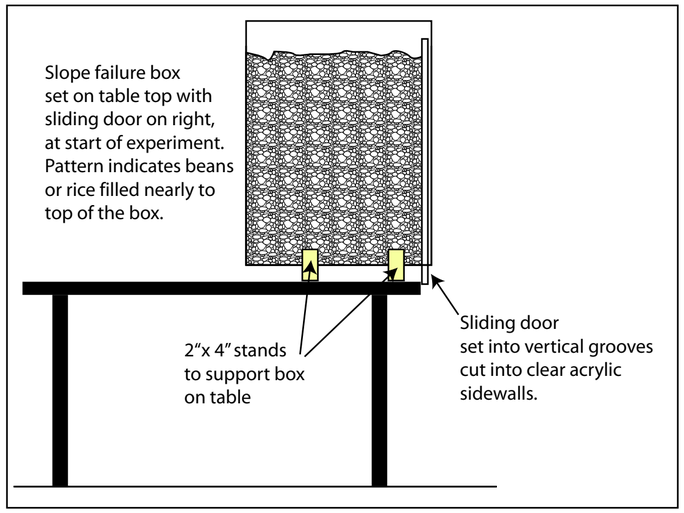
Schematic (roughly scaled) plans for the slope failure box (T. Hickson, University of St. Thomas)

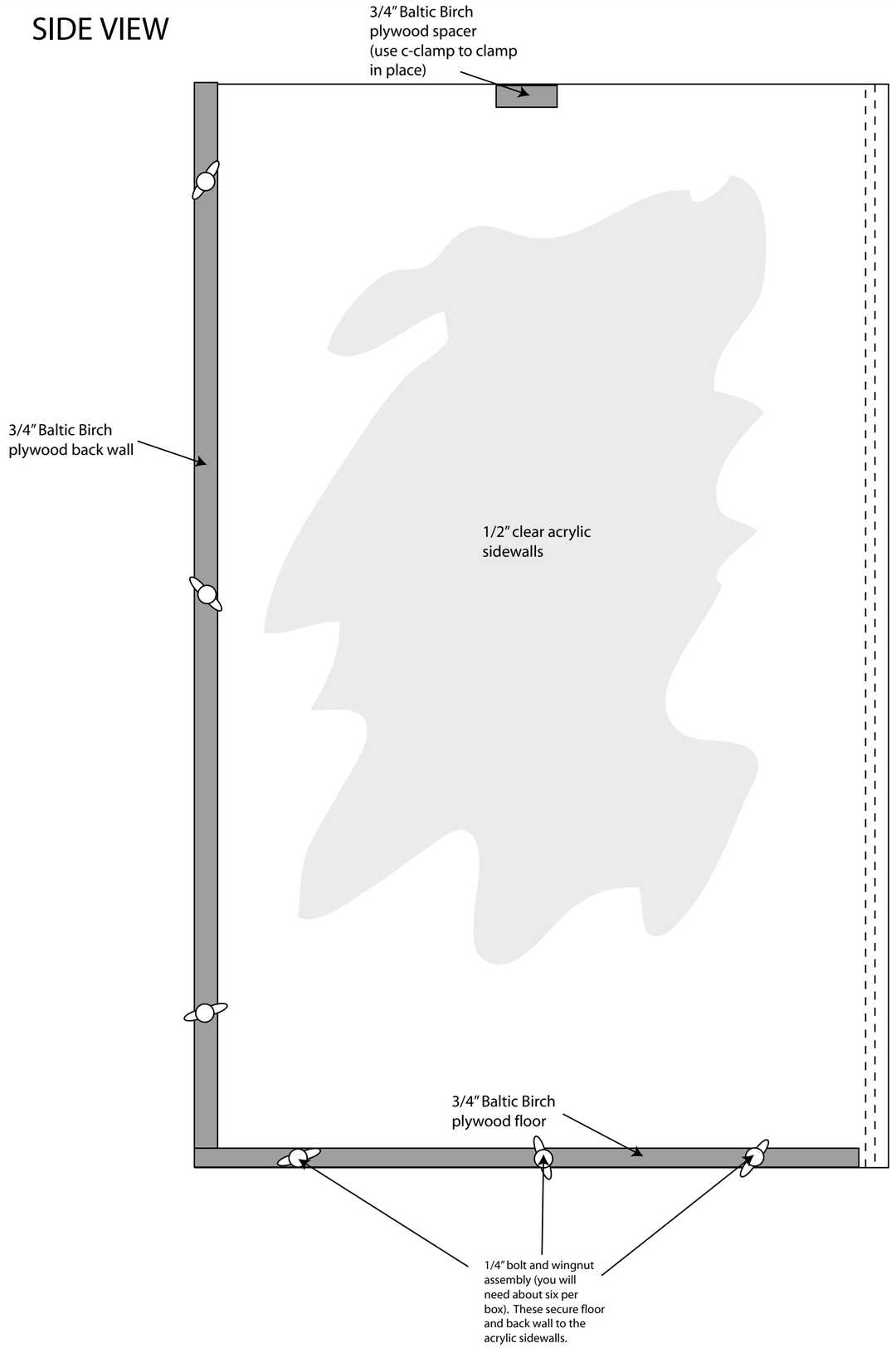


Notes

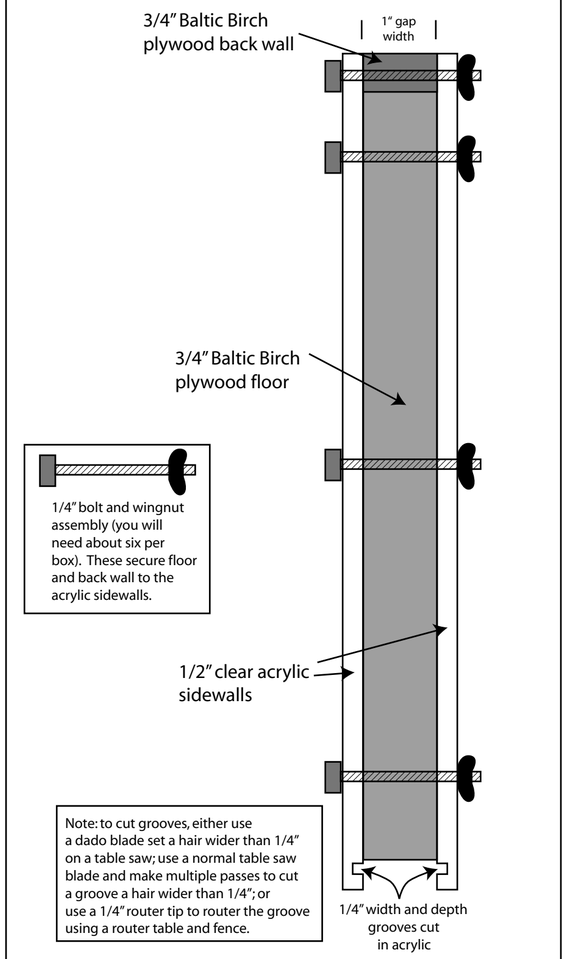
1. Using 1/2" acrylic sidewalls allows you to cut a deeper groove for the sliding door. This prevents bow-out of the door and accidental popping out of the door, which can be catastrophic.
2. I would recommend trying to find some kind of aluminum channel to fit (glue) into the grooves that you cut. This would make a smoother channel and the door would slide easier (particularly if you lubricate it).
3. To control the friction on the door so it doesn't slide down when you let go of it, place a c-clamp at the lower part of the front of the box, then tighten it on either side of the sliding door to get it to just the right frictional resistance.
4. Use 1/4" width acrylic or similar to make your sliding door. It can be slightly longer than the box is tall. REMEMBER: your door needs to be wider than the gap so that it fits into the grooves and slides easily in them. I would start with a width of about 1.5" and then sand off one side to make it fit the groove spacing of your box. Tape a 0.5 cm grid on the door so students can measure increments.
5. To make grooved cuts in the 2x4 stands (that you will use to support the box on the table), just use a table- or radial-arm saw to cut parallel grooves about 2" deep in the 4" dimension of the wood. Just keep moving the block over a bit and cut away wood until you've cut a deep groove in the wood. Make the groove just slightly wider than the box. If you cut it too wide, your box will wobble. You can fix this by placing shims or wedges in the 2x4 grooves you cut.

You can make the box pretty much any dimensions you want. The exact specs are in the Densmore et al. (1997) article. My box is about 2' tall by 1.5' wide, with a 1" gap. You can also change the width of the box by cutting wider bases, back walls, and doors.

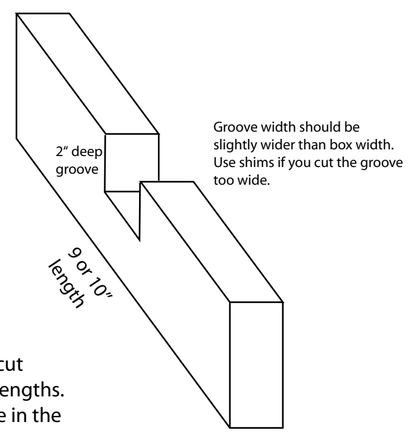
SIDE VIEW



TOP VIEW



2 x 4 stand (make two of these)



Use 2"X 4" wood cut
into 9 or 10 inch lengths.
Center the groove in the
wood.