

September 28<sup>th</sup>, 2007

Swarthmore College  
Dept. of Engineering  
500 College Ave  
Swarthmore, PA 19081

Attn. Swarthmore College Engineering Dept. Faculty:

To complete our E90 Senior Design Thesis, we plan on designing and building a steel bridge to the specifications put forth by ASCE and AISC for their annual Steel Bridge Competition. The bridge must be designed to span a fictitious river and floodway 18 feet 6 inches wide. Additionally, the bridge must stand no taller than 6 feet with its deck at a height between 2 feet 3 inches and 2 feet 6 inches. The bridge must also have a minimum vehicle-passageway width of 3 feet and a total bridge width of no more than 4 feet. The bridge must be constructed entirely of steel and built so that it can be efficiently assembled "on site."

We plan to obtain our building materials through donations by a sponsoring steel fabricator in the greater Philadelphia area. We estimate our bridge will require no more than 250 linear feet of steel members and approximately 4 sq-ft of 1/8 inch thick steel plate for gussets. Additional minor costs will include paint, assembly hardware (i.e. bolts, pins, nuts, etc...) and welding supplies.

We have already begun experimenting with different design concepts using ANSYS in an effort to determine generally what the final bridge design might be. We expect to complete the final design for the bridge by the end of the fall semester 2007. We have already discussed our topic with Professor Siddiqui in moderate detail and are confident he will be our advisor.

Sincerely,

Samuel Garcia '08, and Christopher Caruso '08