



**APPROVED BY: THE CHIEF
OPERATING OFFICER**

EFFECTIVE: May 2019

ENGINEERING TECHNICIAN I/II/III

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 duties in preparing, presenting, creating, amending, updating, and maintaining engineering drawings, plans, maps, reports, and specifications for projects; to perform field surveys and collection of field data; and to perform a variety of tasks relative to assigned area of responsibility.

DISTINGUISHING CHARACTERISTICS

Engineering Technician I

This is the entry level class into the Engineering Technician series. This class is distinguished from the Engineering Technician II by performance of the more routine tasks and engineering calculations within the series, including support of assigned engineering projects and programs. Employees have only limited or no directly related work experience. Advancement to the "II" level is based on possessing the higher level-training and experience requirements, demonstrating proficiency in performing the II level functions, and is at the discretion of management.

Engineering Technician II

This is the experienced class within the Engineering Technician series. This class recognizes positions that require limited time on the job before an incumbent is capable of functioning at the full journey level. Positions at this level are initially expected to perform under immediate supervision, progressing to general supervision as knowledge of operating procedures is gained. Positions in this class are flexibly staffed and are normally filled by advancement from the "I" level, or when filled by the outside, have prior experience. Advancement to the "III" classification is dependent on organizational need for advanced level skills and is at the discretion of management.

Engineering Technician III

This is the journey level class within the Engineering Technician series. Incumbents are expected to perform the full range of duties in areas such as: conducting field surveys and investigations and preparing, creating, and updating engineering drawings, maps and related materials in addition to being responsible for duties requiring knowledge of concepts in assigned area with only occasional instruction or assistance as new or unusual situations arise, and are fully aware of the operating procedures and policies of the work unit.

SUPERVISION RECEIVED AND EXERCISED

Engineering Technician I

Receives immediate supervision. Employees within this class work in the presence of their supervisor or in a situation of close control and easy reference. Work assignments are given with explicit instructions or are so routine that few, if any, deviations from established practices are made without checking with the supervisor.

Engineering Technician II

Receives general supervision. The assigned duties for employees within this class require the exercise of judgment or choice among possible actions, sometimes without clear precedents and with concern for the consequences of the action. Employees may or may not work in proximity to their supervisor.

Engineering Technician III

Receives direction. Employees within this class receive general instructions regarding the scope of and approach to projects or assignments, but procedures and techniques are left to the discretion of the employees.

TYPICAL DUTIES

The duties specified below are representative of the range of duties assigned to this class and are not intended to be an inclusive list. 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 this position. Management reserves the right to add, modify, change, or rescind the work assignments of different positions.

1. Perform a variety of technical duties in preparing, presenting, creating, and updating engineering and technical drawings, maps, graphics, visual aids, and presentation materials.
2. Prepare, create, update and review technical maps, drawings, visual aids, graphic presentations, drafting materials, and other items as needed for various District engineering, land development, and construction projects; amend or revise drawings during design and construction phases; prepare as-built drawings.

3. Research, collect, and analyze documentation concerning the location, dimensions, areas, quantity calculations, alignment and control generation, and other technical data from public records, title reports, survey notes, aerial images, photographs, and format data for presentation materials and graphic displays.
4. Conduct field surveys, inspections and investigations to obtain and verify water resources, asset conditions and engineering data; make measurements and rough sketches; locate public utility lines from surveyors' field notes; prepare limited design drafting; assist in locating new or additional structures or in placing stakes or markers for District contractors' use; take field notes; and locate monuments and points.
5. Provide assistance and review related to the preparation of environmental documents and biological clearances such as Environmental Review Request Form (ERRF) and Biological Survey Request.
6. Assist in the preparation and acquisition of permits and agreements required by federal, state, and local public agencies.
7. Research and adapt new techniques, materials, and equipment applications to maintenance, operations and construction projects, right-of-way requirements, facility access, levee and flood wall slope/type, and planting; ensure worker safety and environmental sensitivity, and conformance with environmental regulations.
8. Participate in the preparation and implementation of goals, objectives, policies, and priorities; perform condition assessments for asset management; participate in the preparation of Stream Maintenance Program-related annual reports such as Notice of Proposed Work (NPW) and Annual Summary Report (ASR); recommend and implement results policies and procedures.
9. Utilize CADD, GPS and GIS software to produce maps, drawings, and other technical documents; provide assistance to staff using engineering or graphic design hardware and software applications; create new software applications on an as-needed basis in the completion of assigned job tasks; create image files by scanning documents; remain current on new hardware and software developments.
10. Perform a variety of engineering calculations related to areas, quantities, and costs; verify submitted calculations by other District staff.
11. Determine parameters of projects; plan and produce graphics and related artwork.
12. Utilize graphics hardware and software applications to design and develop presentation materials; provide technical support to users utilizing systems.
13. Produce and maintain standard drafting manuals for the District as assigned; oversee the District's collection of drafting and other technical materials; catalog all materials obtained.
14. Examine contractual documents to ensure accuracy and conformity with relation to area of responsibility; recommend alterations as needed.

15. Analyze and interpret legal documents related to District properties; interpret property descriptions and maps.
16. Receive, review, and process land use permits; coordinate engineering review process; research maps and right of way records; respond to inquiries on flood hazard issues; communicate District policies on permit requirements; ensure process permits comply with District ordinances, policies, and regulations.
17. Provide technical support in land use issues; serve as liaison with public agencies, developers, consultants, and land owners in receiving and processing land issues in relation to District facilities.
18. Perform field inspections and investigations; confer with maintenance, operations, and engineering staff regarding project status; ensure compliance with defined standards and contract provisions; may represent the District in its interactions with vendors, contractors, and the public when addressing queries or parcel and easement research.
19. Maintain various files and records; prepare a variety of correspondence and documents as needed.
20. Perform field inspections and investigations; confer with maintenance, operations, and engineering staff regarding project status; ensure compliance with defined standards and contract provisions; may represent the District in its interactions with vendors, contractors, and the public when addressing queries or parcel easement research
21. If assigned lead duties, lead, plan and oversee staff engaged in Engineering or field maintenance planning work.
22. Respond to public inquiries and provide information within the area of assignments.
23. Employees have a responsibility for safety, for following safety regulations and safety policies and procedures applicable to their work.
24. Pursuant to California Government Code Section 3100, all public employees are required to serve as disaster service workers subject to such disaster service activities as may be assigned to them by their supervisor or by law.
25. Perform related duties and responsibilities as required.

QUALIFICATIONS

The level and scope of the knowledge, skills and abilities listed in this section are related to the job duties as defined under Distinguishing Characteristics.

Engineering Technician I

Some Knowledge of:

Principles and practices of manual and computer-aided drafting and design.
Operational characteristics of equipment and materials used in conducting field surveys and ability to update engineering drawings, maps, and related materials.
Prepare clear and concise reports.
Algebra, geometry, and trigonometry associated with drafting and other technical tasks.
Principles and practices of data collection and management.
Methods and techniques of field inspections.
Methods and techniques of map making.
Read and interpret construction drawings and specifications
Best practices for office procedures, methods, and equipment, and applications related to the work including CADD, GPS and GIS programs.

Ability to:

Utilize tools, equipment and materials safely as related to assigned work.
Perform mathematical calculations.
Maintain and update various electronic and paper files.
Understand and follow verbal and written instructions.
Communicate clearly and concisely, both orally and in writing.
Organize work, set priorities, and meet deadlines.
Use common desktop applications and specialized software as well as specialized software related to the work.
Establish and maintain effective working relationships with those contacted in the course of work.

Training and Experience Guidelines

The following combination represents the minimum training and experience requirements for this classification:

Training

Equivalent to completion of the twelfth grade supplemented by twelve (12) college semester units in engineering, geography, mathematics, or a related field.

Experience

None.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license.

Engineering Technician II

In addition to the qualifications for Engineering Technician I:

Some Knowledge of:

Principles and practices of property research, including boundary determination and land title examination.

Principles of research and report preparation.

Methods and techniques of designing and creating visual graphics and displays.

Civil engineering practices and terminology in assigned program area.

Operations, services, and activities of a public water agency.

Principles and methods of spatial analysis.

Working Knowledge of:

Principles and practices of manual and computer-aided drafting and design.

Operational characteristics of hardware and software applications in assigned area, including technical engineering, graphics presentation, CADD, GPS, and GIS programs.

Best practices for office procedures, methods, and equipment, and applications related to the work including CADD, GPS and GIS programs.

Ability to:

Research, collect, and analyze documentation and related technical data.

Perform property research activities, including boundary determination and land title examination.

Prepare engineering maps, drawings, diagrams, and other technical documents and materials.

Prepare a variety of visual graphics and display materials.

Perform responsible technical engineering support work with accuracy, speed, and minimal supervision.

Perform field investigations take notes, and make calculations.

Use software programs to produce finished presentation and graphic materials.

Analyze drafting and design issues.

Analyze computer hardware and software problems in assigned area.

Prepare GIS maps.

Training and Experience Guidelines

The following combination represents the minimum training and experience requirements for this classification:

Training

Equivalent to completion of the twelfth grade supplemented by twelve (12) college semester units in engineering, geography, mathematics, or a related field.

Experience

Two (2) years of responsible technical engineering support experience.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license.

Engineering Technician III

In addition to the qualifications for Engineering Technician II:

Working Knowledge of:

Methods and techniques of designing and creating a variety of visual graphics and displays.

Principles of research and report preparation.

Methods and techniques of creating and managing computer databases.

Methods and techniques of 3-D drafting and/or modeling.

Principles and methods of spatial analysis.

Operations, services, and activities of a public water agency.

Methods and techniques of designing and creating visual graphics and displays.

Civil engineering practices and terminology in assigned program area.

Methods and techniques of map making.

Principles and practices of property research, including boundary determination and land title examination.

Ability to:

Analyze drafting and design issues and make recommendations on problem resolution.

Analyze computer hardware and software issues and make recommendations on problem resolution.

Create 3-D drawings and/or models.

Analyze engineering design calculations and criteria for accuracy.

Training and Experience Guidelines

The following combination represents the minimum training and experience requirements for this classification:

Training

Equivalent to completion of the twelfth grade supplemented by twelve (12) college semester units in engineering, geography, mathematics, or a related field.

Experience

Four (4) years of responsible technical engineering support experience.

License or Certificate

Possession of, or ability to obtain, an appropriate, valid California driver's license.

WORKING CONDITIONS

Environmental Conditions

Office and field environment; some positions require frequent field visits or occasional field assignments; travel from site to site; work closely with others or alone; exposure to electrical and radiant energy; irregular work hours including overtime and possible rotating shifts; some positions may involve exposure to inclement weather; heat, cold, dampness, chilling and dry atmospheric conditions; uneven terrain; slippery surfaces; work in confined spaces; work at elevated heights, work with machinery; work around moving vehicles and around high traffic; exposure to biohazards; dirt, dust, fumes, vapors, smoke, gases, noise, poison oak, chemicals, biological and chemical contaminants, wildlife, and other conditions associated with construction sites, water treatment plants and urban and remote field conditions.

Physical Conditions

Essential and other important functions may require maintaining physical condition necessary for walking, standing or sitting for extended periods of time; audiovisual acuity; manual dexterity; some moderate to heavy lifting; operating motorized equipment and vehicles, walking on uneven surfaces including hard terrains, uneven slopes, and inclined surfaces; stooping, pushing, pulling, squatting, crawling, twisting, kneeling, climbing, and bending at neck and waist; simple grasping; fine manipulation; power grasping; work above and below shoulder and in awkward.

CLASS LEGEND

Established Date: 5/2018
Employee Groups: EA
Revisions Dates: 5/2019
FLSA Status: Non-exempt

	<u>Current</u>	<u>Previous</u>
Class Code:	CJ1/2/5	
Series Code:	1CJ	
Family Code:		
Previous Titles:		
Analyst:	FD	