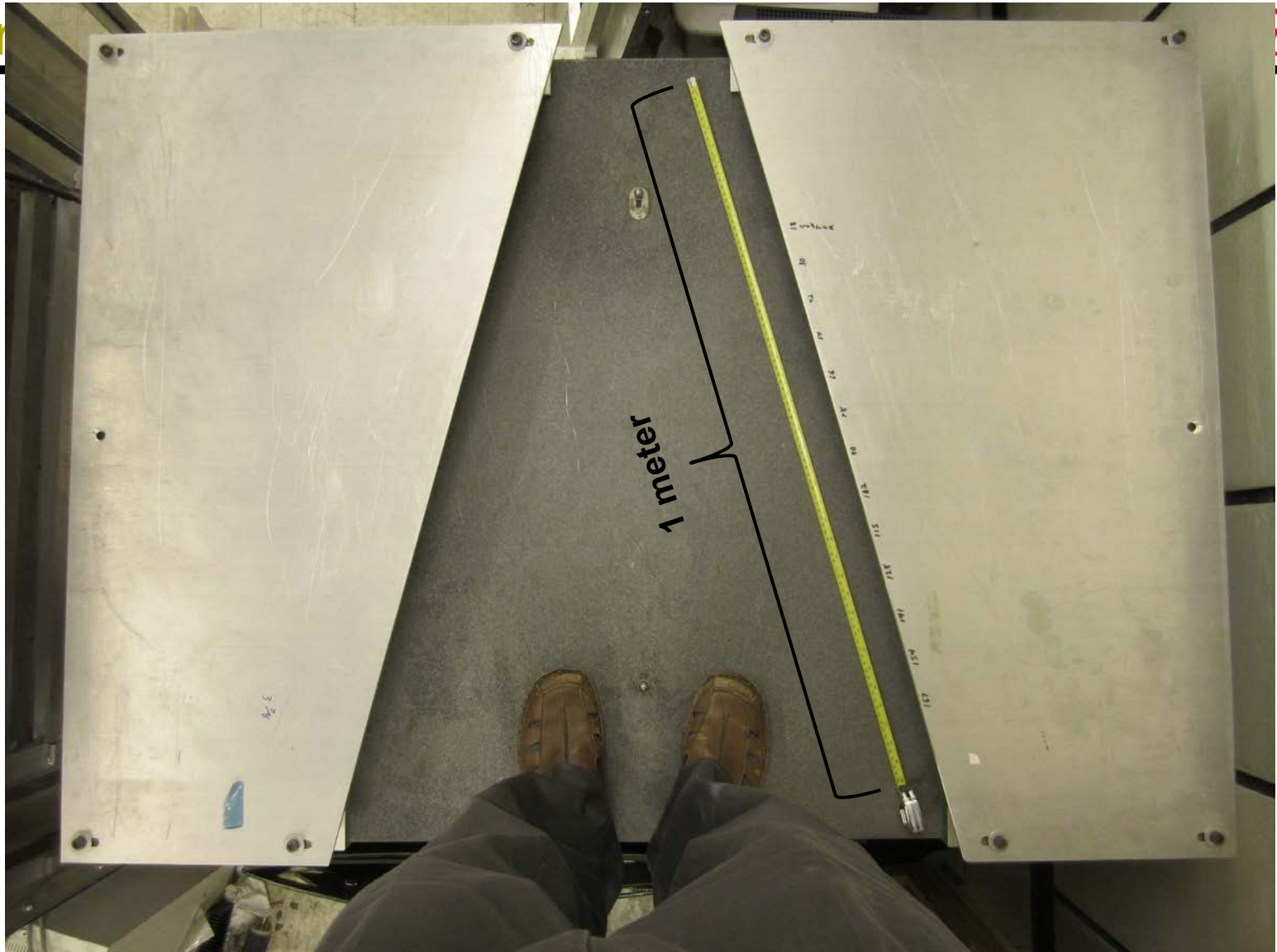


iTPC Combs

Jim Thomas

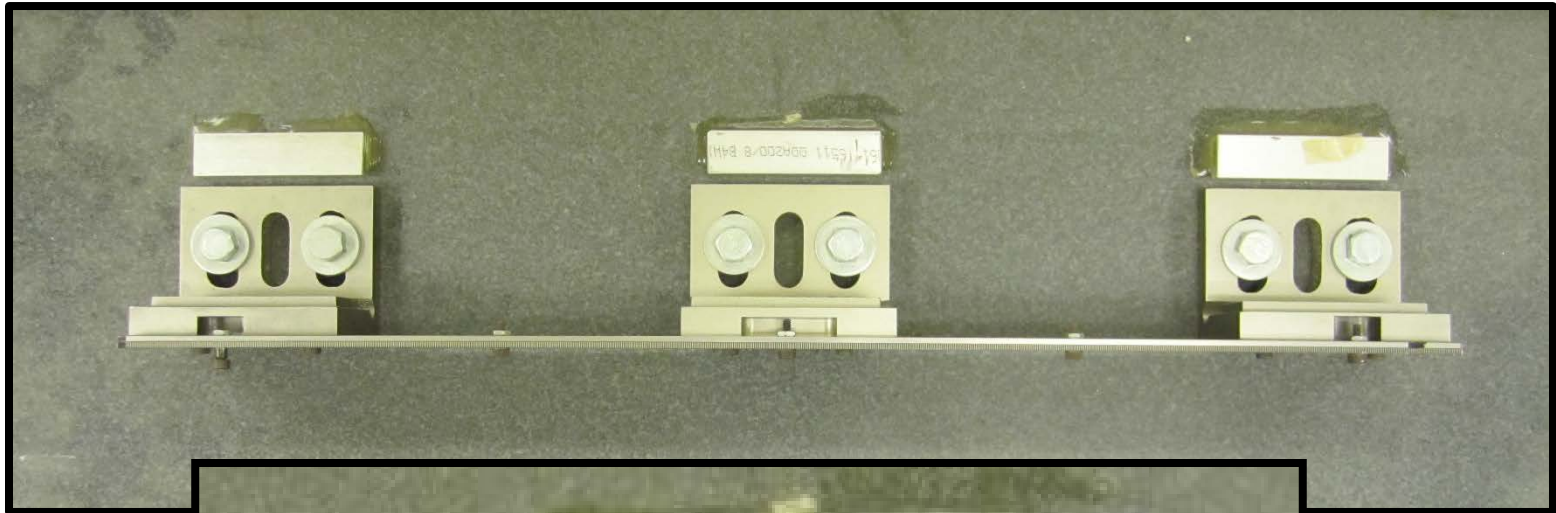
August 17th, 2014



“Comb” exposed – table has 2 combs



Detail: Comb, straight edge and mount



??what is this??
Epoxied to
table ??

Mounting
block

Straight
Edge

Comb

Teeth on the comb



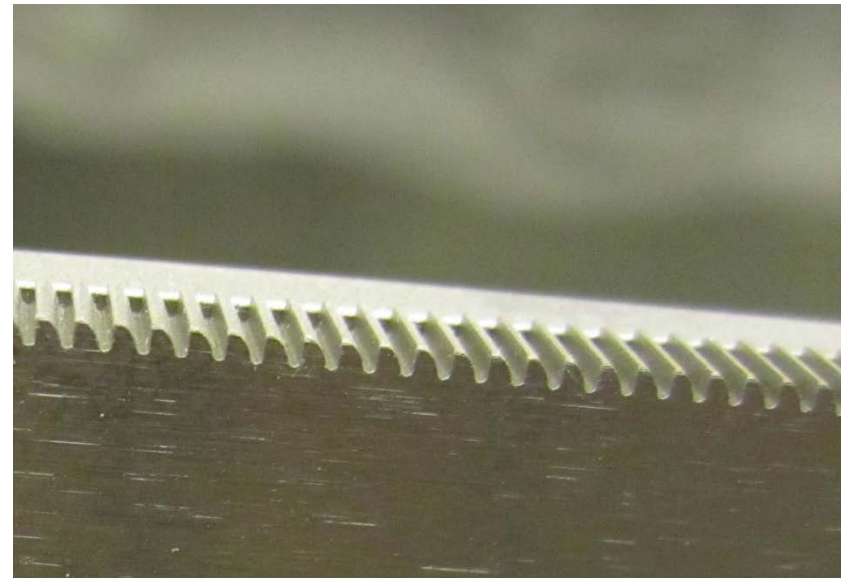
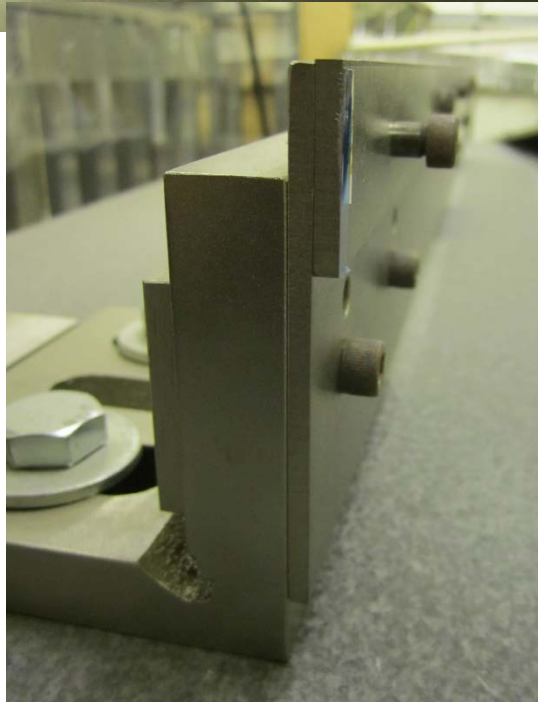
Teeth on the comb have an asymmetrical shape – does this shape have a name?

Comb plate and top of straight edge plate shown, below. Wires rest on the top surface of the straight edge

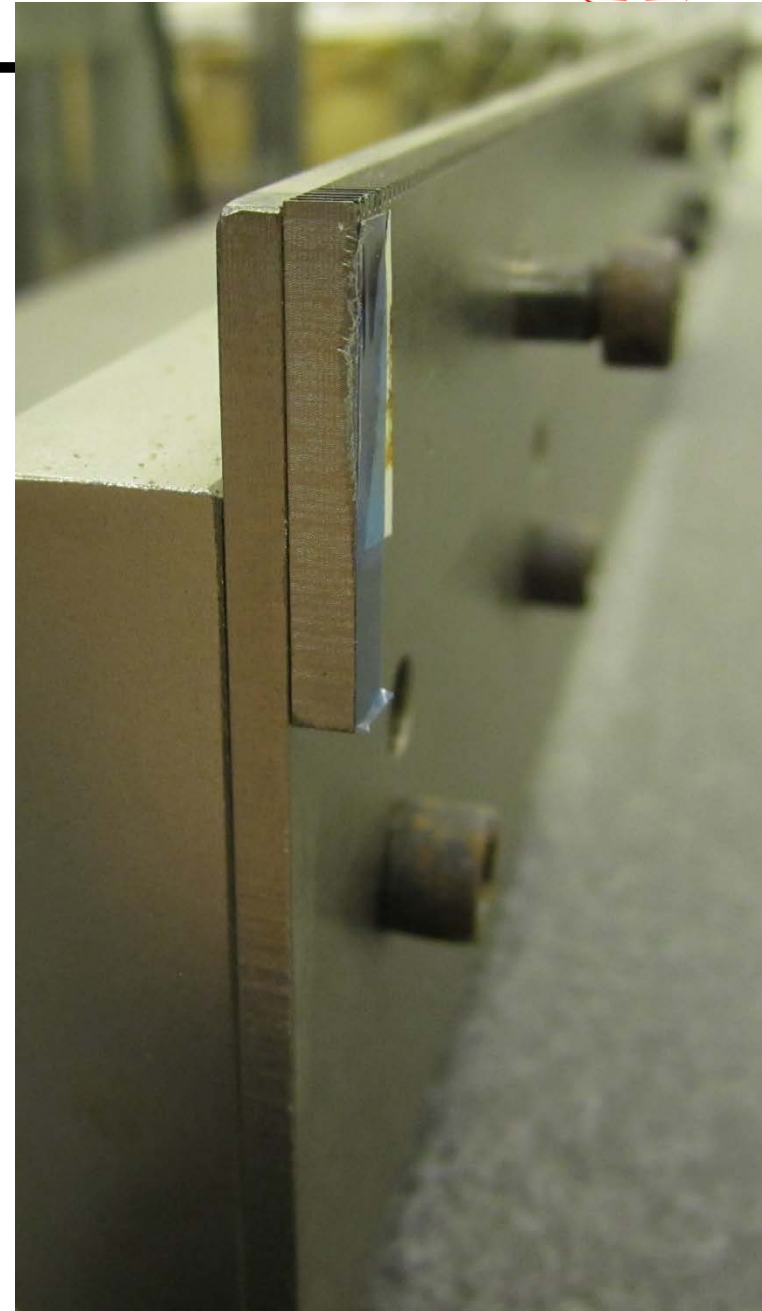
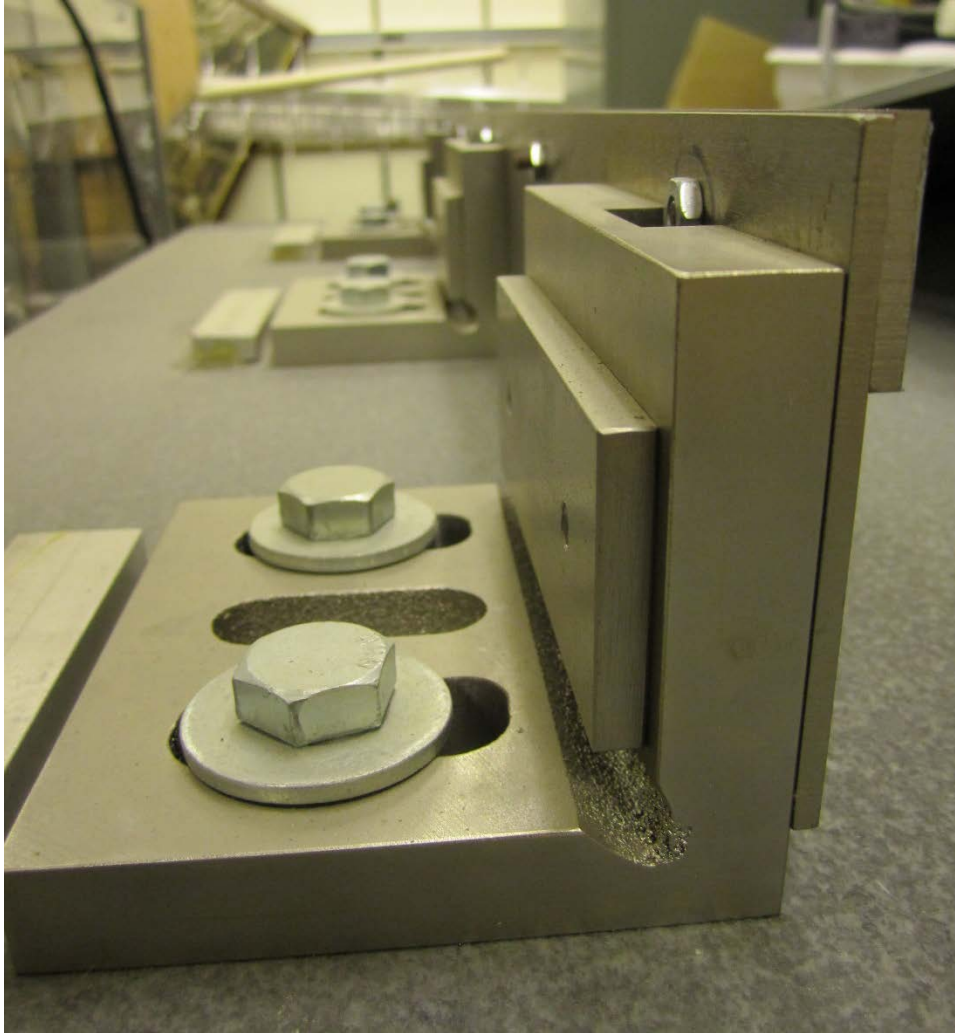
“Bottom” of comb is below the level of the straight edge

Wires are laid on surface of straight edge then “slid” to contact vertical sides of comb

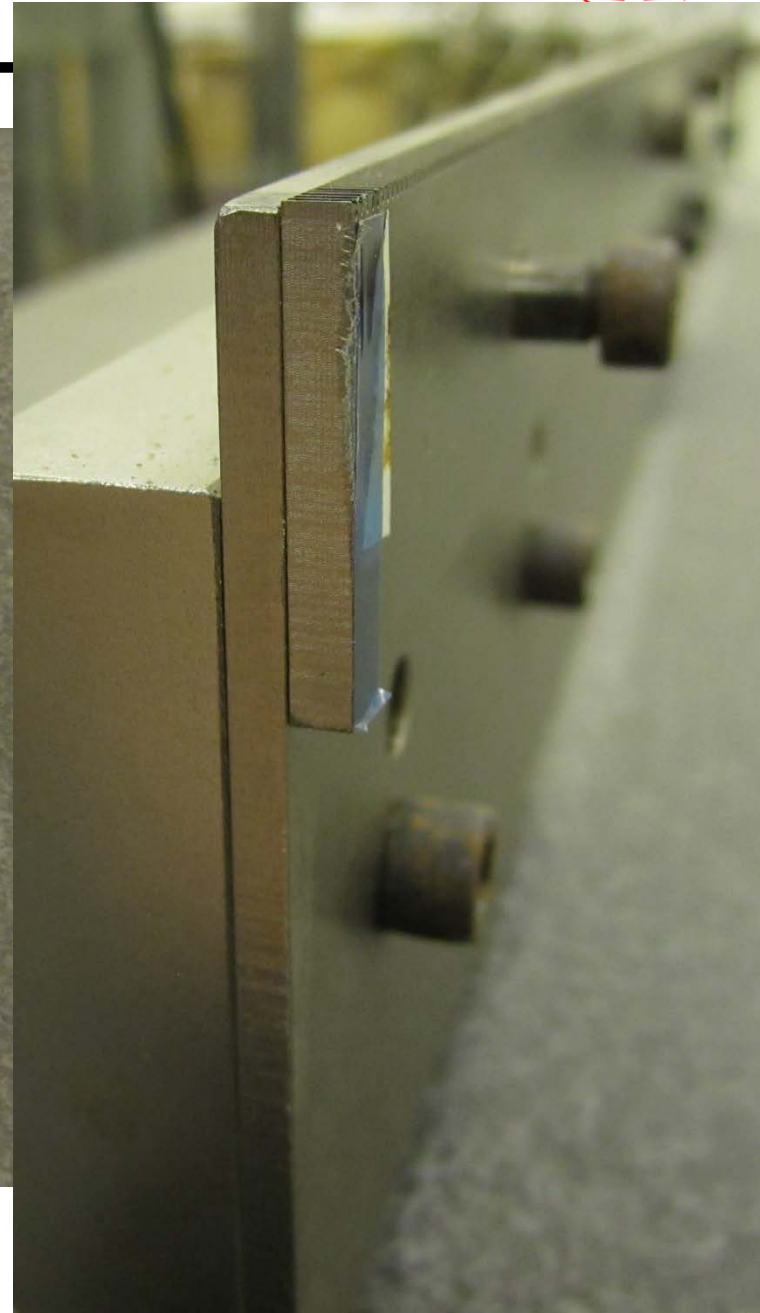
Jim Thomas - LBL



Mounting Block



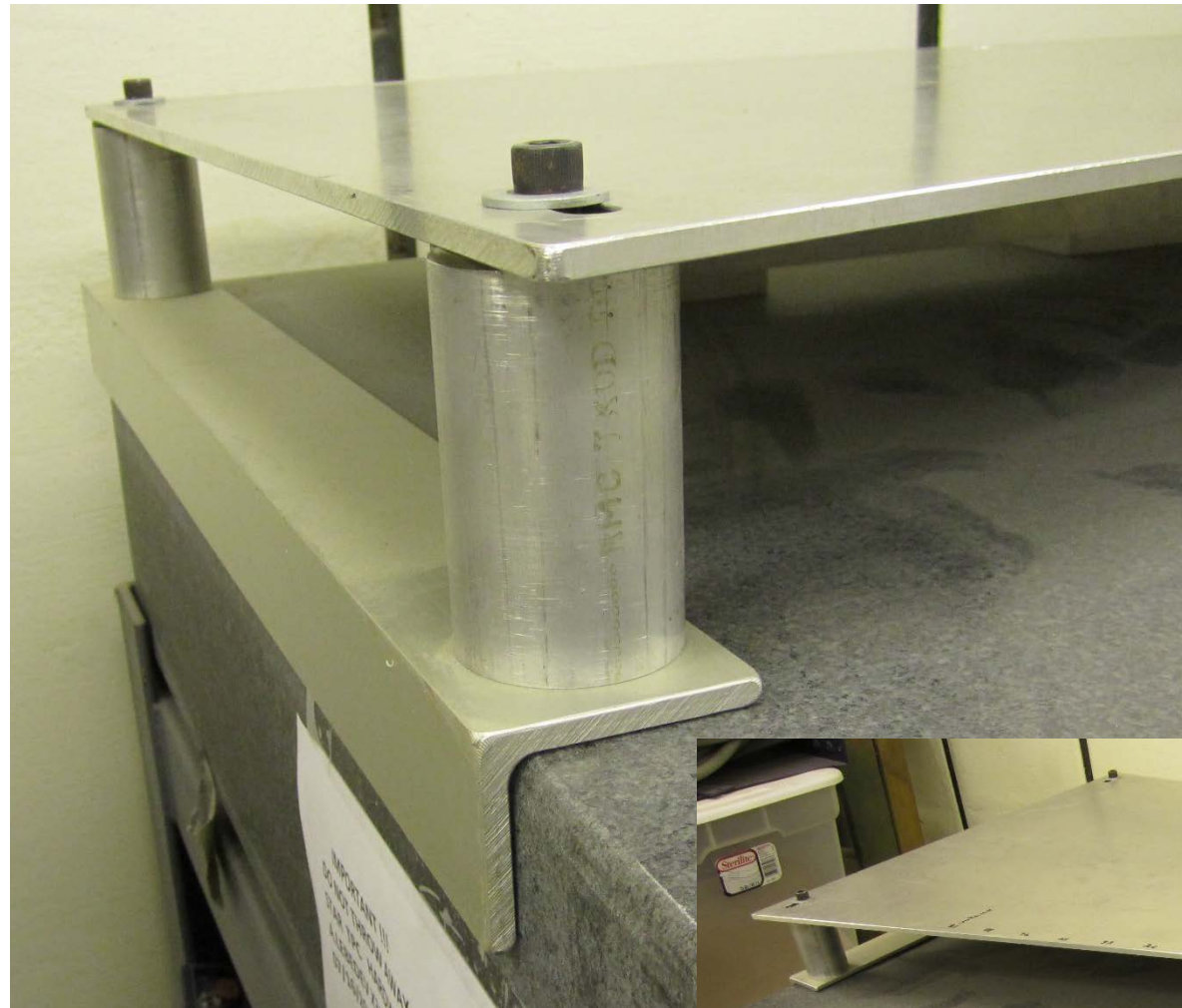
Mounting Block



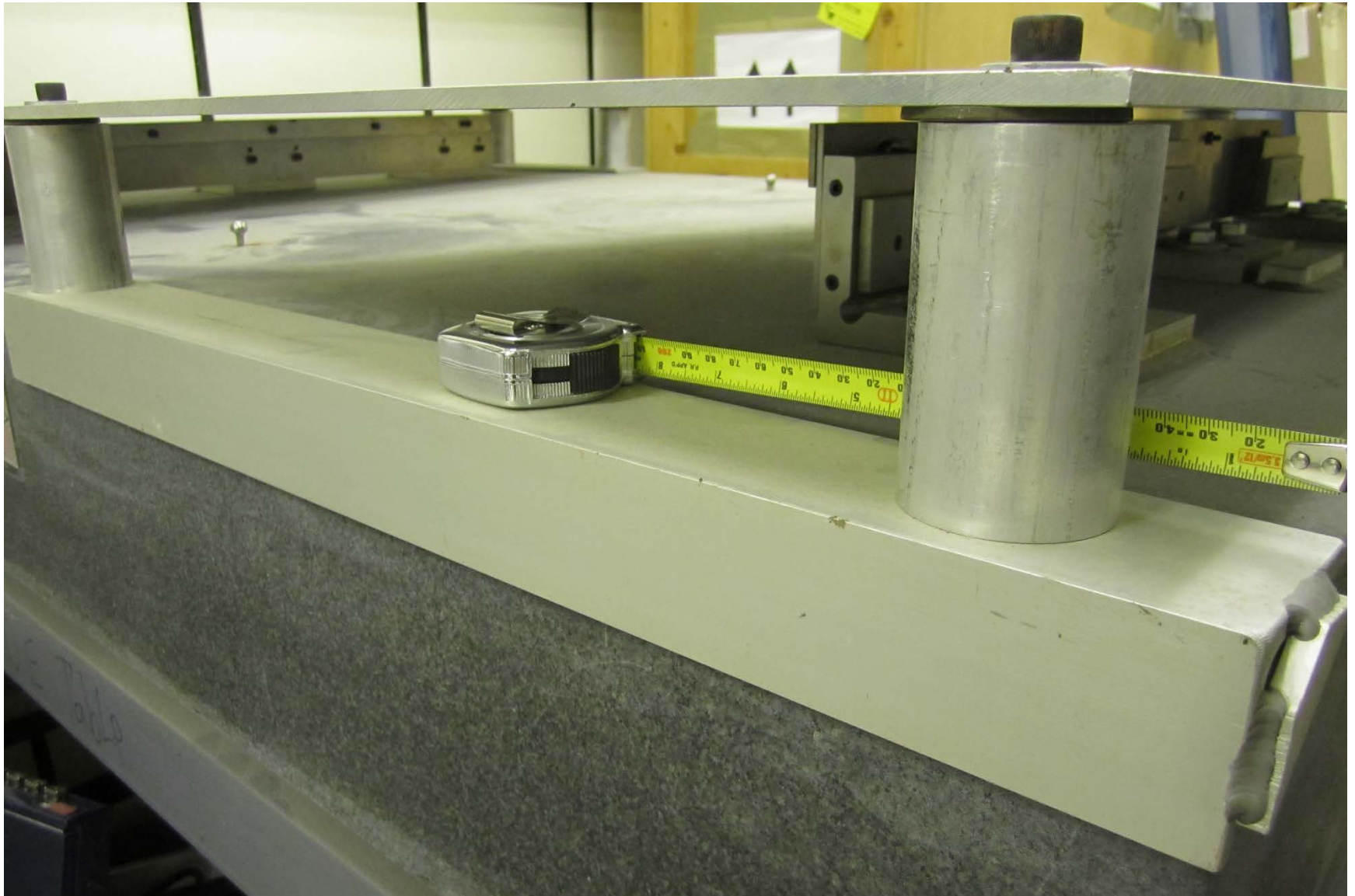
Platform Guards



Platform Guard

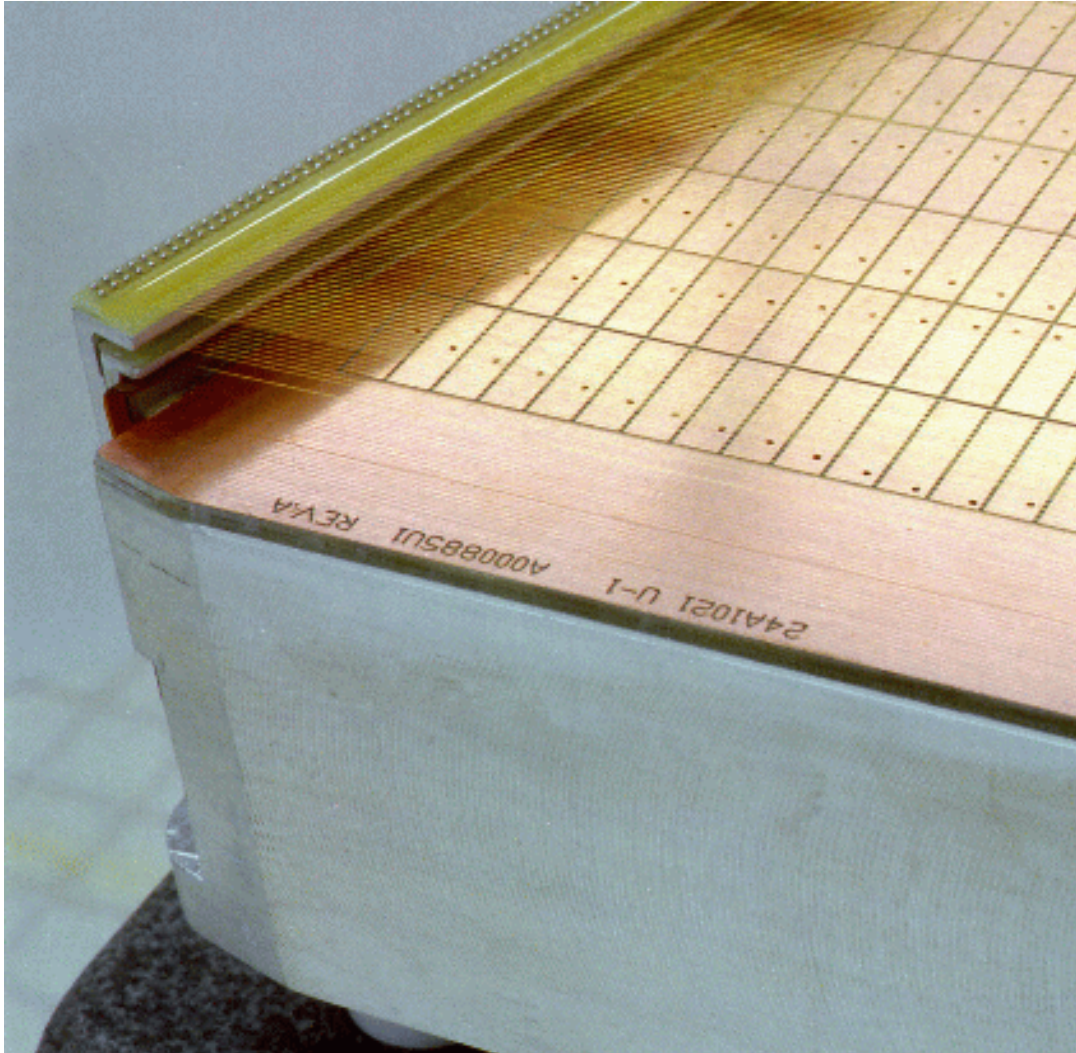


Platform Guard



Backup Slides

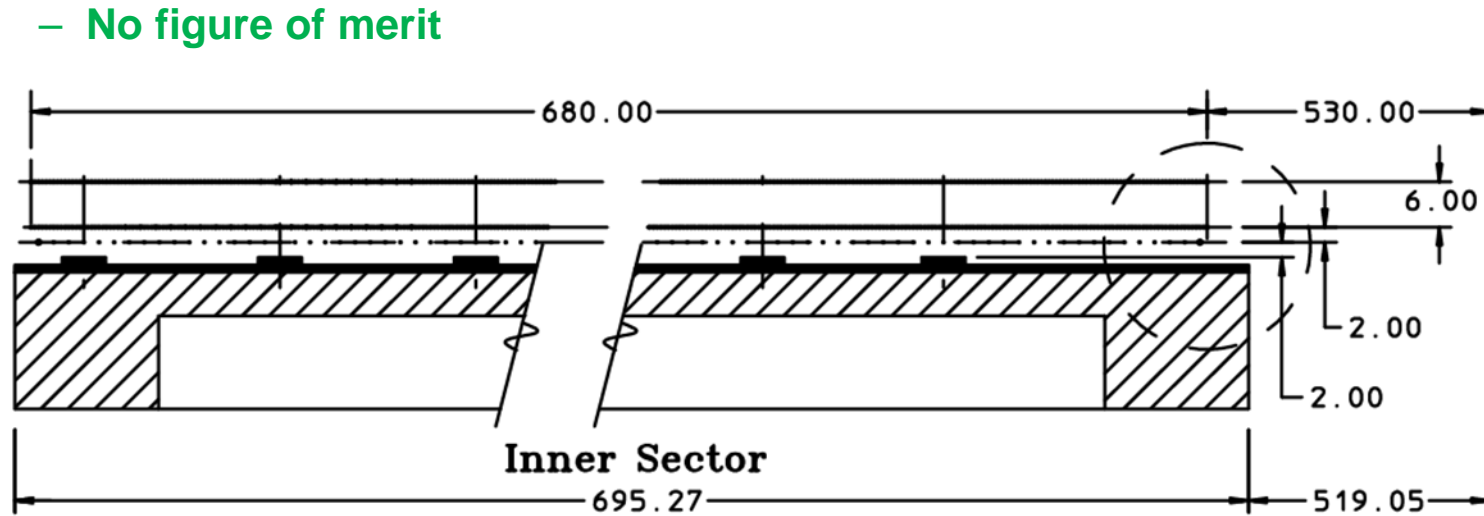
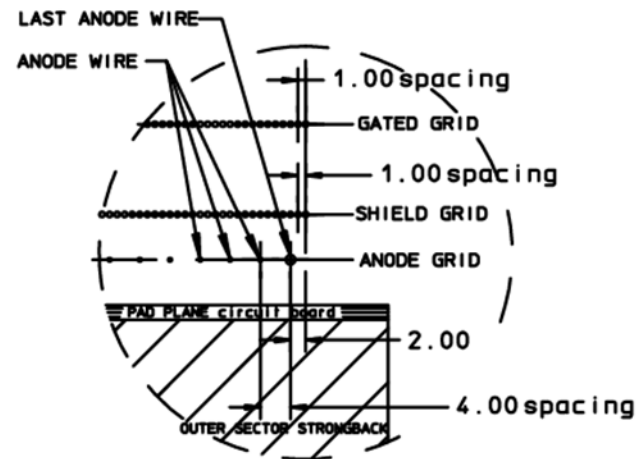
New Pad Plane – new strongbacks (outer shown)



- Avoid “missing rows”
- Hermetic coverage $\eta > 1$
- Increased segmentation
- Better dE/dx & tracking for tracks that leave thru the endcaps
- Optimized installation schedule: no down time
- One goal of this proposal is to relearn the lost arts
- Recover 2D drawings and recast in 3D – cheaper and more efficient fab

Our concern is about the inner sectors

- The inner sectors are affected the most due to $1/r^2$ distribution of charge in the TPC
- We expect a gain shift on anode wires due to charge, gain & dirt
 - Figure of merit is 1 mC / cm
- Malter effect on the cathode wires due to build up of insulating oxide layers ... leads to breakdown
 - No figure of merit



Aging of the anode wires and tripping on the cathode wires