



## Engineering Technician

### **DEFINITION**

Under general supervision, performs routine technical subprofessional engineering office and/or field work; and performs related duties as required.

### **DISTINGUISHING CHARACTERISTICS**

This is the journey level class in the engineering support series. Incumbents perform a high level of support to engineering activities. This class is distinguished from the Engineering Aide by greater independence in actions and responsibility for the more difficult, complex and detailed tasks.

### **EXAMPLES OF DUTIES**

*Typical duties for all incumbents may include, but are not limited to the following.*

- Gather information required for field location of District facilities;
- Make field measurements and sketches;
- Perform calculations and analysis;
- Maintain and update a variety of water supply and water distribution systems records, charts and maps.
- Assist in conducting land surveys related to District facility installations and property transactions.
- Prepare records, reports, and correspondence.
- May act in a lead role for researching or obtaining system measurements in the field.

In additional to the duties listed above, incumbents assigned to this classification may perform the additional duties listed below respective to their assigned section. The District may also assign incumbents to multiple sections listed below, based on business need:

*Assignments in the Records Section may also:*

- Use computer aided drafting and geographic information systems software.
- Create, update, and prepare maps, plans, profiles and detailed drawings from notes and sketches, utilizing GIS and AutoCAD software.

- Locate and mark underground pipes and facilities.
- Create and maintain engineering records in CAD, GIS, and/or hard copy (drawings, ties, maps, schematics).

*Assignments in the Records Section as a Pipe Locator may also:*

- Use geographic information systems software.
- Serves as project lead for pipe location workflow projects, relays information and contacts other work groups to coordinate more complex tasks.
- Locate and mark underground pipes and facilities.
- Assist with prioritizing and assigning pipe locating tickets, as needed.
- Log all information for corrections of records and communicate discrepancies and format changes with field crews, as needed.

*Assignment in the Development Services Section may also:*

- Conduct a full range of sub professional engineering work related to new business activities including representing the District to a wide variety of agencies and the public requesting annexation of territory, extension, relocation, or abandonment of water supply and distribution facilities, and installation of public and private fire protection facilities.
- Assist other staff members in preparing pipeline extension applications and agreements.
- Make field investigations to determine facility requirements.
- Prepare cost estimates for fire hydrant/fire line and service installations.
- Review invoices for all new business reimbursable projects to insure accuracy prior to final billing.
- Respond to requests for new service received by mail, email, telephone and walk-in customers.
- Assist with the review of requests for variance to District code involving the facility requirements to provide new service and prepare response to request.
- Provide information to contractors and the public regarding pipeline extensions, availability of water service, and related subjects.
- Assist in the enforcement of District hydrant meter, water theft and unauthorized use policies.
- Maintain section records.
- Prepares correspondence regarding availability and location of water facilities.

*Assignments in Operations and Planning may also:*

- Install, maintain, collect, record, and perform initial analysis of data from stream gauges, water samples, climatological data-stations, and other data collection instruments.
- Perform calculations and analysis on rainfall, reservoir storage and water usage.
- Maintain budget spreadsheets and make budget transfers.
- Research and process purchase requisitions and invoices.
- Set up, clean, adjust electronic surveying instruments.

*Assignments in Special Projects may also:*

- Assist in the review, development, modification, and implementation of procedures and policies of existing and new regulations;
- Assist in preparing emergency preparedness and other plans, training documents, and presentation materials.

*Assignments in Contract Administration may also:*

- Review contract documentation, process change orders, prepare purchase orders, process requests for payment, review certified payroll from contractors, and perform other contract administration duties.

*Assignment in Facility Design may also:*

- Perform duties required to produce construction contract drawings for District projects beginning with preliminary design and continuing through post-project completion activities.
- Analyze street and topographic maps, improvement plans, and survey data.
- Collect, compute, and compile data on existing underground and above ground facilities.
- Confer with project engineers throughout design process to evaluation and revise design criteria, identify potential problems/conflicts and maintain project scheduling.
- Conduct site investigation and reconnaissance, topographic survey, field sketching, measurement and photography.
- Operate surveying data collection and utility locating equipment.
- Utilize surveying software to reduce and plot collected survey data to produce topographic base map for design.
- Operate surveying software to reduce and plot collected survey data to produce topographic base map for design.

- Utilize computer-aided software to prepare base drawings depicting existing conditions from filed measurements and record drawings.
- Use various computer aided software, including three dimensional engineering software, and GIS to design, detail, and draft the proposed improvements, using supplied design criteria, District standards and specifications and accepted construction practices/methods.
- Under the supervision of the District surveyor, utilize surveying software to reduce and plot collected survey data to produce topographic base map for design.
- Revise and maintain contract drawings to produce record drawings for District records.
- Assist District surveyor to collect data for topographical and boundary surveys.
- Maintain permanent records to include digital and hard copy maps, engineering drawings, data files and system configuration files.
- Prepare, assemble and correlate plans.
- Field locate and plot underground utilities (gas, telephone, electric, and cable) within the capabilities of the electronic locating equipment.

### **QUALIFICATIONS FOR EMPLOYMENT**

Knowledge of:

- Principles and uses of algebra, geometry, trigonometry.
- Principles and techniques of computer aided drafting (CAD), depending on assignment.
- Principles and techniques of geographic information systems (GIS).
- Basic engineering design and construction practices.
- Networked personal computer operations.
- Commonly used word processing, spreadsheet and database computer applications such as Microsoft Office.
- Principles and techniques for gathering information to maintain and update a variety of water supply and water distribution systems records, charts and maps.
- Records management practices and procedures, organizing and maintaining accurate files and records (including computer data storage and retrieval).
- Correct English usage including punctuation, grammar, spelling and business letter writing.
- Safety procedures.
- Construction practices.
- Principles and practices related to the work of the assigned section.

Ability to:

- Integrate technical knowledge with interpersonal and communication skills dealing with the public.
- Operate a personal computer in a networked environment to input and retrieve data.
- Use computer-aided drafting and/or geographic information systems software to prepare neat and accurate maps, drawings and layouts from notes and sketches depending on assignment.
- Operate field survey equipment.
- Read and understand record drawings, parcel and subdivision maps, construction improvement plans and specifications.
- Make mathematical calculations.
- Communicate effectively both verbally and in writing.
- Understand and carry out written and oral instructions.
- Build and maintain positive working relationships with employees and the public by providing high levels of customer service.
- Analyze situations accurately and adopt an effective course of action.
- Travel to off-site work locations depending on job assignments.
- Drive a vehicle.

**Training and Experience:**

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

- Completion of the twelfth grade or its equivalent; including, or supplemented by, coursework in engineering technology, construction technology, geography, or drafting.
- One year of technical engineering support experience at the level of Engineering Aide.

**OTHER REQUIREMENTS**

- Per California Government Code, Title 1, Division 4, Chapter 8, Section 3100 “all public employees are hereby declared to be disaster service workers subject to such disaster service activities as may be assigned to them by their superiors or by law.”
- Work overtime as required.

### **LICENSES AND/OR CERTIFICATIONS**

- Possession of or the ability to obtain an appropriate California driver's license issued by the State Department of Motor Vehicles and satisfactory driving record.

### **PHYSICAL DEMANDS AND WORKING CONDITIONS**

During the course of performing job duties the employee will need the mobility to work in a standard office setting, operate equipment, which may include office and/or field equipment, or specialized instruments or tools requiring repetitive arm/hand movement and/or the coordinated movement of more than one limb simultaneously; enter and retrieve data from personal computers and terminals via keyboards which is often performed while sitting for extended periods of time. The employee frequently stands, walks, bends at neck and waists, twists at neck and waist, uses simple grasping and power grasping (field work only) with both hands, uses fine manipulation of both hands and fingers, and may require use of the arms above the shoulder, climb or balance; stoop, kneel or crouch. If assigned to field work, the employee may walk on uneven or un-level ground surfaces such as hills, slopes, ditches, streams or trenches, on or in tanks, and may work at heights up to ten to twelve feet climbing ladders or stairs. If assigned to field work the employee is occasionally required to lift objects such as meter lids weighing up to 50 lbs, and frequently required to lift and carry objects such as meter lids and pipe locating equipment weighing up to 25 lbs. If assigned to office work the employee is occasionally required to lift and carry short distances objects such as reams of copier paper, office supplies, files, books, printed materials and other packages or equipment weighing up to 10 lbs. This position requires that the employee demonstrate adequate hearing and speech to converse in person and over the telephone, and vision to read printed materials and use a computer screen. If required to drive, individuals must be physically capable of operating the vehicles and equipment safely.

The noise level in the work environment is quiet to moderate noise. Employees assigned to field work are exposed to traffic, outdoor temperatures, humidity, inclement weather and dust. The position may require the ability to work overtime and weekends as needed.

Employees who drive on District business to carry out job-related duties must possess a California driver's license for the class of vehicle driven and meet automobile insurability requirements of the District including review of a recent DMV history. In order to drive, individuals must be physically capable of operating the vehicles and equipment safely.

*To be successful in this job, an individual must be able to satisfactorily perform each of the listed duties. These duties are representative of the knowledge, skill and/or ability required for the position. Reasonable accommodations may be made to enable individuals with disabilities to perform the duties and functions of the position. Requests for reasonable accommodation should be directed to the Human Resources Manager.*

Established: May 2003

Revised: October 2015, April 2021

Approved by: Human Resources Manager