Bridge Design

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This project aims to compare four types of truss bridges currently in use and seeks to determine which is the most stable, feasible, and cost-effective design. The bridge must meet certain stated application criteria. The bridge is for a two-lane, traffic-bearing highway. The bridge will span a valley whose bottom is at least 20 meters below the road deck. The highest point of the road deck may not rise more than 8.5 meters above the top of the supporting banks. The bridge substructure may consist of standard abutments or arch abutments. Anchoring cables may be used if needed . The bridge deck will be 23 cm thick and will consist of medium-strength concrete. The supporting trusses will be made either of carbon steel, high strength low-alloy steel, or quenched and tempered steel. Each truss may be solid or hollow. The bridge must carry the weight of a standard H25 truck, a 5 cm thickness of asphalt, the reinforced, concrete deck, the weight of the steel floor, the weight of the steel floor beam, and any additional structural supports as needed. The bridge will comply with all structural safety codes as provided by the 1994 LRFD AASHTO bridge design.

Awards Won: