



## MATC Internship Report

Olsson Associates

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Rosy streaks peak through the clouds to signal a new day approaching. Caffeine coursing through my veins warms my body and heightens my senses. Sitting with traffic counter in hand, I smile as vehicles pass by. The MATC intern program connected me to a national engineering firm where my sponsor revealed the diversity within the transportation engineering industry and provided opportunities such as traffic studies and roadway design projects.

Early in the summer my supervisors encouraged me to ask questions about software techniques, project scope, and industry practices. Communication and reciprocated understanding became integral to project progression and success. Beginning the first day, projects given to me tested my MicroStation knowledge accrued during a previous UNL course. The work began small as I developed a firm foundation, and my colleagues tested my drafting capabilities. My first project was a local roadway expansion at 84<sup>th</sup> and Adams to facilitate access to a new housing development. I checked geometrics of the proposed roadway design using Geopak. Since the 84<sup>th</sup> Street project is located in Lincoln, I had the opportunity to travel to the site and verify critical element locations such as existing light poles, storm drains, and bordering elevations.

My coworkers quickly found more complex tasks to develop my MicroStation and Geopak skills. The second project required the calculation of soil cut from a ditch the proposed road would cross. Some topsoil in the ditch would need to be removed to reach a firm foundation that would not settle. I measured and input the cuts into the sheets and reran the cross-sections to calculate the total removal quantity.

Working for a large engineering company presents a significant advantage with the chance to collaborate with professionals outside the transportation engineering field. Another project, the expansion of Q Street in Omaha, connected me with the landscape architect as the design transitioned from geometrics to aesthetics, which reminded me of the positive influence a little foliage can add to a concrete landscape.

Occasionally stepping outside my tan cubicle walls to experience nature, morning and afternoon traffic counts varied from gravel road intersections to crowded highways. The one consistency was coffee, possibly the engineer's most important tool. During traffic counts, I worked with Olsson Associates' other MATC intern, Mike Stetson, and former MATC interns Brett Lauritsen, John Parizek, and Justin Peterson. Working with former MATC interns created instant camaraderie because they had lived the pitfalls and successes I experienced throughout the summer.

My final internship project, which I will continue as a part-time Olsson Associates employee, is a parking lot adjoining the Lewis Park baseball fields in Lincoln. We began the lot design with a kick-off meeting to greet affected organizations: Parks and Recreation, Lincoln High, City of Lincoln, and Watershed Management. With high visibility from Capitol Parkway and bordering Antelope Creek, the project needed room for vegetation while maximizing parking space and ensuring sustainability. By utilizing medians as rain gardens and constructing permeable concrete throughout portions of the parking lot, a Low-Impact Development plan eliminated storm sewer runoff.

Upon completing the initial design which satisfied the needs of all interested organizations, the allocated budget would not sustain the proposed construction costs. Through four iterative submittals, a feasible compromise progressed forward. This project taught me the quick and harsh lesson of money and politics hidden within the transportation engineering industry.

My MATC internship has given me the opportunity to discover success while designing roadways for a national engineering firm. Throughout the summer, I was awed by the complexity within the transportation engineering field, but ease comes with experience. My MATC internship has transformed me from an inexperienced student into a budding professional by instilling in me the knowledge, judgment, and confidence to choose a practical and cost-efficient roadway design.