

ENGINEERING TECHNICIAN

DEFINITION

To perform a variety of technical office and field work involving drafting, surveying, mapping, and related engineering activities.

SUPERVISION RECEIVED AND EXERCISED

Receives general supervision from higher level engineering supervisory and management staff and may receive technical and functional supervision from higher level technical staff, as appropriate.

EXAMPLES OF ESSENTIAL DUTIES – Duties may include, but are not limited to, the following:

Prepare, update, and revise engineering maps and drawings related to a variety of public works/capital improvement projects; perform preliminary engineering design work and calculations, including preparation of plans, charts, diagrams, graphs, tables, and sketches.

Prepare details of construction features and alignment; determine cut and fill requirements using various mathematical calculations; identify and locate utilities, easements, property lines and related information from engineering plans.

Check calculations and estimates used in design and projection of various maps including parcel maps, subdivision maps, City maps, and utility systems maps; maintain map record files of properties, utilities and improvements; prepare, issue, track, and file encroachment and grading permits.

Calculate quantities and cost estimates for assigned public works and utility construction projects; obtain vendor/contractor price quotes, produce requisitions, and sign off on purchase orders for equipment, materials and supplies related to work assignment.

Perform field work including surveying and staking of in-house work force projects using a variety of technical survey equipment; reduce field survey notes and computer traverses, grades, closures, distances and areas for office use.

Conduct traffic and parking surveys, compile and tabulate information and produce traffic count reports; maintain related reports and files; assist in developing striping, signage and/or detour plans related to traffic flow and control; make recommendations regarding traffic control devices.

File and retrieve engineering and related plans, maps, exhibits and various documents; update files and maintain document reference and retrieval systems.

Provide internal and external customers with information, such as legal descriptions of parcels, address verification, property ownership, assessor's parcel numbers, zoning designations, easements, flood zone designations, public right-of-way, property jurisdiction and assessment districts.

Assist with public outreach events.

Build and maintain positive working relationships with co-workers, other City employees, and the public using principles of good customer service.

Perform related duties as assigned.

MINIMUM QUALIFICATIONS

Knowledge of:

Terminology, methods, practices and techniques used in sub-professional engineering work, including drafting, surveying, and mapping.

Principles of algebra, geometry, and trigonometry.

Scale representation on maps.

Applicable equipment and instruments used in drafting, surveying, and mapping.

Principles and practices of algebra, geometry and trigonometry as applied to the computation of angles, areas, distances and traverses.

Policies and regulations related to construction, extension, and maintenance of a variety of public works and utility systems and facilities.

Principles and practices of technical report writing and data presentation.

Survey and audit techniques and practices related to area of assignment.

Applicable equipment and instruments used in area of assignment.

Engineering maps and records.

Construction materials and methods.

Ability to:

Independently perform sub-professional engineering duties related to area of assignment.

On a continuous basis, know and understand all aspects of the job; intermittently analyze work papers, reports and special projects; identify and interpret technical and numerical information including engineering calculations; observe and problem solve operational and technical policy and procedure; and explain regulations and procedures to others.

On a continuous basis, sit at desk for long periods of time; intermittently bend, squat, climb, kneel or twist while performing field work; intermittently twist to reach equipment surrounding desk; perform simple grasping and fine manipulation; use telephone, and write or use keyboard to communicate through written means; and lift or carry weight of 10 pounds or less.

Use CAD (Computer Aided Drafting), GIS (Geographic Information Systems), and GPS (Global Positioning System) and other computer applications related to technical engineering work.

Reduce, interpret and apply field notes in performing drafting work.

Compile and analyze technical information; problem-solve complicated engineering issues and identify alternatives and make related recommendations.

Assess vendor/contractor services, related equipment, and associated costs.

Perform engineering and mathematical calculations with speed and accuracy.

Perform database management tasks related to area of assignment.

Use and care for instruments, tools, equipment, and software related to area of assignment.

Communicate clearly and concisely, both orally and in writing.

Establish and maintain effective working relationships with those contacted in the course of work.

Experience and Training

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

Experience:

Two years of technical engineering experience.

Training:

Equivalent to an Associate's degree from a college with course work in engineering, mathematics, drafting, CAD, GPS, GIS, database management or a related field.

License or Certificate

Possession, or ability to obtain, a valid California driver's license.

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