ABC UTC
SEPTEMBER 2019 MONTHLY WEBINAR
PRECAST SEGMENTAL BRIDGES
FOR THE I-49 / I-220 INTERCHANGE

PRESENTERS:
PAUL VAUGHNT, P.E.
ASST. BRIDGE DESIGN ADMINISTRATOR
LOUISIANA DOTD

CRAIG FINLEY, P.E.
MANAGING PRINCIPAL
FINLEY ENGINEERING GROUP, INC.

IVAN LIU, P.E.
BRIDGE ENGINEER
FINLEY ENGINEERING GROUP, INC.
PROJECT PARTICIPANTS - DESIGN

BRIDGE AND STRUCTURAL DESIGN
- TRC
- NTB Associates Inc.

ROADWAY AND GEOMETRIC DESIGN
- Finley Engineering Group
- HNTB

GEOTECHNICAL EXPLORATION AND DESIGN
- DOTD
- Ardaman & Associates, Inc.

LIGHTING DESIGN
- TRC

ARCHITECTURAL DESIGN
- Touchstone

SURVEYING
- Coyle Engineering Co. Inc.
PROJECT PARTICIPANTS - CONSTRUCTION

CONSTRUCTION INSPECTION

DOTD
Beast Engineering LLC

PRIME CONTRACTOR

PCL

SUBCONTRACTORS

ATS
ATs DRILLING, INC.
Specialty Trackhoe
HOPE CONTRACTORS OF SHREVEPORT, INC.
F.J. BURNELL, INC.

CONSTRUCTION ENGINEERING (CONTRACTOR)

FIGG

CORVEN ENG
PROJECT LOCATION

Shreveport, LA

Baton Rouge

New Orleans
INTERSTATE 49

ARKANSAS

Seg A - $29.4M (2.0 mi)
Seg B - $43.9M (3.7 mi)
Seg C - $21.5M (2.7 mi)
Seg D - $41.1M (3.7 mi)
Seg E - $40.2M (3.0 mi)
Seg F - $28.6M (3.4 mi)
Seg G - $36.2M (5.0 mi)
Seg H - $12.5M (1.7 mi)
Seg I - $63.4M (5.8 mi)
Seg J - $50.2M (4.3 mi)
Seg K - 205.8M (1.0 mi)

SHREVEPORT, LA

KANSAS CITY, MO

LAFAYETTE, LA

US 71

US 90 (Future I-49)
NORTH SEGMENT K
PHASE 2
RAMP SE (SOUTH TO EAST)
LENGTH: 3300'
WIDTH: 33'
RADIUS: 840'
ONE LANE
RAMP WN (WEST TO NORTH)
LENGTH: 700'
WIDTH: 29'
RADIUS: 550'
ONE LANE
RAMP EN (EAST TO NORTH)
LENGTH: 3070'
WIDTH: VARIES (64' TO 40')
RADIUS: 3500'
TWO LANES
RUSSELL RD
(I-220 WIDENING)
LENGTH: 3300'
WIDTH: 33'
RADIUS: 840'
ONE LANE
I-49
I-220
SECTION K
PHASE 2
FOUNDA TION

• 66” DIAMETER DRILLED SHAFT SUPPORTED FOOTINGS

• 9 OR 12 SHAFTS PER FOOTING
SUBSTRUCTURE

• Single Column
• Straddle
• Cantilever
TRAFFIC CONTROL

- REQUIRED TO MAINTAIN ONE LANE IN EACH DIRECTION
- CROSSOVER EB TO WB LANES AND VICE VERSA
  - FIELD CHANGE TO SUGGESTED SEQUENCE OF CONSTRUCTION
DESIGN ALTERNATIVES
(DESIGN-BID-BUILD PROJECT)

STEEL TRAPEZOIDAL BOXES

• Bidder #3 $154 Million

• Pros: Increase competition / reduce construction cost
• Cons: Additional design time and cost

PRECAST SEGMENTAL CONCRETE BOXES

• Bidder #1 $138 Million
• Bidder #2 $144 Million
• Bidder #4 $159 Million
2019 PROJECT AWARD (SASHTO)

“BEST USE OF TECHNOLOGY AND INNOVATION”

2019 ASBI Bridge Award of Excellence

Dr. Shawn Wilson, DOTD Secretary (center) with Carlos Bracreas, President of AASHTO (left) and Jim Tymon, CEO of AASHTO (right)