

John James Audubon Bridge Design-Build Project Update

**2007 Transportation Engineering Conference
February 12, 2007**

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Agenda

- **Project Background**
- **Project Description and Preliminary Information**
- **Current Design-Build Status**
 - **Design**
 - **Construction**
- **Additional Information**

John James Audubon Bridge



Project Background

- **The idea of a bridge near this location dates back decades**
- **Project included in the TIMED Program in 1989**
- **LA legislature officially named the John James Audubon Bridge in 1993**
- **Selected to be LA's 1st Design-Build Project, Fall 2004**

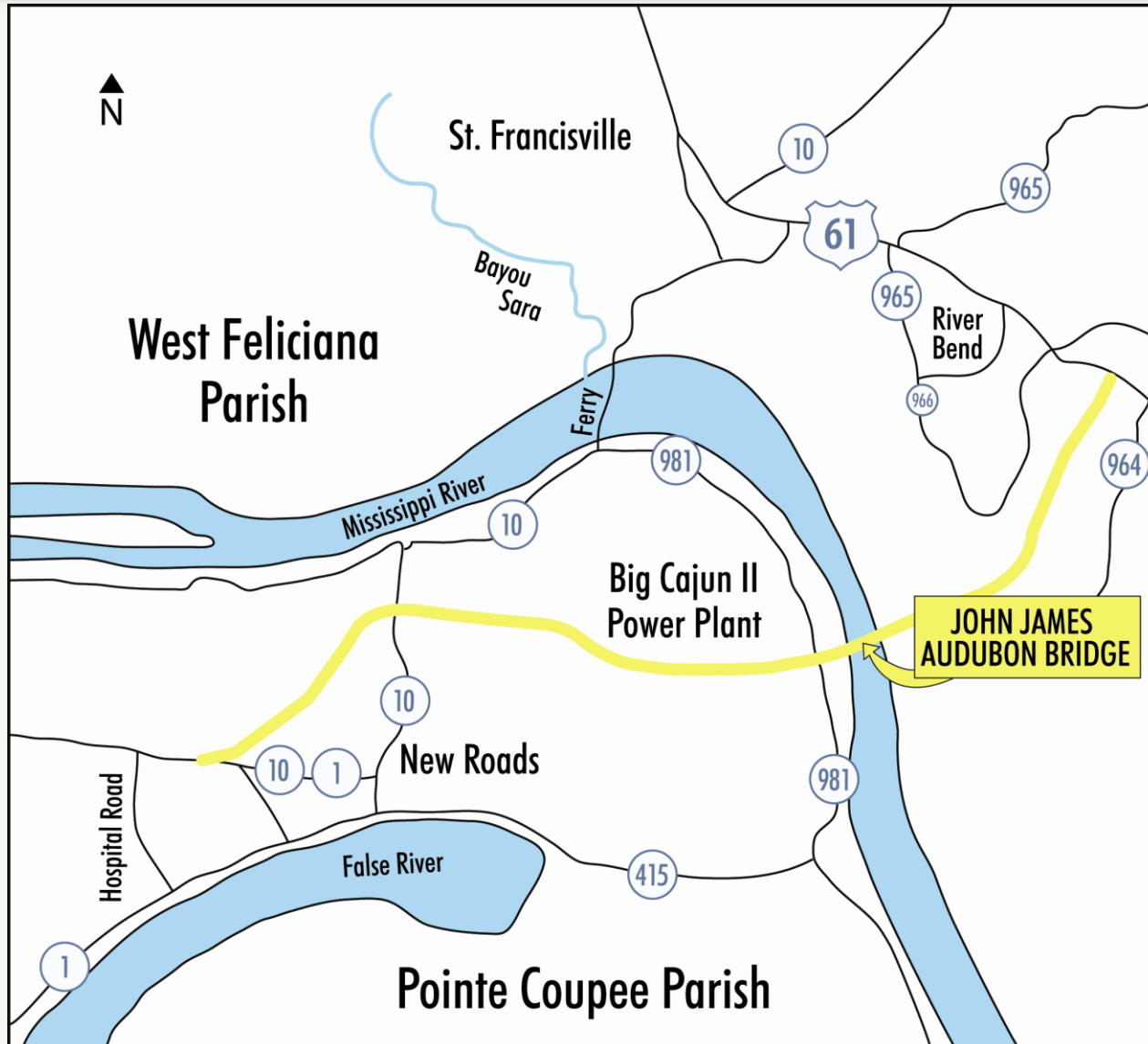
Preliminary Design

- **Final EA, FONSI and Permits (Alignment F)**
- **ROW Maps (Acquisition process complete before D-B RFP)**
- **Utility relocation (all URA's in place before D-B RFP)**
- **Geotechnical**
 - **97 Borings – Pointe Coupee**
 - **78 Borings – West Feliciana**
 - **10 Borings – Mississippi River**

Preliminary Design

- **Partial Preliminary Plans**
 - **Plan – Profile Sheets**
 - **Vertical-Horizontal Geometry (clearance envelopes for river and railroad)**
 - **Bridge Location Stations**
 - **ROW Limits**
 - **Bridge Hydraulics for Approach Bridges**

John James Audubon Bridge



Project Description

- **12 miles of mainline roadway and bridge**
 - **Four-lane bridge over the Mississippi River**
12,150 LF
 - 3,186 LF cable-stayed main span unit (160-641.5-1583-641.5-160)
 - **Two-lane main span approach structures of**
7,566 LF
 - 4,051 LF Railroad Overpass (Pointe Coupee)
 - 140 LF Bridge over Portage Canal
 - 671 LF & 1075 LF over Grants Bayou (West Feliciana)
 - 629 LF, 415 LF & 585 LF over E. Fork Grants Bayou (West Feliciana)

Project Description

- **12 miles of mainline roadway and bridge**
 - **1.9 miles of two-lane approach roadway (West Feliciana; connection to US-61)**
 - **6.15 miles of two-lane approach roadway (Pointe Coupee; connection to LA 1/LA 10)**

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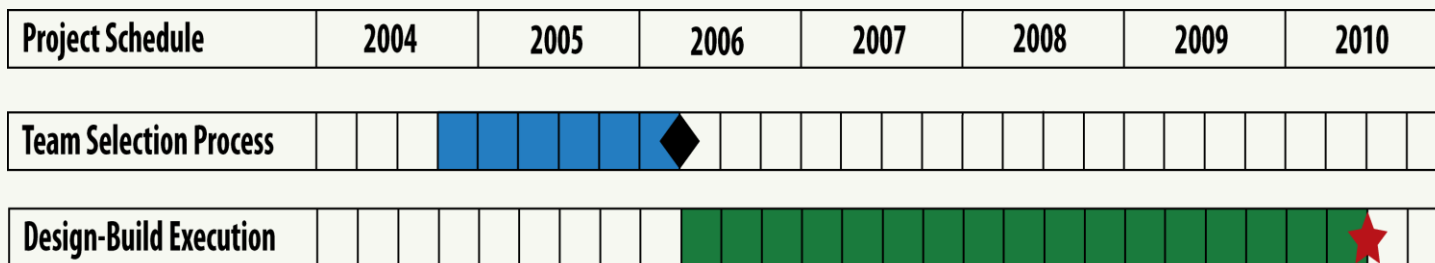
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Design-Build Project Update

John James Audubon Bridge

- Total Cost \$406 Million
- Project Length 14.6 miles
- Bridge Length 4.0 miles
- First Design-build Procurement
- Successful Letting March 2, 2006
- Completion Date: Summer 2010



D-B Begins



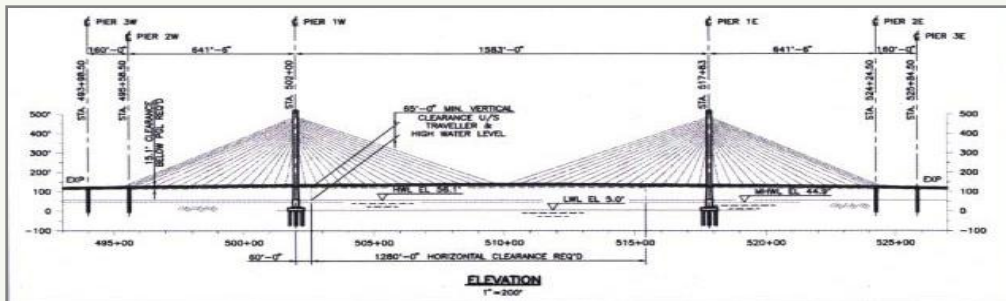
Complete

John James Audubon Bridge



 JOHN JAMES
audubon
BRIDGE

John James Audubon Bridge



- 1583' Cable-stayed main-span
- Twin planes of cable-stays (galvanized strand)
- H-shaped pylon with double strut above deck (515' above low-water elevation)
- Drilled shaft foundations (post grouted)
- Main pier footings at low-water level
- Substantial amount of construction to be land-based from trestles
- Will be the longest cable-stayed span in North and South America
- Total lump sum price: \$347,856,245

John James Audubon Bridge

- **Design-Builder:**

Audubon Bridge Constructors, a joint venture





- **Flatiron Construction**
- **Granite Construction**
- **Parsons Transportation Group**

John James Audubon Bridge

- **Team Members:**
 - **Hill Bros. Construction**
 - **Boh Bros. Construction**
 - **Buckland & Taylor, LTD**
 - **Evans Graves**
 - **Burk Kleinpeter**
 - **PSI**
 - **Dan Brown & Associates**
 - **RWDI**
 - **OEA, Inc**

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- **Design-Build Procurement – Price Proposals & Adjusted Scores**

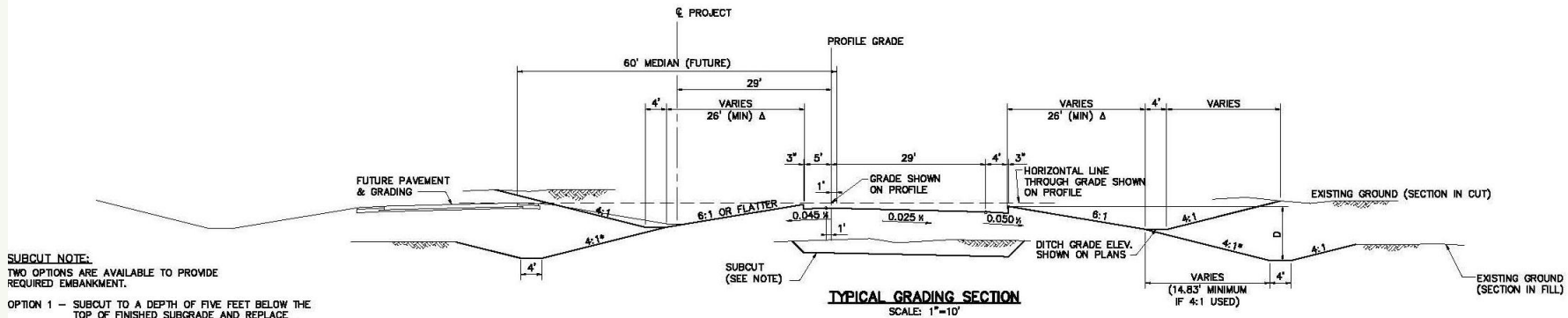
Engineer's Estimate*		Base Proposal		Base Proposal Plus Option 1	
		\$346,046,477.00		\$427,776,227.00	
Adjusted Score Calculation					
	Final Total Technical Score	Base Proposal		Base Proposal Plus Option 1	
		Total Lump Sum Price	Adjusted Score	Total Lump Sum Price	Adjusted Score
<div>American Bridge/Bilfinger Berger JV</div> <div> American Bridge  BILFINGER BERGER Civil Inc.</div>	990	\$344,690,753.67	\$348,172.48	\$361,985,753.67	\$365,642.18
	1000	\$334,656,245.00	\$334,656.25	\$347,856,245.00	\$347,856.25
	975	\$376,995,741.00	\$386,662.30	\$406,481,495.00	\$416,904.10

John James Audubon Bridge

Performance Specifications

- **Cable-Stayed Bridge**
- **Structures**
- **Geotechnical & Foundations**
- **Roadway Geometrics**
- **Pavements**
- **Traffic Signals & Signing**
- **Maintenance**
- **Lighting**
- **Maintenance of Traffic**
- **Utilities**
- **Public Outreach & Community Relations**
- **Drainage**
- **Landscape & Aesthetics**
- **Environmental Mitigation & Compliance**
- **Erosion Control**

John James Audubon Bridge



SUBCUT NOTE:

TWO OPTIONS ARE AVAILABLE TO PROVIDE REQUIRED EMBANKMENT.

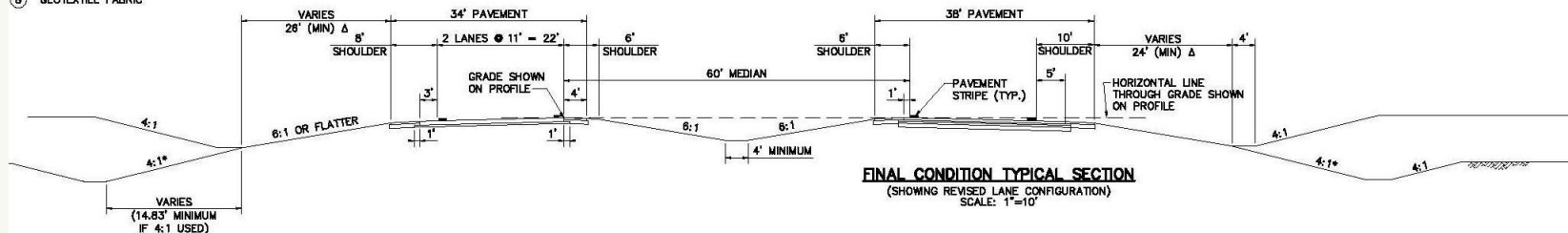
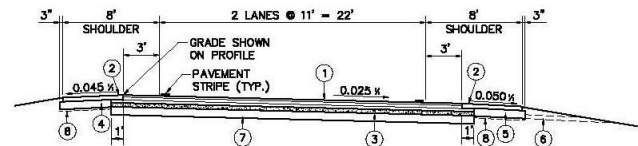
OPTION 1 - SUBCUT TO A DEPTH OF FIVE FEET BELOW THE TOP OF FINISHED SUBGRADE AND REPLACE WITH MATERIAL MEETING REQUIREMENTS FOR EMBANKMENT.

OPTION 2 - LIME TREATMENT (ESTIMATED TO BE 12% BY VOLUME) OF THE EXISTING MATERIAL SUFFICIENT TO ACHIEVE 95% COMPACTION OF UPPER 12 INCHES.

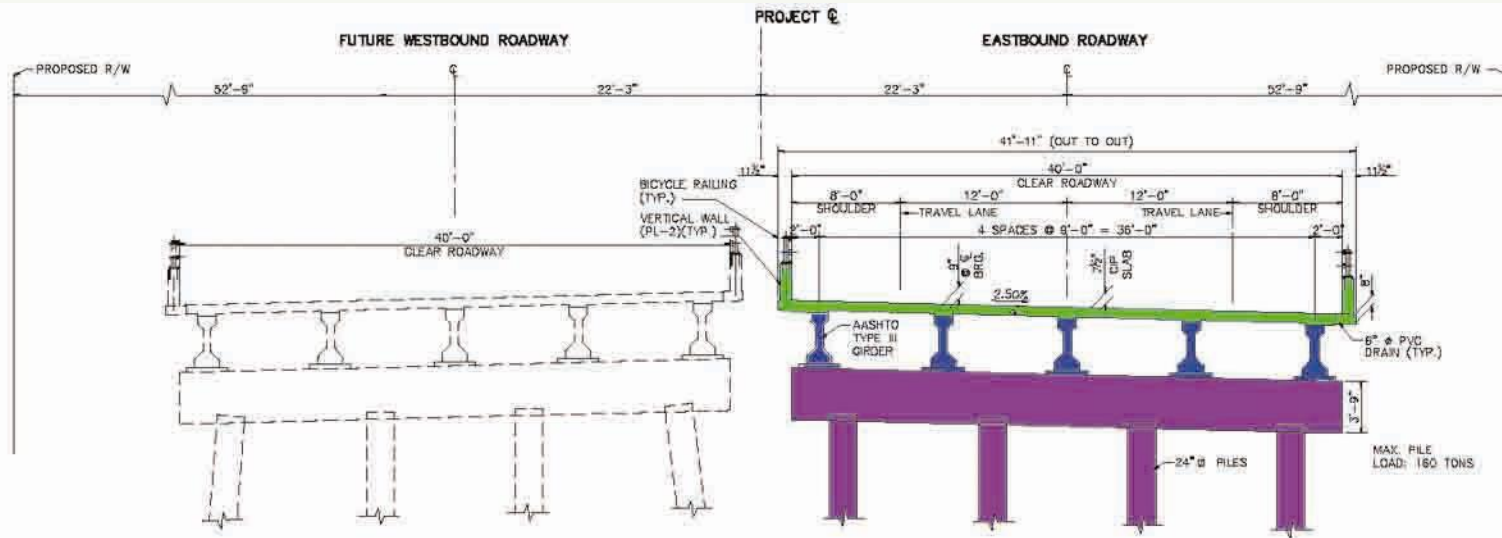
*4:1 SLOPE TO BE USED WHEN "D" EXCEEDS 8'. IF "D" IS LESS THAN 8', 6:1 SLOPE TO BE CONTINUED TO DITCH BOTTOM OR TOE OF FILL. Δ TO BE CONSTRUCTED FREE OF OBSTRUCTIONS

LEGEND:

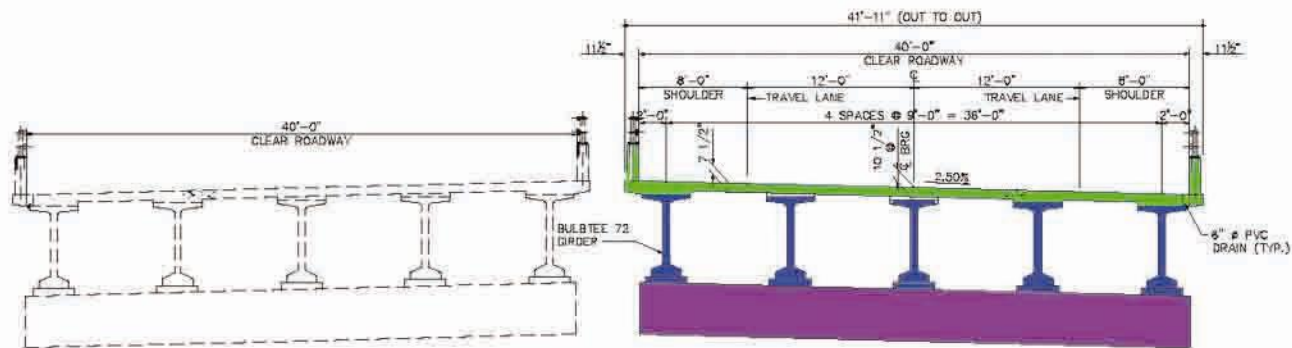
- ① 8" SUPERPAVE ASPHALTIC CONCRETE (LEVEL 2)
(2" WEARING COURSE)
(3" BINDER COURSE)
(3" BASE COURSE)
- ② 4" SUPERPAVE ASPHALTIC CONCRETE (LEVEL A)
(2" WEARING COURSE)
(2" BINDER COURSE)
- ③ CLASS II BASE COURSE (4" THICK) (STONE OR RECYCLED PCGP)
- ④ CLASS II BASE COURSE (8" THICK) (STONE OR RECYCLED PCGP)
- ⑤ 8" THICK NON-PLASTIC EMBANKMENT (STONE OR RECYCLED PCGP)
- ⑥ 4" THICK NON-PLASTIC EMBANKMENT (STONE OR RECYCLED PCGP)(ENCAPSULATE WITH CLASS D GEOTEXTILE FABRIC WITH THE EXCEPTION OF THE OUTSIDE EDGE) (DAYLIGHT THIS EMBANKMENT FOR 4 FEET AT 200' INTERVALS)
- ⑦ 8" CLASS II BASE COURSE (SOIL CEMENT)
- ⑧ GEOTEXTILE FABRIC



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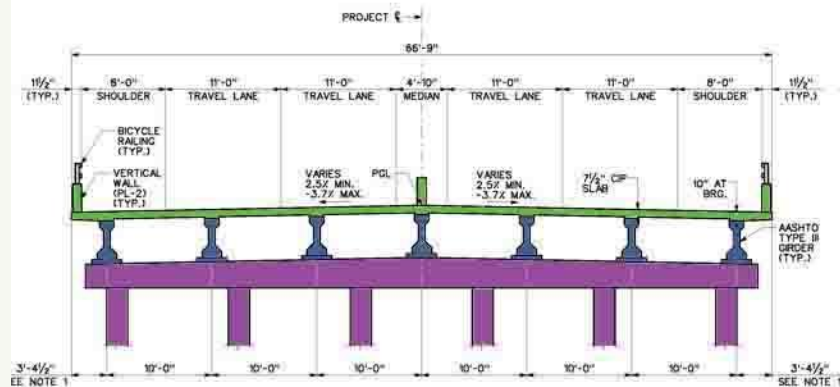


TYPICAL SECTION
STA. 344+95 TO STA. 360+85
STA. 363+37 TO STA. 385+51
SCALE: 1/4" = 1'-0"

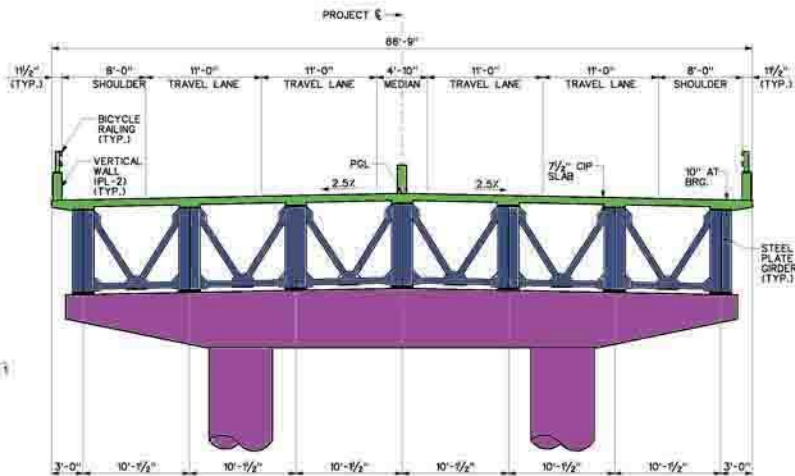


TYPICAL SECTION
STA. 380+85 TO STA. 383+37
SCALE: 1/4" = 1'-0"

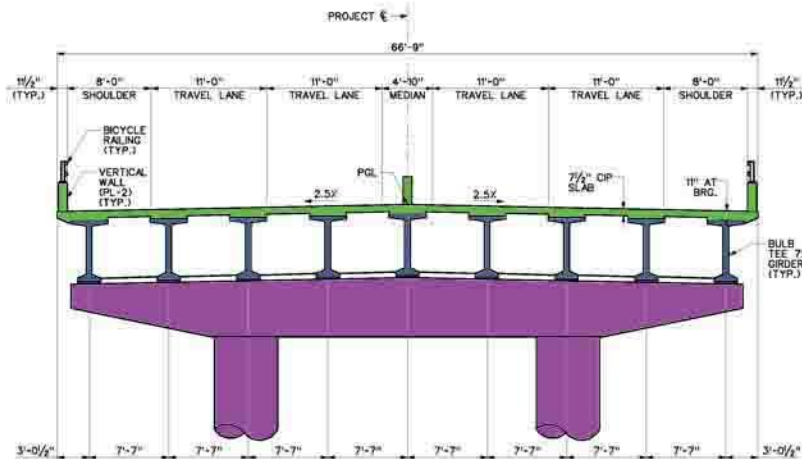
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TYPICAL SECTION
STA 466+25 TO STA 478+80
STA 542+64.50 TO STA 595+05
SCALE: 1/4" = 1'-0"



TYPICAL SECTION
STA 484+40 TO STA 493+88.50
SCALE: 1/4" = 1'-0"

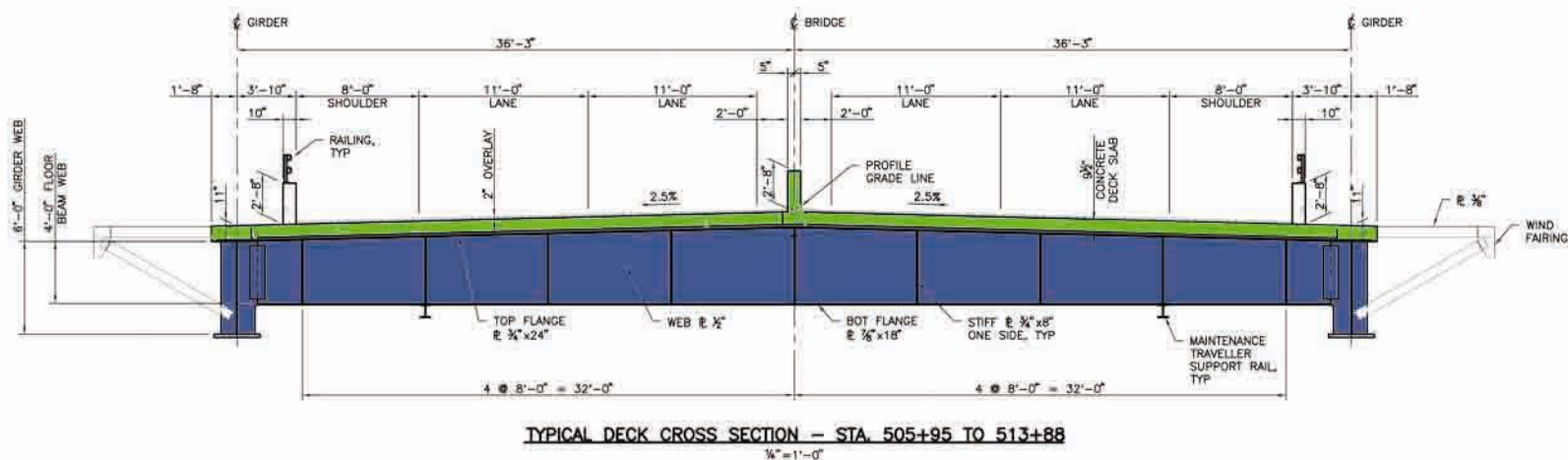
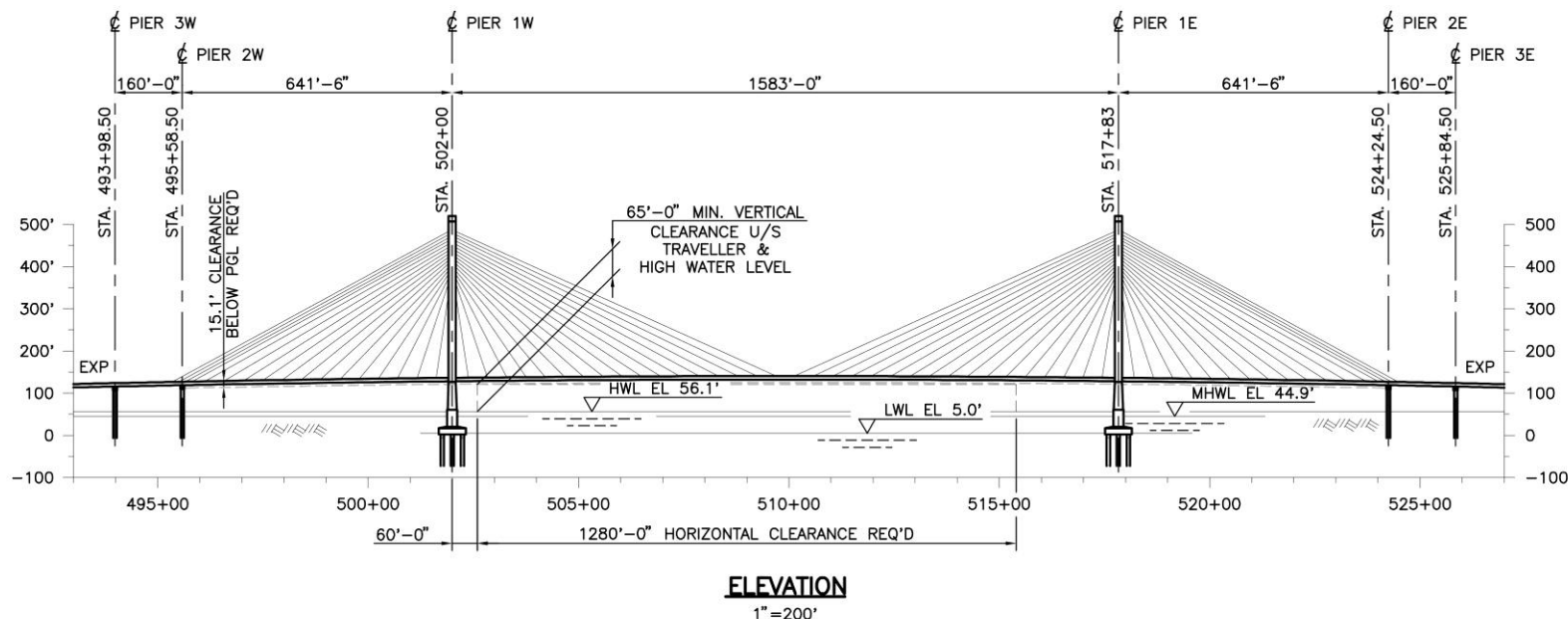


TYPICAL SECTION
STA 478+80 TO STA 484+40
STA 525+84.50 TO STA 542+64.50
SCALE: 1/4" = 1'-0"

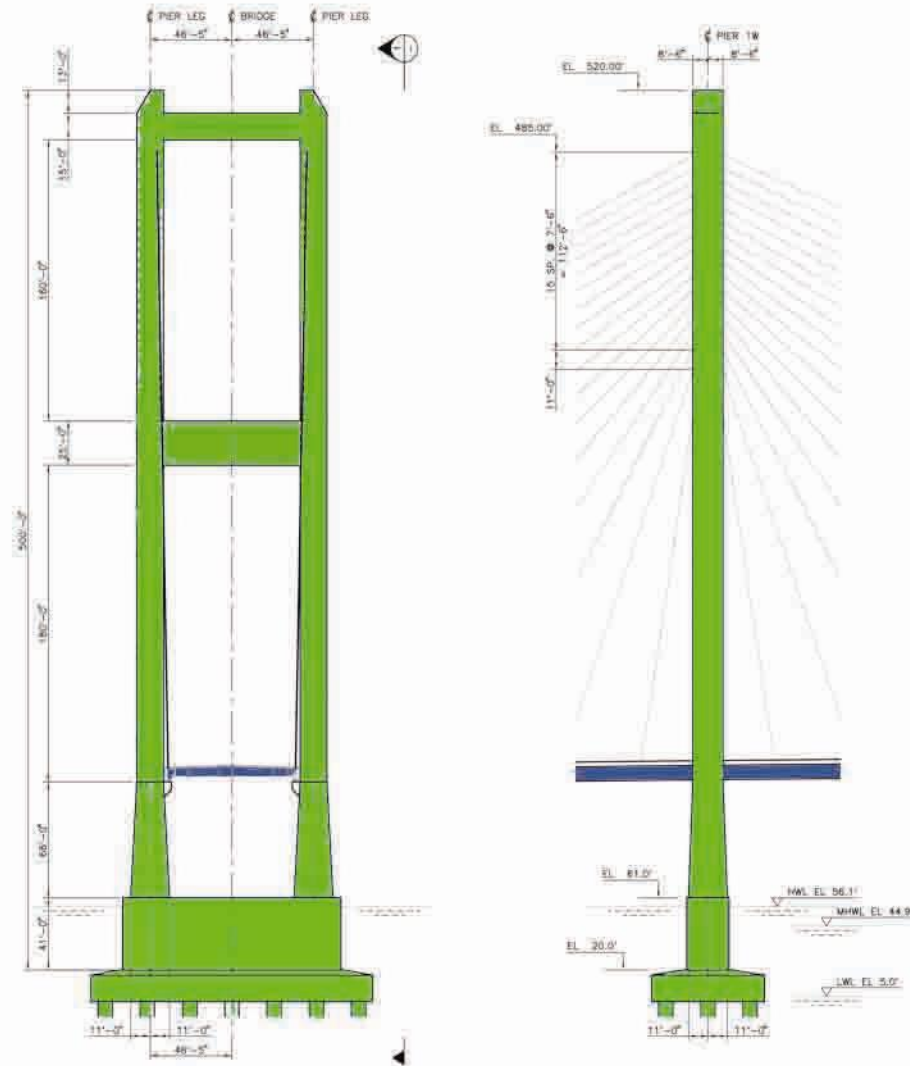
NOTES

1. BETWEEN STA 563+82.09 AND STA 595+05.00, LEFT DECK OVERHANG WILL VARY FROM 3'-3" TO 3'-4 1/2" AND RIGHT DECK OVERHANG WILL VARY FROM 3'-4 1/2" TO 3'-6".

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Wind Tunnel Testing

- **RWDI – Ontario, Canada**
- **Wind Climate Analysis**
- **Section Model Test**
- **Buffeting Analysis**
- **Aeroelastic Model Study**
 - **Complete Bridge**
 - **2 Construction Stages**
 - **Free Standing Tower**
- **Cable Vibration Assessment**



Section Model



Aeroelastic Model



Main Pier Foundations

- **8' ϕ shafts (20 Shafts – 7x3 Group)**
- **Scour: 37.7' (500 year)**
35.7' (100 year)
- **Vessel Collision load**
 - 10,695 kips transverse
 - 5,348 kips longitudinal
- **Horizontal Clearance: 1463'**

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<http://www.timedla.com>




Louisiana TIMED Program
BRIDGE PROJECTS

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JOHN JAMES
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BRIDGE



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Bridge Overview/News

The John James Audubon Bridge project is a new Mississippi River crossing between Pointe Coupee and West Feliciana parishes in south central Louisiana.

The bridge—proposed to be the longest cable-stayed bridge in North America—will replace an existing ferry between the communities of New Roads and St. Francisville.

The bridge will also serve as the only bridge structure on the Mississippi River between Natchez, Mississippi and Baton Rouge, Louisiana (approximately 90 river miles).

The Audubon Bridge project will include:

- A 2.44 mile four-lane elevated bridge structure with two 11-foot travel lanes in each direction with 8-foot outside shoulders and 2-foot inside shoulders
- Approximately 12 miles of two-lane roadway connecting LA 1 east of Hospital Road at New Roads to US 61 south of LA 966 and St. Francisville
- Four new intersections at existing LA 1, LA 10, LA 981 (River Road) and US 61 for entry to and exit from the new roadway and bridge

The project is being constructed by Audubon Bridge Constructors, a joint venture of Flatiron Constructors, Granite Construction and Parsons Transportation Group.

The John James Audubon Bridge project is expected to be complete by summer 2010.

Explore

- ▶ Animation
- ▶ Blog: Bryan on the Bridge
- ▶ Calendar
- ▶ Construction Timetable
- ▶ News & Resources
- ▶ Photo Gallery
- ▶ Glossary & Acronyms
- ▶ Web Cam


Question of the Month

How often do you anticipate crossing the John James Audubon Bridge when it is complete?

- Daily

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<http://flatironcorp.oxblue.com/jjab>



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CAMERA ONE

JANUARY 2007

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28	29	30	31			


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Questions

