2006 MATC Internship

Lincoln Water System

Matt Richart

Different people have told me many times that the most knowledge a student can attain is not learned in a classroom but through experiences while working. After my experience this summer while working with the Lincoln Water System, I definitely would have to agree. Even though my internship did not involve transportation, the values gained from the internship are the same. The things that I have learned during my internship will be very beneficial to me in the future.

The first project I had while working at the Water System mostly entailed the organization and cataloguing of water project drawings. This was something very good for me to start out doing because I got a good understanding of the information on engineering drawings. The biggest concept I learned from this project is the importance of keeping organized records.

This internship was my first experience using MicroStation® and I spent a lot of the summer using it. One project I had involved making schematic drawings of the city pumping stations and reservoirs and then compiling them into a book for the field workers. These drawings showed such features as pipes, valves and pumps so that the operators would have the basic layout in case of an emergency. Some of the drawings I was able to redraw from the old drawings yet others I had to make from scratch. Through this project, I learned how to read engineering drawings and obtain the necessary information from them. Also through this project, I was able to talk with the people who would actually be using them. They explained to me how everything worked and even took me to many of these sites so I could actually see what it was I was drawing.

I probably gained the most knowledge from this project alone, as I learned the basics of a water system.

Another project I worked with using MicroStation® was creating schematic drawings of the Ashland Wellfield, the location where Lincoln pumps its water. These drawings each showed a different water line flushing process and were used to explain the processes to the EPA and NDEQ to show that proper procedures were in place. I was able to visit the Ashland Wellfield and Treatment Plant through this project. I learned from this trip the process that raw water goes through to become potable drinking water. This tour was probably the highlight of my summer.

The largest project I worked on this summer involved working with a Geographic Information System to populate the Water System's Geodatabase. My job was to go through water project drawings and to obtain information of them about the city water mains. I would look for information about the pipes such as material type, date installed, size, joint types, etc. I would then take this information and input it into the geodatabase using ArcGIS®. The project had a number of purposes. One purpose is to provide a form of asset management to show exactly what it is the city is maintaining. Another is that it is a helpful tool used to obtain specific data related questions. The main purpose is that once this project is completed, the computer can run a predictive analysis tool on the data and prioritize segments of water main that are more prone to breakage. This will aid in the determination of which areas to fund for improvements.

Overall, this has been a very good experience for me. I appreciate the effort my supervisor, Arnold Radloff, took to make this position available. I appreciate all that my supervisors have done to explain things to me and show me how everything works together. They have done a nice job of taking me out into the field to see a number of projects in progress. I have learned much from these experiences and it will be useful to me in the future. The Lincoln Water System was a very enjoyable place to work as I looked forward to coming each day. This internship was an excellent opportunity and I strongly recommend to anyone that no matter where your field of interest may lay that you apply for an internship because the experience is priceless.