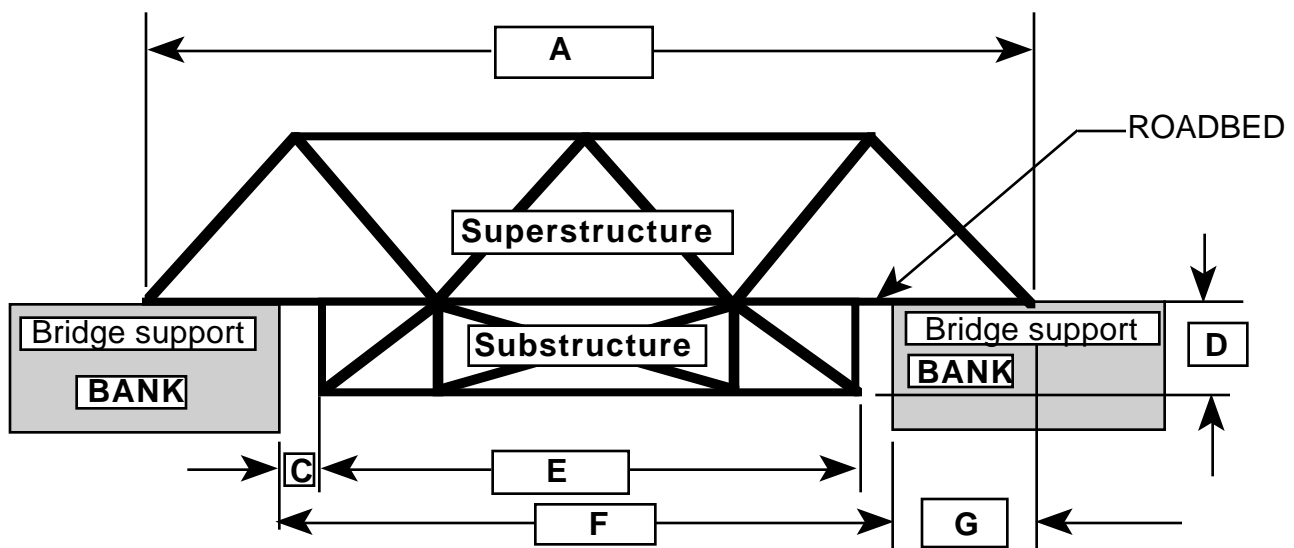
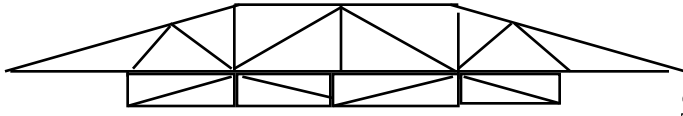


STRUCTURAL ENGINEERING

FOR THE SPRING CONFERENCE WE WILL FOLLOW THE FOLLOWING STRUCTURAL ENGINEERING GUIDELINES:

1. We will follow IV Specific Regulations - D - #2 Bridge with structure above and/or below the roadbed.
 - A. The length of the superstructure will be a **max. of 12"** and a **min. of 10"**.
 - B. You do not have to have a substructure.
 - C. The substructure must maintain **1/2"** clearance from the roadbed test block and the substructure.
 - D. The substructure must be a min. of **1"** and a max. of **3"** below the roadbed.
 - E. The length of the substructure must not exceed **7"**.
 - F. The Span will be **8"**.
 - G. The superstructure's roadbed must be horizontal and extend **1"** over the bank (Bridge support) but no more than **2"**. The roadbed cannot be more than 1/4" in Horizontal height.
 - H. The width of the bridge must be **3" inside** and **3-1/4" outside** measurement.
2. Be sure to leave the **1" square** opening in the middle of the roadbed and substructure for the bolt that will be used in the bridge testing.
3. Be sure to use only **1/8" X 1/8" Balsa wood only**.
4. Be sure to use only **POLYVINYL RESIN EMULSION GLUE** better known as white glue or carpenter's yellow glue. You may color the glue to any color you desire by using food color.
5. You will be allowed to use index card gussets as described in the curricular guide.
6. We will follow the rules set forth in the 1999-2000 Curricular resources guide with this major exception. As in the past the student must build their bridges at their school and bring it to the Spring Conference. **(TIME RESTRAINTS REQUIRE US TO DO THIS)**. Students will enter this event as individuals not as a group. We will also as in the past try not to disqualify any bridge for minor infractions of the rules but before you decide to change some specification check the penalties. Also be sure to include with your bridge a drawing of your bridge.





STRUCTURAL ENGINEERING

Bridge Testing Penalties

We will try not to disqualify any student's bridge. These penalties are designed for minor unintentional violations of the rules. If a student's bridge does not meet all desired specification then we will assess penalties as follows:

1. For every 1/8" that the bridge is off in width a penalty of one pound will be subtracted from the total failure weight.
2. For every 1/8" that the bridge is too long (Overall length) a penalty of one pound will be subtracted from the failure weight.
3. For every 1/8" that the substructure is too long a penalty of one pound will be subtracted from the failure weight.
4. If the bridge's Substructure is too tall then the bridge will be assess a penalty of one pound for every 1/8" will be subtracted from the failure weight.
5. If the roadbed is more than 1/4" in horizontal height than a penalty of 30% for every 1/8" will be assess.
6. If the student used more than double laminated beams then he will be assess a penalty of 20% of the the failure weight for each infraction.
7. If the student used the wrong type of wood a penalty of 30% of the failure weight will be assess.
8. If the student uses the wrong type of glue then he will be assess a penalty of 30% of his failure weight.
9. If anything that is not allowed done to the bridge (i.e. pins inserted) then a penalty of 30% of the failure weight for each infraction will be assess.
10. If the students uses the wrong type of material for gussets than a penalty of 30% of the failure weight will be assess for each infraction.
11. If the size of the gussets are too large that a penalty of 30% of the failure weight will be assess for each infraction.
12. If the student repeatedly violates the rules or in the opinion of the judge intentionally violates the rules then that bridge will be disqualified.
13. Any obstruction to the bridge testing equipment to perform its task than that bridge will be disqualified.
14. Any rules violation that is not covered above will be assess a penalty decided by the judges testing the bridges.

The intent of the penalties is to allow the students to compete on a level field. Although a student may have unintentionally violated a rule or made a minor error in measurement we would not like to disqualified that student. These rules are placed in the intent of fair to all involved.