



Senior Engineering Technician

Summary

Perform advanced, paraprofessional engineering office and field work; provide support to staff members and professional engineers and provide lead direction in an assigned engineering specialty function.

Class Characteristics

Direction is provided by a higher-level supervisor or manager; responsibilities may include the indirect supervision of support staff.

This is the advanced journey-level class in the Engineering Technician series. Positions in this class are normally filled by advancement from the class of Engineering Technician II or, when filled from the outside, require significant prior related work experience. Incumbents work in his/her area of assignment to independently gather, analyze, and monitor a full range of engineering-related data and formulate recommendations using independent judgment and from previous on-the-job experience. The Senior Engineering Technician is expected to have experience and familiarity with engineering principles and practices, automated mapping and drafting systems, permanent records and files, and is required to perform the more difficult work assignments at this level. Positions assigned to this class may provide assistance and/or training to less experienced technical personnel. This class is distinguished from Engineering Technician II in that the technical work is more complex and performed independently or with minimal supervision. The work to be performed is determined by the department, operational division and functional area to which an incumbent is assigned.

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; prepare and administer contracts.

Respond to a variety of routine and difficult technical questions, complaints, and inquiries from employees, other departments, outside agencies, and the public concerning plan review, permit requirements, City processes, and other engineering activities at the 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.

Perform building permit plan review for commercial and residential projects; 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.

Act as the Survey Party Chief and/or a chain, rod, or instrument-person to provide field and record information to be used in production of engineering drawings; 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 coordination systems.

Develop and revise design standards, standard plans, and specifications.

Plan, schedule, assign, coordinate, and review mapping and as-built drawing work performed by less experienced technical engineering personnel; provide technical guidance to less experienced staff; train individuals on techniques for using computer aided design and drafting systems; prepare program and project schedules; requisition necessary equipment and office supplies.

Perform related duties as assigned.

Skills/Abilities:

Read figures and make accurate mathematical and statistical calculations.

Understand and follow oral and written instructions and sketches.

Comprehend and draw inferences from written material; understand and use computer-aided design, modeling, and/or other computer application programs.

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

Operate engineering office equipment, computers, and copy machines.

Maintain engineering records; file information using numerical, alphabetical, chronological, and/or reverse chronological filing systems.

Organize and complete assignments within established time frames.

Perform research and provide lead direction to less experienced staff.

Understand and apply state and city design standards and specifications.

Estimate labor or material costs; investigate and analyze engineering field conditions; and identify discrepancies between plans and construction in the field.

Enforce City requirements with tact and firmness.

Make legible survey notes and drawings.

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

Operate office equipment including computers and supporting word processing, spreadsheet, and database applications.

Communicate clearly and concisely, both orally and in writing.

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

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:

Terminology, methods, practices, and techniques of public works construction; trigonometry as applied to the computations of angles, areas, distances, and traverses.

Surveying principles and practices; engineering design and construction practices; computer aided design and other general engineering computer software application programs, including graphic presentation, spreadsheets and word processing; general principles and configurations of computer systems to include storage, plotting, scanning, database retrieval, graphics, networks, and user care and maintenance.

Basic civil engineering plans, profiles, grading, and drainage.

Quantity and cost estimating; customer service techniques; City design standards and specifications; applicable City and state codes, policies, and procedures; principles of project planning and administration; 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; components of traffic signals and signal timing.

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

Office procedures, methods, and equipment including computers and applicable software applications such as word processing, spreadsheets, and databases.

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; engineering, mathematics, computer-aided design and drafting, construction practices, and/or other related courses are highly desirable. An Associate's degree is preferred.

Experience:

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

Certifications/Licenses:

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

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Department: Various

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