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Design of a Steel Bridge to Compete in the 2014 ASCE Regional Conference

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2014 American Society of Civil Engineering Student Steel Bridge Competition

Problem Statement:

Design a 1/10 scale model of a steel bridge to hold 2500 pounds at 1 of 6 predetermined locations.

Required Research:

- Previous years designs
- Previous connections that worked well
- Types of high strength steel available for use
- Resources available in the area to assist in fabrication

Methodology:

Research for this project included contacting area professionals, going over photos of previous years bridges and how they performed, and investigating how this years rules applied to previous years ideas.

Previous Designs:

Good: Sleek & Fast

Bad: Heavy & Slow

Types of Steel:

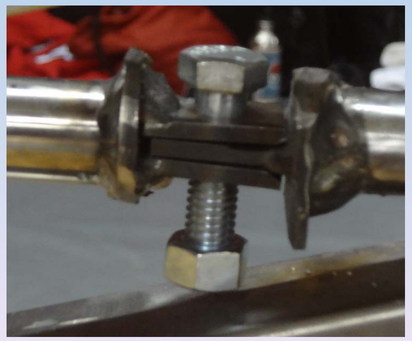
Any type of magnetic steel is allowed for the bridge construction. The best available material is a high carbon steel that is used for hydraulic cylinders.

Resources Available:

We were able to contact CNC professionals here on campus who can do a variety of advanced cuts. Professional fabricators were able to give advice on feasibility of designs.

Previous Connections:

Well Built & Creative



Well Built & Fast

Results:

Based on the research described we were able to design a bridge, using computer structural analysis programs, that used high strength steel, used professional resources for the first time, and created a one of kind bridge

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