

THE THREE BIG LIFTS SASHTO – NEW ORLEANS AUGUST 25, 2014



Huey P. Long Bridge Widening Project



Presenters

- Brian D. Buckel, PE
 - ▣ During Construction – LADOTD Chief Construction Engineer
- Stephen Spohrer, PE
 - ▣ During Construction – LTM Deputy Director, Construction



HUEY P. LONG
BRIDGE WIDENING

The Conceivers



- Special Credit goes to:
- Keith Jacobson, Massman Construction Company, Retired Vice President. Keith followed the strength of his convictions and managed the success of the endeavor.
- John Brestin, PE, formerly HNTB Project Engineer now with Buckland & Taylor Ltd. John designed the temporary works and the lifts.

“Some say that more prayers have been uttered atop the Huey P. Long Bridge than in all the churches of New Orleans and Jefferson Parish combined.”



The Construction Team



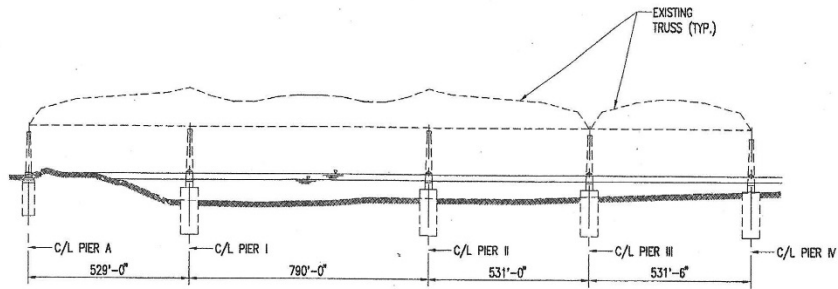
The Owner Team



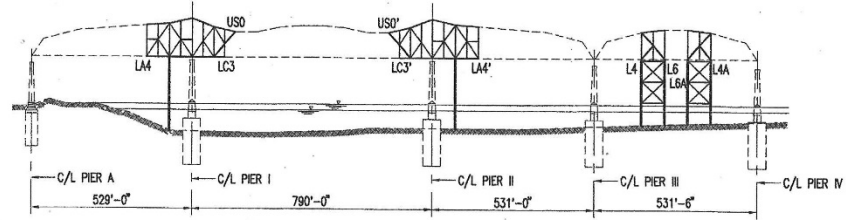
The Problem



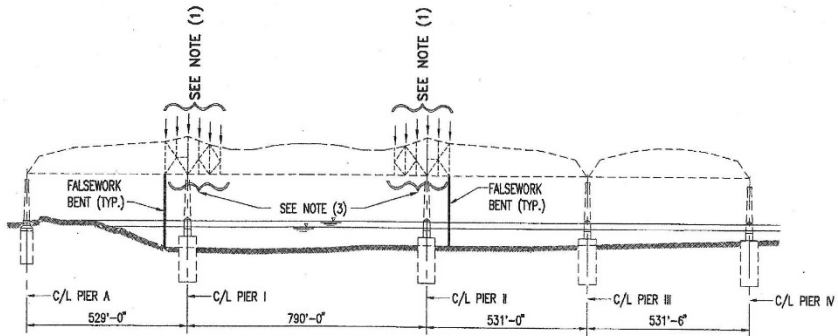
- The planned obstructions in the River and their impacts on barge and steamship traffic.
- The heavy ship and barge traffic, post-Hurricane Katrina.
- Daily Amtrak East-West trains.
- 24 – 30 freight trains per day.
- 50,000 + ADT
- That this project controlled the opening of the new bridge



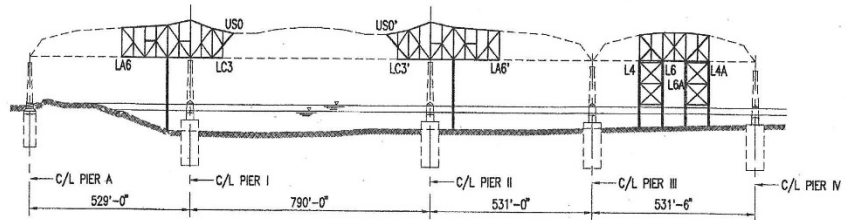
STAGE M3
 BEGIN WIDENING TRUSS ERECTION



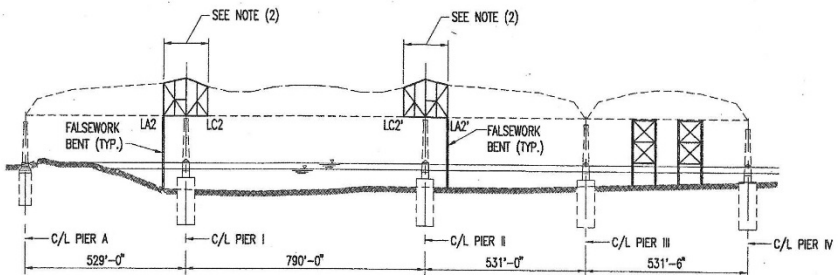
STAGE M3 - TASK 12



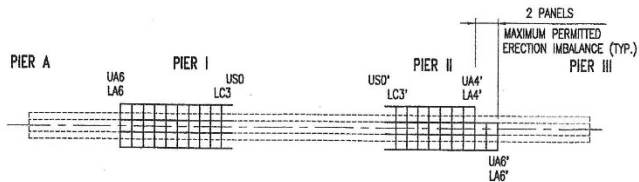
STAGE M3 - TASK 10



STAGE M3 - TASK 13



STAGE M3 - TASK 11

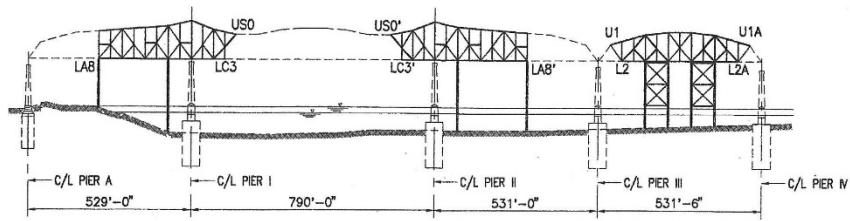


PLAN - MAXIMUM TRANSVERSE IMBALANCE
 TRUSS ERECTION AND DECK REMOVAL &
 CONSTRUCTION
 (STAGE M3 - TASK 13 SHOWN)

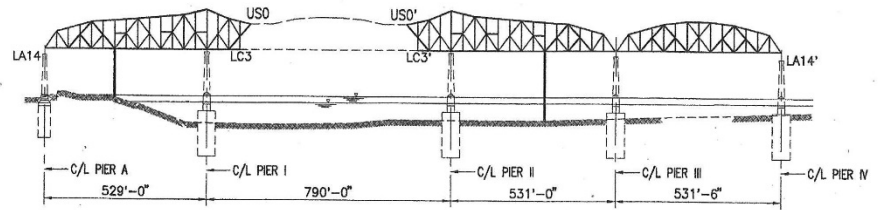
CONCEPTUAL SEQUENCE OF CONSTRUCTION - WIDENING TRUSSES
 SCALE: 1"=200'-0"

- NOTE (1): REPLACE EXISTING TOP LATERAL GUSSET PLATES WITH REQUIRED ONES FOR WIDENING.
- NOTE (2): TEMPORARY TOP LATERAL MEMBERS MAY BE REQUIRED TO ACCOMMODATE THE RANGE OF MOVEMENT REQUIRED FOR CONSTRUCTION FOR JOINTS IN THIS REGION.
- NOTE (3): REPLACE EXISTING BOTTOM LATERAL MEMBERS.

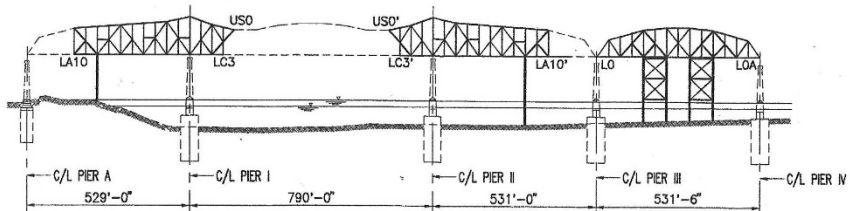
- NOTES:
- FOR NOTES PERTAINING TO THIS SHEET, SEE SHEET NOS. 116 & 117.
 - FOR CONCEPTUAL SEQUENCE OF CONSTRUCTION - SUMMARY, SEE SHEET NOS. 118-120.
 - FOR CONCEPTUAL SEQUENCE OF CONSTRUCTION - FLOOR SYSTEM, SEE SHEET NOS. 128-131.
 - EXISTING TRUSS NOT SHOWN FOR CLARITY. ERECTION SHALL BE BALANCED ABOUT THE LONGITUDINAL AXIS OF THE BRIDGE. MAXIMUM PERMITTED IMBALANCE SHALL BE TWO COMPLETED TRUSS PANEL POINTS.
 - NEED FOR AND LOCATION OF FALSEWORK MAY BE REVISED AT CONTRACTOR'S OPTION.



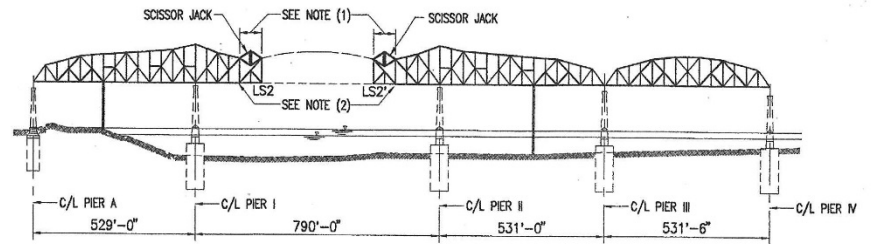
STAGE M3 - TASK 14



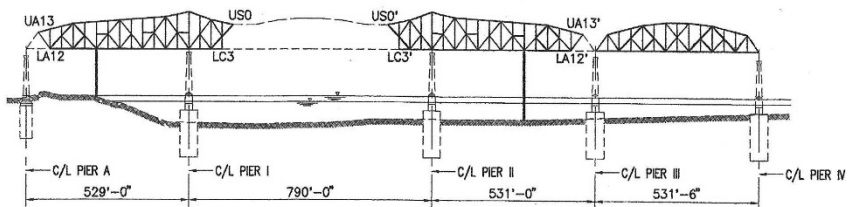
STAGE M3 - TASK 17



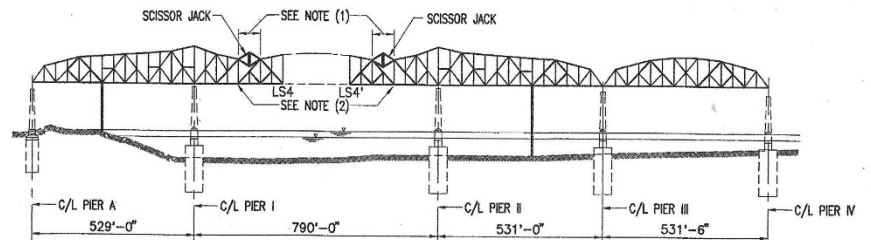
STAGE M3 - TASK 15



STAGE M3 - TASK 18



STAGE M3 - TASK 16



STAGE M3 - TASK 19

CONCEPTUAL SEQUENCE OF CONSTRUCTION - WIDENING TRUSSES

SCALE: 1"=200'-0"

- NOTE(1): CONTRACTOR TO PROVIDE TEMPORARY LATERAL BRACING DURING ERECTION.
- NOTE(2): WIND LINK SHALL NOT BE FULLY CONNECTED.

NOTES:

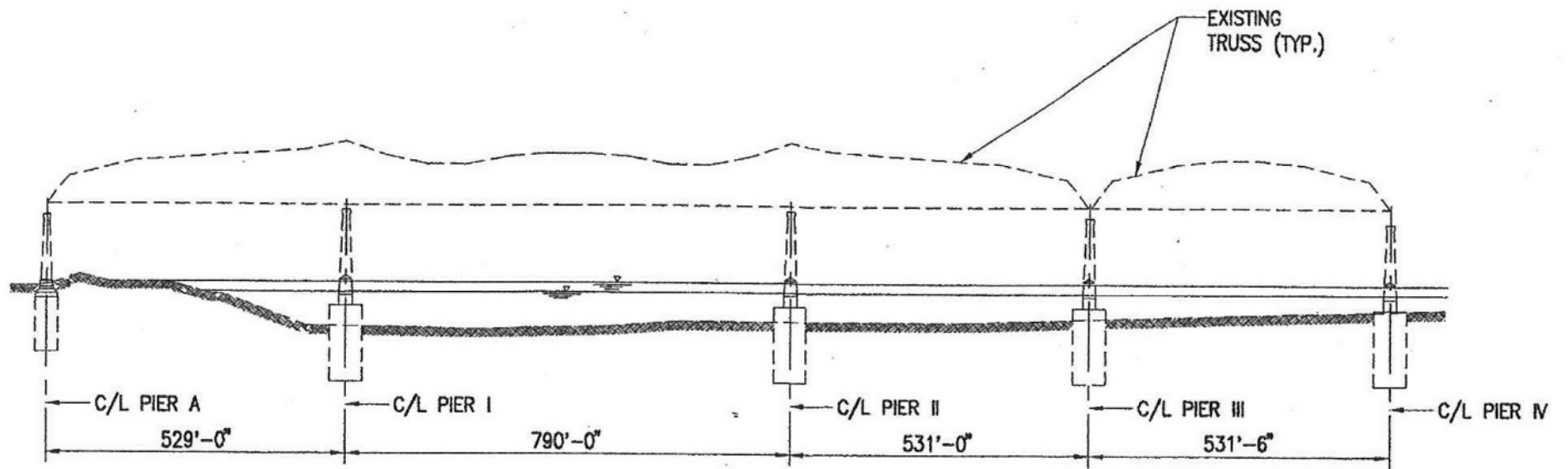
FOR NOTES PERTAINING TO THIS SHEET, SEE SHEET NOS. 116 & 117.

A SCISSOR JACK IS SHOWN IN THE LOCATION OF TOP CHORD'S FALSE CHORD MEMBER FOR USE DURING THE WIDENING TRUSS ERECTION TO CONTROL AND ADJUST THE CANTILEVER PORTION OF THE STRUCTURE. THE CONTRACTOR MAY USE A HYDRAULIC JACK WITH SHIMS OR OTHER JACKING MECHANISM THAT WILL SUPPORT THE ERECTION LOADS AND PERMIT THE ADJUSTMENT OF THE WIDENING TRUSS DURING ERECTION.

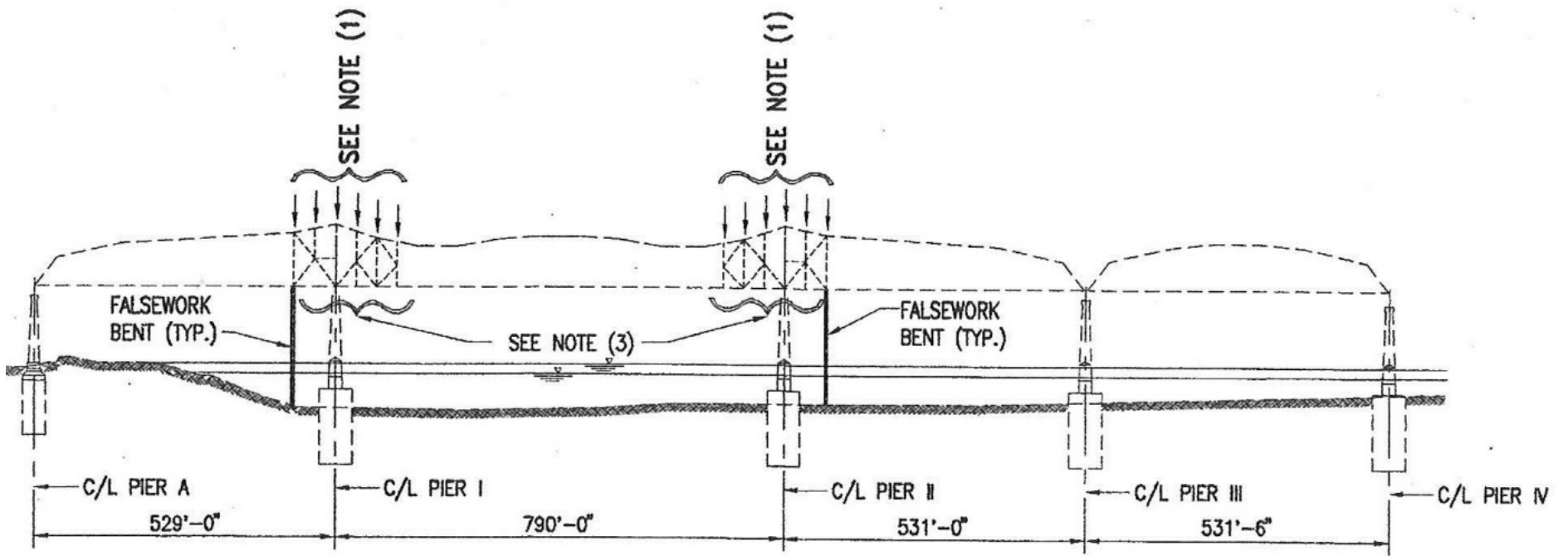
NEED FOR AND LOCATION OF FALSEWORK MAY BE REVISED AT CONTRACTOR'S OPTION.

SHEET NUMBER	122
DESIGNED BY	JEFFERSON
CHECKED BY	JEFFERSON
DATE	JULY, 2006
PROJECT	006-01-0018
REVISIONS	NO. 11-20-06 GENERAL REVISIONS
DATE	NOV 7 2006
BY	M&M
SCALE	AS SHOWN
PROJECT DESCRIPTION	HUEY P. LONG BRIDGE WIDENING U.S. GOVERNMENT MAIN BRIDGE - SUPERSTRUCTURE SEQUENCE OF CONSTRUCTION - 7
APPROVAL	STATE OF LOUISIANA BRUCE PETERSON REGISTERED PROFESSIONAL ENGINEER NO. 35224 EXPIRES 12/31/2008
APPROVAL	BOVA REGISTERED PROFESSIONAL ENGINEER NO. 35224 EXPIRES 12/31/2008
APPROVAL	MURKIN & MASTERS

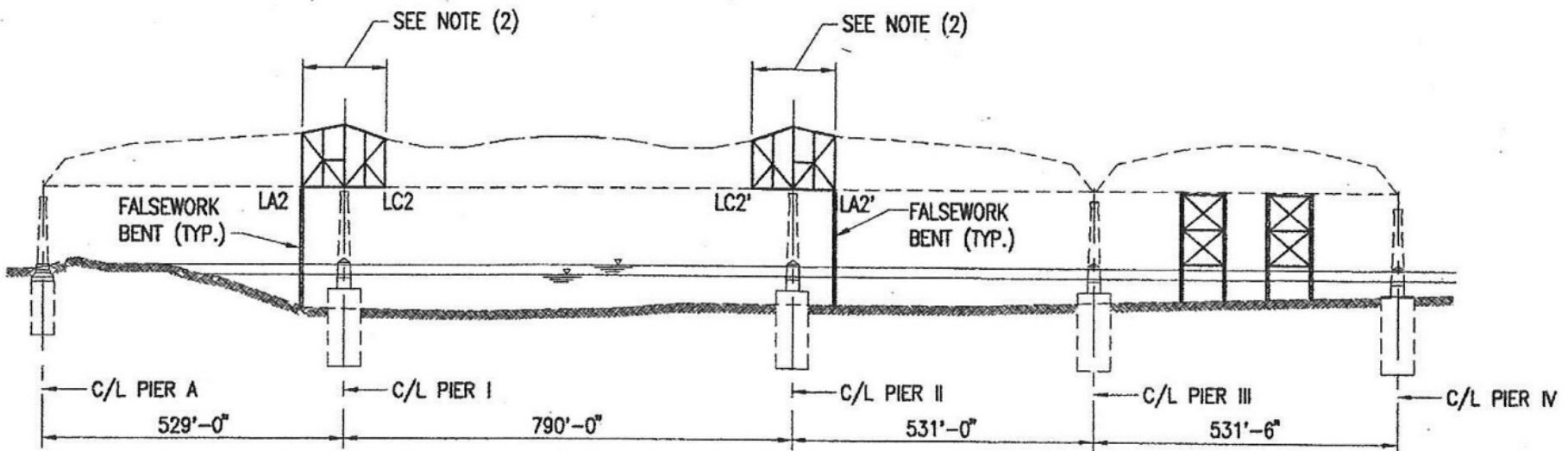




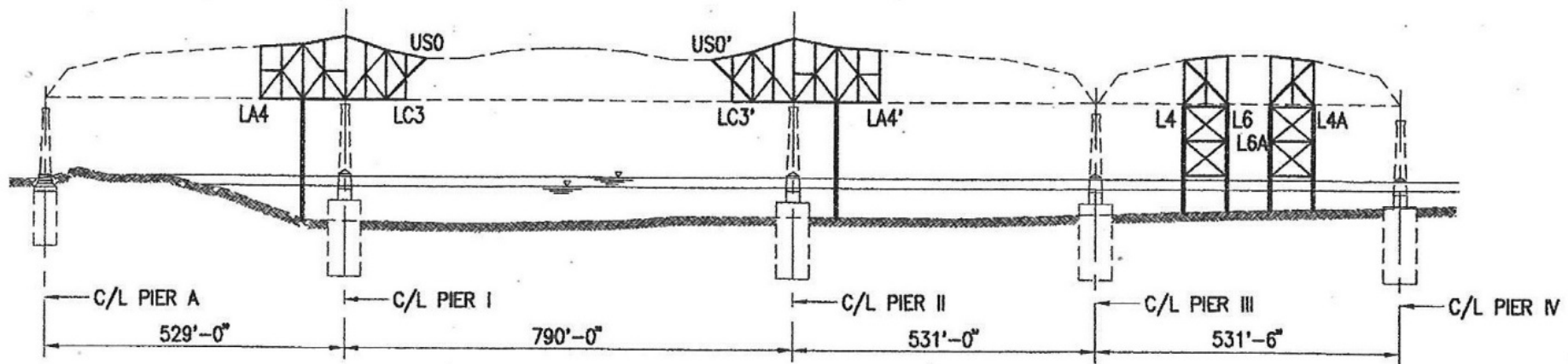
STAGE M3
BEGIN WIDENING TRUSS ERECTION



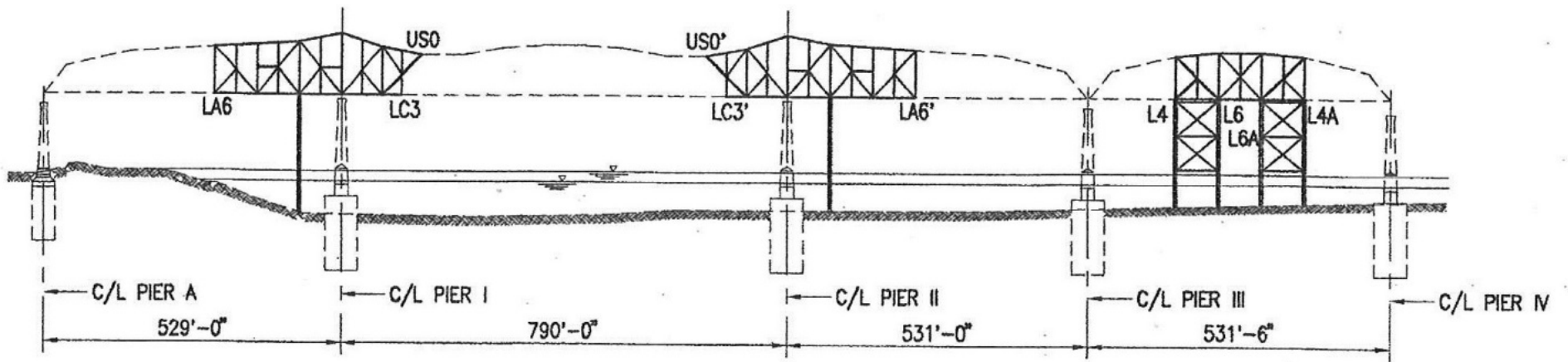
STAGE M3 - TASK 10



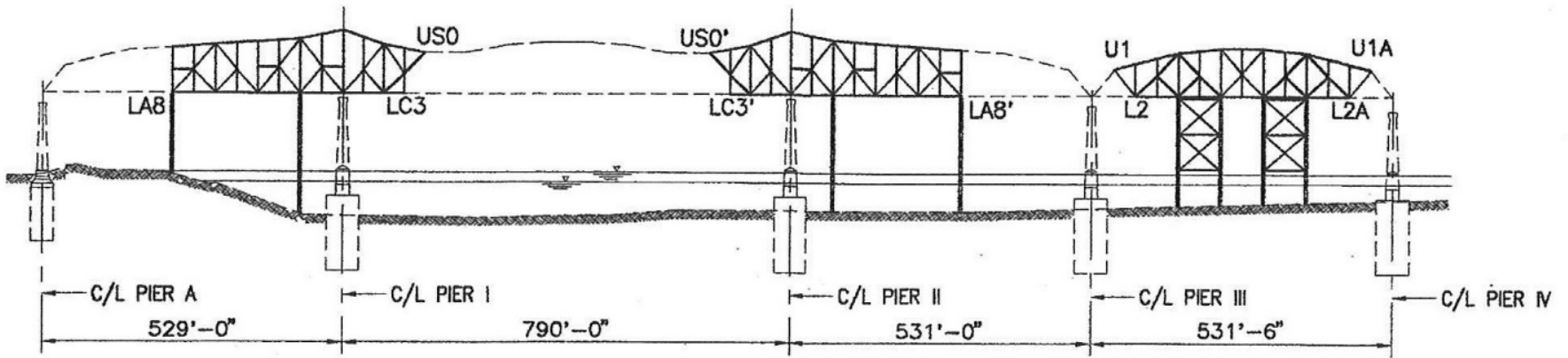
STAGE M3 - TASK 11



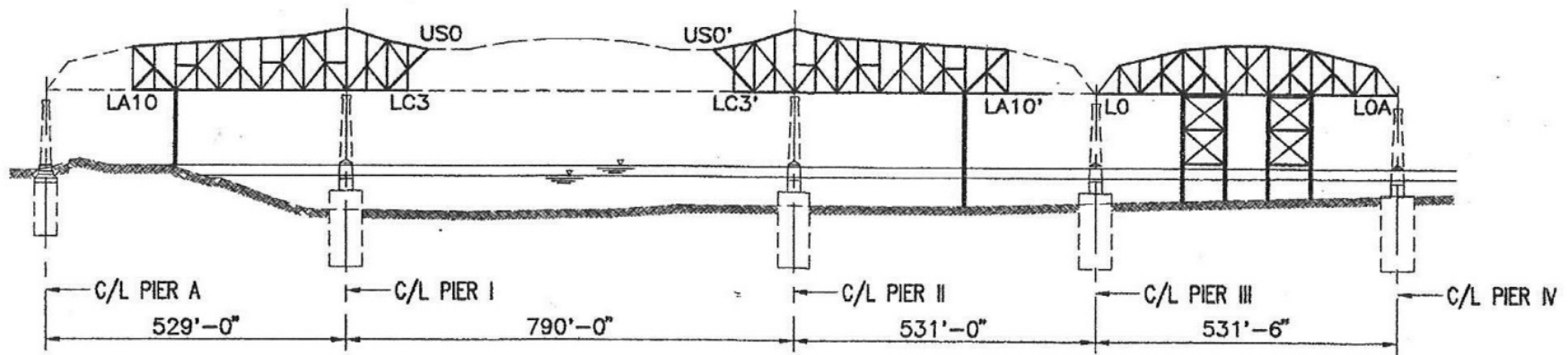
STAGE M3 - TASK 12



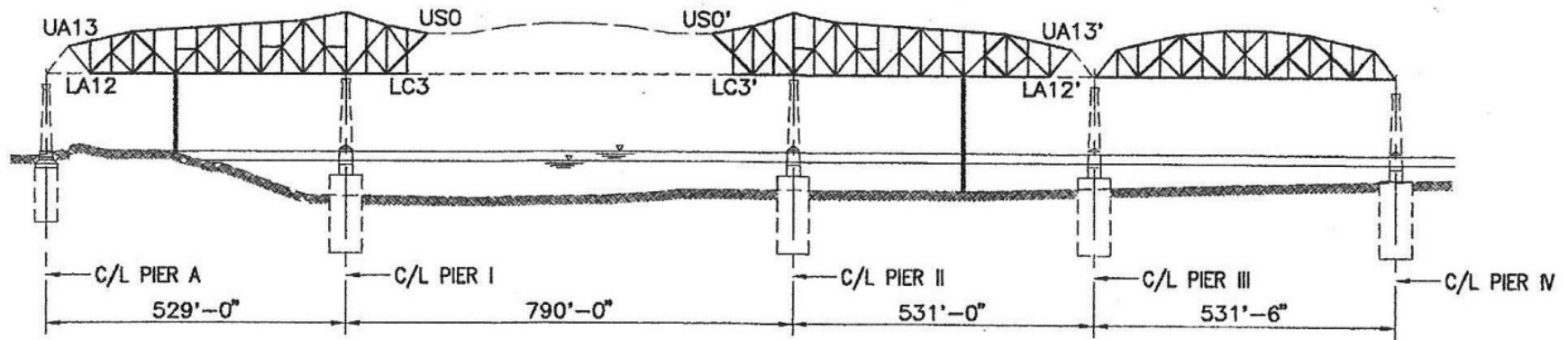
STAGE M3 - TASK 13



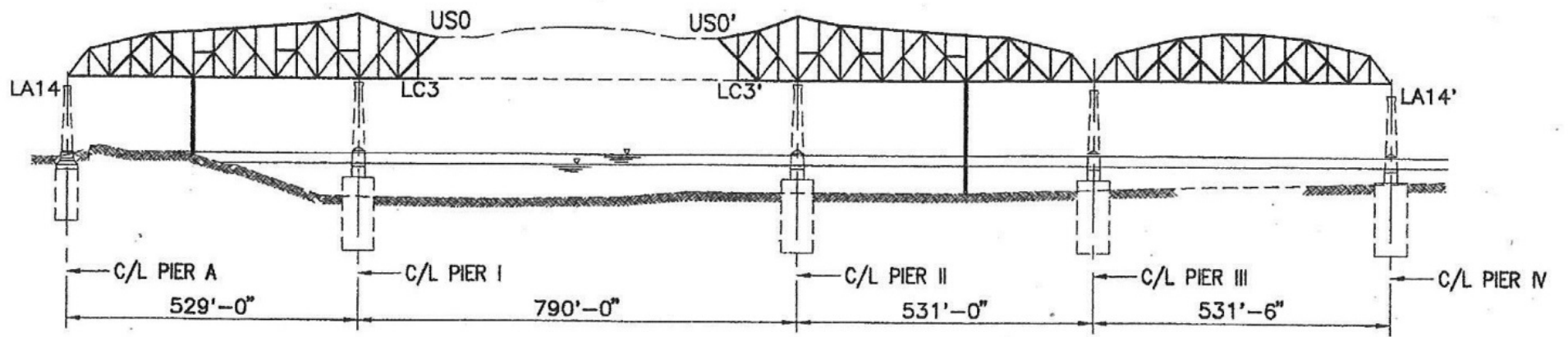
STAGE M3 - TASK 14



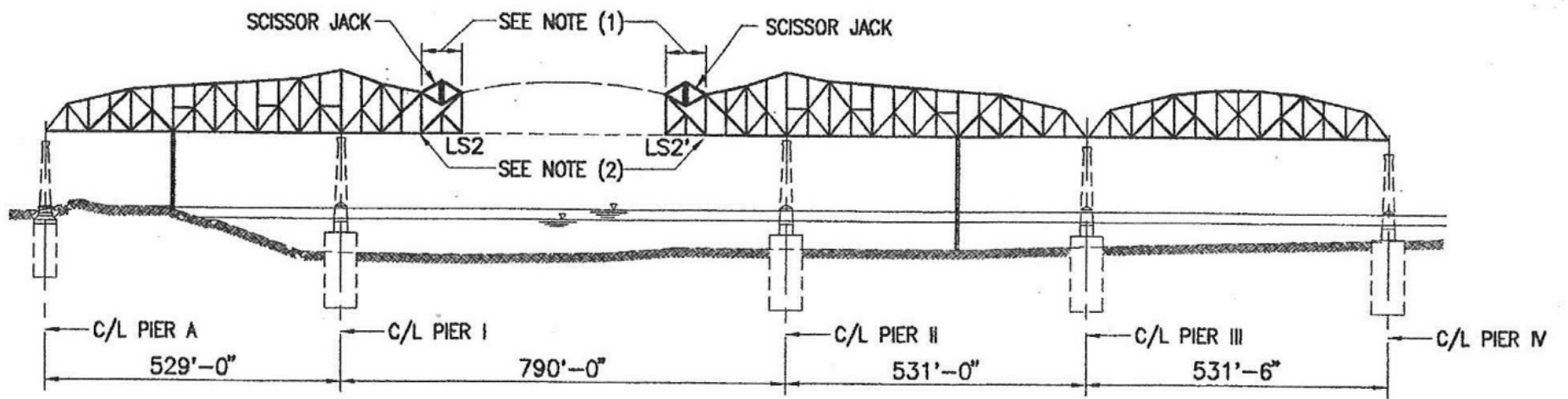
STAGE M3 - TASK 15



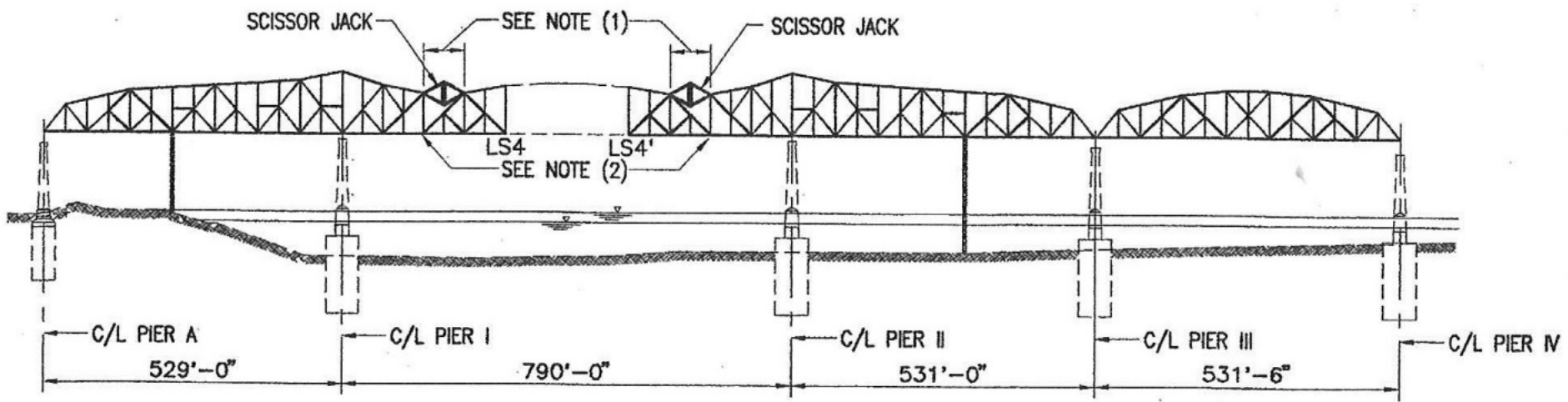
STAGE M3 - TASK 16



STAGE M3 - TASK 17



STAGE M3 - TASK 18



STAGE M3 - TASK 19

The Solution



- Build three of the four spans in a remote location, barge each to the site, lift each in place in one single 8-hour shutdown of the river, railroad, and highway.
- Stick build the fourth span where it was too shallow and overland.

The Solution Became the 3 Big Lifts



- Each was different:
 - ▣ The first lift was the first of the series and in the auxiliary channel.
 - ▣ The second lift was in the main channel with greater traffic, all the ship traffic, and higher currents.
 - ▣ The third lift was the heaviest.

Timing is Everything



- All lifts had to occur before or after the Spring rise.
- All lifts had to occur before June 1st or after October 31st the hurricane season.
- All lifts had a fallback date two weeks later.

HNTB Animation















Big Lift No. 1 - East Anchor Span





Big Lift No. 2 – Main Span

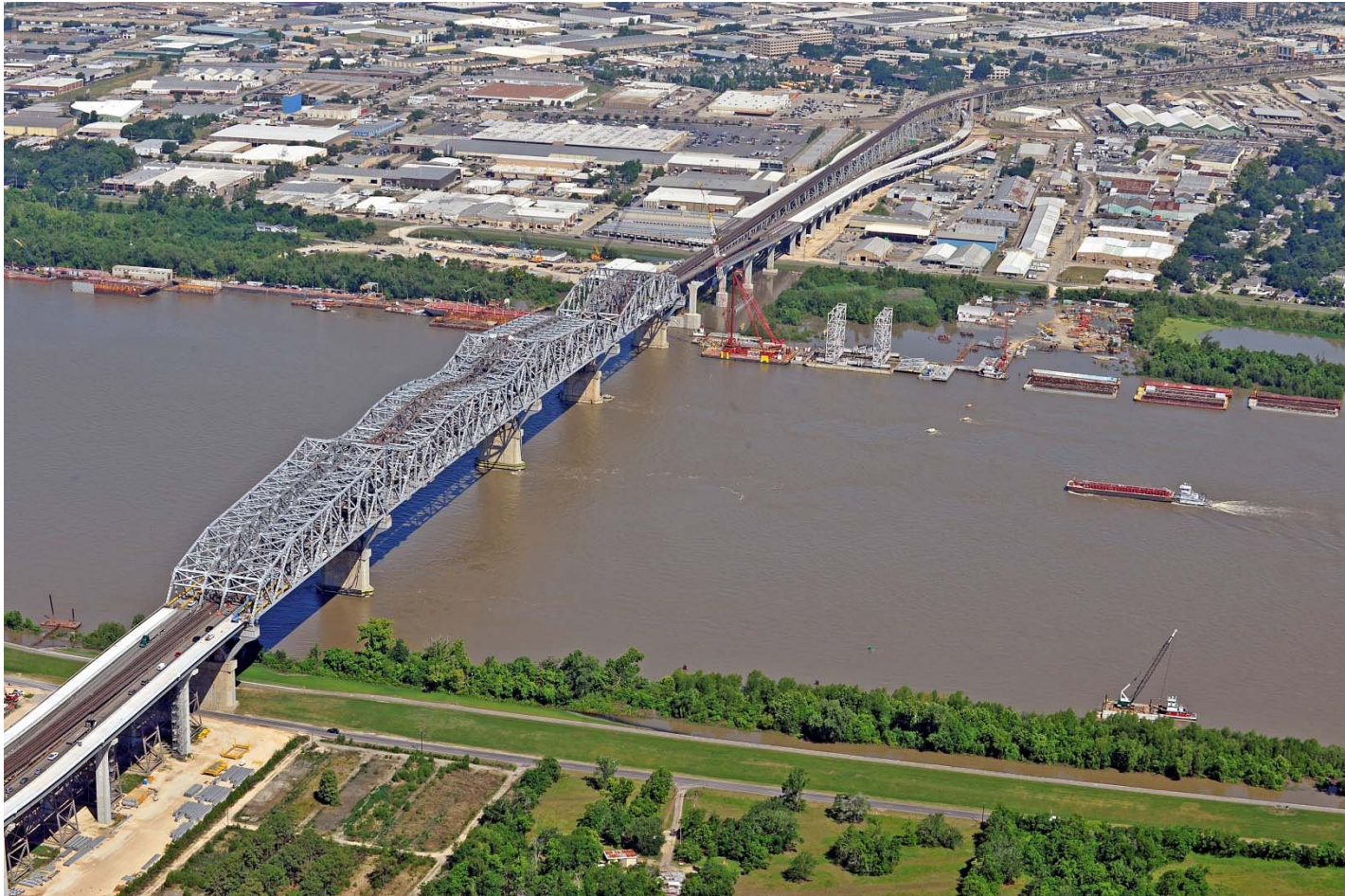




Big Lift No. 3 - East Simple Span

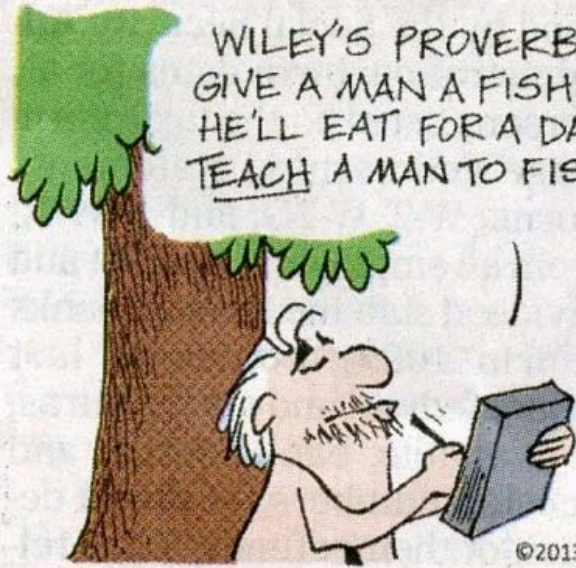






B.C.

WILEY'S PROVERBS —
GIVE A MAN A FISH AND
HE'LL EAT FOR A DAY.
TEACH A MAN TO FISH...



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AND HE'LL DRINK BEER
AND PASS OUT WITH
A POLE IN HIS HAND.



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Questions?

