2007 MATC Internship Report

Mid-America Transportation Center

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College: a time in a person's life to experience as much as they can, to expand their horizons and find a career path that will challenge them on their path through life. College is one of those phases in which everyone has the same overall goal: to find a job. For many fields of study this task is rather simple: if you want to teach, see what schools are hiring; if you want to practice medicine, apply for medical school. But for an engineering major, the options are not so clear. Through my time spent in the MATC internship program I have gain a greater understanding of the job opportunities offered to majors such as mine. My experiences have led me to a clearer grasp on the tasks performed by a typical engineering professional.

During my thirteen week internship at the Mid-America Transportation Center (MATC), I gained valuable insight into the many aspects of a civil engineer's profession. My focus was on the various research projects that this institute had acquired. Throughout this paper I will highlight some key assignments asked of me in the last thirteen weeks on the job and the valuable skills I have come to master on my way to becoming a more marketable employee.

During my first weeks at MATC I was given a large number of tasks to keep me busy. The most surprising of these was a research trip out into the field to collect data for a crossover project. During this expedition I had to dust off my surveying skills from the class I took two semesters ago. With the aid of a few graduate students, we collected over one hundred data points from this worksite using a tool known as the Total Station; it was later I found out that I was also going to be the one to analyze all these points as well.

Once back in the office I set to work with Computer Aided Design (CAD) software called MicroStation. My previous class experience with its sister program AutoCAD provided some guidance in the learning of this new software; none the less, a few hours of tinkering and MicroStation was another powerful tool to add to my engineering arsenal. The majority of modeling needed in the engineering community is done using MicroStation; so my ability to use this vital tool gives me a competitive edge on any of my fellow classmates unfamiliar to the software.

Using this software, the points taken on our trip to the field were going to become a three dimensional image of the worksite that we visited. Once completed, this drawing would allow for researchers to take a virtual drive through the work zone to aid them in the research project concerning crossovers. This drawing took up a considerable amount of my internship time but the result was well worth it. Now not only can I tell employers I am proficient in MicroStation, but I can show them some of my completed work.

While working on this large MicroStation document, I also spent time on a few other research projects being undertaken. One such project dealt with roundabouts and the public's opinion of them. I was charged with the task of organizing more than 500 surveys that where sent out across the state of Nebraska. These surveys were to be inputted into an Excel document where the responses could be further analyzed and could benefit the roundabout project.

Not much later after being assigned the roundabout surveys, we ventured back to the crossover worksite to collect a different kind of data. This time we used Nu-Metrics NC-97 vehicle detectors and video cameras to collect information about

vehicles' behavior while maneuvering through crossovers. This task allowed me to learn a method of noninvasive data collection on a roadway system. The reason for the data collection to be hidden is due to a notable change in driving patterns when drivers know they are being observed. These notable changes could creep error into our data and make the collection of consistent data virtually impossible.

Once back in the office I was charged with the task of organizing this data into an Excel document to be analyzed at a later date. We also collected video data to determine a few factors not capable of being detected by the Nu-metric detectors. This information also needed to be organized into the Excel document. By this time in my internship I was becoming quite the organizer.

The opportunity to work alongside practicing engineers has given me a much greater understanding of the duties required of me once I begin my practice. It has made me a more marketable employee in the job market. I can now use a variety of software programs unfamiliar to me before this summer as well as manage field work given to me. After this summer of experience and learning, I know the next step along my career path and await the tasks ahead in becoming a professional civil engineer.