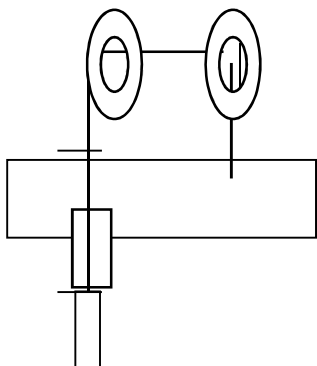


Here is an example of using the technique of suspension in 5S. Suspending a small hand tool - in this case side cutters - used to cut the excess length from cable ties in an assembly finishing process.

What I did here was drill a hole through the side cutters, threaded a cord through it, passed over two small pulleys to a counterweight contained in a plastic pipe.

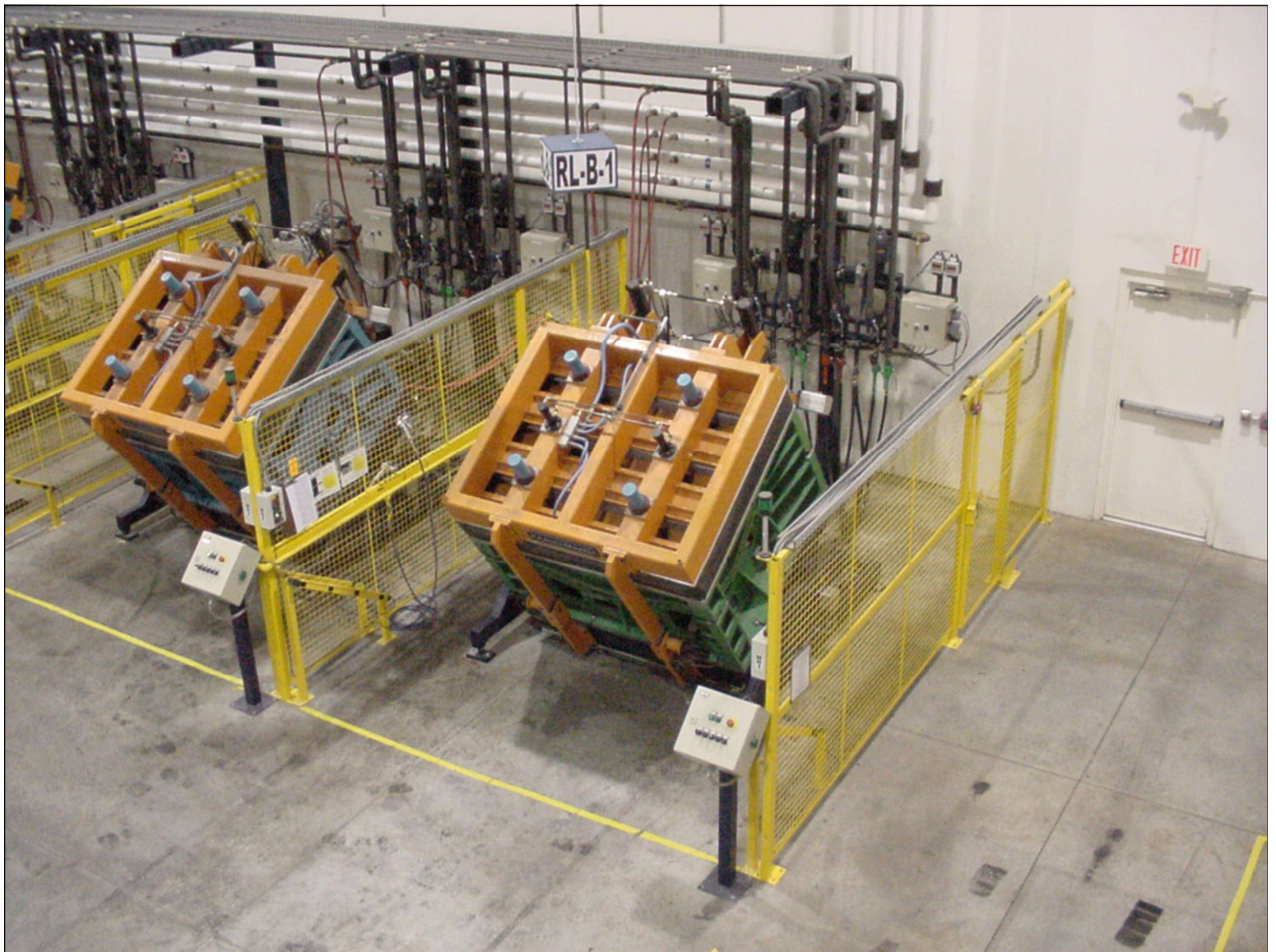
This technique of suspension is what is termed in 5S as unbreakable set back in order, where something returns to its place of storage automatically. The operator liked it, she didn't have to go looking for it because someone took it to cut something else and forgot to bring it back and she didn't have to look to grab it in using it and she could just let it go after use and not have to try and put it back in a holster or a holder of some kind. Again lean is about small sustained improvements everyday...





Picture showing the operator using the side cutters to remove excess length from cable ties installed on this part in the final process of assembly.





Current state... Here I'd used the same technique of suspension and in this case suspending mold release agent spray guns and air line blow guns.

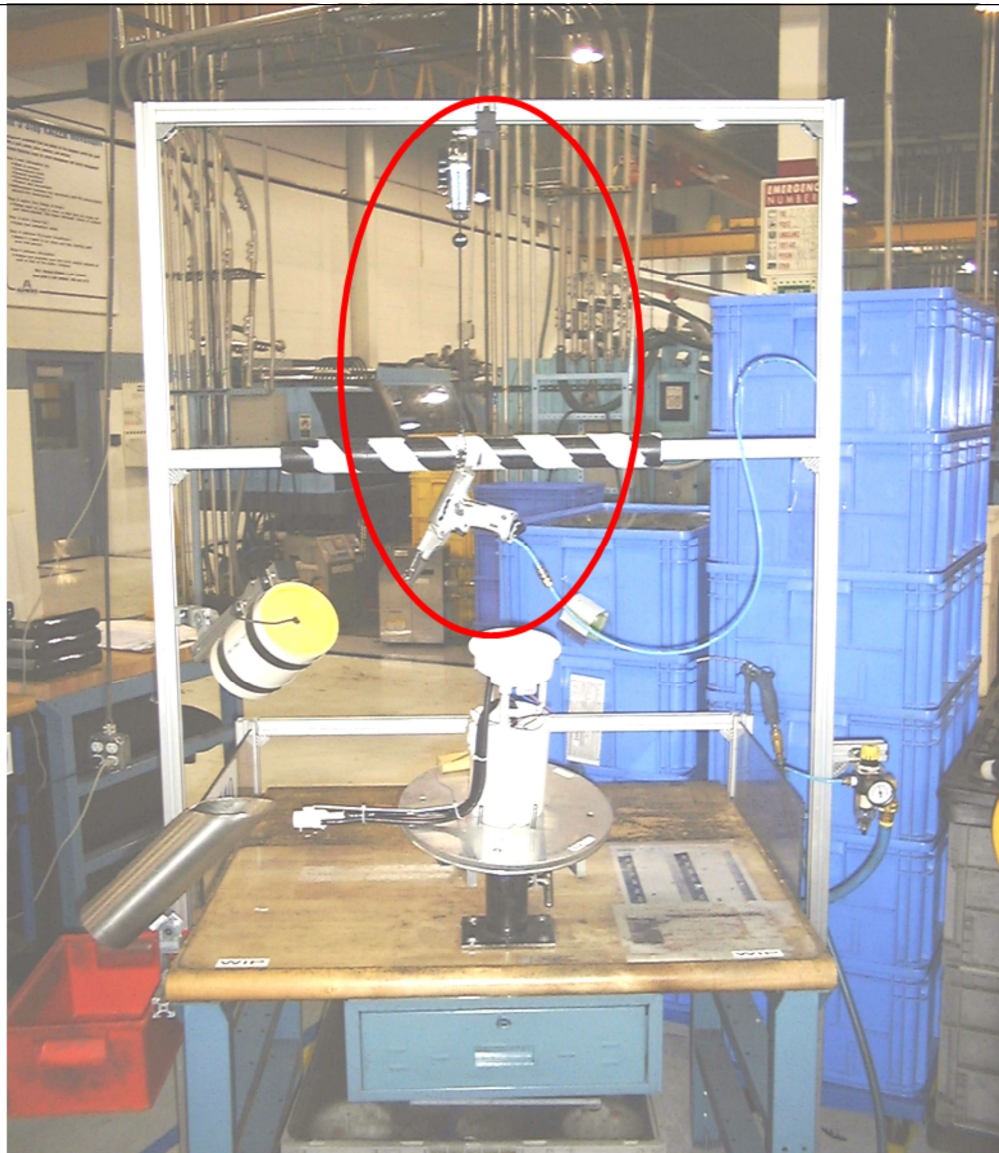




Future state... same idea as before of using a counterweight contained in a plastic pipe to suspend the tool or in this case a the spray guns instead of those tool retractors which typically have band springs in them in which the more you pull out the tool, exponentially the greater the force of retraction.

I used aluminum profile to bridge the suspension point of the spray and air blow guns. Another added bonus was that this practically eliminated the inordinate replacement of the spray guns and/or their hoses as before they would be left laying on the floor and ran over by forklift trucks or accidentally become trapped and cut in the closing clam mold.





This time using a light duty tool balancer to suspend a small hand held pneumatic tool used for trimming cable ties.



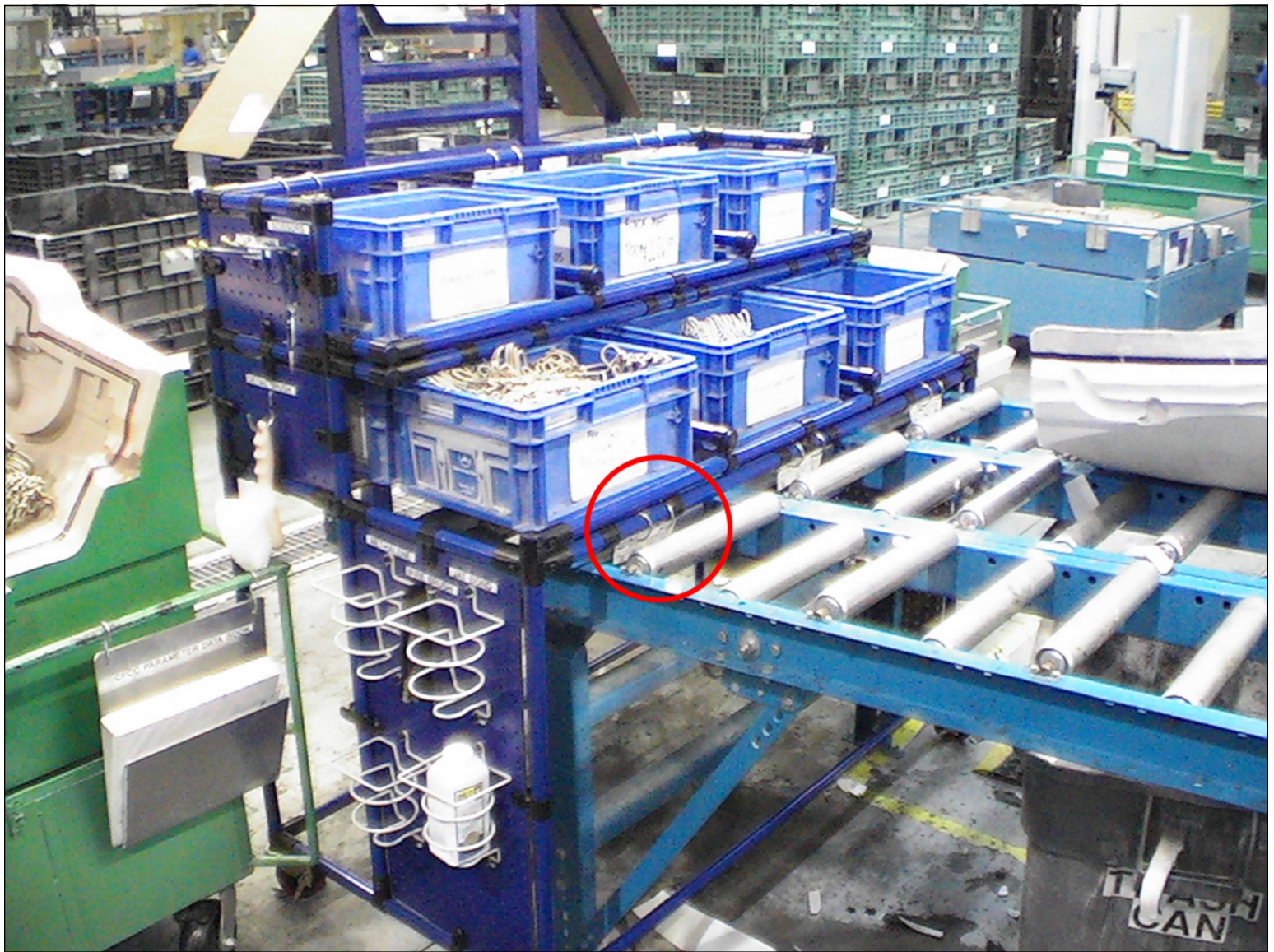


As mentioned before I was employed by a company that made carpets for two well known luxury car manufactures and that part of that process was cutting and trimming the carpets using high pressure water jets.

After the carpets were cut and trimmed by the water jets they were placed on a sloped roller conveyor where they were detailed, inspected and had map pocket nets installed on them.

Picture here shows current state, no Sort, no Set in Order, no Shine, no Standardize and definitely no Sustain of the map pockets, map pocket plastic anchors, detailing cleaning tools, rags, cleaning fluids etc....













Future state... I designed and had made 3 of these detailing work and storage stations and installed them on the water jets that ran these types of carpets. All evidence of Sort, Set in Order, Standardize and Sustain. I kept a shift's worth of map pocket nets and their plastic anchors - as it was physically possible to do that - and set that to a line side kanban card so the water spiders - for those of you not familiar with that term a water spider is a material handler - would know what to store, where and how many - see kanban card on next slide.

Also, note my use of wire bottle holders, that's purposeful so as to prevent anything else from being stored there...







		
<b>MAP POCKET</b> 25 MAP POCKETS PER BUNDLE		
PART NUMBER: <b>36695</b> (4 KNOTS R/H/D)	PER TOTE QUANTITY: MIN <u>4</u> MAX <u>4</u> BUNDLES	COLOR CODE: <b>BEIGE</b>
		

		
<b>MAP POCKET</b> 25 MAP POCKETS PER BUNDLE		
PART NUMBER: <b>36694</b> (4 KNOTS R/H/D)	PER TOTE QUANTITY: MIN <u>4</u> MAX <u>4</u> BUNDLES	COLOR CODE: <b>BLACK</b>
		

		
<b>MAP POCKET</b> 25 MAP POCKETS PER BUNDLE		
PART NUMBER: <b>36697</b> (4 KNOTS R/H/D)	PER TOTE QUANTITY: MIN <u>4</u> MAX <u>4</u> BUNDLES	COLOR CODE: <b>GRAY</b>
		

Line side kanban cards that I made and attached to the respective storage bin on the rack using a shower curtain ring.

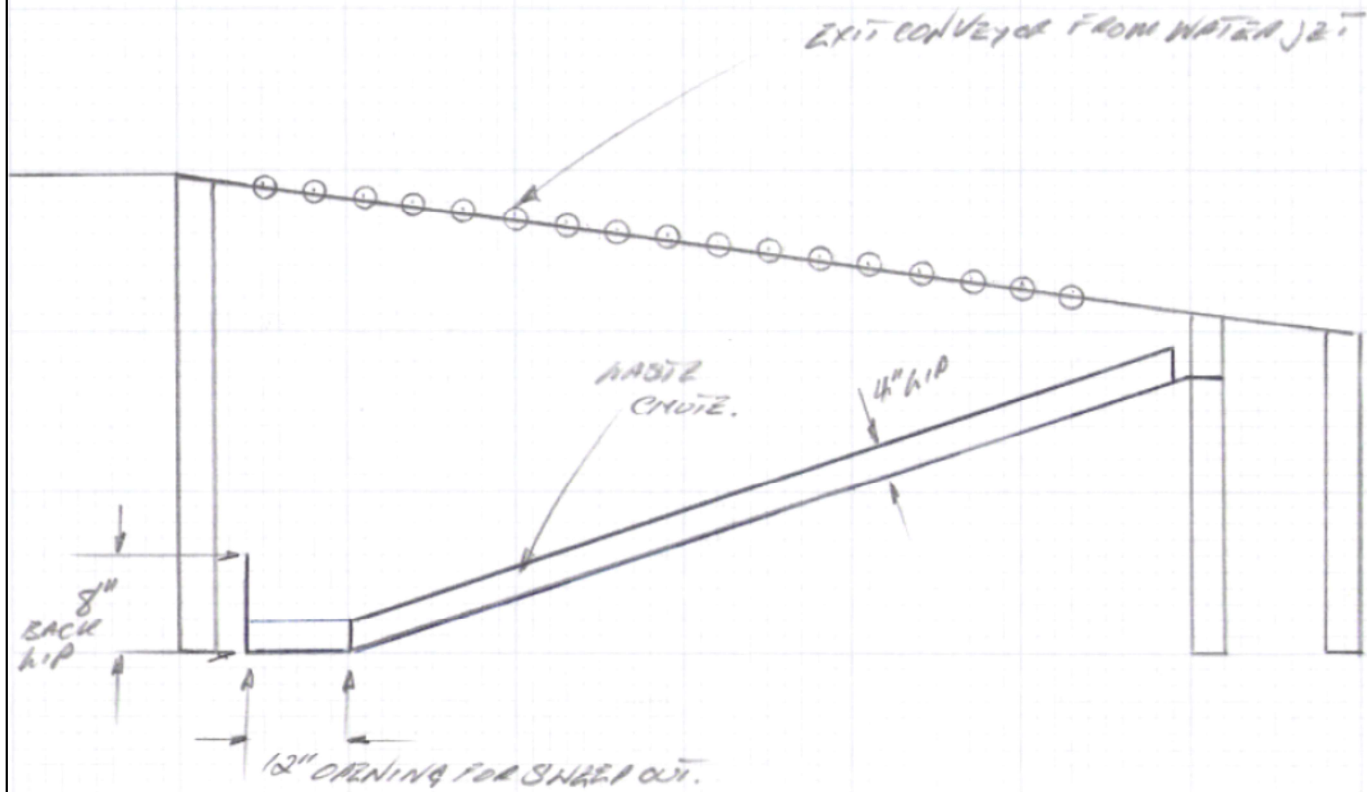




This is a picture of carpet detailing sloped roller conveyor. In 5S shine prevention we need to fundamentally ask ourselves why do we have to clean in the first place. If that is unavoidable then we should find ways to preferably eliminate, if that's not possible then to either reduce, simplify or somehow incorporate the cleaning effort.

Here is an example of where I have done just that with designing and installing a waste pan chute to collect and move process excess waste to a collection point at the bottom of the chute. This reduced and simplified the cleaning effort.

# WASTE CHUTE FOR WATER JET'S EXIT DETAILING CONVEYOR $\frac{1}{8}$ " S/S

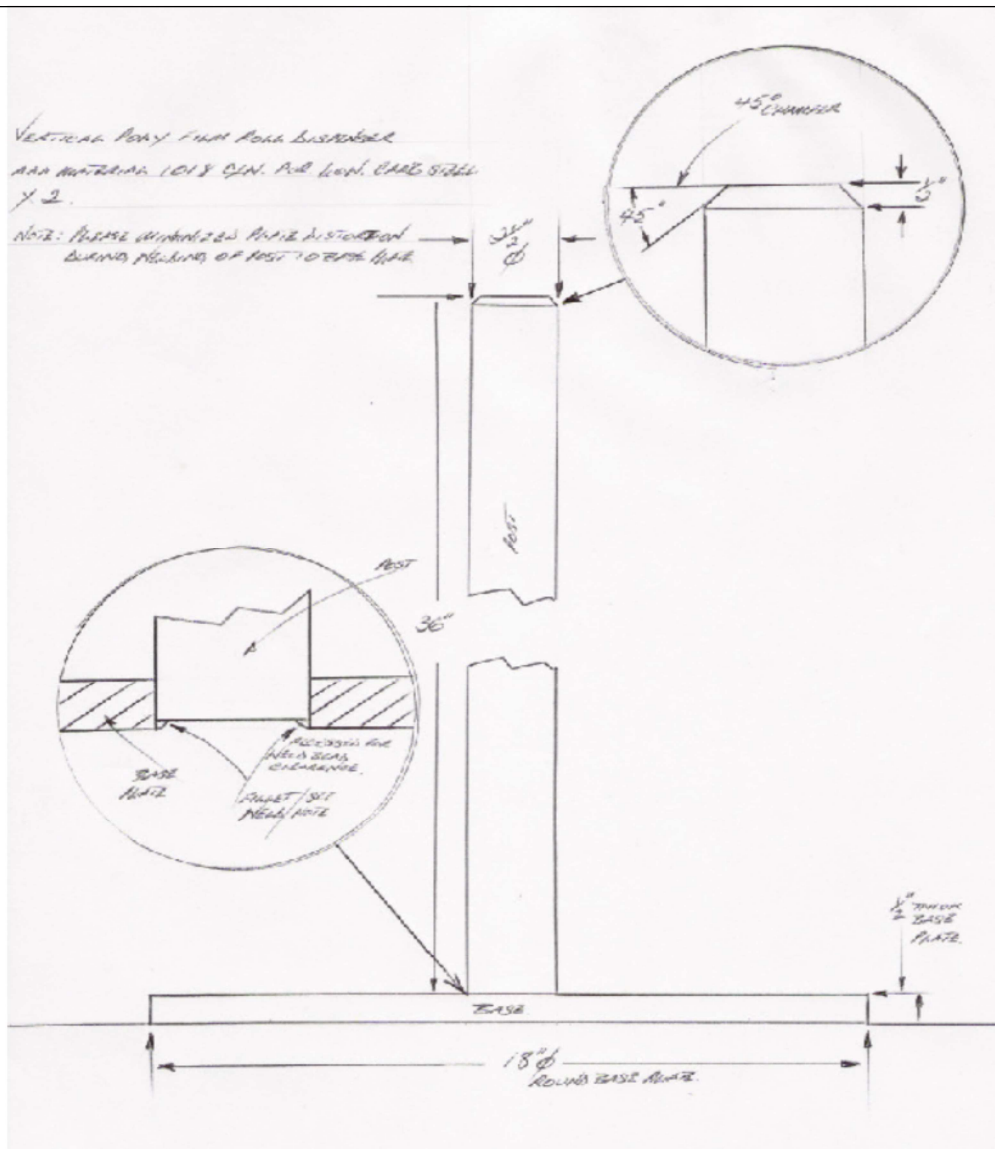


My drawing of the waste pan chute.





Installation of the waste pan chute pan.



A drawing I made to have some poly film roll stands made. The rolls were 8' feet long and a full roll was heavy and cumbersome to use. This was a 5S effort to get the rolls up off the floor and positioned in a vertical attitude to save space and make easy to use.

I used a Teflon steam flange gasket as a low friction bearing at the base of the stand to permit the roll to rotate easy when being used to dispense a length of poly film for packaging purposes.