# Construction Engineer Job Description

A construction engineer is a type of civil engineer who plans, directs, and supervises large construction projects. Most construction engineers specialize in a specific type of project such as commercial buildings, heavy highway (bridges, tunnels, and underground wastewater plants), mechanical systems, or electrical. Construction engineers operate as part engineering expert, part project manager, and part business manager. They creatively serve as a leader and middleman on construction projects to make sure everything about the project is safe, smooth, and structurally sound. Construction engineers usually work full time and may work longer 12-hour shifts seven days per week if they need to travel to a remote location to monitor project progress.

### Construction Engineer Duties and Responsibilities

While a construction engineer’s day-to-day duties and responsibilities are determined by where they work, there are many core tasks associated with the role. Based on our analysis of job listings, these include:

Develop Construction Plans

Construction engineers manage the planning and design stage of construction projects. They carefully evaluate the structural, electrical, and mechanical condition of each project. Engineers carefully inspect all drawings and designs before they are implemented. They plan personnel flows and decide how other contractors and subcontractors will support ongoing operations. The construction engineer also analyzes a job’s financial projections to ensure they are accurate and practical.

Oversee Engineering Processes

Overseeing all the different engineering processes in a construction project is the primary responsibility of a construction engineer. They are expected to be subject-matter experts and complete routine tests to make sure that all legal regulations are followed. They keep an up-to-date understanding of all legal obligations and contract terms to prevent project delays, support all construction workers, and actively drive projects to completion.

Manage Construction Projects

Construction engineers bring specific knowledge to construction projects, such as cost control, cost accounting, and management of project schedules. They constantly refer to schedules to make sure quality work is done on time. When needed, they facilitate discussions and create solutions between construction contractors and construction managers. It is their responsibility to eliminate disagreements in the field and misunderstandings about expected work outcomes.

Draft Technical Support Documents

Keeping up-to-date logs, estimates, change orders, vendor forms, and surveys with different software is a key role of construction engineers. With documentation, they identify and spot technical problems in the construction process. If necessary, they secure more materials to keep construction going.

Communicate with Team Leadership

Weekly meetings with all parties involved in a construction project are common for construction engineers. Part of their job is to provide necessary status updates and respond to questions from contractors, clients, and their own company leadership. Furthermore, they regularly assess all projects to suggest different cost-saving techniques for a project. Many construction engineers are also required to send weekly project reports to their construction manager.

### Construction Engineer Skills and Qualifications

Construction engineers need strong analytical and leadership skills so they can solve technical engineering challenges while managing a large construction team. Employers typically seek candidates with a bachelor’s degree, at least two years of experience, and the following skills:

* Civil engineering – construction engineers using technical engineering skills based in math and physics to predict future problems and find solutions for them
* Project management – construction engineers determine the critical path necessary for a project to get done, then design plans to make it happen. People at all levels look to them for guidance
* Construction management – engineers perform various construction management duties, such as budget management, scheduling, material procurement, and labor planning
* Leadership – interpersonal skills are essential for construction engineers to lead a large crew and successfully influence the outcomes of construction projects
* Creativity – construction engineers need to use creativity to innovate and improve solutions
* Planning skills – planning and design are essential skills for construction engineers to execute their responsibilities well
* Communication skills – good verbal and written communication skills are important for construction engineers because they constantly submit reports and share vital information in a clear, concise manner