



**APPROVED BY: THE CHIEF
ADMINISTRATIVE OFFICER**

EFFECTIVE: March 2005

**ASSISTANT CIVIL ENGINEER I/II
ASSISTANT ENGINEER I/II (CIVIL)¹**

¹*Any incumbent who has not achieved registration as a Professional engineer in California will use this generic title, in accordance with the State of California Business and Profession Code.*

Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.

DEFINITION

To perform a variety of professional civil engineering duties in the preparation of civil engineering studies, reports, designs and construction plans and specifications for the planning, operation, maintenance, and construction of the District's flood control, water quality, and water production, storage, treatment and distribution facilities and systems; to ensure work quality and adherence to professional codes, standards and District specifications; and to perform a variety of professional tasks relative to assigned area of responsibility.

DISTINGUISHING CHARACTERISTICS

Assistant Civil Engineer I

This is the entry level, training class in the professional Civil Engineer series. Initially, under immediate supervision, incumbents perform a limited range of professional civil engineering duties requiring limited exercise of judgment. Duties involve using prescribed methods and include specific and limited portions of a broader assignment of an experienced engineer in the design, construction, operation and maintenance of the District's flood control, water quality and water production, storage, treatment and

distribution facilities. As experience and proficiency are gained, assignments become more diversified and difficult with increasing independence of judgment. Since this class is typically used as a training class, employees may have only limited or no directly related work experience. This class is alternatively staffed with Assistant Civil Engineer II and incumbents may advance to the higher level after gaining experience and demonstrating proficiency which meet the qualifications for the higher class.

Assistant Civil Engineer II

This is the experienced level class within the professional Civil Engineer series. Incumbents in this class work under general supervision and may be assigned specific projects with minimal supervision; additionally, incumbents may direct the work of engineers, draftspersons, technicians, and others who assist in specific project assignments. Work is reviewed for application of sound professional judgement and close supervision is provided whenever new aspects or types of work are assigned. Typical duties and responsibilities require knowledge of principles and techniques commonly employed in the specific area of assignment. As experience is gained, incumbents are assigned more complex or difficult work that involves conventional types of plans, investigations, surveys, structures or equipment with relatively few complex features for which there are precedents. Additionally, incumbents may occasionally be provided the opportunity to lead smaller, short term projects or studies of limited scope. Positions in this class are flexibly staffed and are normally filled by advancement from the "I" level, or when filled from the outside, have prior experience.

SUPERVISION RECEIVED AND EXERCISED

Assistant Civil Engineer I

Receives immediate supervision from higher level supervisory or management staff.

Assistant Civil Engineer II

Receives general supervision from higher level supervisory or management staff.

As assigned, may provide technical supervision over engineering project staff.

ESSENTIAL FUNCTION STATEMENTS

Essential responsibilities and duties may include, but are not limited to, the following:

1. Perform a variety of professional civil engineering duties in the planning, design, development, construction, operation, and maintenance of District's flood control, water quality, and water production, storage, treatment and distribution facilities and systems; ensure adherence to professional standards, codes and District specifications.
2. Conduct various engineering studies, investigations and analyses; participate in preparation of reports regarding issues such as the environmental, hydraulic, geotechnical, seismic, hydrologic, geomorphic, water quality, and treatment process aspects of water supply and flood control facilities and sites.
3. Assist in the preparation of engineering specifications, drawings, sketches, and other supporting documentation for proposed engineering projects; review drawings, plans and other work submitted by external consultants, engineers, contractors and developers for conformance with professional codes, standards and District specifications; draft and prepare technical and administrative correspondence and reports.
4. Perform and review engineering calculations and prepare cost estimates for proposed projects and contract construction and installation work.
5. Collect, compute and compile engineering data, statistics and surveys; conduct field, in-plant and office engineering studies related to the research, planning, design, construction, operation and maintenance of flood control and water supply facilities such as channels, culverts, bridges, roads, retaining walls, pipelines, dams, treatment plants, fishways and appurtenant structures.
6. Participate in various engineering studies and related projects with District staff, outside agencies and consultants ensuring that deadlines, standards and specifications are met appropriately.
7. Participate in and may coordinate regulatory, environmental and/or construction permit activities and processes within the District and with outside agencies.
8. Provide support to District civil engineering construction projects; assist in the inspection of contractor installations as necessary; provide technical support during project construction including design changes, submittal review, request for information from contractors, interpretation of contract documents and assistance with change orders; prepare and review construction contract documents as assigned.
9. May participate in the consultant selection process; assist in administration of consultant and professional service contracts; participate in the negotiation of utility relocation, joint use or similar agreements with other agencies/entities as assigned.
10. Develop and maintain various databases and computer files and uses engineering software or develop programs to solve specific engineering programs.

11. Review statutes and regulations; interpret and apply the regulations with respect to District compliance; develop compliance strategies for regulations; may analyze proposed regulations.
12. Confer with District staff, contractors, the public, and other agencies or organizations as needed regarding assigned work.
13. Analyze projects proposed by other agencies; determine their impact on the District; develop recommendations.
14. Perform related duties and responsibilities as required.

QUALIFICATIONS

Assistant Civil Engineer I

Knowledge of:

Principles and practices of civil engineering with emphasis on flood control, water quality, and water supply, storage, treatment and distribution systems and facilities.

Engineering mathematics and economics.

Construction methods, materials, specifications and codes.

Methods and techniques of statistical analysis.

Methods and techniques of fluvial geomorphology.

Environmental engineering principles, practices and methods.

Computer programs and languages and their engineering applications.

Pertinent Federal, State and local laws, codes and regulations.

Ability to:

Apply principles and practices of civil engineering in assigned projects.

Apply engineering principles and computer programs to the solution of engineering problems.

Conduct various engineering studies; analyze results to recommend engineering solutions.

Perform accurate engineering calculations.

Prepare and interpret drawings, graphs, plans and specifications.

Prepare a variety of technical and administrative reports and documents.

Exercise sound judgment within procedural guidelines.

Understand Federal, State and local policies, laws and regulations as related to assigned projects.

Communicate clearly and concisely, both orally and in writing.
Establish and maintain effective working relationships with those contacted in the course of work.

Experience and Training Guidelines

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

Experience

No experience is necessary.

Training

Equivalent to a Bachelors degree from an accredited college or university with major course work in civil engineering or a related field.

OR

Possession of a valid California Engineer-in-Training (EIT) Certificate with two years of associated paraprofessional engineering experience.

License or Certificate

Registered positions within this classification must possess registration as a professional Civil Engineer in the State of California.

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case by case basis at the time of job posting.

Assistant Civil Engineer II

In addition to the qualifications for Assistant Civil Engineer I:

Knowledge of:

Principles of hydrology, hydraulics, structural design, and water treatment.
Fundamentals related to flood control, water quality and water supply as assigned.
Geographic Information System uses and applications.

Principles and practices of site surveying related to flood control and water supply.
Terminology, methods, practices and techniques used in technical engineering report preparation.

Methods and techniques of fluvial geomorphology.

Civil engineering theory and design concepts for flood control/hydraulic structures, buildings, bridges, pipelines, dams and water treatment plants.

Geotechnical applications in the design of levees, earthfill dams, soil stability analysis, groundwater quality monitoring and contamination investigation and cleanup.

Principles and practices of project scheduling and management including work plans and budgets.

Construction methods, materials, specifications and codes.

Ability to:

Interpret and apply Federal, State and local policies, laws and regulations.

Prepare and review civil engineering designs, drawings, specifications and other engineering project documentation.

Communicate project goals and objectives to members of the public.

Utilize modern geographic information system technology.

Prepare a variety of engineering studies and reports.

Provide technical engineering support to assigned projects.

Prepare schedules and budgets for assigned projects.

Experience and Training Guidelines

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

Experience

Two years of professional engineering experience at a level equivalent to that of the Assistant Engineer I (Civil) classification.

Training

Equivalent to a Bachelors degree from an accredited college or university with major course work in civil engineering or a related field.

OR

Possession of a valid California Engineer-in-Training (EIT) Certificate with two years of associated paraprofessional engineering experience.

License or Certificate

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WORKING CONDITIONS

Environmental Conditions

Indoor environment; some positions require frequent field visits; travel from site to site; work closely with others and alone; exposure to computer screens; irregular work hours; some positions may involve exposure to inclement weather, dust, dirt, noise and other conditions associated with construction sites.

Physical Conditions

Essential and other important functions may require maintaining physical condition necessary for sitting, walking and standing for extended periods of time; occasional moderate lifting and carrying.