



Engineering Technician I/II

Summary

Perform routine to difficult drafting, surveying, and engineering office and field work in support of various engineering activities.

Class Characteristics

General supervision is provided by the Manager; responsibilities may include the indirect supervision of support staff.

Engineering Technician I

The entry-level class of this technical support series. Incumbents are provided with training to enable them to gather, analyze, and monitor routine engineering-related data and formulate recommendations based on established criteria in the area of assignment. Generally, work is observed and reviewed both during performance and upon completion. Changes in procedures or exceptions to rules are explained in detail as they arise.

Engineering Technician II

The journey-level class of this series. Positions in this class are normally filled by advancement from the class of Engineering Technician I, or when filled from the outside, require prior related work experience. Incumbents gather, analyze, and monitor simple to moderately complex engineering-related data. This class is distinguished from the Engineering Technician I in that the routine technical work assignments of this class are performed more independently. The Engineering Technician II class is distinguished from the Senior Engineering Technician in that the latter performs work of a more complex nature independently or with minimal supervision.

Essential Duties, Skills, and Demands of the Position

The duties, skills, and demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with a disability to perform the essential duties, skills, and demands.

Duties:

Participate in the preparation of engineering plans and specifications; research, file, retrieve, review, update and/or prepare a variety of engineering maps, graphic displays, documents, records, reports, and correspondence; operate computer-aided design, modeling and/or other application programs.

Prepare minor construction project estimates; use a computer and/or electronic calculator to solve a variety of engineering-related problems; administer contracts.

Respond to complaints and inquiries from other departments, outside agencies, and the public concerning plan checking, permit requirements and other engineering activities at a public counter or over the telephone.

Locate utilities, easements, property lines, and/or other information on plans; perform and check mathematical, computer, and/or statistical calculations used in engineering tasks; perform field investigations and/or inspections of existing conditions and new construction; collect, compile, and/or analyze data and/or field samples; notify contractors of discrepancies between work performed and the approved plans, specifications, and standards.

Review final subdivision and parcel maps, legal descriptions and improvement plans as well as other drawings for conformance with established engineering standards; process permit applications and issue permits; determine and collect fees.

Assist on field survey crews as needed; perform and verify preliminary, construction, boundary, and control surveys; perform construction staking.

Participate in traffic studies and/or counts; develop and with assistance, maintain traffic signal timing and coordinated systems.

Develop and revise design standards, standard plans, specifications, and engineer approved lists.

Perform related duties as assigned.

Skills/Abilities:

Analyze and learn to resolve problems and discrepancies encountered on assignments.

Read figures and make accurate arithmetical calculations.

Understand and follow oral and written instructions and sketches.

Use basic drafting materials, tools, and techniques.

Work both independently and as part of a team.

Operate computer-aided mapping, drafting workstations, and plotter.

Prioritize work and meet time deadlines.

Choose appropriate drawing scales, views and sections; gather data, prepare reports and maintain accurate records.

Answer questions and provide clear, concise, and accurate information to staff and the public concerning engineering activities.

Learn and observe all appropriate safety precautions including, but not limited to, CAL/OSHA and City policies.

Communicate effectively both verbally and in writing.

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

Engineering Technician II (in addition to the qualification for Engineering Technician I):

Solve mathematical problems and make accurate computations; analyze engineering, technical, and statistical information; evaluate alternatives and make sound recommendations.

Comprehend and draw inferences from written material.

Understand and use computer-aided design, modeling, and/or other application programs; use computer-aided and manual design and drafting tools and equipment to prepare skilled layouts, maps, and graphic materials.

Read and understand record drawings, parcel maps, subdivision maps, zoning maps, improvement plans, and specifications.

Use a variety of engineering office equipment; maintain engineering records; file information using numerical, alphabetical, and chronological and/or reverse chronological filing systems.

Perform research; provide lead direction to less experienced staff.

Understand and apply City and state design standards and specifications.

Estimate labor or material costs; investigate and analyze engineering field conditions.

Identify discrepancies between plans and construction in the field.

Operate and care for surveying instruments.

Make legible survey notes and drawings.

Enforce City requirements with tact and firmness.

Organize and complete assignments within established timeframes.

Learn and observe all appropriate safety precautions including but not limited to CAL/OHSA and City policies.

If assigned traffic engineering duties, understand traffic signal timing principles and methods; and apply basic traffic engineering and transportation planning principles to the collection and analysis of data.

Physical Demands and Work Environment:

While performing the duties of this job, the employee is regularly required to sit, stand, walk, use hands to finger, handle, or feel, and talk or hear. The employee frequently is required to reach with hands and arms; climb or balance; stoop, kneel, crouch, or crawl; and taste or smell. The employee must frequently lift and/or move weight up to 30 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, peripheral vision, depth perception, and ability to adjust focus. While performing the duties of this job, the employee is frequently exposed to outside weather conditions. The employee is occasionally exposed to fumes or airborne particles. The noise level in the work environment is usually moderate.

QUALIFICATIONS

Knowledge of:

Drafting procedures, nomenclature, and symbols.

Trigonometry as applied to the computations of angles, areas, distances, and traverses.

Computer-aided drafting techniques; general office computer applications.

Engineering Technician II (in addition to the qualifications for Engineering Technician I):

Terminology, methods, practices, and techniques of public works construction inspection.

Surveying principles and practices; engineering design and construction practices.

Proper techniques and methods used in mapping, engineering and drafting.

Graphic presentation tools, materials, and techniques.

Computer-aided design and other general engineering computer software application programs, including graphic presentation, spreadsheets, and word processing.

Quantity and cost estimating.

City design standards and specifications.

Applicable City and state codes, policies, and procedures; principles of project planning.

Principles of statistics and mathematics as applied to engineering tasks.

Positions assigned to traffic engineering also require knowledge of traffic engineering and transportation planning principles and practices and components of traffic signals and signal timing.

Education and Experience

Any combination equivalent to the education and experience likely to provide the required knowledge and abilities would be qualifying. A typical way to gain such knowledge and abilities would be:

Education:

Equivalent to graduation from high school, including or supplemented by courses in trigonometry and computer aided design and drafting. College level coursework in mathematics, computer-aided design, construction practices, surveying, and other related courses are highly desirable.

Engineering Technician I

Experience:

None

Engineering Technician II:

Experience:

Two years of engineering technical support work at a level equivalent to the City's class of Engineering Technician I.

Certificates/Licenses:

Possession of a valid California Class C driver's license.

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