

## Champaign County Job Description

**Job Title:** Structural Engineer

**Department:** Highway

**Reports To:** County Engineer

**FLSA Status:** Exempt

**Grade Range:** L

**Prepared Date:** December 20, 2019

**SUMMARY** Plans, designs, and directs engineering projects on County and Township roads and bridges. Serves as Resident Engineer on major construction projects and supervises contractors. Prepares and certifies workable design drawings of bridge projects.

**PRIMARY DUTIES AND RESPONSIBILITIES** include the following. Other duties may be assigned.

Serves as Structural Design Engineer on county and township bridge projects.

Serves as Resident Engineer on major construction projects to ensure that projects are built in accordance with plans, special provisions, IDOT Standards and estimates. Provides engineering advice to assist in solving problems.

Performs bridge inspection surveys on all county and township structures to monitor bridges for maintenance, repair, or replacement.

Analyzes reports, maps, drawings and tests on soil composition, terrain, hydrological characteristics, and other topographical and geological data to plan and design projects.

Directs or performs surveys for proposed construction. Estimates costs and determines feasibility of project based on analysis of collected data.

Co-ordinates contract work with utility companies and other governmental agencies.

Prepares or directs preparation and modification of reports, specifications, plans, construction schedules, environmental impact studies, and designs for project. Reviews preliminary plans and specifications of construction contracts. Approves shop drawings of structural components submitted by contractors. Prepares authorizations for change orders regarding construction revisions.

Inspects construction site to monitor progress and ensure conformance to engineering plans, specifications, and construction and safety standards. Resolves design or construction problems and meets with contractors and the public.

Uses computer assisted engineering and design software and equipment to prepare engineering and design documents.

Administers EEO and labor compliance requirements. Prepares progress and final documents to meet State and Federal Highway Administration requirements.

**SUPERVISORY RESPONSIBILITIES** Supervises contractor's workforce on site. Carries out supervisory responsibilities in accordance with the organization's policies and applicable laws. Other supervisory responsibilities include training employees, assigning and directing work.

**QUALIFICATIONS** To perform this job successfully, an individual must be able to perform each primary duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required.

**EDUCATION and/or EXPERIENCE** Bachelor's Degree (B.S.) from a four-year college or university with a degree in Civil Engineering; with 5-7 years related experience and some supervisory experience; or equivalent training and experience. Continuous studying and training in the job is required.

**LANGUAGE SKILLS** Ability to read, analyze, and interpret common engineering and technical journals and financial reports and legal contracts. Ability to respond to inquiries or complaints from contractors, regulatory agencies, or other engineers. Ability to effectively present information to contractors, employees, government agency personnel and the general public.

**MATHEMATICAL SKILLS** Ability to apply advanced mathematical concepts such as exponents, logarithms, quadratic equations, and permutations. Ability to apply mathematical operations to such engineering tasks as structure, stress, load weights and other engineering factors.

**REASONING ABILITY** Ability to define problems, collect data, establish facts, and draw valid conclusions. Ability to interpret an extensive variety of technical instructions in mathematical or diagram form and deal with several abstract and concrete variables.

**CERTIFICATES, LICENSES, REGISTRATIONS** Registration as a Professional Engineer in the State of Illinois. Registration as a Structural Engineer in the State of Illinois. Certification as a bridge inspector.

**PHYSICAL DEMANDS** The physical demands described here are representative of those that must be met by an employee to successfully perform the primary functions of this job. Frequent on-site visits to road and bridge construction which includes climbing and walking over rough terrain. While performing the duties of this job, the employee is frequently required to walk; reach with hands and arms; and talk; or hear. The employee is occasionally required to stand; sit; use hands, handle, or feel; climb or balance; and stoop; kneel; crouch; or crawl. Employee must occasionally lift and/or move up to 75 pounds. Specific vision abilities required by this job include close vision and depth perception. Occasionally required to wear safety helmets and safety glasses.

**WORK ENVIRONMENT** The work environment characteristics described here are representative of those an employee encounters while performing the primary functions of this job. While performing the duties of this job, the employee is occasionally exposed to wet and/or humid conditions, moving mechanical parts and outside weather conditions. The noise level in the work environment is usually quiet, although the individual can be exposed to loud noise situations occasionally.