Background

IPRO 326 has been working during the fall semester to produce a final steel bridge design for competition while simultaneously using management skills to begin to market the project to the IIT and business communities. One of the goals of this IPRO is to win this year's ASCE/AISC Regional Student Steel Bridge Competition, and to place in the top ten in the National Student Steel Bridge Competition.

The goal of the AISC / ASCE Student Steel Bridge Competition (SSBC) is to enhance the education of civil engineering students with a real-world application assignment. This includes the conception, design, fabrication, erection, and testing of a scaled steel bridge. Thec ompetition increases awareness of real-world issues and problems. The design process requires well-organized team work and project management in order to make progress and succeed.

The AISC / ASCE Student Steel Bridge Competition is cosponsored by the ASCE (American Society of Civil Engineers) and the AISC (American Institute of Steel Construction). The students are required to adhere to strict rules outlined on the competition's web site, **www.2009steelbridge-.com/**. The rules are based on real life build scenarios.

IIT has participated in this competition for many years with our greatest success coming in the 2004 competition where the team went to nationals and placed in several events.

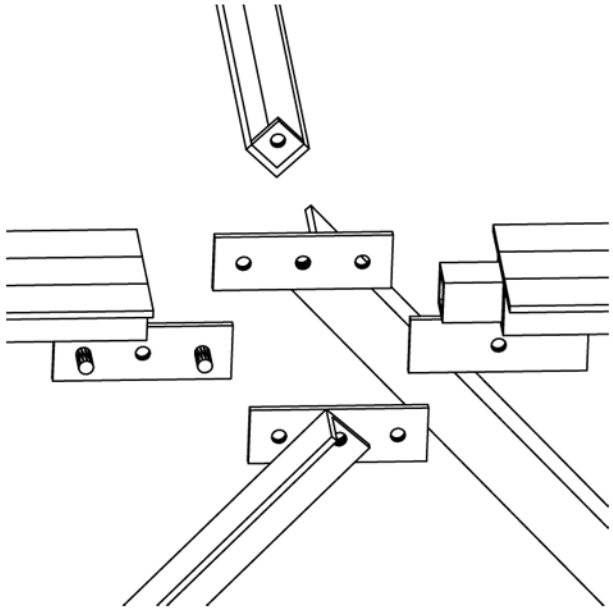
In order for this project to be a success the students of the ASCE chapter at IIT will need to raise $12,000 to offset the costs of construction of the steel bridge, transportation, conference registration, and lodging. If you, or your company, is interested in donating to help fund the construction of IIT's steel bridge entry into the 2009 ASCE Steel Bridge Competition then you can send a check made out to "ASCE-IIT" and send it to:

Civil, Architectural & Environmental Engineering,
3201 S. Dearborn, AM Suite 228
Chicago, IL 60616

For any questions feel free to contact us at **asce@iit.edu**, or to learn more about the conference, visit **http://nd.edu/~asce/glc2009.html**. All donations are greatly appreciated and the team's success at this year's competition will be a direct result of the support received, and we hope you will join this effort!

ILLINOIS INSTITUTE OF TECHNOLOGY

IPRO 326



Steel Bridge Design

Marcus Choy
Trevor Dickson
Keenan Gottschall
Heather Grace
Josh Gross
Mike Hartwig
Tracy Korbus
Michael Krueger
Michael McCarthy
Jelena Milkic
Lucian Muresan
Kevin O'Leary
Peter Olney
Krysztof Olszowy
Justin Van Eaton
Randall Weyhe

Advisor: Chad Fischer

After experimenting with numerous design solutions the following design was developed due to its overall balance of strength, low weight, and ease of construction.

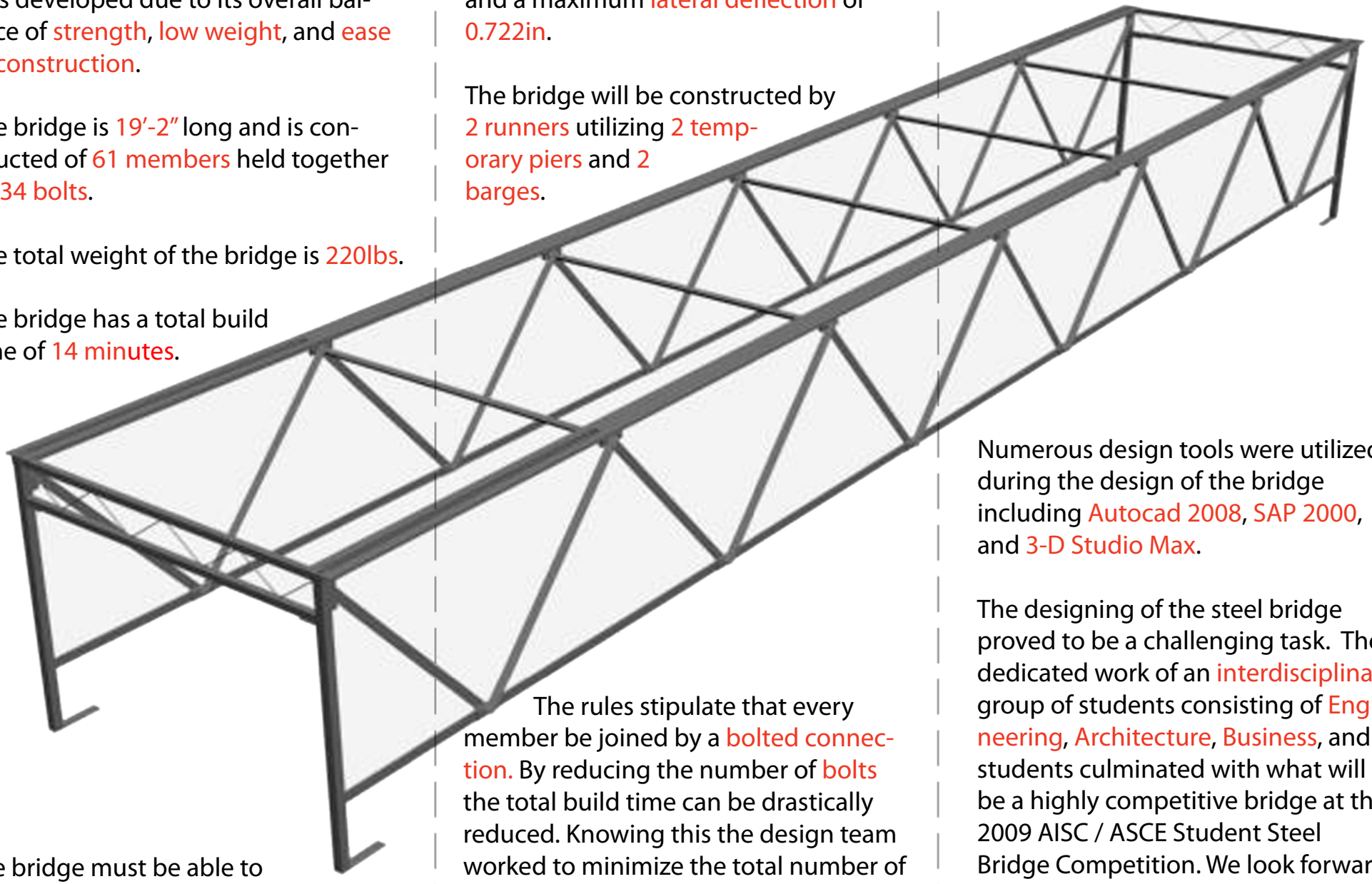
The bridge is 19'-2" long and is constructed of 61 members held together by 34 bolts.

The total weight of the bridge is 220lbs.

The bridge has a total build time of 14 minutes.

When loaded the bridge will have a maximum vertical deflection of 0.161in and a maximum lateral deflection of 0.722in.

The bridge will be constructed by 2 runners utilizing 2 temporary piers and 2 barges.



Numerous design tools were utilized during the design of the bridge including Autocad 2008, SAP 2000, and 3-D Studio Max.

The designing of the steel bridge proved to be a challenging task. The dedicated work of an interdisciplinary group of students consisting of Engineering, Architecture, Business, and IT students culminated with what will be a highly competitive bridge at the 2009 AISC / ASCE Student Steel Bridge Competition. We look forward to the realization of this project in the Spring 2009 Steel Bridge IPRO.

The bridge must be able to withstand a max vertical load of 2500lbs and a max lateral load of 50lbs.

The rules stipulate that every member be joined by a bolted connection. By reducing the number of bolts the total build time can be drastically reduced. Knowing this the design team worked to minimize the total number of bolts allowing a single bolt to join as many as 5 members.