

JUNIOR ENGINEER

DEFINITION

Under direct supervision, the Junior Engineer performs various paraprofessional and technical field and office support for engineering work related to the planning, design, construction and maintenance of City capital improvement projects, City infrastructure, and daily department operations. The Junior Engineer assists in maintenance of the City's Geographic Information System (GIS) in conformance with regular procedures and approved engineering record-keeping methods. Performs a variety of studies and prepare/present staff reports; and perform related work as required.

SUPERVISION RECEIVED AND EXERCISED

The Junior Engineer receives supervision from the Public Works Director and may receive work direction, training, and coaching from a, Senior Engineer or Associate Engineer.

CLASS CHARACTERISTICS

This is the first point of entry into the engineering series of classifications in which incumbents may have only limited or no directly related work experience. Under direct supervision, incumbents perform the more routine engineering tasks and duties as assigned. With gained experience, this class performs more diversified and difficult engineering functions.

EXAMPLES OF DUTIES

Depending upon assignment, duties may include, but are not limited to, the following:

- Performs responsible computer aided and technical drafting work; reads, creates maps with, and updates Graphic Information Systems.
- Research and drafts assessment maps, street, sewer, and water improvement maps, prepares sketches showing details or office standards.
- Draws to scale projects such as park and playground areas, community centers, tennis and basketball courts, and other recreational structures or facilities.
- Secures information from applicable sources, books and file maps and notes, reduces and plots field notes on topography, location, and cross section surveys.
- Assists in investigating field problems affecting property owners, contractors, and maintenance operations; resolve problems or refer as appropriate.
- Request and/or participate in the collection of survey and mapping data.
- Perform calculations and prepare estimates of time and material costs.
- Performs related duties as required.

QUALIFICATIONS

Knowledge of:

- Basic knowledge of terminology, methods, practices, and techniques of engineering, architectural or planning drafting, GIS systems and maintenance, and research of City infrastructure documentation.
- Drafting and design nomenclature and symbols.
- Knowledge of mathematics and trigonometry as applied drafting and planning.
- Basic knowledge of software programs used in computer aided drafting.
- Methods, materials and techniques employed in public works and parks construction and maintenance.
- Modern developments, current literature and sources of information regarding engineering.
- Computer operation and Computer Aided Design (CAD) techniques.
- Principles and practices of civil engineering as applied to the design, construction, and inspection of public works.

Ability to:

- Understand and follow oral and written instructions.
- Effectively utilize drafting instruments and computers.
- Use survey equipment and land survey nomenclature and symbols.
- Read and understand basic diagrams and maps.
- Make technical computations.
- Establish and maintain effective working relationships with others.
- Interpret and apply Federal, State and local policies, laws and regulations.
- Assist in developing and administering contracts for professional services and construction.
- Prepare basic or assist in preparing more complex maps and engineering drawings, design computations, plans, and studies.
- Read basic plans and diagrams and perform basic plan checking activities.
- Interpret, apply and explain complex laws, codes, regulations, and policies.
- Calculate figures and amounts such as discounts, interest, commissions, proportions, and percentages.
- Apply concepts of basic algebra.
- Respond tactfully, clearly, concisely

EDUCATION AND EXPERIENCE

Any combination of training and experience that would provide the required knowledge, skills, and abilities is qualifying. A typical way to obtain the required qualifications would be:

Associate's degree (or equivalent combination of work experience, training, and education) with major course work in engineering, planning, geographical information systems or closely related field. Some experience in engineering, architectural or planning drafting work.

OR

Two years of experience working in an engineering, architectural, or planning environment and some post-secondary education in engineering.

LICENSES AND CERTIFICATIONS:

- The ability to convey oneself to and from geographical locations frequently and timely, or possession of a valid CA driver's license.
- AutoCAD® or ArcGIS® experience is desired.

PHYSICAL DEMANDS

Must possess mobility to work in a standard office setting and use standard office equipment, including a computer, to inspect development sites, including traversing uneven terrain, climbing ladders, stairs, and other temporary or construction access points, to operate a motor vehicle, and to visit various City and meeting sites; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups, and over the telephone. This is primarily a sedentary office classification although standing in work areas and walking between work areas and to conduct inspections may be required. Finger dexterity is needed to access, enter, and retrieve data using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects weighing up to 25 pounds.

ENVIRONMENTAL ELEMENTS

Employees work in an office environment with moderate noise levels, controlled temperature conditions, and no direct exposure to hazardous physical substances. Employees may work in the field and occasionally be exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.