ALTERATION OF GALVESTON CAUSEWAY AND EJ&E RAILROAD BRIDGES UNDER THE COAST GUARD BRIDGE PROGRAM

Kamal Elnahal, Ph.D., P.E.
Chief, Bridge Program Engineering Division, Coast Guard

Ralph Eppehimer, P.E.
Senior Associate, Modjeski and Masters

AASHTO BRIDGE MEETING
JUNE 2013
Overview

- Coast Guard Program of Bridge Alteration
- Construction Approach
- Challenges and Unusual Construction Techniques
Coast Guard policy is to ensure that bridges crossing the navigable waters do not obstruct the reasonable needs of navigation.
Coast Guard Projects

BNSF BRIDGE OVER UPPER MISSISSIPPI RIVER BURLINGTON, IOWA

CSX BRIDGE OVER MOBILE RIVER, HURRICANE, AL
Coast Guard Projects

SCDOT HIGHWAY BRIDGE OVER STONO RIVER, CHARLESTON, SC

GADOT SIDNEY LANIER BRIDGE OVER BRUNSWICK RIVER, BRUNSWICK, GA
Galveston Bridge over Intracoastal Canal
Galveston, Texas

Consultant: Modjeski and Masters
Contractor: Cianbro/Brasfield & Gorrie Joint Venture
EJ&E Bridge Over Illinois River
Divine, IL

Consultant: Modjeski and Masters
Contractor: James McHugh Construction Company
Foundation Construction
Galveston Bridge
Tower Erection
Galveston Bridge
Machinery House Erection
Galveston Bridge

30' (L) x 28.5' (W) x 18' (H)
Weight = 100,000 lb
Lift Span Assembly @ Span Yard
Galveston Bridge
Float-In
Galveston Bridge

Lift Span Transported to Bulkhead
Float-In Continued
Galveston Bridge

Lift Span Floating towards Bridge

Lift Span Arrived Near Bridge
Float-In Continued
Galveston Bridge

Lift Span inching towards its Final Resting Place
Galveston Bridge
Unusual Aspects of the Project
Galveston Bridge

• New Tower Foundation Integral With Existing Arch Approach Spans
• Temporary Track Stabilization over Remaining Arch Span Sections
• Single Rack and Pinion Operation of Bascule Span
Arch Struts Installation
Galveston Bridge
Arch Struts Installation
Galveston Bridge
Arch Struts Installation
Galveston Bridge
Coring / Driving Through Arch
Galveston Bridge

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Track Stabilization
Galveston Bridge
Track Stabilization
Galveston Bridge
Track Stabilization
Galveston Bridge
Single Pinion & Rack Operations
Galveston Bridge
Single Pinion & Rack Operations
Galveston Bridge
Single Pinion & Rack Operations
Galveston Bridge
EJ&E Railroad Bridge Over Illinois River
Divine, IL
Unusual Aspects of the Project
EJ&E Bridge

- New Towers Straddling Existing Truss Spans
- Replacing an Existing Lift Span with a New Lift Span
- Skid Shoe / Launch Method of Span Change-out
Tower Straddling Truss Span
EJ&E Bridge
Replacing Existing Lift Span
Replacing Existing Lift Span
EJ&E Bridge
Replacing Existing Lift Span
EJ&E Bridge
Lift Span Launch
EJ&E Bridge

MAMMOET

SKIDDING

SKIDSHOE with hydraulic jack

PUSH-PULL UNIT

SKIDTRACK

SKIDSHOE without hydraulic jack

STROKE

SHOE LENGTH

STROKE

HEIGHT

TRACK LENGTH

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Lift Span Launch
EJ&E Bridge

LAUNCH STAGE 1
- LAUNCH BRIDGE 116 FEET TO THE SOUTH SO THAT L2' IS CENTERED ON THE LAUNCH POINT.
Lift Span Launch
EJ&E Bridge
Lift Span Launch
EJ&E Bridge
Questions