As mentioned before, the project timeline got delayed due to problems with obtaining stainless steel sheets as well as pipes. However, the problem has been resolved and the stainless steel should arrive at the Storrs campus in a short period of time; hopefully either this Thursday or Friday. When placing the order on Monday I was told by a Yarde Metals representative that it would arrive within three to four days. Our team could have easily taken the easy way out and simply ordered the stainless steel online. However, quotes which were received from online sources exceeded $2,000, and for this reason we decided to turn to local vendors.

The quarter inch stainless steel sheets and the required stainless steel tubes were purchased from Yarde Metals for a price which did not exceed $1,000. To ensure that our team was in fact getting a “deal” I took the liberty to visit other metal vendors in the area and asked for a quote for the same material. The closest quote to the price given by Yarde Metals was $1,500; over $500 dollars more than was paid.

I also asked Yarde Metals if they would be able to cut the stainless steel to match our exact dimensions. I was told that they could, but that it would be a plasma cut which is not CNC machine controlled. I decided that instead of waiting extra days to receive the stainless steel, I would order rectangular sheets since a regular plasma cut can also be done at the UConn machine shop. Correspondingly, there is a possibility that one of the saws at the machine shop can be modified so that it can accommodate sheets as large as ours. If this would in fact prove to be true, we would be able to cut the stainless steel with a saw which would generate a much cleaner and much more aesthetically pleasing finish.

A total of 16 hollow 304 stainless steel tubes were ordered and cut to the required lengths. Eight of the hollow tubes have an outer diameter of 1.00 inch and the other eight of the hollow tubes have an outer diameter of 1.25 inch. This will allow the construction of eight telescoping assemblies to allow the standing gardener to be adjusted as required based on the user’s height. It was recommended by a Yarde Metals representative to order outer tubes with an outer diameter of 1.5 inches to allow for greater slack.
However, after speaking with Dr. Enderle, it was concluded that if such a size is ordered the top of the table may become wobbly. For this reason it was concluded that an outer diameter of 1.25 inches was large enough. The figure below shows a CAD drawing of the assembly discussed in this paragraph.

Figure 1 – Assembled telescoping tubes.

The team had a large concern that drilling holes in the tubes at equal distances and proper alignment would be problematic. However, this concern was eliminated after speaking with the gentlemen at the machine shop on Friday, 01-30-2009. We were told that this would in fact be accomplished quite easily by securing the tubes and using a CNC machine to drill the holes in the correct places. We were further notified that this task would be even easier if the tubes would be the same length. Correspondingly, there are two sets of eight tubes, and the tubes in each of the sets have the same length.

As of Wednesday 02-04-2009 some parts have already arrived to the Storrs campus. These parts were fabric and foam for the construction of supportive pads. If the stainless steel does not arrive by Friday, 02-06-2009, then the team will focus its effort on Friday to begin constructing such pads mainly by exposing the properties of the fabric to be used. Different types of stitching techniques will be used on the fabric and will then be tested for mechanical strength and will also be evaluated based on overall appearance. Furthermore, the capabilities of the foam will also be tested so that an ideal thickness of foam is used when constructing the supportive pads.
Due to the delay in parts order, the team has decided to purchase a wheelchair and modify it to function as a multi-terrain wheelchair instead of building the frame from scratch. Today, Wednesday, 02-04-2009 I picked up a used wheelchair which was advertised for sale online. It is in excellent condition and appears to have been used a minimal number of times (it was also advertised as rarely used online). It is an Access Point Model AXS-4 LITE wheelchair, and a picture of the wheelchair can be seen in the figure below:

![Access Point Model AXS-4 LITE wheelchair](image)

**Figure 2 – Access Point Model AXS-4 LITE wheelchair.**

Before purchasing the wheelchair, the width of the seat was measured to ensure that it would allow us to construct a clamp so that the client’s car seat can be secured directly to the wheelchair frame. In addition, the distance between the front and rear wheels was also measured to make sure that there is enough clearance to allow for the attachment of wheels with a larger surface area which were previously ordered from Weeleez.com.

After further considering the diameter of the new wheels, it is questioned whether installing a push rim is a realistic and practical concept. Since the largest wheels offered on the market are roughly 19 inches in diameter, the push rim can only be 18.5 inches in diameter at a maximum. Clearly, this will reduce the amount of torque produced, and
given the larger surface area of the wheels it may be an impractical means of mobilization. If the team concludes that this in fact is a legitimate concern, a new brake system will need to be planned and constructed which does not depend on the existence of a push rim.

If the wheels arrive before this Friday, the old wheelchair wheels will be removed, and an extension will be made to the existing rear wheel axle. This is necessary because the current axle is only half an inch in diameter, while the new wheels will require an axle that is one inch in diameter. Additionally, the front castors along with the wheels will be removed and the new casters which have the ability to accommodate a much thicker wheel will be installed after necessary modifications are made. After this is completed, the existing wheelchair seat will be unscrewed and the team will begin planning the construction of a clamp so that the customer can attach her car seat directly to the wheelchair.

Clearly, the team has a lot of work planned for the future and will hopefully soon catch up with the initially proposed time-table. If this is accomplished it will be the result of careful team planning and an efficient use of time. At this point, many of the major initially met obstacles have been overcome, and the team is ready to move the project forward to the next phase.