

# Career

# PATHWAYS



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*Career Pathways explores high-demand careers and the local people who work in them.  
Read all about it and see if one is for you!*

## CONSTRUCTION TECHNICIAN

### ABOUT: CONSTRUCTION TECHNICIAN CAREERS

Our vast and complex national infrastructure keeps Americans moving! And without it, we'd have a hard time getting around safely.

We often don't realize how reliant we are on structures like roads, bridges, and sewers until construction interrupts our daily routines. But that's where construction technicians come in! They ensure that when a road needs to be repaired (to fix those big potholes) or a new bridge is built, the work is done correctly, while keeping traffic flowing and ensuring our favorite businesses remain accessible.

Technicians survey, sample and inspect projects as they are being built. They work in all kinds of weather and with all kinds of people. They interact daily with contractors, subcontractors, fellow employees, business owners and community members.

Technicians have keen problem solving abilities and there's never a dull moment. What? A fiber optic line or sewer system is in the way of construction? Figure out how to work around it or move it—the challenges are as diverse as our roadways!

Are you excited yet? If the challenge isn't enough for you, the pay isn't bad either. Read more to find out if you are ready for a career as a construction technician.

### MEET A CONSTRUCTION TECHNICIAN

Chuck Broderick has been working as a construction technician with the Michigan Department of Transportation (MDOT) for 21 years. From an early age, he knew this career was for him. "Our family owned a construction company," explained Broderick. He remembers watching his Dad work with an inspector on various projects. "I decided then that I wanted to have his job. I wanted to be in charge."

After graduating from high school, Broderick enrolled in the construction engineering technology program at Ferris State University and later transferred to Michigan State University for civil engineering. Broderick participated in a co-op training program with the Michigan Department of Transportation, which allowed him to spend half his time in the classroom and the other half training on-the-job with MDOT projects. He was hired immediately and has worked on projects in Grand Rapids and Battle Creek, but spends most of his time in the tri-county area.



Chuck Broderick, Construction Technician

### A DAY IN THE LIFE

There is a lot of variety in a Technician's day. Broderick's job has him surveying; testing asphalt and concrete; and inspecting all kinds of infrastructures from bridges and roads to sanitary, sewer and water mains. "I'm never bored because the work is challenging and I'm constantly solving problems."

MDOT staff who design projects sometimes have to rely on inaccurate or outdated blueprints, and when something unexpected is found in the field (i.e. an unknown water main in the way of construction), it's up to Broderick to find an alternative. "When there's a problem, I consult engineers and designers back at the office to come up with solutions."

While engineers and designers spend a lot of time in the office, Technicians are primarily out in the field working on the front lines and making things happen, which Broderick enjoys the most. "I like working independently, but I also work with a variety of teams," Broderick said.

Finding ways to get the work done while keeping everyone happy is his biggest challenge. "It's hard to please everyone," he explained. "I meet a lot of new people," Broderick said. "You have to listen to their needs, earn their trust and be responsible to make sure things are done right."

### REQUIRED SKILLS AND EDUCATION

Individuals interested in a career path similar to Broderick's usually need an associate's degree, which is typically in civil engineering with a focus on transportation, and then usually on-the-job or more specialized training after that.

"Good math skills are important, too," explained Broderick, who said he relies on math to calculate yields and tons of asphalt ... and to find cubic yards of volumes for where concrete and pavement are removed. "We use a lot of trigonometry for surveying and algebra for everything else—sometimes even calculus." Technicians should also be able to manage inventory, such as pipes, pavement, signage and barrels.

In the field, Broderick added that technicians need to be tough enough to tolerate all kinds of weather—from heat and dust to snow and rain. Individuals should also be able to do some lifting and be comfortable enough to climb on bridges and other structures in addition to operating field management software on computers.

### TOOLS OF THE TRADE:

Calculator, computers

### SHOW ME THE MONEY CIVIL ENGINEERING TECHNICIANS (LOWER 25% - UPPER 75%)

Tri-County	Michigan	United States
\$44,300 - \$58,400	\$34,700 - \$49,900	\$32,500 - \$54,400

### CIVIL ENGINEERS (LOWER 25% - UPPER 75%)

Tri-County	Michigan	United States
\$56,900 - \$90,100	\$54,400 - \$78,400	\$56,900 - \$90,100

### LEARN LOCALLY:

**Civil engineering technician programs:** Alpena Community College, Central Michigan University, Delta College, Eastern Michigan University, Ferris State University, Gogebic Community College, Lake Superior State University, Lansing Community College, Lawrence Technological University, Macomb Community College, Michigan Technological University, Monroe County Community College, Northern Michigan University, Siena Heights University and Western Michigan University.

**Civil engineering programs:** Lawrence Technological University, Michigan State University, Michigan Technological University, University of Detroit Mercy, University of Michigan-Ann Arbor, Wayne State University, Western Michigan University

### TRENDS:

Conserving money and materials, while maintaining quality, have been a key focus of the industry. "There is a great emphasis on fiscal responsibility and efficiency to find ways to be more productive with limited resources," Broderick said. Environmentally speaking, he added, the organization works hard to shut off lights, not idle trucks, turn down thermostats, and recycle asphalt, concrete and scrap metal when possible.

### WEB RESOURCES

- Alpena Community College – [www.alpenacc.edu](http://www.alpenacc.edu)
- American Association of State Highway and Transportation Officials – [transportation.org](http://transportation.org)
- American Society of Civil Engineers – [www.asce.org](http://www.asce.org)
- Central Michigan University – [www.cmich.edu](http://www.cmich.edu)
- Delta College – [www.delta.edu](http://www.delta.edu)
- Eastern Michigan University – [www.emich.edu](http://www.emich.edu)
- Ferris State University – [www.ferris.edu](http://www.ferris.edu)
- Gogebic Community College – [www.gogebic.cc.mi.us](http://www.gogebic.cc.mi.us)
- Institute of Transportation Engineers – [www.ite.org](http://www.ite.org)
- Lake Superior State University – [www.lssu.edu](http://www.lssu.edu)

- Lansing Community College – [www.lcc.edu](http://www.lcc.edu)
- Lawrence Technological University – [www.ltu.edu](http://www.ltu.edu)
- Macomb Community College – [www.macomb.edu](http://www.macomb.edu)
- Michigan Department of Transportation (MDOT) – [www.michigan.gov/mdot](http://www.michigan.gov/mdot)
- Michigan Infrastructure & Transportation Association – [www.mi-ita.com](http://www.mi-ita.com)
- Michigan State University – [www.msu.edu](http://www.msu.edu)
- Michigan Technological University – [www.mtu.edu](http://www.mtu.edu)
- Monroe County Community College – [www.monroeccc.edu](http://www.monroeccc.edu)
- Northern Michigan University – [www.nmu.edu](http://www.nmu.edu)
- Siena Heights University – [www.sienaheights.edu](http://www.sienaheights.edu)
- Wayne State University – [www.wayne.edu](http://www.wayne.edu)
- Western Michigan University – [www.wmich.edu](http://www.wmich.edu)

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