

## CIVIL ENGINEER

### JOB DESCRIPTION

**Classification Responsibilities:** Under general supervision, performs professional civil engineering work in the office. This class performs related duties as required.

**Distinguishing Features:** An employee of this class performs professional civil engineering work, including design layout and plan review. In addition, the Civil Engineer may supervise the work performed by technical or paraprofessional Engineering staff. The Civil Engineer classification is the entry-level class within the professional engineering career ladder. Assignments provide opportunity for the application of independent judgment and initiative in the design, management, and review of projects. Work is performed under the direct supervision and guidance of a registered engineer, who instructs the Civil Engineer in practices of project management, engineering methodologies, and engineering principles. Work is reviewed through meetings, conferences, inspections, and results achieved. The Civil Engineer class differs from the Senior Civil Engineer class by the latter having registration in the state of Arizona as a Civil Engineer, and performing more difficult and varied professional engineering work assignments with minimal direct supervision. Employees in this class may progress by noncompetitive promotion to Senior Civil Engineer upon meeting the specific criteria-based promotion requirements of performance and registration as a Professional (Civil) Engineer in the state of Arizona. This class is FLSA exempt-professional.

### QUALIFICATIONS

**Employee Values:** All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

**Minimum Qualifications Required.** Any combination of training, education, and experience equivalent to graduation from an accredited college or university with a Bachelor's Degree in Civil Engineering or closely related field.

**Special Requirements.** Must possess a valid Arizona Driver's License by hire date.

**Substance Abuse Testing.** None.

**Preferred/Desirable Qualifications.** Some (6 months - 1 year) civil engineering experience is desirable. Certification as an Engineer-in-Training (EIT) is also desirable.

### ESSENTIAL FUNCTIONS

One position may not include all of the essential functions, knowledge, and abilities listed, nor do the listed examples include all the knowledge and abilities which may be found in positions of this classification.

**Communication:** Communicates with the general public, other City, state, and federal employees, vendors, management, consultants, contractors, and public officials in order to perform assigned work.

Instructs and trains subordinates, consultants, contractors, and the general public in a classroom setting regarding capital improvement projects, or different programs such as the City's design process. Prepares letters, memos, specifications, and reports with clearly-organized thoughts and using the proper sentence structure, punctuation, and grammar to communicate technical and controversial issues.

**Manual/Physical:** Reviews the work products of others to ensure compliance with standard operating procedures, federal regulations such as the Environmental Protection Agency (EPA), Department of Transportation (DOT), or Corp of Engineers, state regulations such as the Arizona Department of Transportation (ADOT), Arizona Department of Environmental Quality (ADEQ), and county and City regulations. Inspects, monitors, and evaluates work-related information to determine compliance with prescribed operating and safety standards. Operates a City vehicle requiring a standard Arizona Driver's License to perform field reviews of projects as well as to meet with outside agencies and utility companies. Operates a variety of standard office equipment. Enters data or information into a personal computer in order to prepare reports, perform calculations, and prepare drawings. Prepares bundles of plans, specifications, and reports for distribution and/or mailing to other City agencies and departments. Meets scheduling and attendance requirements.

**Mental:** May plan, organize, and direct the activities of technical or paraprofessional staff. May supervise and evaluate the work of staff, which may include: drafting, design calculations, technical reports, customer contacts, and fieldwork requests. Prioritizes own work and may prioritize and assign work to staff. Plans, organizes, designs, manages, and reviews projects. Resolves procedural, operational, and other work-related problems that are design-related by discussing the problem and finding alternatives. Coordinates work activities and program function with other City departments, other cities, and other state and federal agencies. Develops design-specific policies, procedures, and short- and long-term objectives regarding standards and design concepts. Conducts research and analyzes service and operation data, design standards, and regulations in order to perform assigned duties. Performs mathematical calculations, statistical computations, and financial and/or cost analyses. Prepares cost estimates for specific projects and assists in preparing the division budget. Comprehends and makes inferences from written material such as memos, letters, plans, specifications, and standards to perform duties. Understands and/or interprets blueprints, schematic drawings, layouts, and other visual aids such as redesigning or models to perform design and design review. Estimates labor and material costs from blueprints. Learns job-related material through on-the-job training, and in a classroom setting regarding design of a particular project, or new regulations regarding design.

**Knowledge and Abilities:**

Knowledge of:

public works design, standards, materials, and construction;  
the principles and practices of civil engineering and the methods and techniques used in the design of public water, sanitary sewer, storm sewer, underground utility lines, retention basins, pump stations, water storage tank sites, and public street improvements;  
federal, state, and local regulations and codes, and the engineering standards pertaining to the design of the projects assigned; and  
symbols and terminology used in engineering drawings.

Ability to:

determine, upon receipt of a design project, the approach to be taken for completion, including elements assigned to subordinate personnel;

direct the research and compilation of data necessary for the fulfillment of design objectives;

coordinate related work flow, both within the City and with outside agencies;

supervise an engineering design team by assigning work, selecting work methods, answering questions, and reviewing design and other work performed by paraprofessional/technical team members for compliance to instructions given and conformity to sound engineering principles;

assist team members in the resolution of design problems;

review construction plans by checking for such factors as proper sewer and water line slopes, sizes, and depths to ensure adequate flows and capacities, compliance with County Health Department requirements, and standard civil engineering practices for sewer line design and correct manhole spacing and location of cleanouts;

review construction plans by checking for such factors as proper street and right-of way widths; alignment and grades of curbs, gutters, and pavement sections; and compatibility with existing improvements within the adjacent areas already developed;

coordinate the design of City projects with consulting engineers;

review outside design work for aspects identical or similar to those of work performed in-house;

provide general engineering advice to other City divisions and to the general public;

prepare oral and written reports of a technical nature;

establish and maintain effective working relationships with City officials, other professionals, contractors, coworkers, and the general public;

determine adherence to civil specifications on a variety of construction jobs and communicate effectively and persuasively with contractors, consultants, and developers in securing compliance with specifications, plans, and ordinances;

apply fractions, percentages, ratios and proportions, mensuration, logarithms, algebra, geometric constructions, and the essentials of trigonometry;

work quickly and accurately under pressure to meet deadlines for project completion or issuing an addendum;

write project special conditions and construction notes precisely so there is little possibility of misinterpretation by contractors;

read and interpret construction drawings;

compute quantities and make cost estimates; and

conduct engineering research work.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included do not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

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