ENGINEERING ASSOCIATE

This class specification indicates, in general terms, the type and level of work performed as well as the responsibilities of employees in this classification. The job functions described are not to be interpreted as being all-inclusive to any specific employee.

DEFINITION

Under direct or general supervision or direction, performs a variety of complex paraprofessional engineering field and office duties in support of professional engineering staff from the design phase through the bidding process to develop cost estimates, preliminary design reports and job plans; evaluates design bids; assists in obtaining permits; provides information and assistance to contractors, developers, engineers, and the general public on the District’s engineering services and activities; and performs a variety of technical tasks relative to assigned area of responsibility.

SUPERVISION RECEIVED AND EXERCISED

Receives direct or general supervision or direction from the assigned supervisory and/or managerial staff. Exercises no direct supervision of staff.

CLASS CHARACTERISTICS

This classification is the third of three (3) levels within the engineering paraprofessional job series. This class has responsibilities spanning the entire spectrum of paraprofessional engineering functions, including coordination of responsibilities for projects and support programs. Incumbents apply advanced paraprofessional engineering knowledge and skills to complete assignments in engineering, mapping, surveying, inspections of construction projects, conducting surveys, and preparation of specifications, plans, and estimates. The work requires public contact, the frequent use of tact and judgment, thorough knowledge of departmental operations, and the ability to coordinate independent projects and programs.

EXAMPLES OF ESSENTIAL JOB FUNCTIONS (Illustrative Only)

The following essential job functions are typical for this classification. Incumbents may not perform all of the listed job functions and/or may be required to perform additional or different job functions from those set forth below to address business needs and changing business practices.

- Works with District’s consultants in preparing cost estimates, preliminary design reports and job plans; develops “scopes of work” for the consultants to develop design proposals; evaluates design proposals; participates in project design meetings; coordinates with local building agencies and utility companies to obtain permits for the construction of plant projects.
- Ensures established safety precautions are adhered to, corrects unsafe work conditions/practices, and/or reports unsafe work conditions/practices to assigned supervisory or managerial staff.
- Works with construction staff and project engineers to interpret plans and review submittals, as-built drawings, and proposed redesign changes to ensure that they are done according to regulatory requirements and project plans and specifications.
- Conducts field reviews and field measurements to gather data for design and construction purposes for the review of submittals and design changes.
- Verifies existing installations; obtains measurements; prepares as-built drawings; prepares charts, loop diagrams, and related documents.
➢ Prepares sketches, concept drawings, and exhibits for the Board of Directors’ Building Committee to obtain necessary approvals for the construction of plant facilities.
➢ Receives internal and capital documentation; checks for accuracy; posts information to the appropriate master document.
➢ Prepares design specifications, plans and estimates for routine projects, such as grading, ramps, curbs, asphalt, and process piping.
➢ Approves the issuance of connection permits to contractors and the general public after evaluating the construction plans and specifications to ensure that they meet District standards and to determine permit requirements and fees.
➢ Reviews and approves annexation applications; prepares sketches, maps and concept drawings.
➢ Receives and processes utility requests and sewer transfers.
➢ Maintains Collection System Record Drawing process including filed investigations, mathematical calculations, making sketches and drafting; tracks contractor plan changes; keeps updated status on tracking list for collection capital improvement projects, field discrepancies and connection permits.
➢ Maintains and updates the Sewer Atlas system using appropriate drafting and GIS software applications and databases.
➢ Assigns work and gives direction to Engineering Assistant I or II involved in activities such as drafting record drawings, preparing maps, graphs, charts, report covers and other visual aides for permanent documentation or meeting displays; issues connection permits and receive fees.
➢ Performs related duties as assigned.

QUALIFICATIONS

Knowledge of:
➢ Basic civil, mechanical, electrical, or instrumentation engineering principles, practices, and methods applicable to office and field work involving the design, construction, and maintenance of engineering projects.
➢ Basic design and construction practices and methods of underground facilities and related infrastructure.
➢ Engineering plan types, review practices, and permit filing and approval procedures.
➢ Principles and practices of technical civil engineering drafting and surveying.
➢ Principles of drafting and technical design.
➢ Basic principles and practices of civil, structural, electrical, and mechanical design.
➢ Principles and practices of instrumentation design.
➢ Mathematical principles and calculations.
➢ Methods, techniques, materials, equipment and tools used in engineering and drafting.
➢ Modern office practices, methods, and computer equipment and applications related to the work, including word processing, database, spreadsheet, computer aided drafting, and internet software.
➢ Principles and procedures of record keeping and reporting.
➢ Technical engineering mathematics.
➢ Mechanical and computer drafting techniques.
➢ Methods, techniques, materials, equipment, and tools used in engineering and drafting.
➢ Drafting and surveying equipment, computers, principles, problems, techniques, and practices.
➢ Applicable Federal, State, and local laws, codes, and regulations, including administrative and department policies and procedures.
➢ English usage, grammar, spelling, vocabulary, and punctuation.
➢ Principles and practices of customer service and techniques for effectively communicating with the public, vendors, contractors, and District staff.

Ability to:
➢ Perform responsible technical engineering support work with accuracy, speed, and minimal supervision.
➢ Use drafting, design, and related drawing applications.
➢ Draft design drawings from blueprints or engineers’ drawings using drafting equipment, tools, supplies and software packages or by freehand.
➢ Prepare as-builts, technical charts, and loop diagrams.
➢ Compile data, maintain records and files, and participate in the preparation of clear and concise reports.
➢ Read and interpret maps, plans, sketches, schematics, diagrams, and blueprints.
➢ Identify and classify pipes and other pertinent construction materials.
➢ Learn and utilize computerized drafting, design, project management, and records software.
➢ Recognize electrical color codes.
➢ Make mathematical calculations and accurate engineering computations and drawings.
➢ Organize own work, set priorities, and meet critical time deadlines.
➢ Utilize a computer, relevant software applications and/or other equipment.
➢ Travel to District project sites and meeting locations.
➢ Work independently in the absence of supervision.
➢ Adhere to safe work practices and procedures in the workplace.
➢ Effectively communicate in person, over the telephone, and in writing.
➢ Use tact, initiative, prudence, and independent judgment within general policy, procedural, and legal guidelines.
➢ Establish, maintain, and foster positive and effective working relationships with those contacted in the course of work.

**Employment Standards:**
Any combination of education and experience that provides the required knowledge, skills, and abilities may be qualifying as determined by OCSD.

1. High school diploma or G.E.D., supplemented by 60 semester units from a college or university accredited by the U.S. Department of Education, with major coursework in pre-engineering, engineering, or a related field; AND
2. Five (5) years of work experience preparing preliminary plans, designs, specifications, and estimates for wastewater treatment facilities, performing mathematical computations and applying the knowledge of drafting methods, techniques and equipment to the solution of standard engineering problems.

**Licenses and/or Certifications:**
➢ Valid California Class C Driver’s License.

**Disaster Service Workers:**
All Orange County Sanitation District employees are designated Disaster Service Workers through state law (California Government Code Section 3100-3109). Employment with the Orange County Sanitation District requires the affirmation of a loyalty oath to this effect. Employees are required to complete all related training as assigned, and to return to work as ordered in the event of an emergency.

**PHYSICAL DEMANDS**
Must possess mobility to work in a standard office setting and use standard office equipment, including a computer, and to inspect District engineering and construction sites; ability to travel to various District sites, projects and/or meetings; vision to read printed materials and a computer screen; and hearing and speech to communicate in person, before groups, and over the telephone. This is partially a sedentary office classification, although the job involves field inspection work requiring frequent walking at inspection sites to monitor performance and to identify problems or hazards; standing in work areas and walking between work areas is required. Finger dexterity is needed to access, enter, and retrieve data
using a computer keyboard or calculator and to operate standard office equipment. Positions in this classification occasionally bend, stoop, kneel, reach, push, and pull drawers open and closed to retrieve and file information. Employees must possess the ability to lift, carry, push, and pull materials and objects weighing up to 10 pounds, or heavier weights with the use of proper equipment.

**ENVIRONMENTAL ELEMENTS**

Employees work in an office environment with moderate noise levels and controlled temperature conditions; but may occasionally work in the field and be exposed to loud noise levels, cold and hot temperatures, inclement weather conditions, road hazards, vibration, mechanical and/or electrical hazards, and hazardous physical substances and fumes. Employees may interact with upset staff and/or public and private representatives in interpreting and enforcing departmental policies and procedures.