

## My MATC Internship Experience

City of Lincoln

Public Works

Engineering Services

Design/Construction

May 2014 to August 2014

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My internship this summer was with the City of Lincoln Public Works Engineering Services Design/Construction Department. I worked in the field with another construction inspector, Tim Zach, and we reported to the Project Manager, Tim Byrne. I was on the Old Cheney widening project from 70<sup>th</sup> to 82<sup>nd</sup> Street and there was never a dull moment with those contractors out there. My main task was to inspect the construction of the modular block retaining wall. This internship exposed me to all different aspects of large road projects, including: storm sewer installation, water main replacement, private utility relocation, sediment and erosion control, construction and removal of pavement, traffic signals, lighting, pavement markings, and signage. I learned a lot about dealing with the public (both happy and upset homeowners) and the contractors.

The majority of my time was spent observing and inspecting the modular block retaining wall. The first step to constructing the wall was excavating, and I learned a lot from just observing. Communication between the utility companies, locators, and excavators is important. A lot of underground utility lines had to be relocated before this project could begin. The old conduit was abandoned and when the excavator comes across it, we had to decide if the line is abandoned and safe to remove. If the excavators don't know, they may damage the line and cause delays in the project. The most important part of the wall is the first course. It was my job to make sure the first course of blocks was straight and level before they could continue building the wall up. The contractors also had to install geotextile fabric and backfill in front of and behind the wall. These steps sound easy, but don't always go according to plan.

The biggest thing I learned is that even after the plans have been finalized, they can change, even the time table. When you have a few contractors working together there is going

to be somebody in the way. Unforeseen conflicts may slow the project down. Other factors that may change the schedule of the project include weather, miscommunication, and incentives. Some things look great on paper, but when the contractor gets to that section of the project, it is not practical to complete the task as outlined in the plans. For example, the design of the blocks in the retaining wall actually changed after completion of the first wall. The original blocks had a four inch step back on every course. When it came to shoring the embankment near the utilities, the sheet pilings were set back to allow for the block stepping back and were getting too close to the underground utilities. Not only was a vertical wall more practical, it was also more appealing. In another change of plans, there was a case where homeowners were upset we were going to remove their trees, so the city told them we could save them. In order to do that, temporary sheet piling that was not called for in the plans had to be installed along the embankment. On the 77th Street intersection the south east mast arm pole had to be moved further east and south because the storm sewer pipe was installed with the wrong radius and was interfering with the foundation of the pole. Finally, the plans call for sediment and erosion control fencing around certain areas of the project. These fences were not only installed in those areas, but also in problem areas not seen ahead of time. If sediment is getting onto a homeowners property, more fencing is needed to make sure we protect land we are not allowed to disturb.

Old Cheney was a large project that I learned a lot from. It takes years of planning ahead to get a project like that completed. I learned that no matter how hard you try you cannot always make everyone happy. Somebody will have a problem with the project or the way things are being done. To go from looking at the project plans to seeing a finished product was a

valuable experience for me. My summer with the City of Lincoln was a memorable one and something I believe will be very valuable to me in my career.