Apr 26th, 2:00 PM

2019 Student Steel Bridge Team

Kourtney Arena
Rowan University

Andrew Biglin
Rowan University

Brett Palmer
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Nathaniel Maute
Rowan University

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Student Name
Kourtney Arena, Andrew Biglin, Brett Palmer, Nathaniel Maute, Kenneth Reiser, Jacob Dicks, and Paul Kowaleski

2019 Student Steel Bridge Team

Team: Kurtis Schwoerer, Andrew Biglin, Brett Palmer, Kevin Tress, Jacob Dicks, Jared DiZenzo, Paul Kowaleski, Jarod Michael, Kenny Reiser, Kourtney Arena &, Nathaniel Maute

Objectives

Design and build a bridge to compete in the AISC 2019 Student Steel Bridge Competition. Considerations are to be made for minimal weight, minimal deflections, most efficient constructability.

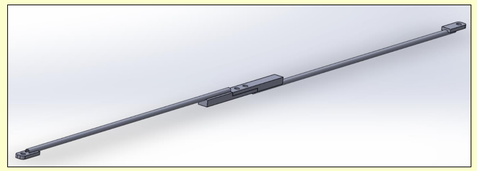
Design

The final design was selected for having the most favorable balance between weight, deflections, and assembly time. Learning from the mistakes of the last year's team optimizations were made to the connections and lateral members. To prevent lateral deflection and lateral torsional buckling, the lateral members are placed at the top and bottom of the bridge rather than the middle. The female connections are designed to be thick to prevent deformation. In addition to this, an offset footing was included to meet design requirements. Renderings of the decking supports, lateral supports, connections, and dimensions of the bridge are provided.

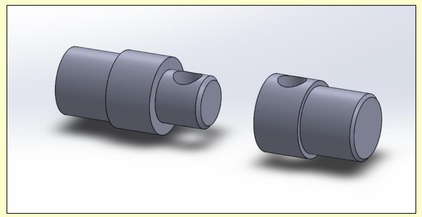
Acknowledgments

Special thanks to Dr. Amirhossein Iranmanesh, Dr. Douglas Cleary, and Chuck Linderman

Member Models



Lateral Support



Male and Female Connections

Top/Bottom Decking Support

Theoretical Results

Maximum Vertical Deflection: 1.452”

Maximum Lateral Deflection: 0.687”

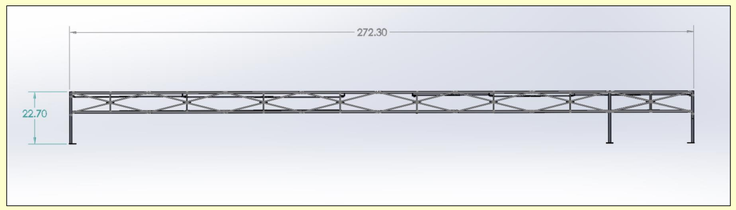
Weight:
180 lbs

Cost:
$660

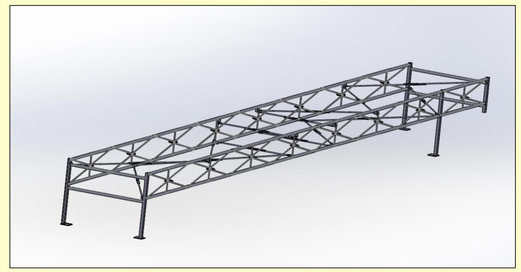
Competition

Regionals take place April 27. The team will be competing in the Metropolitan Region Competition held at the New Jersey Institute of Technology.

Bridge Models



Bridge Dimensions



3D Bridge