First of all, the machines to which the tubes come most repeatedly are given high priority while placing. Because saving one unit length of extra travel will multiply the number of times the process repeats. Such machine’s position are fixed first then the dependent machines, based on their prior and after processes, their positions are chosen to achieve minimum total path length.

**Honing**: the honing machine should be placed as close as possible to degreasing, because every time a tube undergoes honing it has to go to degreasing to remove oil and grease contaminants on the surface.

And honing machines must be kept close to UT (ultra sound testing), because during UT most of the times the defects detected are in the internal surface of the tube, which would need honing to remove the defect.

It also must stay close to Roller straightening machine, which is on the opposite side of the degreasing. As the degreasing process repeats more times than roller straightening, it is compromised and honing is still kept closer to degreasing.

A tube must be able to come to honing after End Cutting operation, for which, it is finally positioned right opposite to passage 4

**QC**: quality check must always stay close to UT. Because every tube after machining, goes to QC for check then if none found, it goes to UT. The sub surface defects on the tube, sometimes are missed by the UT machine. Such defects are detectable in Eddy Current Testing in QC. If any defects are detected in the outer and inner surfaces of the tube in QC, they are sent back to ODG or Honing or conditioning (if the defects are minute).

The tubes take Eddy Current Testing in QC and go to Sand Blasting in the neighboring STP plant. After sand blasting, tube comes again in to QC for Boroscopy. After sand blasting, it will become easy to detect defects through boroscopy.

So QC is kept close to SB, UT and ODG and Honing.