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

Boone Viaduct

MODELING IN 1/29TH SCALE

Part Two: Tentative Design

- Deck Specs
- Tower Specs
- River Span Specs

Boone Viaduct “Kate Shelley High Bridge”

1/29 **Build Part 2** – Scale footprint, reverse engineering, Drawings

Contents

Boone Viaduct Scale Project

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

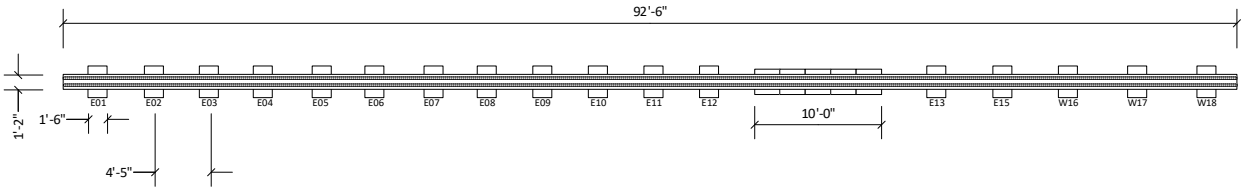
Prototypical specifications

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

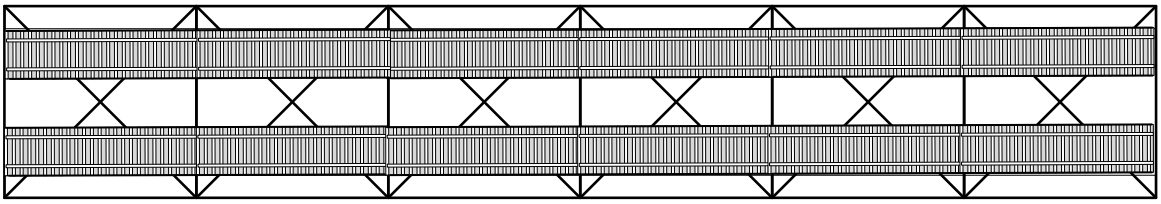
- It stands 185 feet (56 m) above the Des Moines River.
- Total length is 2,685 feet (818 m) long.
- Deck is dual rail and 35 feet wide with walkway.

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

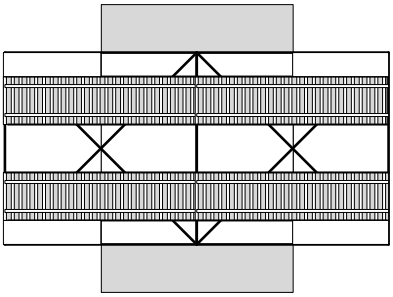
Bridge Footprint



Top View River Span



The Deck



The total length of the dual track deck will be 92’ long and will start off approximately 4’ off the ground as it will be the exit from the pole barn indoor yard. At either end will be a 20’ radius that will complete a phase 1 dog bone.

The width of the deck will be 14” wide. The deck trusses will be 3” thick. Track spacing will be 9” on center to provide a 7” separation between each track.

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Tower Designs

Total of 18 towers that are 2 bents double up. This means I have to create 36 bents.

The plan is to create a template for a 4’ bent and then cut down to match the slope of my backyard terrain.

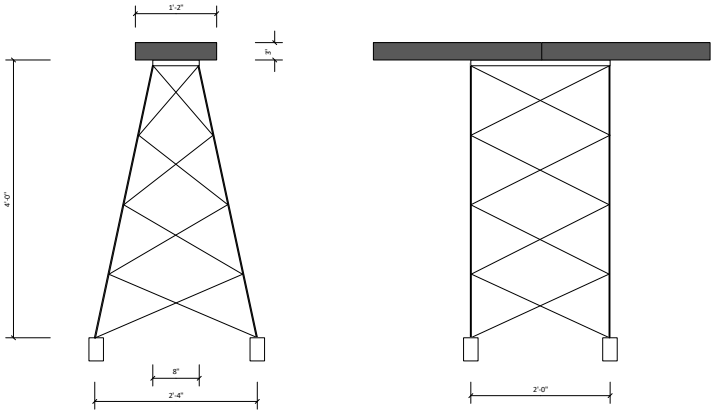
Parallel Bents

The Parallel bents will be the default. They will measure 24” across from leg to leg.

The vertical height of the cross supports will be 12” spacing.

Perpendicular Bents

These will be Parallel bents tilted to the right slope and cross supports will be cut to fit.



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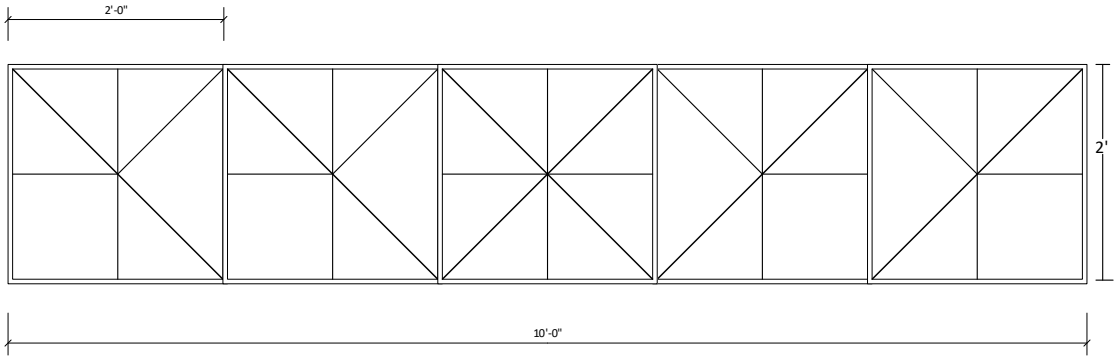
River Span Design

“Duel Bent View”



“Des Moines River Span”

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

Conclusion

I am currently creating all of these simple drawings into cad files in Sketchup. My plan is to CNC each of the 2’ cubes for the river span and most of the deck infrastructure. There is currently a 6-week delay on my CNC so I will see when it finally gets here.