Luckily our stainless steel has arrived, as was promised by Yarde representatives, on Friday 2-6-09 and we were able to begin working with the metal. Since the pipes for telescoping came in pre-cut we decided to drill the holes necessary for telescoping first. The holes were all drilled with the use of a CNC drilling machine at 2 inch intervals. Despite the past presumptions, this proved to be a time consuming task since each hole first needed to be predrilled to make it possible to drill a straight hole in a curved surface, and then needed to be completely drilled through with the use of a different drill. In other words, each pipe needed to be drilled in the same place twice with two different drills. Since we had a total of 16 pipes which are going to be used for telescoping to drill, the process took longer than was previously anticipated.

In addition, after discussing the matter further with Surge as well as Rich from the machine shop, we definitively decided that the telescoping pipes will not be directly welded onto the main steel plates. The first reason for this decision is the possibility that the main plates may warp during welding. Clearly, such a scenario is not acceptable given the fact that the stainless steel was chosen with positive appearance in mind. Furthermore, attaching the pipes directly to the main plates would produce a structure which would not be easily transportable due to an awkward large three-dimensional shape as well as weight. This would make it difficult for us to transport the project to “project demonstrations” at the end of the semester and also to the client. Furthermore, if the client would ever decide to relocate the device the action would be very problematic.
For the above mentioned reasons it was concluded that the best option is to weld 5” x 5” square plates to the tubes to serve as feet. These feet will then be bolted onto the main plates to give the device structure. This will give us the ability to remove the telescoping pipes from the main plates if the device is to be transported; hence, versatility of the device will be greatly increased. For a visual image of the feet attached to the telescoping tubes please reference Figure 1.

![Figure 1 – Feet attached to telescoping pipes.](image)

A total of 16 5” x 5” plates cut out of 1/8\textsuperscript{th} inch thick stainless steel sheets were made and four holes were stapled into each foot to allow attachment. Next week’s plans include countersinking the holes on the telescoping pipes and filing off rough edges to prevent cuts during use. In addition, we also want to start cutting the main stainless steel sheets to size and perhaps begin welding the “feet” to obtain telescoping pipes which resemble the one portrayed in Figure 1.
Concerning the wheelchair, we were initially planning to make an axle for the back wheels. However, this would prevent wheelchair-like ability since in this situation the wheels would not be able to spin in opposite directions at the same time. Consequently, tight turning abilities would be sacrificed. For this reason we decided to drop the axle idea. Instead metal rods will be welded to each side of the wheelchair frame and attached to each wheel’s bearing housings. Even though the rods will be mounted secure, each wheel will still have the ability to turn, and more importantly to turn independently of the other wheel.

The total amount of hours I have worked this week is approximately equal to 7. Next week promises to be much more productive since I will have fewer conflicts with the machine shop’s operating hours. Clearly there are plenty of things still left to be done, but the important thing is that progress is finally being made.