



University of Evansville Student Chapter

1800 Lincoln Avenue
Evansville, Indiana 47722

Contest Date and Location:

Saturday, February 23, 2019
Evansville Museum
441 SE Riverside Drive
Evansville, IN 47713

Age Divisions and Times:

Elementary:

Kindergarten - 5th grade 11:00 - 12:30PM

Middle School:

6th grade – 8th grade 12:30 – 1:30 PM

High School:

9th grade – 12th grade 1:30 - 2:15 PM

Contact Information:

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Balsawood Bridge Competition
Co-Project Manager
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Rules of Construction:

1. Bridges must provide for a 2 inch by 2 inch by 1/2-inch (2" x 2" x 1/2") plywood block (Figure 1) to be placed in the loading platform area shown in Figure 2. Note that the loading area is ± 0.5 inches vertically from the elevation of the abutments and is at the center of the span. This plywood block will serve to transfer the testing load to the rest of the bridge.

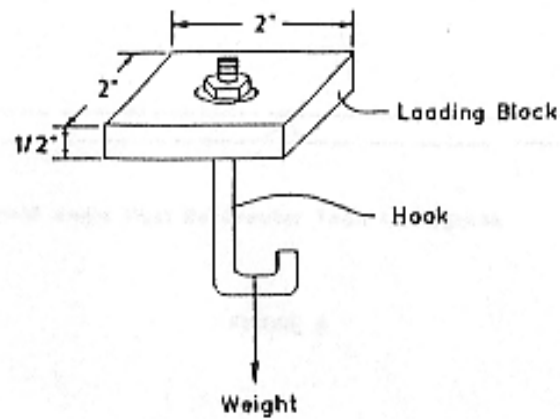
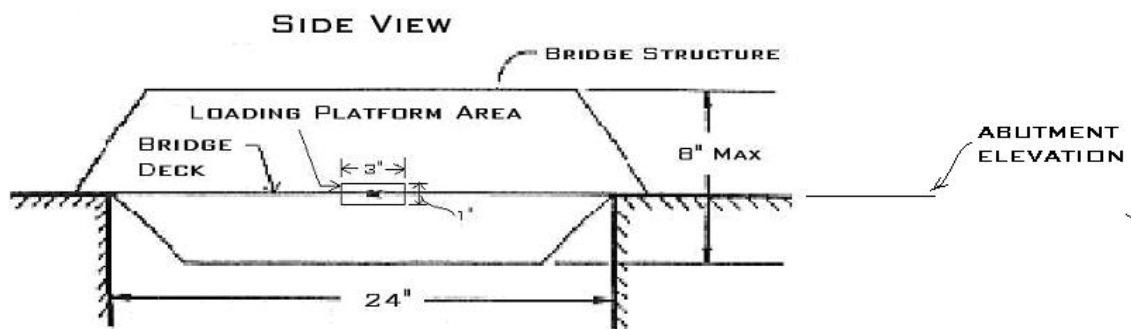


Figure 1

Figure 2



2. All wood to be used in the construction of the bridges has been provided by UE's ASCE chapter. This material consists of 17 sticks of 1/8-inch square balsa wood stock (Approximately 51 linear feet).
3. Participants must provide their own glue (wood glue is recommended). Mechanical fasteners, super glue, or other polymer-based bonding agent will not be permitted.
4. Glue may be placed **only** on the face of the joint being glued (See Figure 3). The bridge may **not** be painted, coated, or treated in any way. Glue may **not** be spread more than 1/8 inch beyond the glued joint.

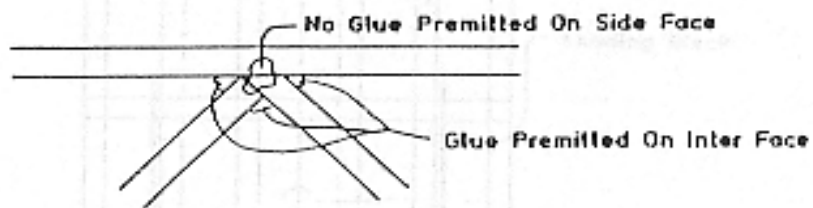


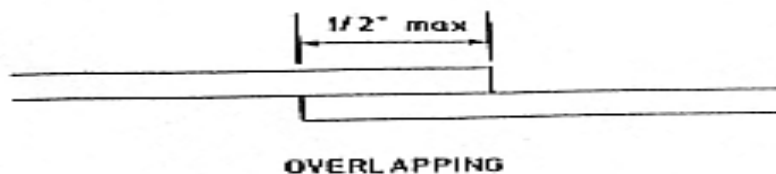
Figure 3

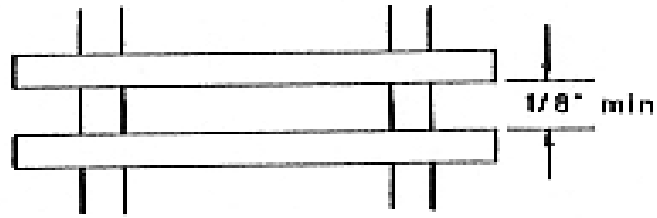
5. Members of the bridge may **not** be laminated together (See Figure 4). The allowable overlapping of one member to another is 1/2 inch (See Figure 5). Parallel members will be glued **only** at their ends or where they come into contact with cross members. The minimum allowable spacing between parallel members is 1/8 inch (Figure 6).

Figure 4



Figure 5





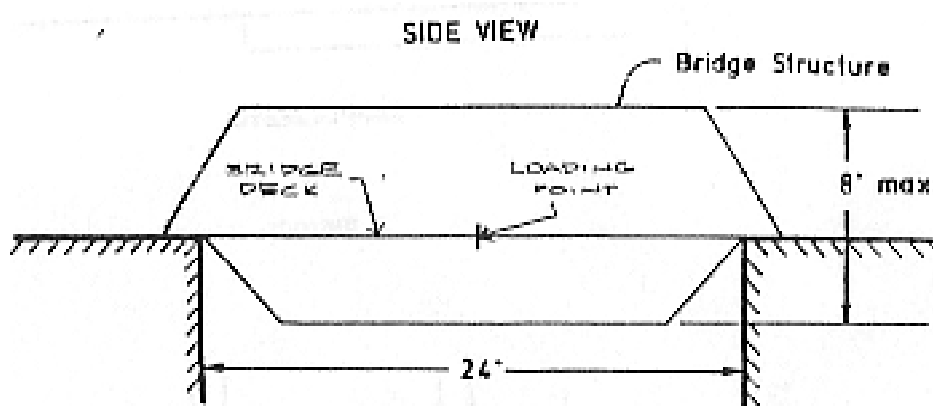
PARALLEL SPACING

Figure 6

Bridge Dimensions:

1. Bridges may have a total height of no more than 8 inches (Figure 7).

Figure 7



2. Bridges may be **no more** than 30 inches and **no less** than 26 inches long (Figure 8).
3. Bridges may have a maximum width of **no more** than 6 inches (Figure 8).

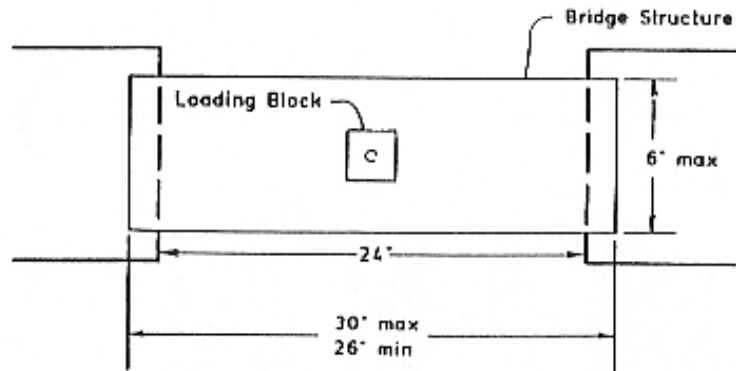


Figure 8

4. Bridges will not be allowed to butt up against the supports (Figure 9).

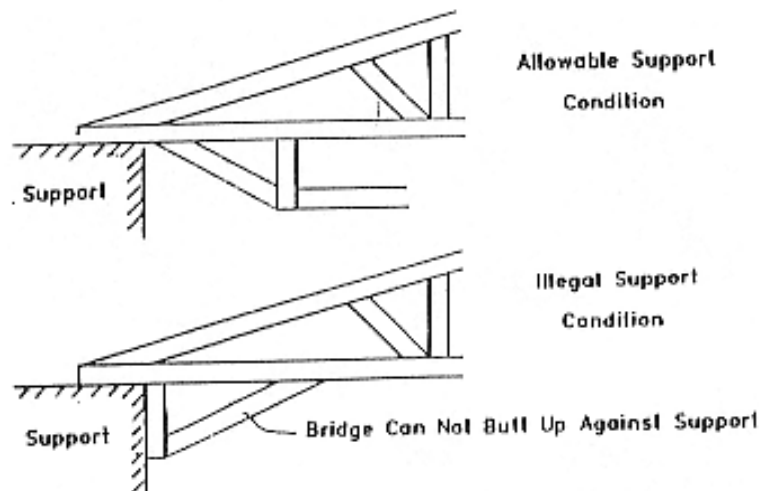


Figure 9

Judging:

1. The UE ASCE Chapter reserves the right to disqualify any bridge that does not meet the criteria outlined in the “Rules of Construction” and “Bridge Dimensions” sections of this packet.
2. Bridges will be scored and ranked based on an efficiency factor calculated by dividing the load sustained at failure by the weight of the bridge (Load Sustained/Weight).
3. The winner of each age division will be the bridge that has the highest efficiency value.
4. A decision, measurement, score, condition of competition, or interpretation of rules may be appealed only by a bridge team member or faculty advisor. Judges will refuse to hear protests regarding a bridge other than the team member’s.

Awards:

1. University of Evansville “Add-On” Scholarships(*) will be offered in the amount of \$1000 for the following participants:
 - Highest ranked, high-school, junior-year, individual competitor.
 - Highest ranked, high-school, junior-year, member(s) of a competition team.(*) Scholarships are contingent on application and acceptance to the University of Evansville and will be in addition to any merit-based scholarships,
2. Each student that participates in the building of a bridge entered in the competition will receive a T-shirt and certificate.
3. Prizes will be awarded to the top finishing bridge in each division.

*Photos of the construction process can be found on our website:

<http://evansville.edu/asce/balsaWoodContest.cfm>

A waiver form (found on the website) **MUST be filled out and brought to the competition for each student participating in the competition. If you have multiple children participating, you may list multiple names on one form.

Questions:

If you have any questions or concerns regarding the bridge rules or contest, please contact

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