

Josh Bauer

2007 MATC Summer Internship Report

Nebraska Department of Roads



When I signed up for the 2007 MATC summer internship program, I really did not know what I was getting myself into. I had only the knowledge from one transportation course I had taken the semester before. Although that course touched on a variety of topics within the field, I still did not know how the academic and employment sides of the profession would integrate, if at all. I had never used MicroStation or SignCAD before, nor did I have any idea what a junction plan would actually entail. However, before long I was using these programs to get tasks done that I had no idea how to do one week before.

When I began in the traffic engineering department at the Nebraska Department of Roads, I started learning how to operate MicroStation and began doing basic tasks the first day. My major project for the summer began when I was given the junction plan books for the entire State of Nebraska. This seemed to be a daunting task as there has to be hundreds upon hundreds of highway junctions in Nebraska alone. I was told I was to help clean up these plans and make changes according to what actually exists on the road. Starting with my first plan, I realized that many of these had not been updated for 20 or more years so the corresponding signage had completely changed and some roads no longer exist or had changed numbers.

In doing this I learned the major difference between public agencies and private firms. The Nebraska Dept. of Roads has control over every highway in the state; therefore, it is in charge of all junction plans within the state. In accordance with junction plans, the Nebraska Dept. of Roads is also responsible for placing the physical signs shown on the plans. Most of these signs already exist, but for new or redesigned

junctions, new signs must be designed and placed. To do this, I learned how to utilize SignCAD, a program used for creating new traffic signs.

The State of Nebraska is divided up into districts and work is sent from the districts to the main office in Lincoln, District 1. For example, the signing engineer in District 6 would send a request to the Lincoln office for a new or replacement sign to be placed in their respective district. Most signs have already been created in SignCAD, so the design is just pulled up and sent out to be made. But sometimes a sign doesn't exist as a SignCAD file so it must be created before it can be sent to the shop to be made. I was given new signs to draw up and send out. I think this was one of the best parts of the internship as you really get a feeling of accomplishment when something you designed actually gets manufactured and placed.

I also worked with engineers in the traffic analysis section of the traffic engineering department to see how present road conditions will fill the needs of communities and future businesses. I worked on the "Grand Island South" project to access roadway problems by looking at accident reports and going out and looking at conditions. From doing this, problem areas can be determined and suggestions can be made. In this case, the current design of US-281 could not withstand the rapidly growing community of Grand Island. Old pavement, out-dated design, and improper signs and lighting were causing problems in the area.

Overall, I have really enjoyed my experience at the Nebraska Dept. of Roads this summer. I am more interested in transportation engineering, especially traffic engineering, than I was when I started. I am glad I had the opportunity to be involved in

the program and am planning to go into transportation engineering in some capacity when I graduate in May 2008.