

Kyle McLaughlin

MATC Intern Report

Summer 2015

City of Lincoln

For the summer of 2015 I was placed with the City of Lincoln by the Mid-America Transportation Center. This summer has been almost the exact opposite of what I had envisioned for my internship and that is in no way a bad thing. Throughout the summer I have been able to see things from the other side of engineering, as a field inspector for the public sector. An Inspector is someone who is at the physical job site watching the construction happen. They are also the people responsible for making sure that the contractor stays on schedule, makes sure that they do the work that they are being paid for, as well as initiates a payment for those things as the work gets done. Overseeing the contractor entails everything from confirming the amount of materials being used, to ensuring that steel is being tied in the proper orientation, as well as help keep an eye out for problems that come about that are not specified in the plans.

Most of my summer was spent on the project at Northwest 48<sup>th</sup>, it is a lane widening project and a 15 million dollar project at that. Since it is within the city limits, and because it is being built on an already developed piece of land, there are a lot more complex pieces to the puzzle that is a four lane street. When widening a street, not only do you have to be concerned about implementing a new water line storm sewer, sewage, and roadway, but you also have to be concerned with what is existing, what can be tied into, and how to remove and phase traffic throughout the project. It has been a learning experience in itself just to watch the contractor juggle all these things while working on this project. To take it step by step, I have been able to watch the contractor figure out how to get the forms of a box culvert to work without making his employees crawl over 150 feet to remove the forms once it is poured with concrete. I have seen the contractor figure out traffic phasing and stay on top of subcontractors who are responsible for traffic signage and lane switching. Water main line has been interesting to watch because there is always something being changed, whether it is a valve being put in or taken out, a hydrant being forgone, or a problem arising with tie in and contamination issues because the engineer didn't think about the procedure thoroughly in the design.

The project held weekly meetings at which all of the subcontractors for the project sent a representative and discussed what happened the week before as well as the plan for the coming week. These meetings served as a place for everyone to get potential problems and delays to the entire project without sending a ton of emails. They also provided me, the project inspector, with a week by week timeline of the important and critical events happening throughout the project, which helped focus efforts to ensure a job well done. At times I sat there and marveled at how well some of the workers were able to read the plans drawn up by an engineering firm and by people that they have never met, yet they were still able to understand some of the thought processes of the engineer behind the design.

While I was not at the project, I filled up the rest of my hours this summer with sidewalk inspections. The residents of the city called in to request the aid and services of the Public Works to fix and maintain the sidewalks to a standard that allows disabled people to easily use them. I went on a few different bridge inspections, things that are done as routine maintenance to ensure the public safety. And one of the most unexpected things that I have done this summer while on the job was get a tan.

One of the few things that I did not do throughout this entire summer at my internship was sit behind a desk and do design engineering work, and that is perfectly OK by me. By being in the field, I have been able to broaden my perspective of what a project entails as well as the intricacies of a project within city limits, some of the roadblocks that arise in the field, and some of the methods of resolution to problems in the field are. By being in the field for a summer with the people actually building the projects, I have somewhat of a better understanding of what can potentially be confusing to someone who has not had any influence in the design. I am now able to think about some ways to make certain details less confusing or less cluttered so that people who are just looking at the plans can understand what I am trying to accomplish and therefore make a better resulting project. Being on the construction end of a project allows for an engineer to get a unique perspective on the work that they are doing, it allows for an engineer to see what type of problems can arise that are not visible from a computer desk.

Knowing what is possible, what is required, and what is realistic is a great toolset to have on the path to becoming a holistic engineer.

I would say that my introduction to the public sector of engineering and construction has been a great success, and I am strongly considering taking that path as a career.