



Modelling the “Kate Shelley High Bridge” for my G Scale Model RR.

Boone Viaduct

MODELING IN 1/29TH SCALE

Part One: Project Overview

- History of Boone Viaduct
- Viaduct Specifications
- Perceived challenges

# Boone Viaduct “Kate Shelley High Bridge”

1/29 Build

## Contents

Boone Viaduct Scale Project Overview .....	2
Planned Article Series .....	2
Project Motivation and Selection .....	3
Current Situation - New Home.....	3
Phase 1:.....	4
Phase 2:.....	4
Phase 3:.....	4
Phase 4:.....	4
Why Kate Shelley High Bridge?” .....	5
Prototypical specifications.....	6
Detailed Images .....	7
Conclusion.....	8

# Boone Viaduct “Kate Shelley High Bridge”

1/29 Build

## Boone Viaduct Scale Project Overview



"Chicago & North Western viaduct over Des Moines River near Boone, Iowa" ca. 1902

### [Planned Article Series](#)

- Part One: History of Boone Viaduct, specifications, and perceived challenges
- Part Two: Scale footprint, reverse engineering, Drawings
- Part Three: Plan of attack and strategy

# Boone Viaduct “Kate Shelley High Bridge”

1/29 Build

## Project Motivation and Selection

As a child I once viewed this bridge from below. Looking up I was in awe of the majesty of her. That day I said that I wanted to build a model of it for my own model RR. Of course, Mom and Dad laughed and said I am sure you will. Well, the time has come.

I will be creating a series of articles that covers my journey to building this center piece for my Tower Line division of the CNW. This bridge will be the transition from my Pole Barn fiddle yard and storage out to the ground level raised beds.

The Tower Line Branch is fictionally representing traffic from Omaha to Duluth. I will model:

- Sioux City, IA
- Worthington, MN
- Mankato, MN
- Shakopee, MN
- Duluth, MN

These are just the initial locations and as it grows, I will be adding more.

### Current Situation - New Home

We have recently moved to a much better property that will accommodate such a large footprint needed for this bridge and locations. So I am in planning, designing, and will start preparation for this Spring.

As of this writing, I have allocated the following space.

- 22' X 10' Fiddle yard inside the Pole Barn
- 20' X 40' Section next to the Pole Barn
- 50' X 110' for future raised beds and industry

The 92' long Bridge will span across the entire depth of the railroad. It will start off at 4' high and down to 1' due to the slope in the property. Wind will be a very real concern for me.

I am being realistic and have broken this down into four phases.

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1/29 Build

## Phase 1:

Fiddle yard and storage inside Pole barn over the winter. Bent and Deck building over the Winter in defined sections. Assembly and track laying over the Summer as long as money supports. 😊

Phase complete will be when I get an out and back over the Bridge.

## Phase 2:

2025 will be the focus of building raised beds and final track layout planning. This will be ongoing, and progress may start early. First raised bed will have a wye as a focal point. The Dekalb Coal tower will be the center piece of this area. The Sioux City Missouri Train Bridge will be here spanning into the next Raised bed.

## Phase 3:

Sioux City including the Sgt Bluff Coal Plants. The New Bridge will span the same area where the Boone Viaduct is spanning the Des Moine River just at a much smaller width.

Phase complete will be when I get an out and back over the Bridge and utilize the wye to enable local spur traffic.

## Phase 4:

This will be the largest raised bed and will house Mankato, Worthington, Shakopee, and Duluth. The plan is to have each raised bed as local traffic and switching. Almost as standalone brand lines.

Wants that I have not come up with solutions for.

- European houses and landscape for ICE trains.
- Full signaling and automated coal train traffic. (ESU or JRMI)
- German BR50 excursion train

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1/29 Build

## Why Kate Shelley High Bridge?”

It was nicknamed after the Iowa railroad heroine, Catherine Carroll Shelley, better known as Kate Shelley. On July 6, 1881, when she was 15 years old, Kate Shelley risked her life to warn the Chicago and Northwestern Railroad company that the Honey Creek bridge was out. A "pusher" train had fallen through the bridge near her home. Kate heard the accident and knew the train schedules, so Kate attempted to save a passenger train scheduled to travel over the Honey Creek bridge by crossing the Des Moines River Bridge near her Moingona home. It was night, during a raging thunderstorm. Wearing only her nightdress and armed with a lantern, she crossed the bridge on her hands and knees. She made it to the station and saved the train. She then led rescuers back to save the men who had fallen from Honey Creek Bridge. Of the four men who fell, two were saved, one was found dead, and the fourth was never found, presumed to be dead.

[Wiki Link](#)

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1/29 Build

## Prototypical specifications

Designed by George S. Morison for the Chicago and North Western Railway and was constructed from 1899 to 1901.

- It stands 185 feet (56 m) above the Des Moines River.
- Total length is 2,685 feet (818 m) long.
- Deck is dual rail and 35 feet wide with walkway.

### Kate Shelly Bridge Dimensions

	Scale Inches		Scale Feet			
	Width	Length	Width	Length	Width	Length
<b>River Span</b>						
Span	60'	300'	24"	10'	2'	8'
5 Cube Sections	60'	60'	24"	24"	2'	2'
<b>Towers</b>						
18 Towers 36 Bents						
Paired apart	45'		18"		1.5'	
Legs Size	20"		1/2"		.042'	
<b>Top</b>						
1:6 batter	20'		8"		.66'	
			28"		2.3	
<b>Deck</b>						
Deck	35'		14"		1.2'	
Between Bents	75'		30"		2.5'	
<b>Total Length</b>	<b>2685'</b>			<b>1110"</b>	<b>1.2'</b>	<b>92.5'</b>

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1/29 Build

## Detailed Images



River Span across the Des Moines River including the unique Bents on either side.



Tower Bents detail



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## Conclusion

- The next article will be focusing on:
- Translating prototypical size to 1/29<sup>th</sup>
- Breaking up the bridge into modular pieces to ease building and repair.
- Standardized methods and template creation
- Survey and layout to maintain slope.