

# Improving Project Efficiency with Bridge Programmatic Agreements

Karen L. Daniels

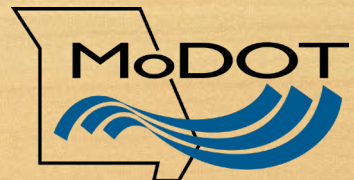
MoDOT

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# MoDOT Historic Bridge PA

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- Bridge Preservation Plan
- Pre-1952 Pony Truss PA
- Bridges Associated with Bull Shoals Lake PA
- Pre-1945 Concrete and Steel Bridge PA



# Advisory Council on Historic Preservation

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- Interstate Exemption, 2005
- Post-1945 Concrete and Steel Bridges Program Comment, 2012
  - Reinforced concrete slab, girder & beam bridges
  - Steel girder and multi-girder bridges
  - Culverts and reinforced concrete boxes

# Consultation

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- Consulting Parties

- ACHP
- FHWA
- SHPO
- MoDOT
- Missouri Preservation
- James Baughn
- National Trust for Historic Preservation

- Consultation Meetings

- Identification of historic bridges
- Appropriate mitigation measures for bridge types and any individual bridges that might be affected by project
- Drafting the PA



# Pre-1952 Pony Truss Bridges

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# Pre-1945 Concrete & Steel Bridges PA

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## Concrete

- Slab
- Beam

## Steel

- Multi-Girder
- Built-up Girder

## Culverts



# MoDOT Pre-1945 Bridge PA

Bridge Type	NRHP or Pre-45 on HBL	Identified for Study	# on SHS	SHS Pre-1945	# in Missouri	MO Pre-1945
Concrete Deck Girder	1	12	366	249	591	393
Concrete Solid Slab		4	337	80	1,934	557
Steel Built-Up Girder		1	2	2	10	5
Steel Girder-Floorbeam		5	47	9	254	119
Steel Plate Girder		1	1,360	7	1,548	34
Steel Through Girder-Floorbeam	2	2	7	7	45	27
Steel WF Girder		5	1,896	339	8,314	1,567
Culvert, Other		4	47	10	609	47

NRHP=National Register of Historic Places, HBL=Historic Bridge List , SHS=State Highway System



# Mitigation

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## MISSOURI DEPARTMENT OF TRANSPORTATION PONY TRUSS MITIGATION: HISTORIC CONTEXT

Missouri



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Prepared for:



Missouri Department of Transportation  
105 W. Capitol Avenue  
Jefferson City, Missouri 65102

Prepared by:

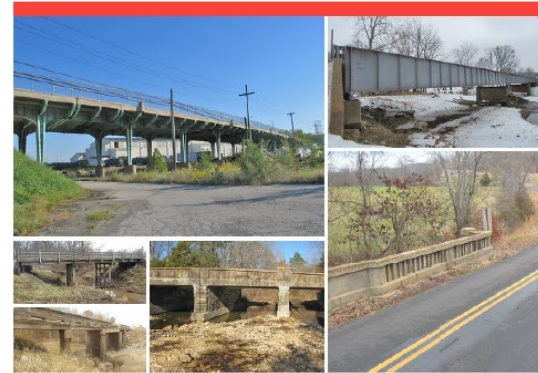


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February 3, 2022

## MISSOURI PRE-1945 CONCRETE AND STEEL BRIDGES: HISTORIC CONTEXT

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November 1, 2023

# Historic Bridge Website Content

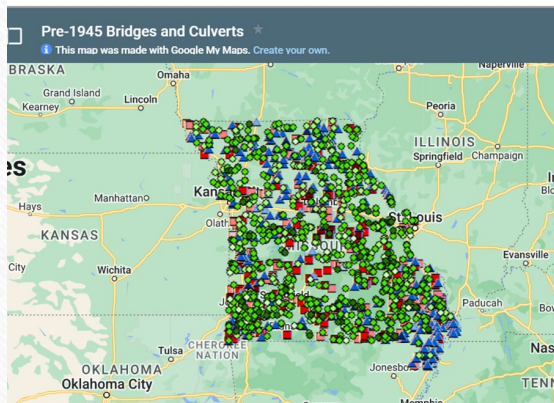


## Missouri Historic Bridge Types

Missouri features a wide variety of bridge types, built using differing standards developed by both state and county engineers as well as private bridge companies.

[ADDITIONAL INFORMATION](#)

### PRE-1945 COMMON BRIDGES AND CULVERTS



- ▶ Pratt Trusses
- ▶ Pratt Truss Subtypes
- ▶ Bowstring Arch-Trusses
- ▶ Kingpost Trusses

#### Bedstead Trusses

- Pin-Connected Pratt Bedstead
- Rigid-Connected Pratt Bedstead
- Rigid-Connected Warren Bedstead
- Rigid-Connected Polygonal Warren Bedstead
- Rigid-Connected Baltimore Bedstead
- Rigid-Connected Lattice Bedstead

The bedstead truss enjoyed widespread popularity in Missouri in the late 19th and early 20th centuries. It is characterized by a single "leg" that functioned as both endpost and support at each corner. Bedsteads were marketed extensively to Missouri's counties in the 19th century by such industry giants and the Wrought Iron Bridge Company and the King Iron Bridge and Manufacturing Company as an inexpensive



Photo: Bedstead truss  
Source: MoDOT

Use the links below to explore the types of bridges built in Missouri documented under Programmatic Agreements.

[Pony Truss \(2022\)](#)

[Pre-1945 Common Bridge Types \(2021\)](#)

<https://www.modot.org/historic-bridges>



# Bridge Specific Mitigation

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- Bridge Documentation (if adverse effect)
  - Archival photographs to NRHP Standards of bridge
  - Collection of original bridge plans for archiving
  - Report documenting history of the bridge and submission of photographs to local historical societies, libraries, SHPO, and the public

## Documentation of the Historic Indian Creek Bridge

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Bridge No. H-792  
McDonald County, Route EE  
January 8, 2024





# Preservation of Select Bridges

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# Benefits

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- Have confidence in NRHP determinations for life of PA
- Section 106 agreements done for historic bridges
- Mitigation measures that are useful for us and for our local partners
- Preservation of representative bridges

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