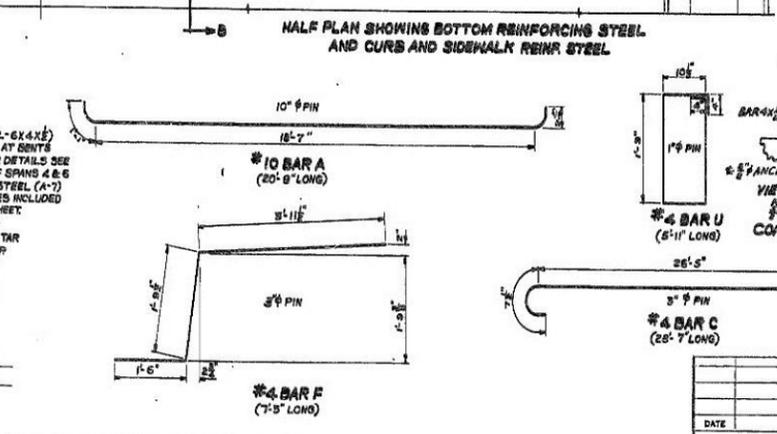
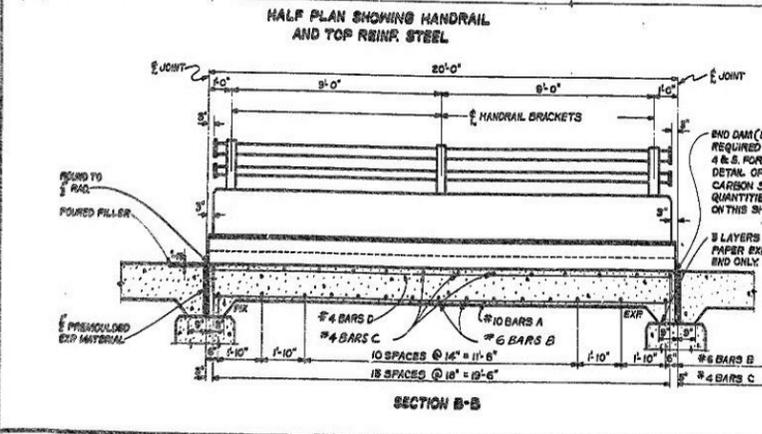




BAR SIZE	N ^o	UNIT	TOTAL LENGTH	LOCATION
A #10	76	20'-0"	1577'-0"	BOTTOM OF SLAB
B #6	50	28'-5"	852'-5"	BOTTOM OF SLAB
C #4	28	28'-7"	800'-4"	TOP OF SLAB
D #4	51	18'-7"	958'-9"	TOP OF SLAB & SIDEWALK
D ₁ #4	4	18'-2"	76'-8"	PARAPET WALL
F #4	54	7'-5"	391'-6"	CURB & SIDEWALK
U #4	30	5'-11"	177'-6"	STIRRUPS IN PARAPET WALL
D ₂ #4	4	8'-11"	36'-8"	
TOTAL #4 BARS = 2490'-5" / 1657 LBS.				
TOTAL #6 BARS = 852'-5" / 1657 LBS.				
TOTAL #10 BARS = 1577'-0" / 678 LBS.				
TOTAL #4 BARS = 852'-5" / 1657 LBS.				
TOTAL DER REINFR. STEEL = 5723 LBS.				
TOTAL CLASS 'A' CONCRETE = 58.27 CU. YDS.				
ALUMINUM HANDRAIL = 28.28 LIN. FT.				
CARBON STEEL (A-7) = 1168 LBS.				

NOTE:
 LAP #4 BARS C @ 6" ROWNY.
 LAP #6 BARS B @ 6" ROWNY.

GENERAL NOTES:
 CONSTRUCTION SPECIFICATIONS: LA. DEPT. OF HIGHWAYS STD. SPEC., JULY, 1956.
 DESIGN SPECIFICATIONS: A.A.S.H.O. STD. SPEC. FOR HIGHWAY BRIDGES, 1961 AS AMENDED TO SEPTEMBER 1961.
 LIVE LOAD: HS-20-44.
 ALL CONCRETE TO BE CLASS 'A'.
 EXPOSED CORNERS TO BE CHAMFERED UNLESS NOTED.
 REINFORCING BARS SHALL BE INTERMEDIATE OR HARD ENAMEL, A.S.T.M. A6, OR RAIL STEEL, A.S.T.M. A16 CONFORMING WITH A.S.T.M. A502.
 DIMENSIONS RELATIVE TO REINFORCING STEEL ARE TO BAR CENTERS.
 1/2" PRECASTED EXPANDED MATERIAL, POURED FILLER AND TAP PAPER TO BE INCLUDED IN PRICE BID FOR CONCRETE.
 AFTER COMPLETING POUR FOR ROADWAY SLAB, A MINIMUM OF 3 DAYS SHALL ELAPSE (OR CONCRETE IN ROADWAY SLAB SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 P.S.I.) BEFORE BEGINNING POUR FOR SIDEWALK CANTILEVER.
 AFTER COMPLETING POUR FOR SIDEWALK CANTILEVER, A MINIMUM OF 7 DAYS SHALL ELAPSE (OR CONCRETE IN SIDEWALK CANTILEVER SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.) BEFORE BEGINNING POUR FOR HANDRAIL PARAPET.
 R → DENOTES CLASS 2 RUBBED FINISH.



SPAN #3

**ABBEVILLE BYPASS
VERMILION RIVER BRIDGE
AND
APPROACHES**

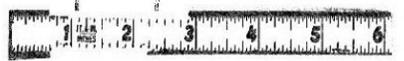
DATED JAN. 22, 1962

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DESIGNED: E. Joffe
 CHECKED: C. B. [unclear]
 TRACED: O. [unclear]

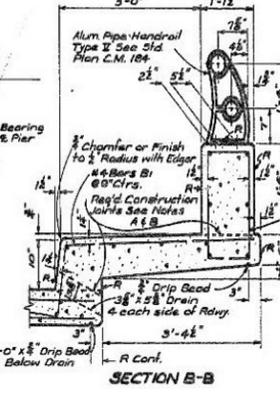
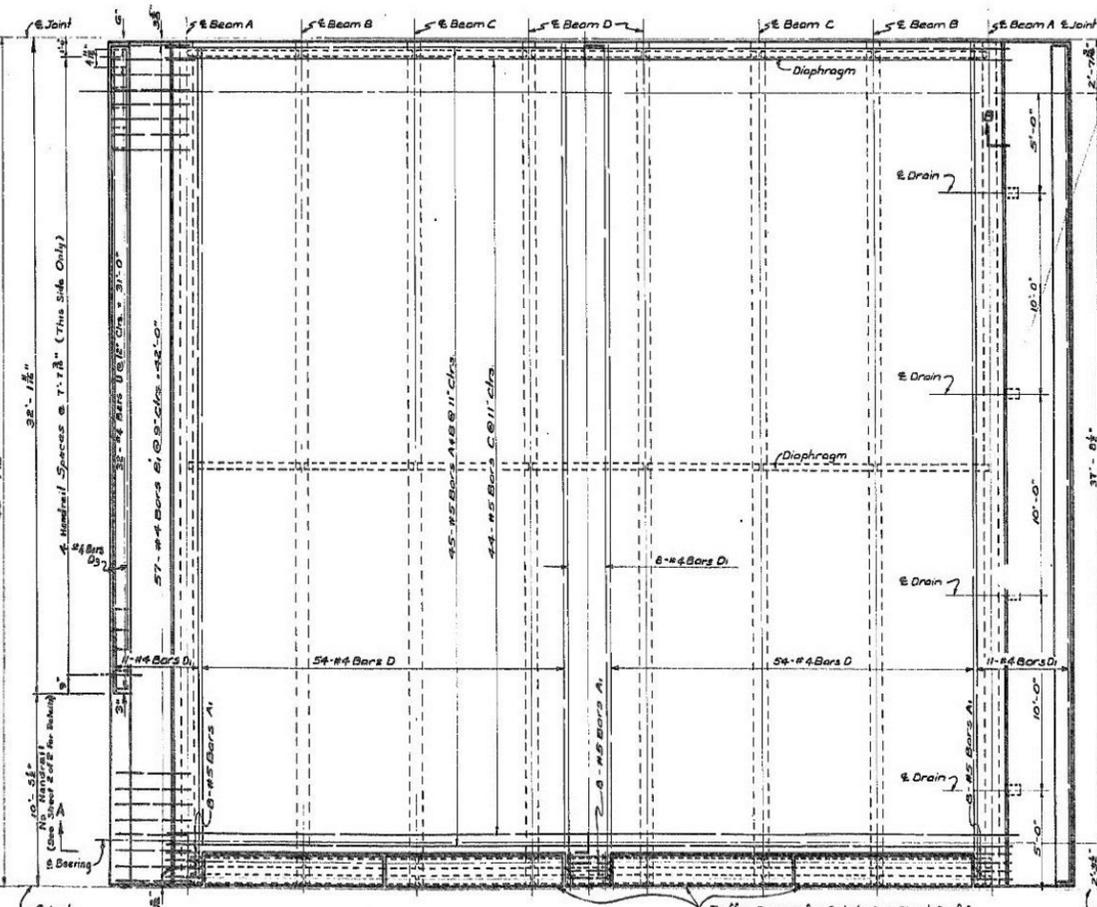
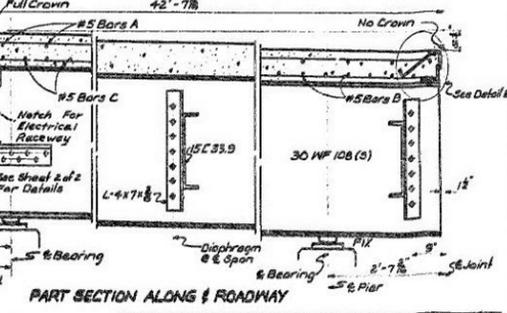
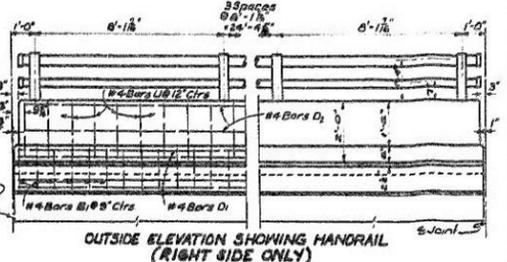
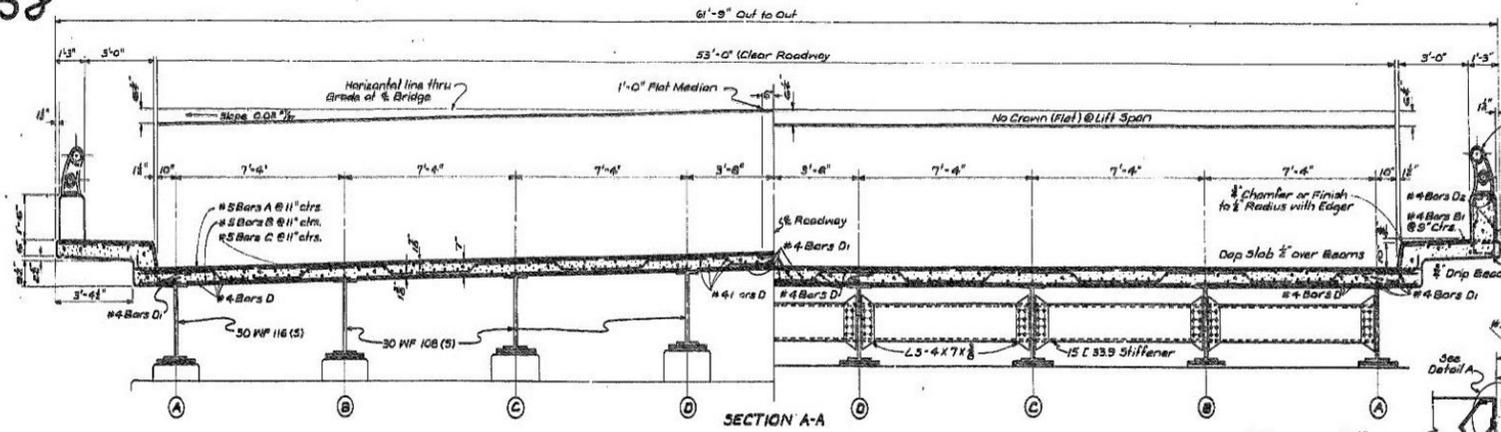
DATE	DESCRIPTION	BY

BRIDGE DESIGN SECTION



58

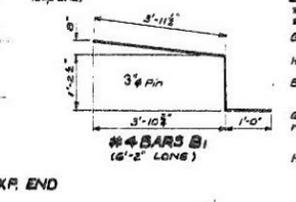
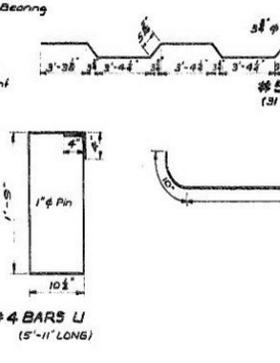
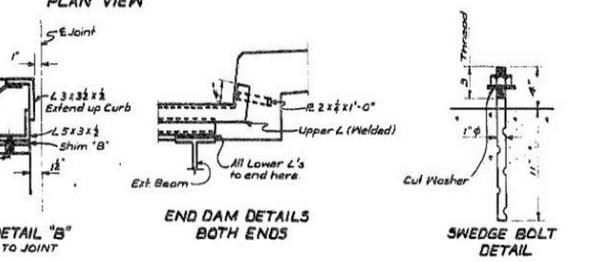
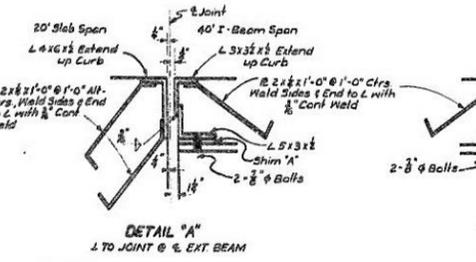
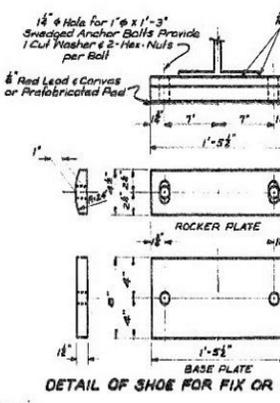
U.S.	STATE PROJECT	PARISH	SHEET NO.
197 (A)	55-30-D	VERMILION	114



NOTE A:
After completing pour for Rdwy. Slab, a min. of 3-days shall elapse (or concrete in Rdwy. Slab shall obtain a min. comp. strength of 1800 P.S.I.) before beginning pour for Sidewalk Cantilever.

NOTE B:
After completing pour for Sidewalk Cantilever, a min. of 7-days shall elapse for concrete in sidewalk cantilever shall obtain a min. comp. strength of 3000 P.S.I.) before beginning pour for Handrail Parapet.

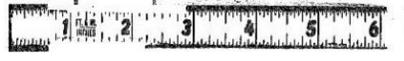
BAR SIZE	NO	UNIT LENGTH	TOTAL LENGTH	LOCATION
#5 A	#5	30'	2581'-6"	Trans in Slab
A1	#5	24'	60'-0"	Trans in Slab
B	#5	90'	2790'-0"	Trans in Slab
WC	#5	88'	2801'-4"	Trans in Slab
TOTAL #5 BARS = 6238'-10"				8593-LBS
B1	#4	114'	703'-0"	Curb & Sidewalk
D	#4	106'	4347'-0"	Long in Slab
D1	#4	30'	1260'-0"	Long in Slab & SW
D2	#4	4	187'-0"	Long in Parapet Wall
U	#4	16	449'-8"	Parapet Wall
D3	#4	4	126'-0"	Long in Parapet Wall
TOTAL #4 BARS = 7052'-8"				4,711-LBS
DEFORMED REINF STEEL = 13,304-LBS				
CLASS "A" CONCRETE = 61,56 CU YDS.				
SILICON STEEL (A94) = 36,644 LBS				
CARBON STEEL (A7) = 12,695 LBS				
ALUM. HANDRAIL = 13.99 LIN. FT.				



GENERAL NOTES:
Construction Specifications Latest Approved La Dept of Hwy. Standard Specifications
Design Specification - A.A.S.H.O. Std Specs for Hwy. Bridges, 1961, as amended to Sept. 1961
Live Load - H20-S16-44
Reinforcement Bars shall be "Intermediate or Hard Grade, A.S.T.M. A15 or Rail Steel, A.S.T.M. A16, conforming with A.S.T.M. A305
Dimensions relating to Reinforcing steel are to bar centers
Welding shall conform to Specifications for Welded Highway and Railway Bridges of the American Welding Society
Spliced corners to be Coped and 2" unless otherwise noted
Shop & Field connections of rivets or High Tensile Bolts, Holes 1/8" Structural Steel marked (S) shall be Silicon Steel (A94)
All other metals unless otherwise noted on the plans, shall be classified and paid for as Carbon Steel (A7)
Surface finished where shown or where required shall conform to the American Std. for Surface Roughness, Flatness, & Lay, Part 1, A.S.A. B46-1-1967.
R - Denotes Class 2 Rubbed Finish.

SPAN #4			
ASBEVILLE BYPASS - VERMILION RIVER BRIDGE AND APPROACHES			
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS			
DESIGNED <i>[Signature]</i> DETAILED <i>[Signature]</i> TRACED <i>[Signature]</i>			
CHECKED <i>[Signature]</i> CHECKED <i>[Signature]</i> CHECKED <i>[Signature]</i>			
BRIDGE DESIGN SECTION			

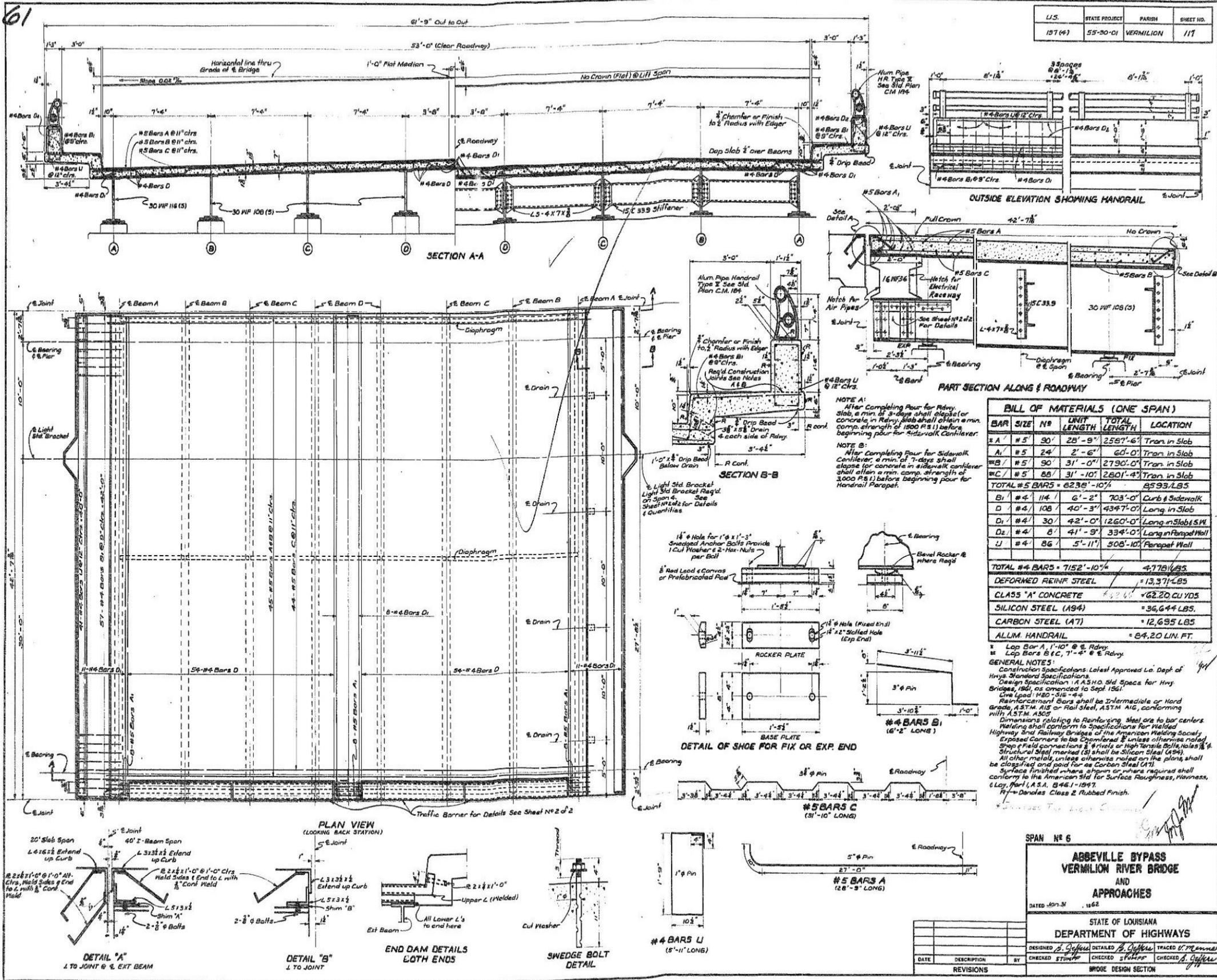
AS BUILT PLANS



SHEET NO. 1 OF 2

61

U.S.	STATE PROJECT	PARISH	SHEET NO.
197 (4)	55-20-01	VERMILION	117



BILL OF MATERIALS (ONE SPAN)

BAR	SIZE	N ^o	UNIT LENGTH	TOTAL LENGTH	LOCATION
A	#5	30	25'-9"	2587'-6"	Trans in Slab
A'	#5	24	2'-6"	60'-0"	Trans in Slab
B	#5	90	31'-0"	2790'-0"	Trans in Slab
WC	#5	88	31'-10"	2801'-4"	Trans in Slab
TOTAL #5 BARS = 6238'-10"				8593 LBS	
B1	#4	114	6'-2"	703'-0"	Curb & Sidewalk
D	#4	108	40'-3"	4347'-0"	Long in Slab
D1	#4	30	42'-0"	1260'-0"	Long in Slab (SW)
D2	#4	8	41'-9"	334'-0"	Long in Parapet Wall
U	#4	86	5'-11"	508'-10"	Parapet Wall
TOTAL #4 BARS = 7152'-10"				4778 LBS	
DEFORMED REINF STEEL				= 13,371 LBS	
CLASS "A" CONCRETE				= 62.20 CU YDS	
SILICON STEEL (A94)				= 36,644 LBS	
CARBON STEEL (A7)				= 12,695 LBS	
ALLIM. HANDRAIL				= 64.20 LIN. FT.	

NOTE A:
After completing pour for Rdwy. Slab, a min. of 3-days shall elapse (or concrete in Rdwy. Slab shall obtain a min. comp. strength of 1500 P.S.I.) before beginning pour for sidewalk cantilever.

NOTE B:
After completing pour for Sidewalk Cantilever, a min. of 7-days shall elapse (or concrete in sidewalk cantilever shall obtain a min. comp. strength of 3000 P.S.I.) before beginning pour for Handrail Parapet.

GENERAL NOTES:
Construction Specifications, Latest Approved U.S. Dept. of Hwy. Standard Specifications.
Design Specification 1.8 A.S.H.O. Std. Spec. for Hwy. Bridges, 1961, as amended to Sept. 1961.
Live Load: 1400-316-44.
Reinforcement Bars shall be Intermediate or Hard grade, ASTM A15 or Rail steel, ASTM A16, conforming with ASTM A305.
Dimensions relating to Reinforcing Steel are to bar centers.
Welding shall conform to Specifications for Welded Highway and Railway Bridges of the American Welding Society.
Exposed corners to be chamfered & unless otherwise noted, sharp field connections & 90° or high torque bolts, holes & structural steel marked (S) shall be Silicon Steel (A94).
All other metal, unless otherwise noted on the plans, shall be aluminum and painted for as Carbon Steel (A7).
Surface finished where shown or where required shall conform to the American Std. for Surface Roughness, Flatness, & Lay, Part 1, A.S.A. B46.1-1947.
R = Denotes Class 2 Rubbed Finish.

SPAN # 6

**ABBEVILLE BYPASS
VERMILION RIVER BRIDGE
AND
APPROACHES**

DESIGNED *B. J. J. J.* DRAWN *B. J. J. J.* TRACED *B. J. J. J.*

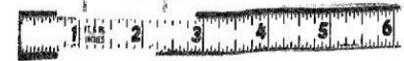
STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

DATE: 10-1-51

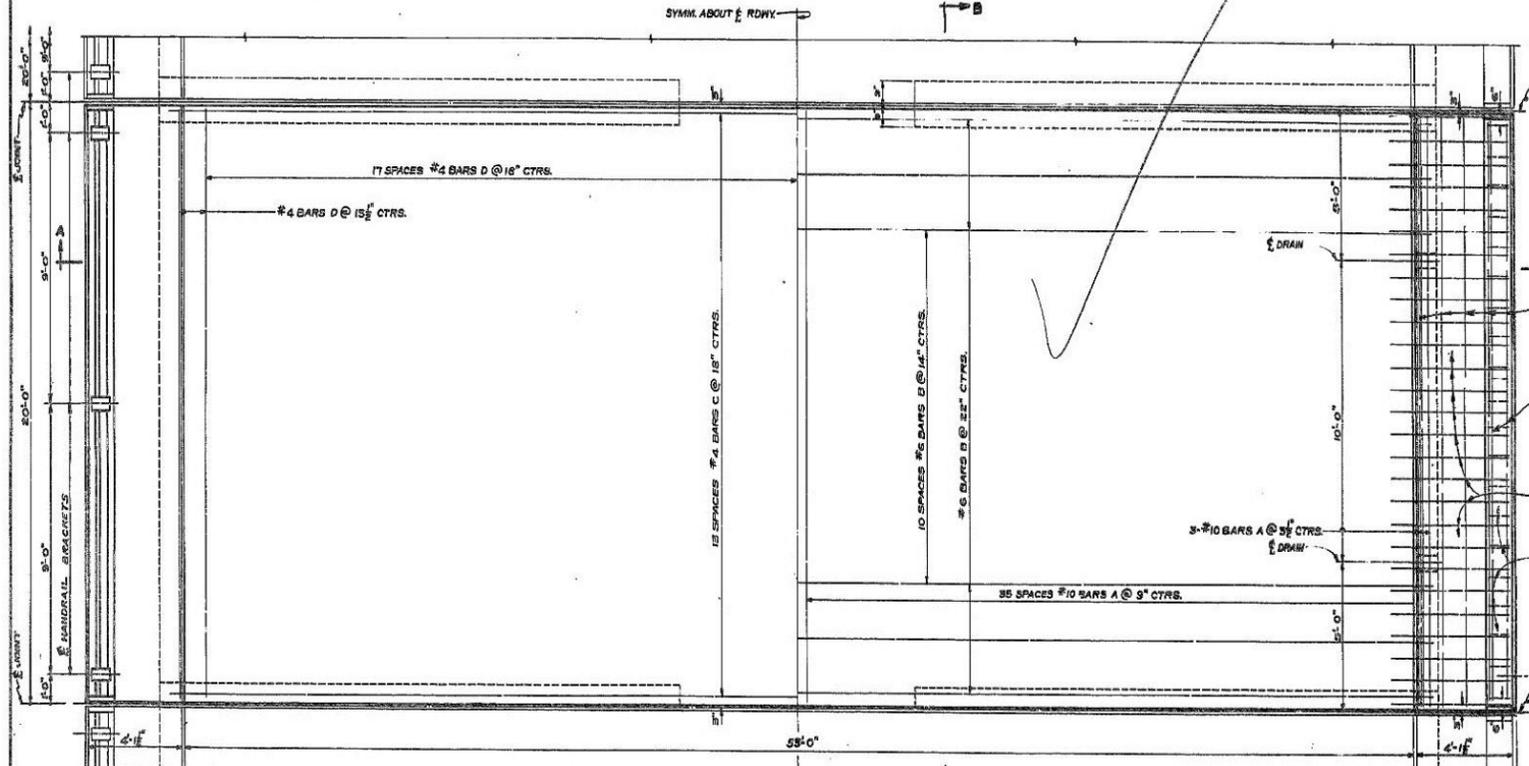
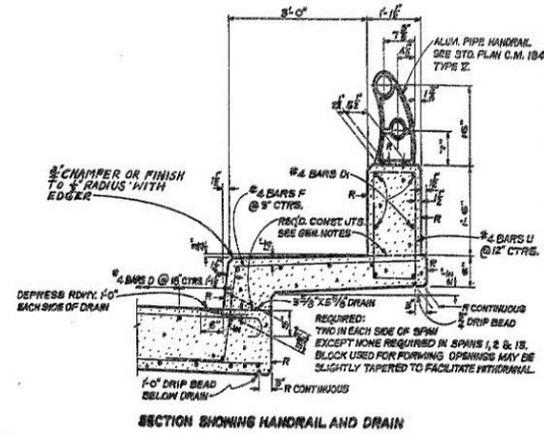
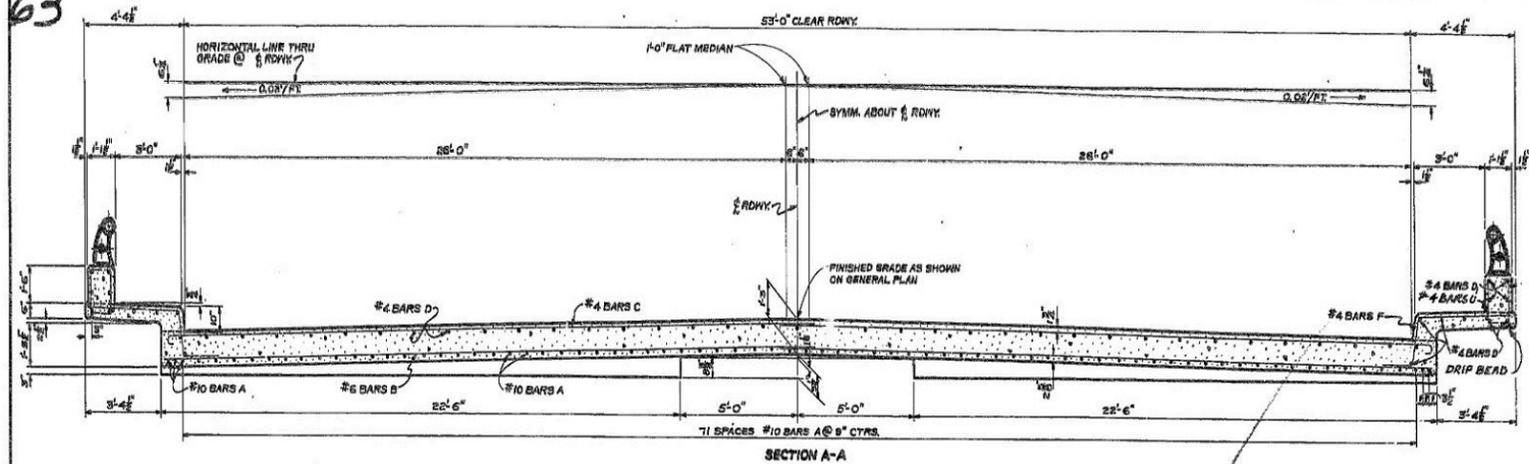
DESIGNED	DRAWN	TRACED
CHECKED <i>B. J. J. J.</i>	CHECKED <i>B. J. J. J.</i>	CHECKED <i>B. J. J. J.</i>

BRIDGE DESIGN SECTION

AS BUILT PLANS



63

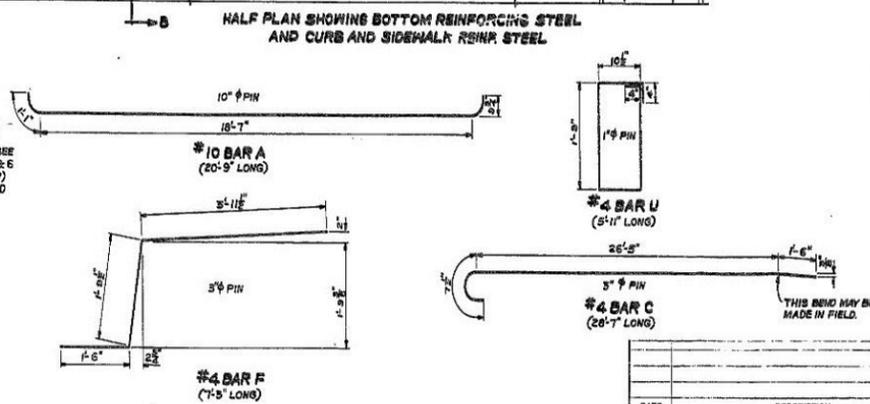
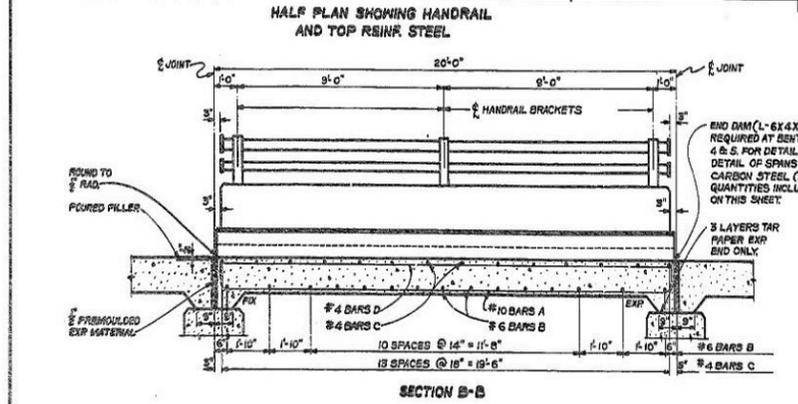


BILL OF MATERIALS FOR ONE SPAN

BAR SIZE	N ^o	UNIT LENGTH	TOTAL LENGTH	LOCATION	
A	#10	76	20'-5"	1577'-0"	BOTTOM OF SLAB
TOTAL #10 BARS = 1577'-0" = 6786 LBS.					
B	#6	30	25'-5"	852'-6"	BOTTOM OF SLAB
TOTAL #6 BARS = 852'-6" = 1280 LBS.					
C	#4	28	28'-7"	800'-4"	TOP OF SLAB
D	#4	51	19'-7"	998'-9"	TOP OF SLAB & SIDEWALK
D ₁	#4	8	15'-2"	153'-4"	PARAPET WALL
F	#4	24	7'-3"	391'-6"	CURB & SIDEWALK
U	#4	40	5'-11"	236'-8"	STIRRUPS IN PARAPET WALL
TOTAL #4 BARS = 2860'-7" = 1744 LBS.					
TOTAL DEK REINF. STEEL = 9790 LBS.					
TOTAL CLASS "A" CONCRETE 58.48 = 28.91 CU. YDS.					
ALUMINUM HANDRAIL = 39 LIN. FT.					
CARBON STEEL (A-7) = 1168 LBS.					

NOTE:
 LAP #4 BARS C @ 4' RDWKY.
 LAP #6 BARS B @ 4' RDWKY.

GENERAL NOTES:
 CONSTRUCTION SPECIFICATIONS: LA. DEPT. OF HIGHWAYS
 STD. SPECS., JULY, 1962.
 DESIGN SPECIFICATIONS: A.A.S.H.O. STD. SPECS. FOR HIGHWAY
 BRIDGES, 1951 AS AMENDED TO SEPTEMBER 1961.
 LIVE LOAD: HS-20-S16-44.
 ALL CONCRETE TO BE CLASS "A".
 EXPOSED CORNERS TO BE CHAMFERED UNLESS NOTED.
 REINFORCEMENT BARS SHALL BE INTERMEDIATE OR HARD & DE. ASTM A6, OR RAIL
 STEEL, A.S.T.M. A10, CONFORMING WITH A.S.T.M. A302.
 DIMENSIONS RELATING TO REINFORCING STEEL ARE TO
 BAR CENTERS.
 1/2" PREMOULDED EXPANSION MATERIAL, POURED FILLER
 AND TAR PAPER TO BE INCLUDED IN PRICE BID FOR CONCRETE.
 AFTER COMPLETING POUR FOR ROADWAY SLAB, A MINIMUM
 OF 8 DAYS SHALL ELAPSE (OR CONCRETE IN ROADWAY SLAB
 SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 500 P.S.I.)
 BEFORE BEGINNING POUR FOR SIDEWALK CANTILEVER.
 AFTER COMPLETING POUR FOR SIDEWALK CANTILEVER,
 A MINIMUM OF 7 DAYS SHALL ELAPSE (OR CONCRETE IN
 SIDEWALK CANTILEVER SHALL ATTAIN A MINIMUM COMPRESSIVE
 STRENGTH OF 500 P.S.I.) BEFORE BEGINNING POUR FOR
 HANDRAIL PARAPET.
 R-DENOTES CLASS 2 RUBBED FINISH.



SPAN # 7

**ABBEVILLE BYPASS
 VERMILION RIVER BRIDGE
 AND
 APPROACHES**

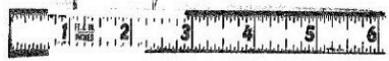
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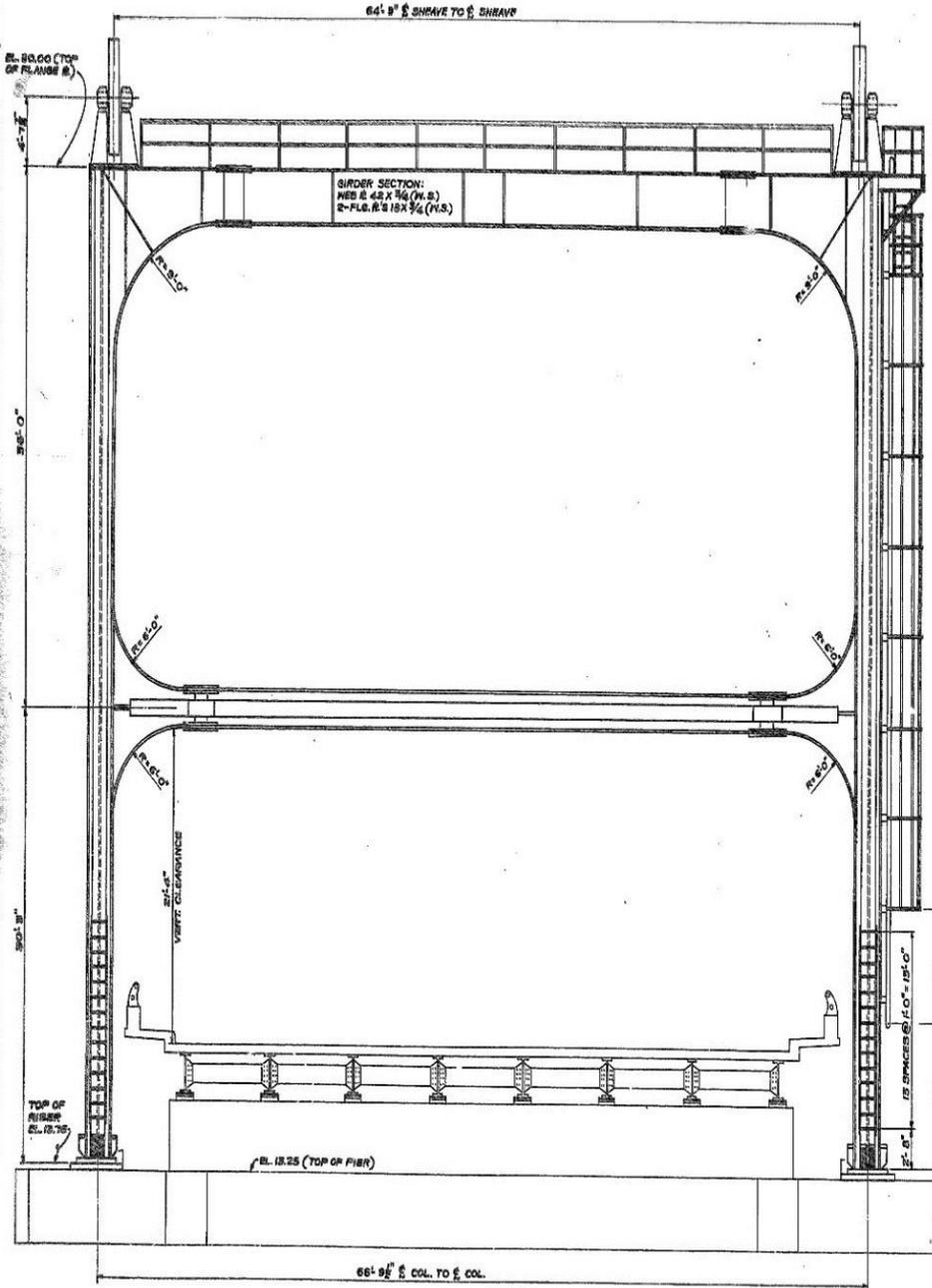
STATE OF LOUISIANA
 DEPARTMENT OF HIGHWAYS

DESIGNED: B. Joffe, DETAILED: D. Joffe, TRACED: A. Joffe
 CHECKED: B. Joffe, CHECKED: B. Joffe, CHECKED: B. Joffe

BRIDGE DESIGN SECTION

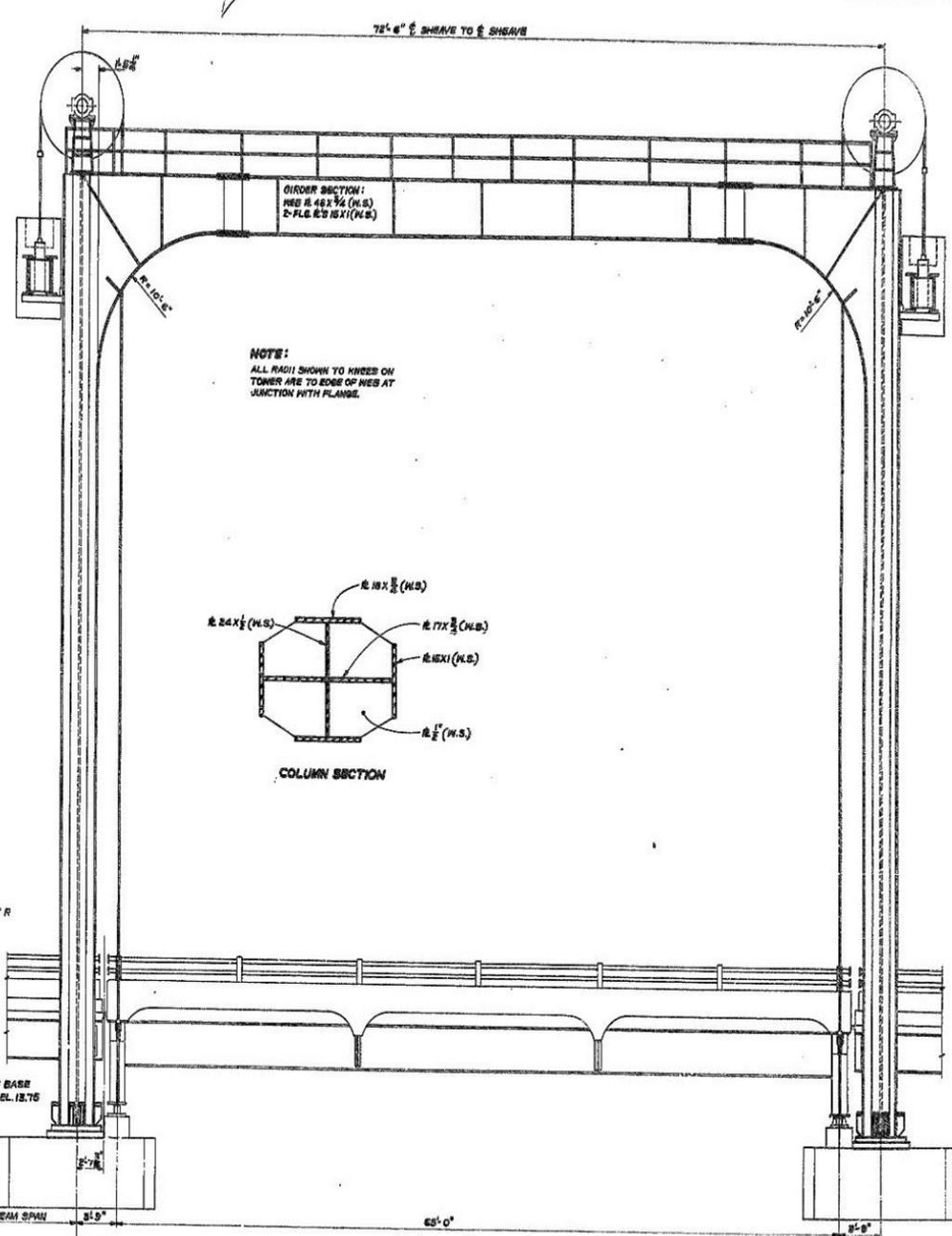
AS BUILT PLANS





SECTION THRU ROADWAY AT TOWER

MATERIALS IN TOWER		
CARBON STEEL (A-7)	104,500	LBS.
WELDING STEEL (A-372)	210,000	LBS.



SIDE ELEVATION AT TOWER

NOTE:
SEE SHEET 4 OF 4
FOR GENERAL NOTES.

TOWER DETAILS

**ABBEVILLE BYPASS
VERMILION RIVER BRIDGE
AND
APPROACHES**

DATED FEB. 22 1962

STATE OF LOUISIANA
DEPARTMENT OF HIGHWAYS

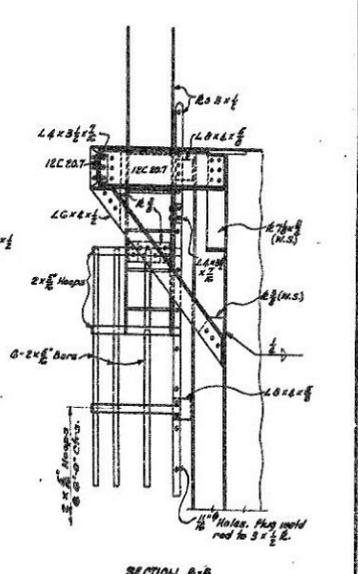
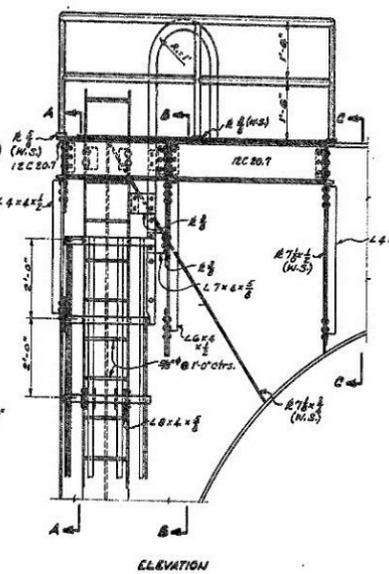
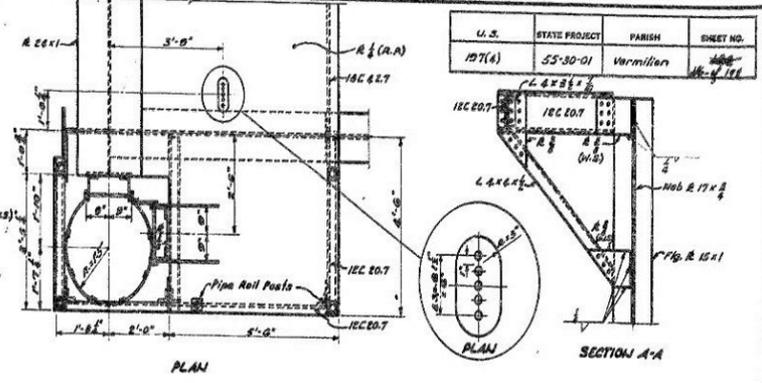
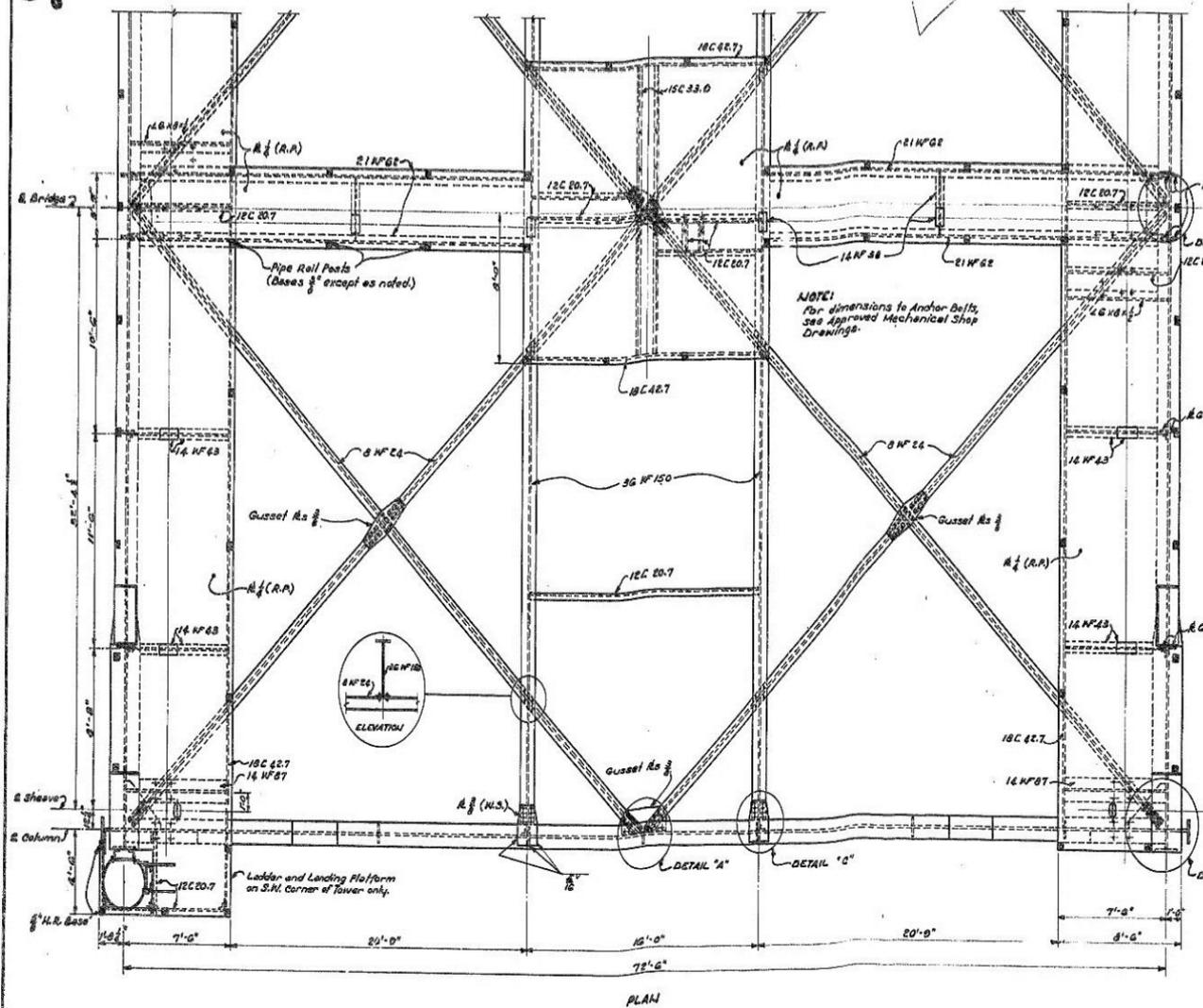
DESIGNED	BY	TRACED	BY
CHECKED	BY	CHECKED	BY

BRIDGE DESIGN SECTION 55-30-01

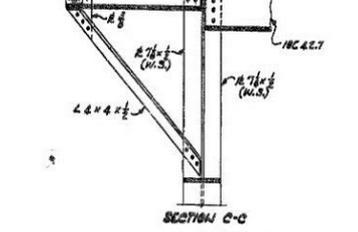
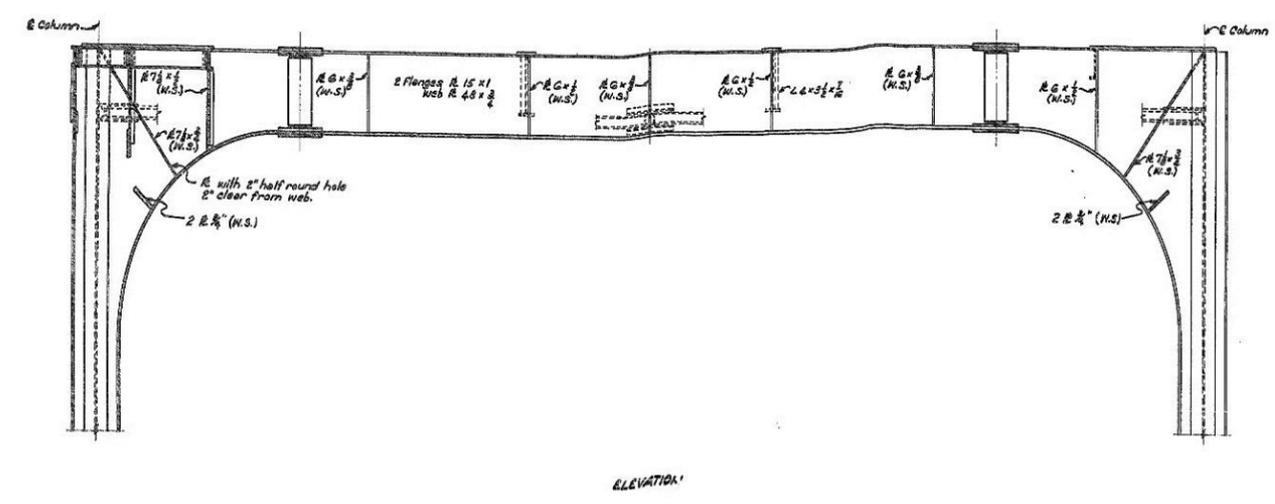
AS BUILT PLANS



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LADDER DETAILS



NOTE: See Sheet 4 of 6 for General Notes.

TOWER DETAILS

ABBEVILLE BYPASS VERMILION RIVER BRIDGE AND APPROACHES		
DATED Feb. 13 1962		
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS		
DESIGNED <i>[Signature]</i>	DETAILED <i>[Signature]</i>	TRACED <i>[Signature]</i>
CHECKED <i>[Signature]</i>	CHECKED <i>[Signature]</i>	CHECKED <i>[Signature]</i>
BRIDGE DESIGN SECTION		

DATE	DESCRIPTION	BY

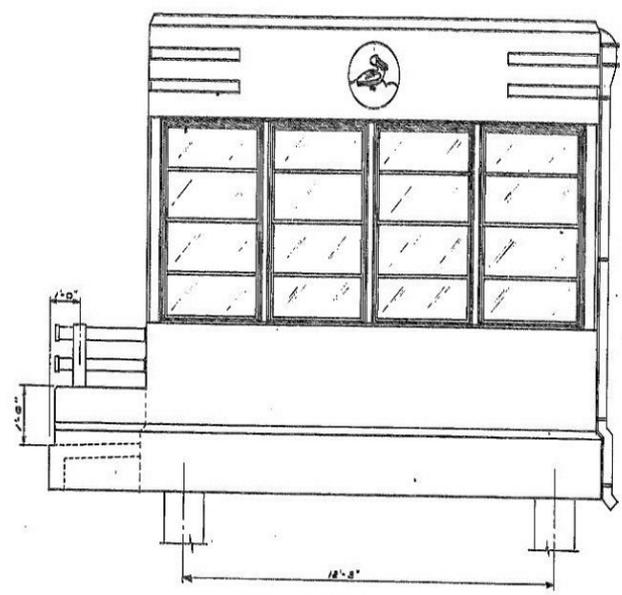
SHEET 3 OF 4

AS BUILT PLANS

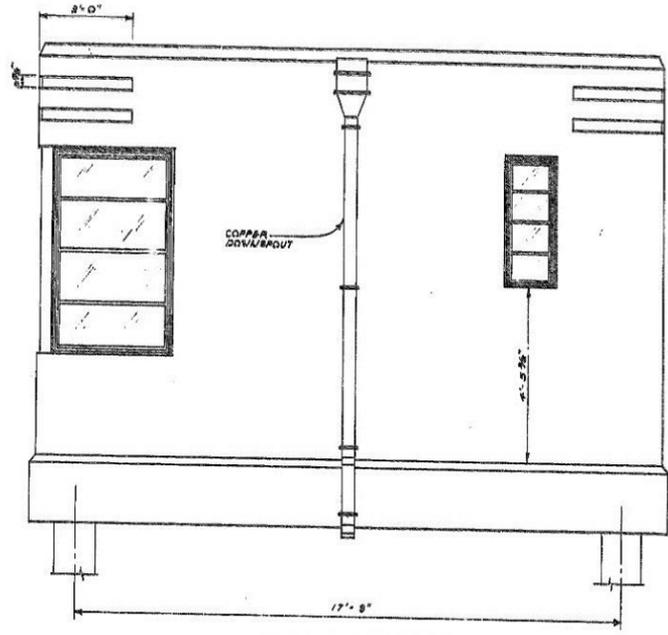


82

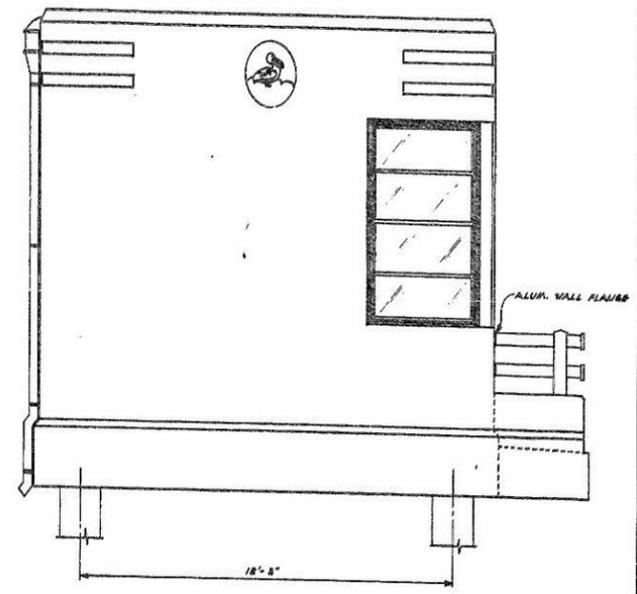
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197 (4)	SE-80-01	VERMILION	400 6-1-198



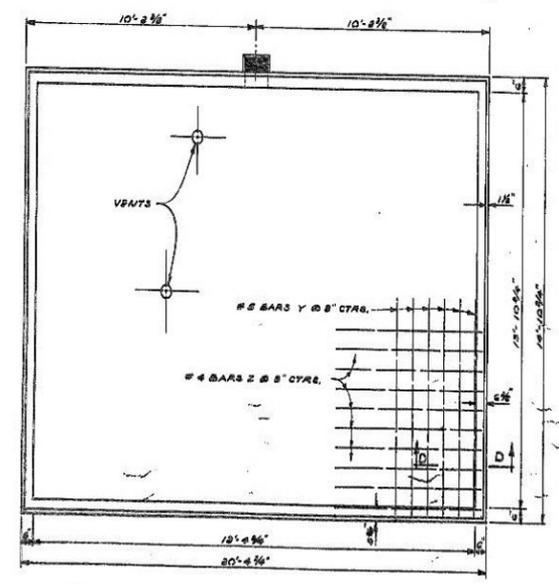
SIDE ELEVATION
SCALE 1/8"=1'-0"



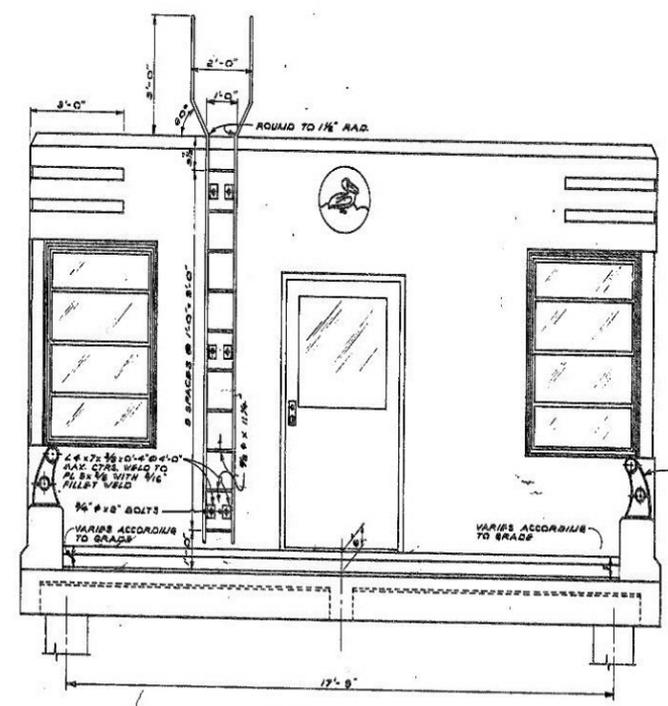
REAR ELEVATION
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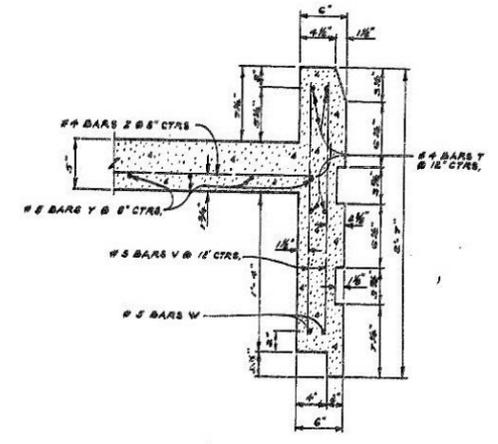
SIDE ELEVATION
SCALE 1/8"=1'-0"



ROOF PLAN
SCALE 1/8"=1'-0"



FRONT ELEVATION
SCALE 1/8"=1'-0"



SECTION D-D
SCALE 1/8"=1'-0"

OPERATING HOUSE

ABBEVILLE BYPASS
VERMILION RIVER BRIDGE
AND
APPROACHES

DATE: JAN. 25, 1968.

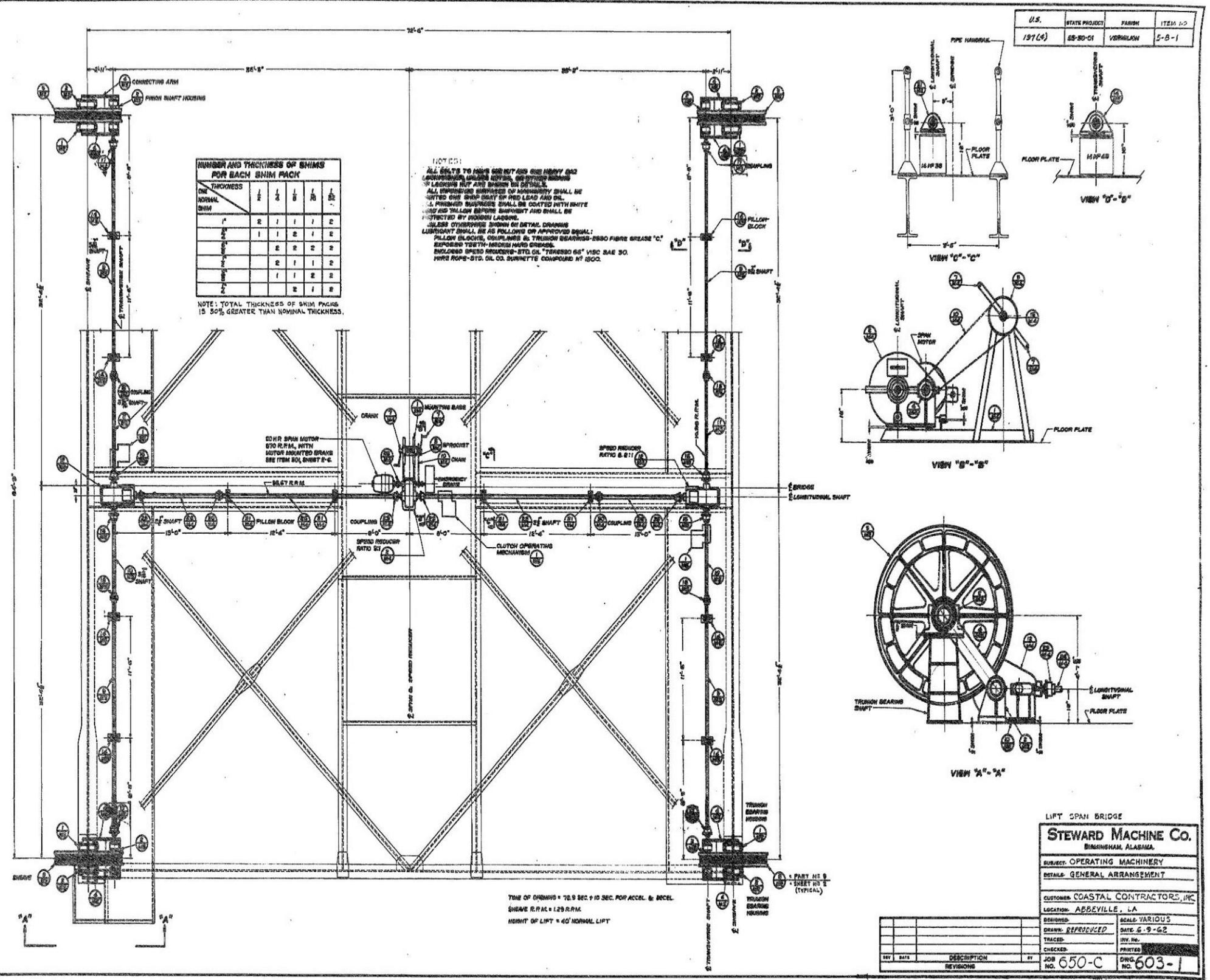
STATE OF LOUISIANA DEPARTMENT OF HIGHWAYS			
DESIGNED	INSTALLED D. GODEC	TRACED	
CHECKED	CHANGED J. P. ...	CHECKED	
BRIDGE DESIGN SECTION			
SHEET 1 OF 4			

DATE	DESCRIPTION	BY
	REVISIONS	

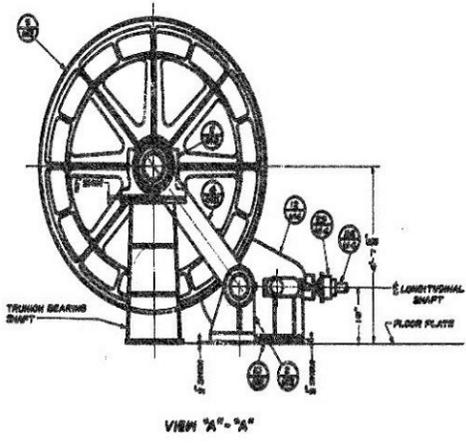
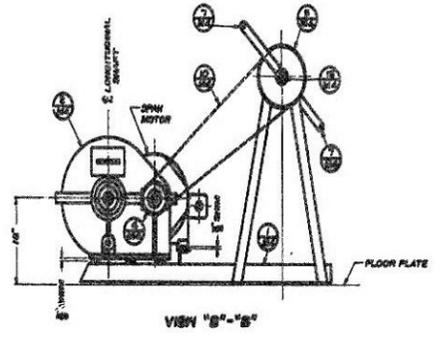
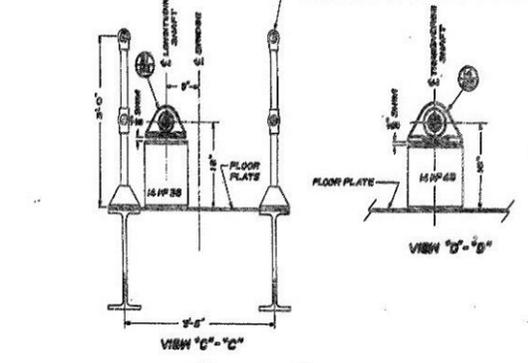
AS BUILT PLANS



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U.S.	STATE PROJECT	FABRIC	ITEM NO.
1976	SS-30-01	VERMILION	5-B-1



LIFT SPAN BRIDGE

STEWART MACHINE Co.
 BIRMINGHAM, ALABAMA.

SUBJECT: OPERATING MACHINERY
 DETAIL: GENERAL ARRANGEMENT

CUSTOMER: COASTAL CONTRACTORS, INC.
 LOCATION: ABBEVILLE, LA

DESIGNED: SCALE: VARIOUS
 DRAWN: REPRODUCED DATE: 6-9-62
 TRACED: INV. NO.
 CHECKED: PRINTER

JOB NO. 650-C
 SHEET NO. 603-1

REV.	DATE	DESCRIPTION	BY

S.P.H. 55-30-01

SHOP DRAWINGS



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