



ALAMEDA COUNTY WATER DISTRICT
Revision Date: October 2015

Engineering Technician III

Class Code:
033

DEFINITION

Under supervision, performs difficult and complex technical assignments; provides lead direction for Engineering Technicians engaged in sub-professional engineering work; utilizes manual drafting and a variety of technical engineering software and hardware applications including the CADD (Computer Aided Drafting and Design) and GIS (Geographic Information System) to create and maintain engineering drawings and maps; provides technical and administrative support for District projects and programs; and performs other related work as required.

DISTINGUISHING CHARACTERISTICS

The Engineering Technician III is the advanced level classification within the Engineering Technician series. Under limited supervision within a framework of established policies and procedures, incumbents receive complex project or program assignments for completion, personally performing the most difficult tasks and coordinating the work of others.

This class is distinguished from the intermediate-level Engineering Technician II class by the responsibility for performing the most difficult and complex technical engineering assignments and coordinating the work of others.

TYPICAL DUTIES

TYPICAL EXAMPLES OF DUTIES MAY INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

When assigned to the Development/Technical Services Section:

- Prepares complex design drawings from engineering sketches and/or oral instructions; reviews new development water system improvement plans; prepares water main extension contracts, customer job orders and job order work drawings; confers with customers, contractors and development engineers on new water system requirements and/or construction.
- Performs fire flow tests and prepares related correspondence; coordinates District involvement with other public agency projects.
- Performs corrosion control surveys; takes field measurements and prepares project documentation drawings; develops scale models of proposed projects.
- Assists in the administration of the Geographic Information System (GIS) program; evaluates and makes recommendation for purchase of related computer hardware and software; generally oversees and coordinates the technical aspects of the GIS program.
- Prepares drawings and specifications for bidding water distribution system upgrade and replacement projects; reviews contractor submittals; prepares progress payments, change orders, routine correspondence, and project reports. Confers with vendors, contractors, and/or outside agencies in response to questions, oversees and

coordinates work, and helps to resolve problems and disputes.

- Assists in the inspection of all aspects of field construction work; releases new meter sets; prepares routine correspondence and daily inspection reports.
- Updates and creates datasets; performs geospatial analysis; ensures the integrity of GIS data; reviews data input for accuracy and compliance with system standards; and prepares maps, reports, figures and exhibits as needed from multiple layers of data.
- May act as lead survey instrument person; gathers field data for pipeline design; reduces and plots field survey notes; maintains survey records; prepares simple property and easement descriptions.
- May act as drafting coordinator; evaluates drafting workload and allocates necessary resources to assure successful completion of projects; assigns drafting work; develops or assists in the development of guidelines, procedures and/or standards.
- May act as lead computer aided drafting (CAD) technician to develop and maintain CAD drafting standards and procedures; evaluates and makes recommendations for purchase of related computer hardware and software; responsible for the storage, retrieval and preservation of CAD files; performs advanced level CAD drafting and design work.

When assigned to the Groundwater Resources Section:

- Assists the Well Ordinance Administrator in the administration of Well Ordinance programs; coordinates processing of applications for drilling permits, scheduling of drilling contractors and assignment of state well numbers; inspects well construction, well destruction and other drilling work associated with water wells, geotechnical and chemical investigations.
- Reviews development, demolition and tank removal plans; researches District records and identifies active or abandoned wells that may be impacted by proposed work; verifies existence of these wells in the field; and prepares letters to the appropriate city that specifies well numbers and plots well locations on a diagram.
- Assists in the administration of the Replenishment Assessment Program; evaluates private well production; conducts field investigations; and installs water meters.
- Measures and calculates groundwater elevations, collects water samples, performs field analyses and participates in and coordinates other work associated with groundwater monitoring and aquifer reclamation programs.
- Compiles and organizes data on wells, water levels, monitoring results and other information using computer spreadsheets, databases, or other software and creates computer programs with languages provided in the software.
- Prepares charts, tables and diagrams using computer presentation graphics and computer aided drafting (CAD) and other software programs.

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- Performs complex engineering calculations; reviews contractor's materials and equipment submittals; prepares routine correspondence; organizes collects and maintains engineering files; performs minor engineering designs; reduces and plots field survey notes and maintains survey records; prepares simple property and easement descriptions; prepares complex design drawings from engineering sketches and/or oral instructions.

When assigned to the Project Engineering Section:

- Prepares design drawings and drawing bid sets from engineering sketches, oral instructions, fields measurements, historical records and maps and other information as needed from multiple layers and sources of information.
- May act as lead computer aided drafting (CAD) technician to develop, maintain and coordinate District's CAD drafting standards and procedures; evaluates and makes recommendations for purchase of related computer hardware and software; responsible for the storage, retrieval and preservation of CAD files; performs advances level CAD drafting and design work.
- Performs corrosion control surveys; takes field measurements and prepares project documentation drawings; develops scale models of proposed projects.
- May act as drafting coordinator; evaluates drafting workload and allocates necessary resources to assure successful completion of projects; assigns drafting work; develops or assists in the development of guidelines, procedures and/or standards.
- May act as lead technician to develop and maintain electronic document management system standards procedures; provide training and assistance to District staff as needed on procedures.

When assigned to the Water Quality Section (Operations):

- Researches maps, drawings, technical reports, water quality data, correspondence, engineering files, and operation and maintenance records; collects available data to define the scope and nature of work needed. Interviews and consults with staff to obtain a complete understanding of existing procedures and particular issues and concerns.
- Plans and performs water quality measurements, hydraulic tests and field surveys. Prepares drawings and specifications for bidding small design projects and capital equipment acquisitions; reviews submittals, maintains files and provides other documentation in support of projects as needed.
- Assists in conducting bench, pilot and plant scale studies, including selecting and obtaining equipment and supplies, coordinating equipment placement and installation, developing test procedures, executing the study, collecting and reducing data, preparing tabular summaries and report graphics, and preparing a narrative description of the work performed.
- Uses and trains others in the use of electronic data logging equipment and PC based software for hydraulic and water quality distribution system modeling, plotting, database

management, and graphics presentations.

- Assists in the review and analysis of data by building and compiling information in a database, performing complex engineering calculations and data manipulations to assess tendencies, trends and solutions, and presents results in the form of easily understood graphs and tables.
- Confers with vendors and contractors in response to questions, oversees and coordinates work, and helps to resolve problems and disputes.

In All Assignment Areas:

- Assists and/or trains others in the use of computer spreadsheets, databases, presentation graphics, and other software programs.
- Interacts with internal District departments to schedule and coordinate work crews.
- Performs other related work as required.

REQUIREMENTS

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

Education and Experience:

Possession of an Associate Degree or equivalent in engineering or a closely related field; and four (4) years of applicable engineering technician experience with at least two (2) years equivalent to the engineering Technician II level. Additional experience at a level equivalent to the District's Engineering Technician II class may be substituted for a maximum of one (1) year of the education requirement.

Knowledge, Skills and Abilities:

Thorough knowledge of: District policies and procedures in areas of responsibility; office methods and procedures, including filing and record keeping; engineering mathematics including trigonometry; drafting principles, practices, techniques and equipment; engineering surveying principles and equipment; hardware and software applications related to work assignments; applicable codes, guidelines and regulations.

Skill and Ability to: work independently and cooperatively with others; conduct and/or coordinate major programs; set priorities and coordinate several concurrent projects under time pressures and deadlines; interpret and apply engineering principles and techniques, District specifications, ordinances and policies; perform complex mathematical calculations; use computer aided design and graphics (CADD), drafting materials, engineering tools, equipment and techniques proficiently; prepare neat, accurate and legible drawings; letter neatly and clearly and take accurate and legible notes; read and interpret complex plans, specifications, maps, legal property descriptions, construction drawings and related engineering documents; operate a computer, calculator and other office equipment; communicate effectively both orally and in writing; maintain detailed, complete and accurate records; establish and maintain effective

working relationships with those contacted in the course of the work; and perform the essential functions of the job without causing harm to self or others.

Additional Requirements:

- Must possess a valid California driver's license and have a satisfactory driving record
- Must possess a Grade I Water Distribution Certificate within 18 months of appointment, when assigned to the Development Services Division only.

Working Conditions/Physical Requirements:

The essential functions of the job require the ability to sit for extended periods of time when performing office tasks and finger dexterity to operate a computer; to speak and hear in person and on the phone; field activities require the ability to work outdoors on a year-round basis under a variety of climatic and geographic conditions in an environment with exposure to loud noise, chemicals, fumes, and other environmental substances; to traverse uneven terrain; to stand for long periods of time; to bend, squat and/or climb; to grasp, hold and reach; and to work long or unusual hours as situations demand and frequently lift, carry and/or maneuver objects weighing up to 55 pounds and occasionally up to 90 pounds.

Revised: 10/15

Approved: 
Human Resources

