

ENGINEERING TECHNICIAN II

JOB DESCRIPTION

Classification Responsibilities: An Engineering Technician II performs paraprofessional engineering work, including technical and skilled drafting assignments. This class performs related duties as required.

Engineering Assignment: This position functions at full performance regarding Civil 3D and other Computer-Aided Drafting (CAD) assignments. An employee in this class continues to build their engineering design experience, understanding, and capabilities. Responsibilities include drafting and design of utility projects, public works projects including; sanitary sewers, storm drains, street improvements, retention basins, site improvements, public water, and other underground utility lines, etc., and other related tasks. Additionally, this class will be responsible for various aspects of Civil 3D modeling which may include; establishing alignments, surface modeling and development, profile and style template creation, survey point generation, and illustration of other Civil 3D elements. The incumbent is assigned to a Design Team headed by a Senior Civil Engineer, Senior Engineering Technician, or other assigned Engineering classes. A significant element of the work entails the drafting of moderately difficult engineering design projects. An Engineering Technician II exercises considerable judgment in determining work methods and functions as an independent member of the Design Team with moderate oversight and coaching.

Water Resources Assignment: Primary responsibilities include: data collection from field equipment, instruments, or supervisory control and data acquisition (SCADA); assisting with data analysis through preparation of tables and reports; data entry into databases or spreadsheets; preparation of maps, exhibits, and standard details using ArcGIS or AutoCAD software as appropriate; researching record drawings, shop drawings, and operations & maintenance (O&M) manuals; preliminary review of plans and specifications for conformance to department standards; and preparing cost estimates. For the wastewater system, specific assignments may include: coordinating data collection with field crews and City contractors, reviewing closed circuit television (CCTV) sewer inspection videos; identifying sewer defects using National Association of Sewer Service Company (NASSCO) defect codes; preparing inspection logs using Granite XP and PipeLogix software; assisting with recommendations for rehabilitation of sewer lines; collecting field data from portable flow monitors, odor sampling monitors, and other field instruments; assisting in performing field pump tests, vibration analysis, and compiling data in spreadsheets and graphs; collecting asset information from O&M manuals and field equipment for entry into computerized maintenance management system (CMMS) software; assisting engineers in collecting data, preparing exhibits, and drafting design concept reports for capital improvement projects.

Distinguishing Features: An Engineering Technician II is distinguished from the Engineering Technician I by the greater independence under which the work is performed, the complexity of work performed, and by having ongoing responsibility for project teamwork. An Engineering Technician II is distinguished from the higher-level Engineering Technician classes by the former's limited involvement in design work and capacity to design. Employees are supervised by a Supervising Engineer, a Senior Civil Engineer, Senior Engineering Technician, or other technical staff, with work reviewed upon completion. This class is FLSA nonexempt.

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. Graduation from high school or GED. Any combination of training, education, and experience equivalent to two years' experience in paraprofessional engineering work involving CAD or other related software.

Special Requirements. Must possess a valid Class D Arizona Driver's License by hire or promotion date.

Substance Abuse Testing. None.

Preferred/Desirable Qualifications. Graduation from an accredited college or university with an Associate's Degree or certification in CAD drafting. Autodesk Software (Civil3D and AutoCAD) experience (2+ years) as well as capacity to work in different disciplines are preferred. Experience integrating CAD and ArcGIS Esri Desktop is desirable. Capability to draft street or utility layouts, including right-of-way lines, lot lines, existing utilities, and addresses. Familiarity in working with survey data, surfaces, alignments, and plan and profiles in preparation of construction documents. Knowledge in Microsoft Office Product Suite. Experience in balancing a few projects consecutively is highly preferred (*Engineering Assignment*). Some (2+years) CAD, GIS, or related software experience preferred. Supplemental coursework in Civil Engineering, Engineering Technology, or equivalent. Basic understanding of water and wastewater systems, experience with field monitoring and sampling equipment, proficiency with word processing and spreadsheet software, and basic ability to use AutoCAD and/or ArcGIS software (*Water Resources Assignment*).

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 employees, or others in order to identify work flow problems, express ideas for new codes, and establish the specific needs of work requests. Assists with updates to CAD and other related standards. Prepares written documents such as work sheets, problem reports, and functional problems with clearly organized thoughts and using proper sentence structure, punctuation, and grammar in order to present to the supervisors.

Manual/Physical: Learns to do the following: apply fundamental design practices and procedures, utilize civil engineering programs (example: CAD) to assist in completing plans and projects, operate a computer workstation and understand standard computer command operations, and compute quantities and make cost estimates. Assists with site inspection and data validations and collection of data through observation and surveying techniques. Researches available information to assist with design of facilities. Operates a motor vehicle requiring a standard Class D Arizona Driver's License to conduct field reviews and field checks on completed work. Prepares drawings from sketches, verbal descriptions, and specifications. Distinguishes color, texture, and patterns in order to perform

activities such as: differentiating styles, color palates, thickness and patterns utilized in drafting activities with CAD software, and in reviewing redline and markup drawings. Moves object of up to 50 pounds or more for distances of up to 150 feet. Operates a variety of office equipment, such as a personal computer (PC), engineering printer, etc., to enter data or information for studies, projects, and work assignments. Prepares plan sets record drawing research, and quarter section maps for distribution to utilities, consultants, contractors, and other City employees. Meets scheduling and attendance requirements.

Mental: Interprets construction plan sets. Applies the techniques of drafting to produce neat, precise, and well-balanced drawings. Prioritizes work assignments. Comprehends and makes inferences from “record drawings,” written procedures, and specifications. Conducts research to properly identify land and utility data, plans, and project needs. Performs mathematical calculations, statistical computations, and applies fractions, percentages, ratios and proportions, algebra, geometric constructions, and the essentials of trigonometry. Performs detailed engineering records research and applies research to ensure the precision, accuracy, and completion of computerized engineering maps.

Knowledge and Abilities:

Knowledge of:

the principles and practices of civil engineering and the methods and techniques used in the design of sanitary sewer, water distribution, storm sewer underground utility lines, retention basins, and public street improvements;
symbols, features and terminology used in engineering drawings;
federal, state, and local regulations and codes, and the engineering standards (MAG and City of Mesa) pertaining to the design of the project assigned;
CAD design and civil engineering programs (AutoCAD and Civil3D);
Microsoft Office Product Suite (Word, Excel, Outlook, PowerPoint); and
engineering design, exhibits, as-builts and records;

Ability to:

prepare or review engineering drawings from sketches, maps, exhibits, verbal descriptions, and specifications;
work effectively and at times independently with supplemental supervision;
read and interpret construction drawings and specifications;
manage assigned workload through planning, organizing, motivating, and evaluating performance objectively;
communicate problems and work assignments when confronted with several pressing demands at one time;
maintain concentration on detailed information over an extended (six hours or more) period of time when accuracy and efficiency are important;
follow general instructions received from engineers or higher-level staff regarding technical work to be performed;
provide advice and assistance on engineering matters to engineers, architects, contractors, developers, real estate staff, and/or the general public;
review work in progress and resolve the more difficult problems;

interpret field notes and engineering sketches;
confer with engineers regarding the scheduling and prioritization of work;
provide input or maintain Mesa Standard Details and Specifications, including continuous additions, refinement, and distribution annually;
assist staff in the completion of as-built work, including determining best methods for resolving problems;
maintain engineering records management equipment and supplies;
apply research to ensure accuracy and completion of manual engineering drawings, map, or exhibits; and
establish and maintain effective working relationships with all those encountered during the course of 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 does 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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JOB FCTN-ENG

INCREMENTS 50-200

PAY GRADE 46

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