

JOB DESCRIPTION
Engineer-In-Training
Code Number: 22028

GENERAL PURPOSE

Under immediate supervision, performs a variety of routine and semi-routine professional-level civil engineering work in the research, design and construction of water and sewer capital improvement and construction projects; and performs related duties as assigned.

DISTINGUISHING CHARACTERISTICS

Engineer-In-Training is the entry/trainee level class in the professional engineering series. Under direct supervision and project management guidance, incumbents learn to apply the theories, principles and practices of the civil engineering discipline to specific design assignments pertaining to the EMWD water, wastewater and reclaimed water systems.

ESSENTIAL DUTIES AND RESPONSIBILITIES

The duties listed below are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to the class.

Participates in extensive inter-departmental cross-training activities with construction crews, Construction Inspectors, Mechanical Services staff, Electricians and Control Technicians, Water and Wastewater Treatment Plant staff, Water Distribution staff, Air Quality Compliance staff, Engineering Design staff and others to gain experience with processes, techniques, equipment, facilities, and safety requirements associated with projects.

Performs engineering planning and design for capital construction and improvement programs.

Prepares, or causes to be prepared by consulting engineers, plans and specifications for the construction of a variety of water and wastewater structures, including pipelines, pumping stations, lift stations, water tanks, drainage facilities and roadways; researches and identifies project design requirements; conducts computer modeling of the system and facilities to determine design requirements and parameters; analyzes hydraulic requirements and facilities using District-adopted guidelines for existing and proposed projects; performs routine to difficult engineering calculations encompassing hydraulics, surveying, mechanical and structural dimensions.

May serve as project engineer for small facilities expansion and/or refurbishment projects designed in-house and by engineering consultants; generates preliminary design reports; drafts specifications for construction of District facilities; establishes progress schedules and serves as a liaison between the District, contractors, consultants and other utilities or agencies; monitors design project progress.

Provides engineering support for construction work in progress, including field investigations, to ensure compliance with approved plans, specifications and standards.

Performs plan checks of developer projects to ensure conformance with District standards.

Coordinates engineering design projects with other departments and agencies.

Assigns routine drafting tasks to technical support staff; reviews submittals/shop drawings; assists in the solution of drafting and design problems.

Prepares assigned special engineering studies, cost estimates, correspondence, records, files and reports.

Performs related duties as assigned.

DESIRED MINIMUM QUALIFICATIONS

Knowledge of:

Theory, principles and practices of civil engineering design and construction; principles of physics and mathematics applicable to civil engineering; principles and techniques of project management; principles, modern techniques and equipment used in design, construction and maintenance of various public works projects; strength, properties and uses of construction materials; legal guidelines for public works engineering; public relations; micro-computer applications pertaining to the work, including word processing, spreadsheet analysis, computer-aided drafting and design and hydraulic modeling.

Ability to:

Review and prepare routine to difficult engineering plans, specifications and legal contracts; prepare and evaluate project engineering studies; perform technical research and analyze engineering and mathematical problems, evaluating alternatives and recommending or adopting effective courses of action; perform accurate engineering calculations and cost estimates; make sound independent judgments within established guidelines, communicate effectively, orally and in writing; prepare clear, concise and accurate reports, drawings, maps, notes, correspondence and other written materials;

establish and maintain effective working relationships with those encountered in the course of the work.

Training and Experience:

A typical way of obtaining the knowledge, skills and abilities outlined above is completion of at least three years of college engineering coursework at a recognized college or university applicable toward a degree in civil, mechanical or electrical engineering.

Licenses; Certificates; Special Requirements:

A valid certificate of registration as an Engineer-in-Training issued by the State of California or acceptance of eligibility to sit for the Professional Engineering examination.

PHYSICAL AND MENTAL DEMANDS

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Physical Demands

While performing the duties of this job, the employee is regularly required to stand and sit; talk and hear, both in person and by telephone; use hands to finger, handle, feel objects or controls; and reach with hands and arms.

Specific vision abilities required by this job include close vision, distance vision, depth perception, color vision and the ability to adjust focus.

Mental Demands

While performing the duties of this class, the incumbent is regularly required to use written and oral communication skills; read and interpret data, information and documents; analyze and solve difficult problems; use math/mathematical skills; perform detailed work under changing, intensive deadlines, on multiple, concurrent tasks; work with interruptions; and interact with officials, outside engineers, contractors and the public.

WORK ENVIRONMENT

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

The employee usually works under typical office conditions where the noise level in the work environment is moderately quiet. Employees will often be required to work outside, exposed to climatic conditions, where the noise level may be loud.

FLSA DETERMINATION: Non-exempt