ENGINEERING TECHNICIAN IV

JOB DESCRIPTION

Classification Responsibilities: An Engineering Technician IV is an advanced, journey-level class in the Engineering Technician series involved in the performance of skilled, technical civil engineering and drafting work. The position performs related duties as required.

Engineering Design Assignment: An Engineering Technician IV is assigned to the Engineering Department's CAD group and works under the direct supervision of the Senior Engineering Technician. Primary responsibility is to use AutoCad and Civil 3D software to provide CAD (computer-aided drafting) support to all Engineering groups within the Department. Design groups include (but not limited to): Civil Engineering Design, Electric, Gas, Landscape, Real Estate, and Survey. Support to these design groups will include assistance in the production of plan sets for development and capital improvement projects. The incumbent will be responsible for minor design, detail(s) creation and/or modification, record drawing management, base map creation, city and non-city utility coordination and development while adhering to the City of Mesa's CAD Standards and Design. Additionally, the Engineering Technician IV will be required to use AutoCAD and Civil 3D platforms to create, modify and update surfaces, alignments, vertical profiles, pipe networks, Survey and GIS data management. Other duties will include creating and updating City of Mesa Standard Details, Non-City Standard Details, and creating miscellaneous details and drawings. An Engineering Technician IV is distinguished from the Engineering Designer class by the latter's greater percentage of design work, project management, and plan review responsibilities. Occasional work responsibilities also include data collection from field equipment and instruments; data analysis and entry into databases or spreadsheets; preparation of maps, exhibits, and standard organization in geographic information systems (GIS) software or AutoCAD as appropriate.

Transportation Assignment: An Engineering Technician IV is assigned to the Streetlight group. The primary responsibility for drafting, designing, and coordinating Spot Improvement Projects including meeting with the property owners and residents, to determine needs and/or requests; researching and reviewing maps to verify locations of utility lines, streetlights, power sources, etc.; researching and determining best locations; identifying rights-of-way for placement; meeting and coordinating with City of Mesa (COM) Electric or Salt River Project (SRP) (to determine appropriate power sources); preparing, drafting, and designing AutoCad construction drawings; providing information to foremen for installation; and following up with record drawings changes and entering into mapping database. The incumbent will also be responsible for coordinating, responding, and updating internal and external organizations (example: City of Mesa Electric Division, SRP, Engineering, etc.) regarding development projects and capital improvement projects including: reviewing plans in regards to streetlights to determine and analyze items such as point of service (SRP or COM), number of lights, correct wiring, existing cabinets, wattages, circuit configurations, etc.; coordinating with foremen, Engineering Designer, or consultant on corrections or minor changes to plan sets; corresponding and coordinating with COM and SRP requesting power designs, light or cabinet removals or additions, wattage changes, change of source feeds, and requests for luminaire numbers; and coordinating and following up with SRP on the status of source feed designs and hookups for Streetlight projects. Duties also include performing complex drafting and drawing functions in AutoCad including: researching and developing new products in coordination with the foreman; researching, creating, and updating City of Mesa Standard Details; and creating miscellaneous details and drawings used by vendors in the fabrication and manufacturing of components used by the Streetlight group.

Water Resources Assignment: An Engineering Technician IV is assigned to the Water Resources Engineering and Planning group and works under the direct supervision of a Senior Civil Engineer. Primary responsibilities include: data collection from field equipment, instruments, or supervisory control and data acquisition (SCADA); data analysis through preparation of tables and reports; data entry into databases or spreadsheets; preparation of maps, exhibits, and standard details in geographic information systems (GIS) software or AutoCAD as appropriate; researching record drawings, shop drawings, and operations & maintenance (O&M) manuals; preliminary review of plans and specifications for conformance to clearly defined 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 Companies (NASSCO) defect codes; preparing inspection logs using Granite XP and PipeLogix software; making recommendations for rehabilitation of sewer lines; collecting field data from portable flow monitors, odor sampling monitors, and other field instruments; coordinating manhole inspection data; assisting field staff with wastewater lift station performance testing; and preparing draft condition assessment reports. For the water system specific assignments may include: collecting field data from pressure transducers, chlorine 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 systems (CMMS) software; and assisting engineers in collecting data, preparing exhibits, and drafting design concept reports for capital improvement projects.

Distinguishing Features: The Engineering Technician IV class does not exercise full supervisory responsibilities, but may function in a lead capacity, including providing direction or training to other employees as the need arises. This class is distinguished from the lower-level Engineering Technician classes by the advanced know-how applied and the more complex assignments performed. Employees in this class receive only occasional instruction as unusual situations arise, as they are thoroughly familiar with the operating policies and procedures in the work section assigned. 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. Four years paraprofessional or technical civil engineering work experience (example: civil drafting, technical research, right-of-way exhibit preparation, etc.). Transportation assignment requires a minimum of one year of AutoCAD experience.

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

Substance Abuse Testing. None.

Preferred/Desirable Qualifications. A minimum of six hours of college-level or technical school coursework in drafting technology, engineering graphics, computer-aided drafting, or related field of study is preferred. For ***Transportation Assignment***: knowledge of street-lighting principles or design is

desired. For ***Water Resources Assignment***: 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 Environmental Systems Research Institute (ESRI) GIS are desirable.

ESSENTIAL FUNCTIONS (may vary by assignment)

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 outside agencies, utility companies, engineers, designers, the general public, other City employees, vendors, management, contractors, and public officials in order to explain policies, procedures, and regulations relating to the development process and to prepare detailed design drawings. Assists in the writing of construction notes and estimates material quantities needed. Prepares letters, memos, and specifications with clearly organized thoughts and using proper sentence structure, punctuation, and grammar.

Manual/Physical: Inspects proposed project sites to determine the scope of projects. Operates a motor vehicle requiring a standard Arizona Driver's License to pick up and deliver materials and supplies, and to review, observe, and measure field conditions at project locations during the design and construction phases as well as to attend off-site meetings. Enters data or information into a computer in order to maintain current reference system to provide data. Meets scheduling and attendance requirements.

Mental: Utilizes computer-aided design and civil engineering programs. Prepares engineering drawings from sketches, verbal descriptions, and specifications. Performs engineering calculations, such as: computing elevations for manholes, determining slopes, calculating areas of property parcels, the width of trenches, and size of piping. Applies skilled, technical civil engineering drafting concepts on all types of projects. Performs illustrative artwork and drafting. Prioritizes own work. Reviews plans submitted by consultant to ensure adherence to Maricopa Association of Governments (MAG) Standards and Details. Provides assistance in determining correct placement of valves, fire hydrants, manholes, ramps, sidewalks, etc., and interprets field notes, specifications, and standards. Reads and interprets engineering drawings, maps, and plans.

Knowledge and Abilities:

Knowledge of:

computer-aided design and civil engineering programs;
mathematics, including algebra, geometry, and trigonometry;
engineering drafting principles required to formulate and prepare engineering drawings and maps;
sources of engineering information needed for manual mapping;
engineering maps and records;
the symbols and terminology used in engineering drawings; and
civil engineering principles and practices.

Ability to:

exercise independent judgment in determining work methods;
perform detailed engineering records research;
apply research to ensure accuracy and completion of manual engineering or maps and drawings;
apply analytical and mathematical processes to engineering assignments;
apply the practices and techniques of drafting to produce neat, precise, and well-balanced drawings;
establish and maintain effective working relationships with all those encountered during the course of work; and work with a variety of other personnel in and outside of City service.

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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