

# James Bridge Replacement over the North Fork of the White River



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Branson, MO*

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# Introduction

- **Project Background**
- **Historic Flood of April 29-30, 2017**
- **Design Phase**
- **Construction Phase**
- **Questions**



# Project Background

- **Ozark County Route PP over North Fork of the White River**
  - Existing 5-span bridge, Total Length = 405'
  - Two large truss spans, 120' long each
  - Built in 1958
  - Scheduled for replacement in 2019



# Existing James Bridge

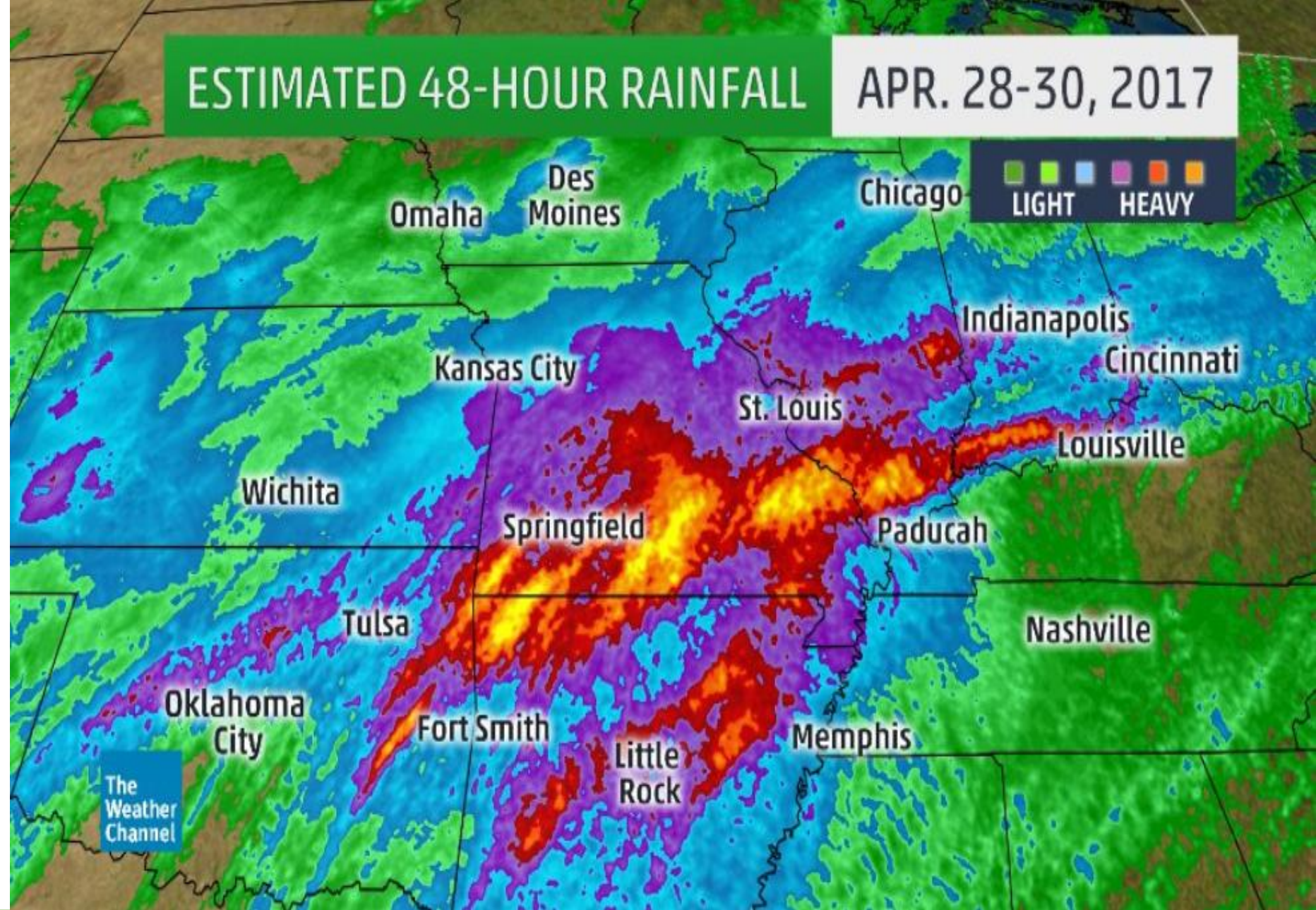


# April 29-30, 2017 Flood

- Rainfall and flood stage records set all across Southern MO
- Over 8 inches of rain in a 24-hr period; up to 12” in some areas
- MoDOT lost 3 bridges during flooding event, 2 over North Fork
- Took days in some cases to determine which bridges they lost



# April 2017 Flood



# Flood Aftermath



N0670 Ozark Rte. PP  
Bridge Out  
View from South

05/02/2017



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# Flood Aftermath

N0670 Ozark Rte. PP  
North Truss Span  
Laying Upside down



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# Flood Aftermath

**N0670 Ozark Rte. PP  
South Truss Span  
Upside down on bank**



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# Flood Aftermath

N0670 Ozark Rte. PP  
View from downstream



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# Flood Aftermath



# Design Phase

- **Consultants notified May 2, 2017 for “urgent” bridge replacements.**
- **Final design plans were due by May 24, 2017.**
- **Preliminary bridge & roadway nearly complete, but not approved.**
- **Weekly conference calls with MoDOT C.O. and SE District.**
- **Met directly and frequently with MoDOT Environmental staff.**



# Design Phase - Bridge

- **Conventional Bridge Design**

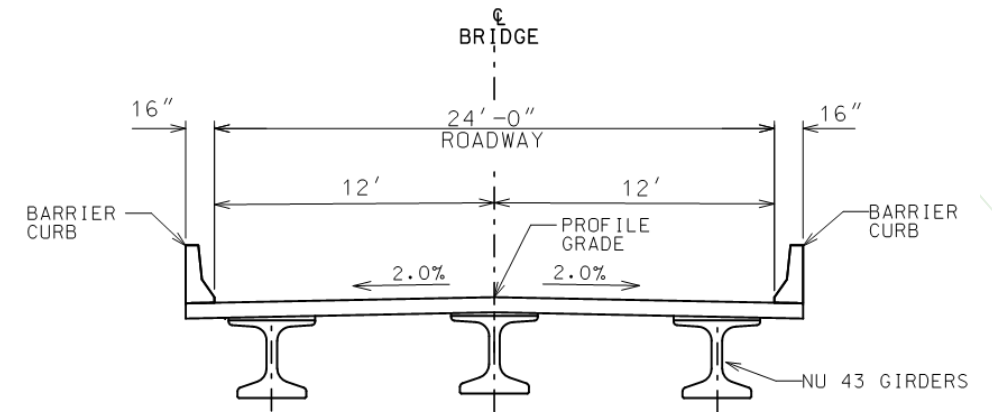
- **4 spans: 102'-110'-110'-102';**

- **Prestressed NU-43 Girders**

- **Drilled Shafts in Rock and 'H' Piling end bents**

- **CIP Deck and Safety Barrier Curb**

- **Bridge Plans completed in 17 days**

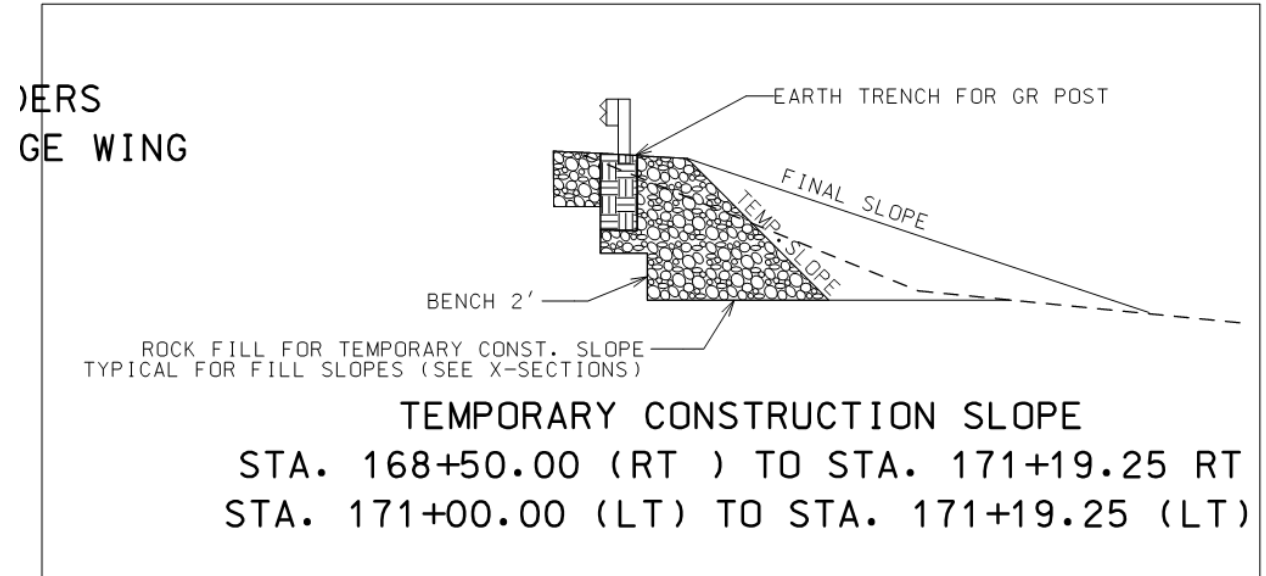


PROPOSED TYPICAL SECTION ON BRIDGE



# Design Challenges

- Raised profile grade 4-foot
- R/W takings on 3 parcels
  - 3 submittals within six days
- Condemnation on north half of project
- Redesign of plans 3 days before bid opening



# Design Challenges

- Environmental Restrictions
  - Removal of Existing Truss Sections.
  - Clearing & Grubbing
  - Sensitive Cultural Resource Area:  
Minimal excavation due to burials and artifacts
  - Special Water Quality Control Measures:  
Stream restrictions



# Construction Phase



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# Pre-Construction Timeline

- **Contract awarded to Clarkson Construction of Kansas City, MO**
- **Notice of Award and Notice to Proceed: July 3, 2017**
- **Preconstruction Conference: June 29, 2017**
- **Land Disturbance Pre-activity meeting July 5, 2017**
- **Open to Traffic Milestone of September 15, 2017**



# Construction Challenges

- **Accelerated Timeline**

- Contract Documentation

- Continuous communication, both internally and with outside agencies.

- Materials suppliers

- **Environmental**

- **Right of Way constraints**



# Construction Progress – 8/29/17











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Nearly  
Complete!  
10/1/17



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# Successful Project!

- **Bridge completed and traffic restored.**
- **Opened to traffic less than 6 months after flood.**
- **Public very pleased with speed and end result of project.**
- **Environmental commitments met.**



# Project Timeline

- Flood – 4/29/17
- Consultant notified – 5/2/17
- Sealed Plans – 5/24/17
- Project Advertised – 6/1/17
- Bids Opened – 6/23/17
- Contract Award & NTP – 7/3/17
- Construction begins – 7/6/17
- Poured first Drilled Shaft – 7/24/17
- Completed Substructure - 8/17/17
- Poured Deck - 9/12/17
- Finished Bridge Removal - 10/10/17
- Open to traffic - 10/11/17



# Project Construction (Time Lapse)



# Questions?

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