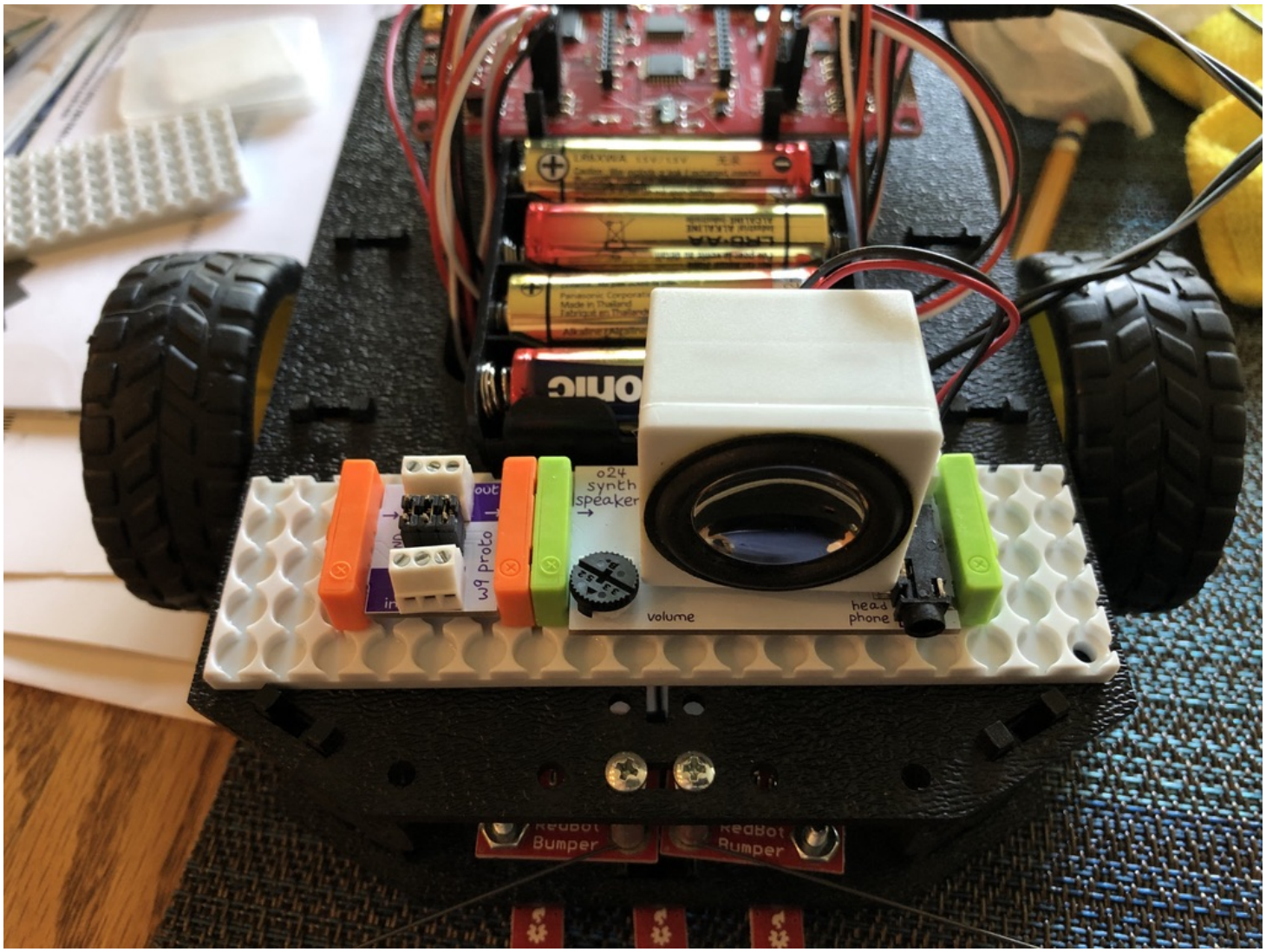
A copy of a post I made to our TAs last September to show how I'd cut a littleBits mounting board to create a mountable base for the "RedBot Amps" (constructing the RedBot Amps is what used up our supply of Proto Bits):

RedBot Amps mounting boards -- some ideas!

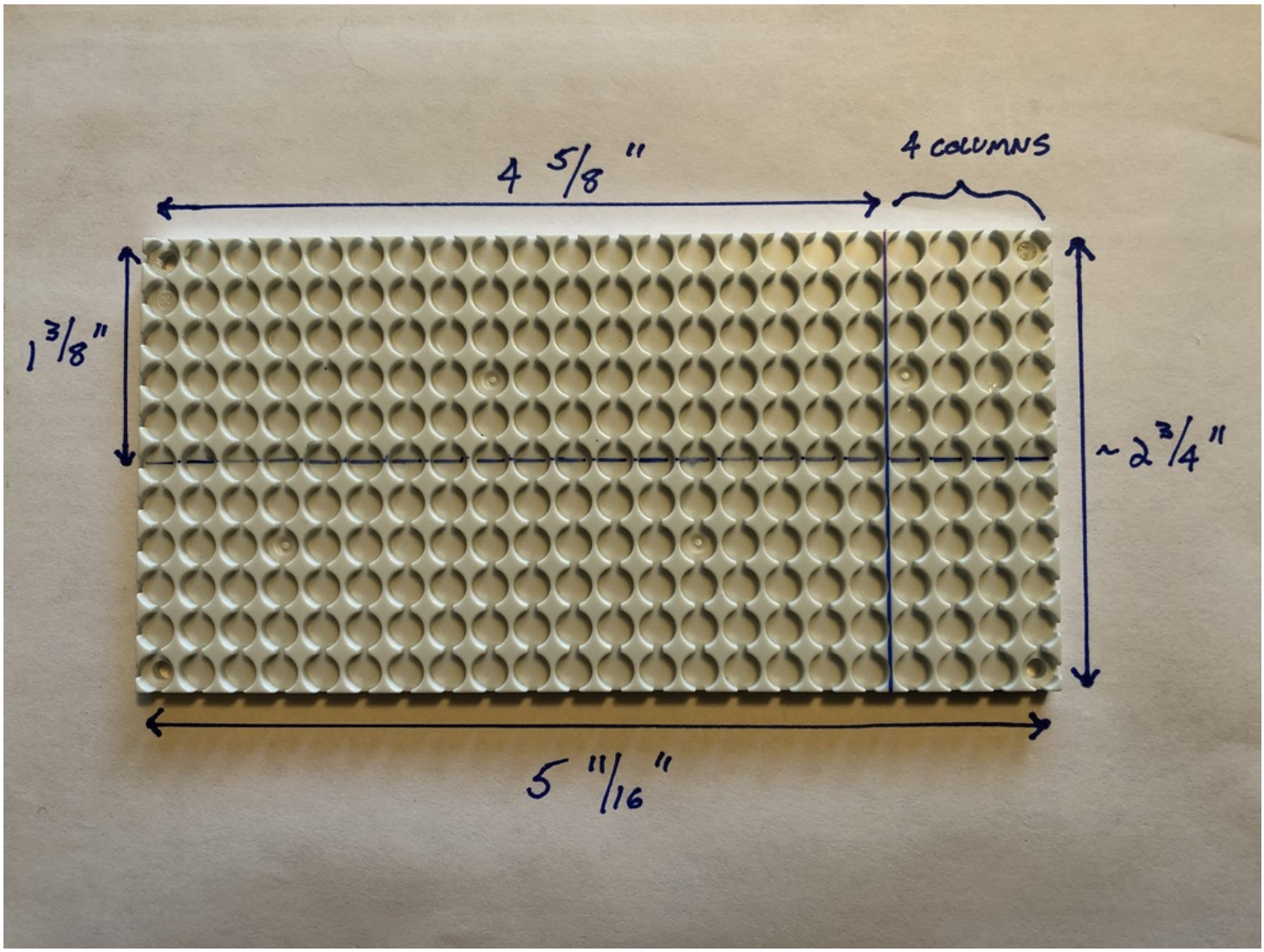
I tried a few experiments this afternoon with the mounting boards for the littleAmps (aka RedBot Amps). Here are my results/thoughts, provided in an illustrated step-by-step guide inspired by Clara's earlier dowel holder post!

Here's the end result I think we're aiming for:



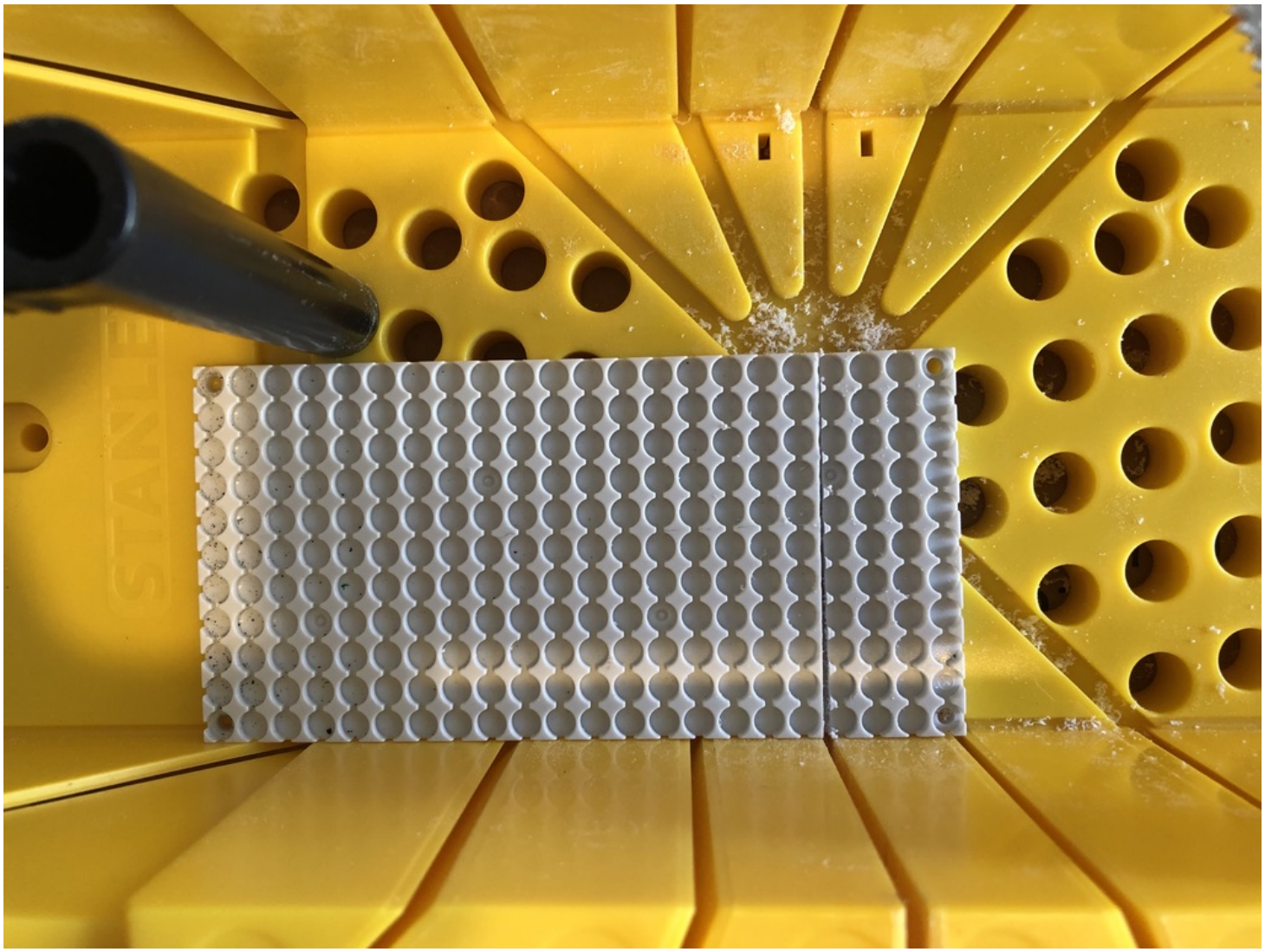
The size of the cut mounting board above provides a nearly ideal fit on the front of the top chassis plate of the RedBot -- with "wings" on the sides where a couple of strips of tape could be placed to hold it in place during a vigorous performance!

Here are the cutting dimensions I used:

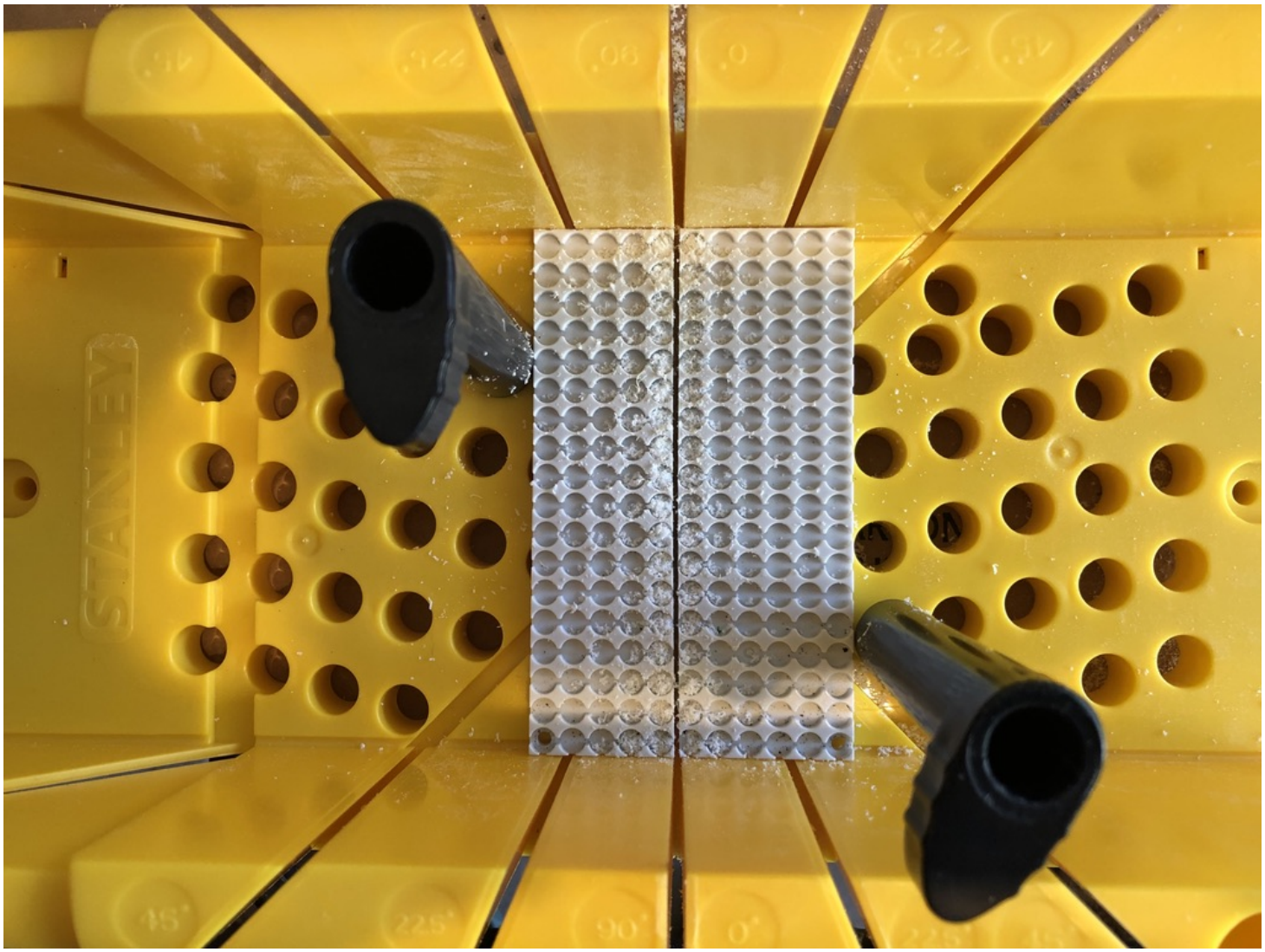


OK, those are the cutting dimensions I *should* have used. What I'll show below was my first attempt where I cut the board slightly asymmetrically so I had a "5 holes wide piece" and a "6 holes wide piece". I did this so I was cutting on a vertical "ridge" of the plastic -- but after doing this I realized it didn't really provide any benefit, and cutting so as to produce two "5.5 holes wide" pieces would have been just as good and results in two identical pieces.

How did I cut it? No fancy lasers or robots -- just a miter box and back saw like we have in G34. I cut across the short dimension first, cutting off "4 columns of holes" from the right side:

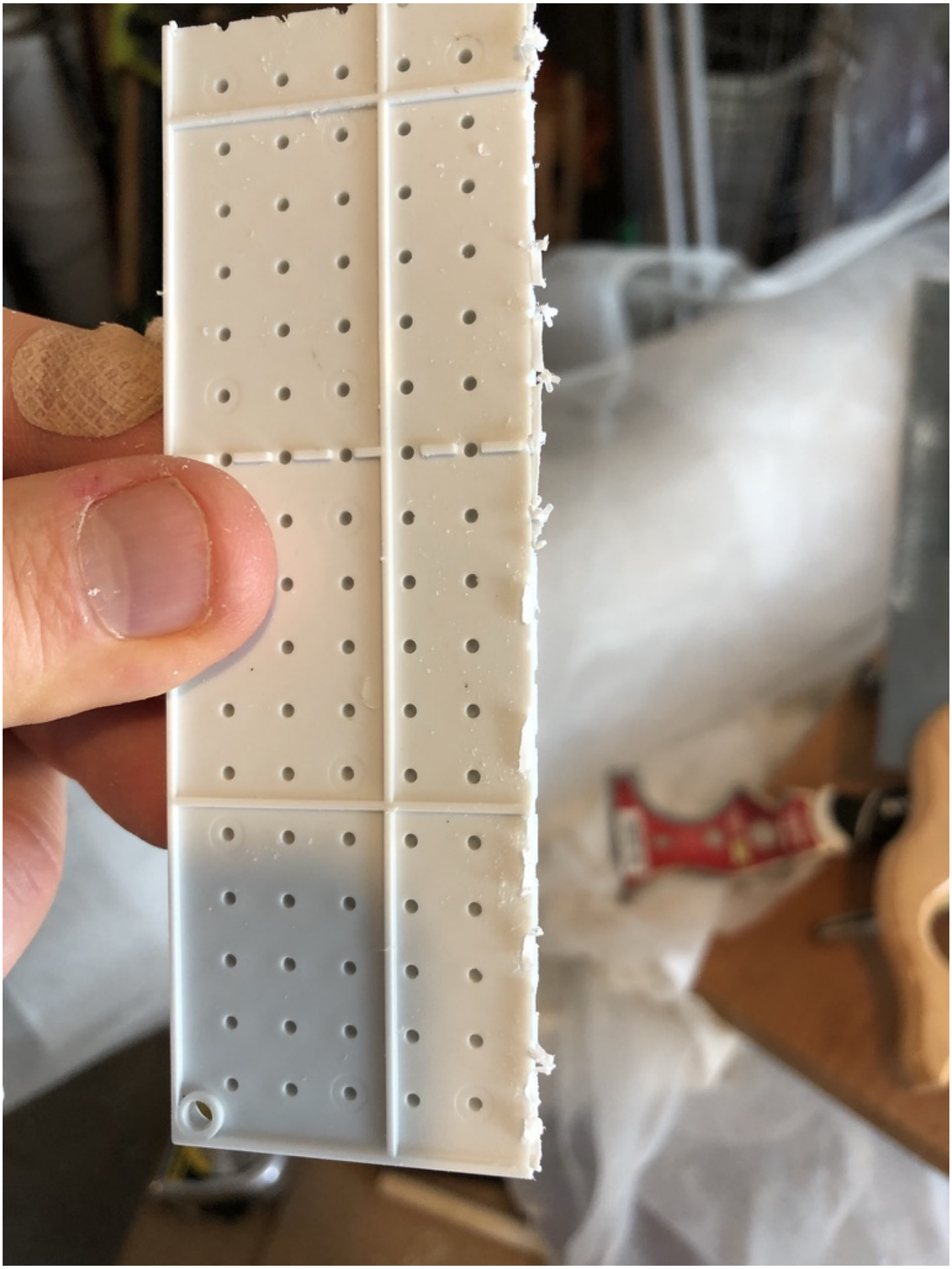


And then -- amazingly! -- the remaining long dimension exactly fit across the width of the box. Note: for both the first and second cuts, the pin clamps had to be turned in **very carefully** to avoid shifting the desired cutline off of the miter box saw-line (required some "nudge and adjusting"):

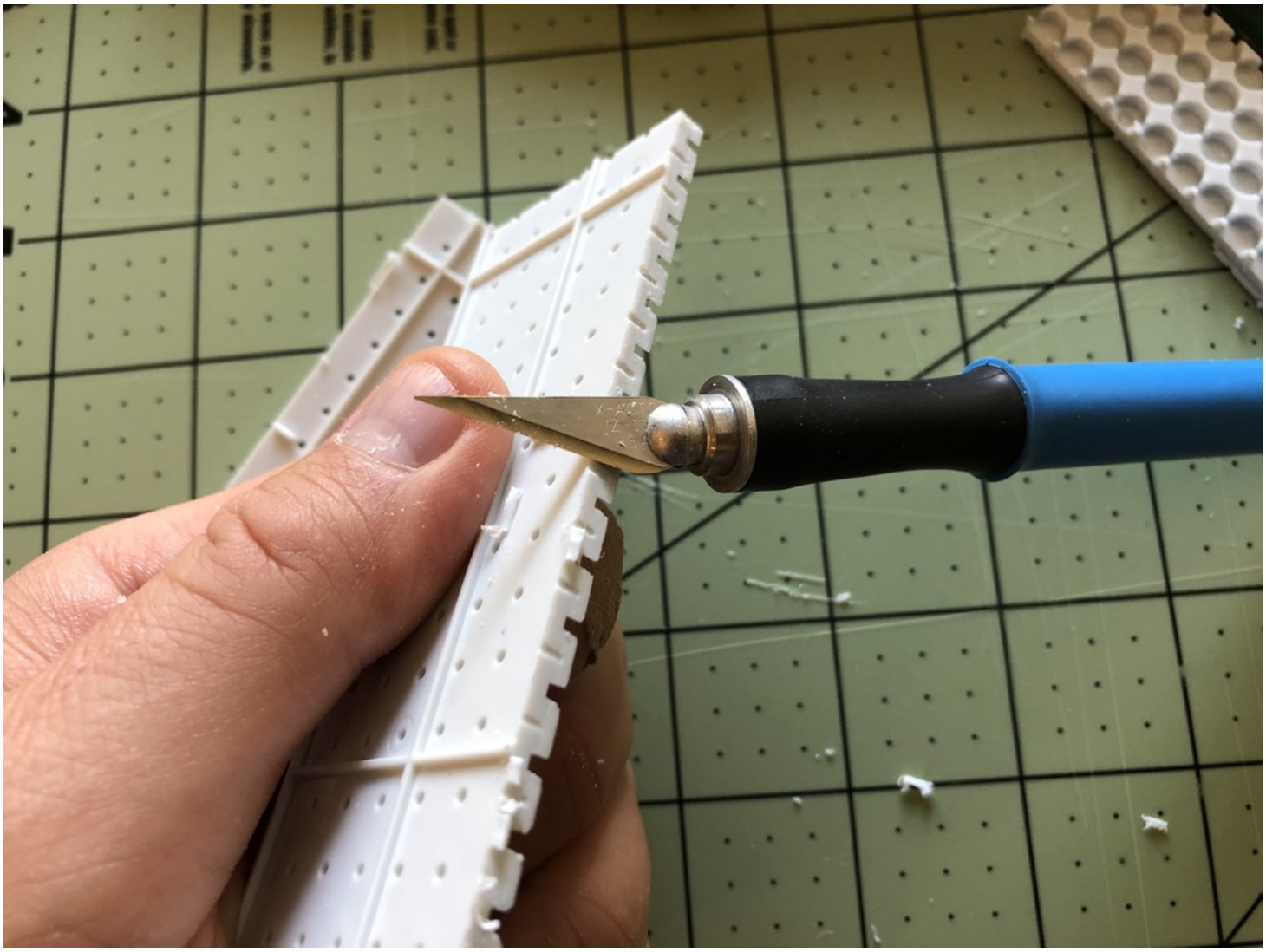


Again, I did a 5/6 cut above -- if I was doing over I'd just cut down the middle.

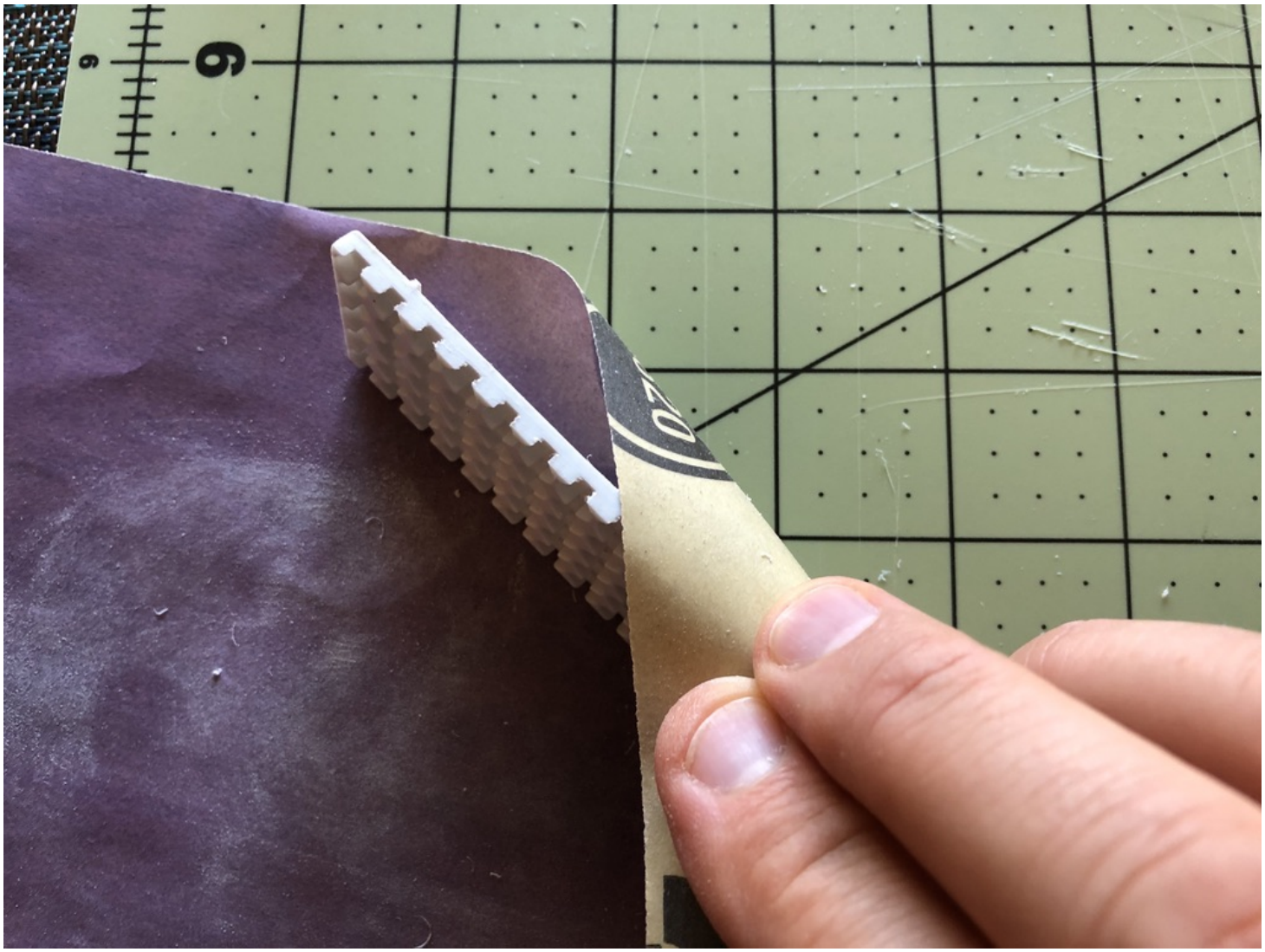
The cut edges had some plastic shards that were easily removed by (carefully) running an X-acto along the edge:



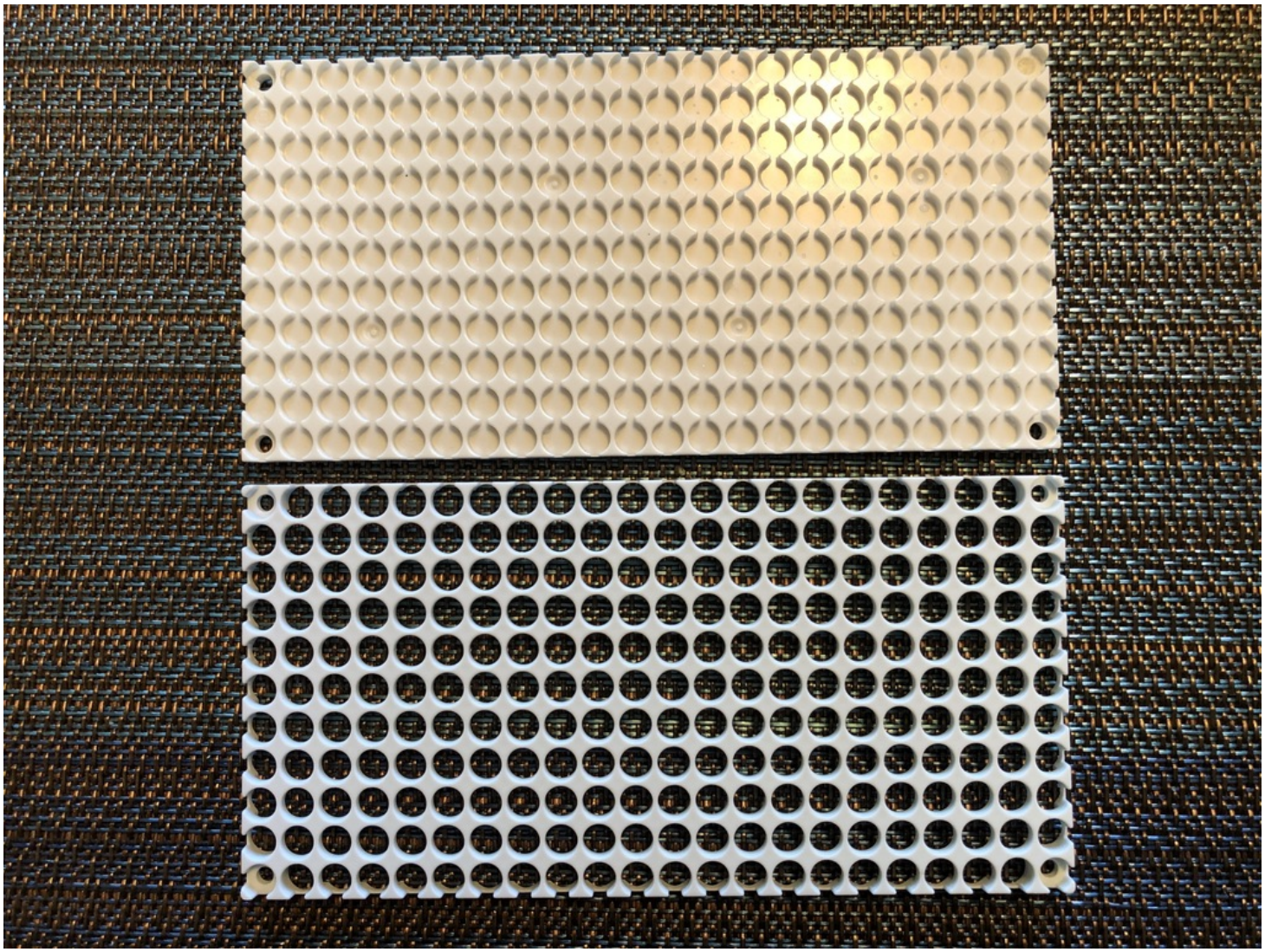
(Note: bandaid on finger was not due to incompetence when using backsaw. It was due to incompetence two days ago while using kitchen knife.)



I then finished the edges with a few passes of fine (320) sandpaper:



A note about littleBits mounting boards: there are at least two "flavors" I've run across, one is more "solid" (that's what I cut above), the other is more open. The solid one seems a little more rigid for mounting applications.



The total time it took for me to make the above two boards was about 10 minutes. So consider this as an option -- maybe we don't need CNC cutting.

And regarding laser cutting: I don't know for sure the identity of this plastic. It's too soft to be polycarbonate. When I sawed it the slight odor reminded me of cutting PVC -- it "feels" a little like that, but that's not a reliable way of identifying it. PVC should NOT be laser cut -- it works, but it generates hydrochloric acid and toxic fumes. So whatever we do let's not laser cut it.