

## San Benito County Water District

Classification Unit:	Field and Office
Salary Range:	62
Last Revision:	October 2007

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### ENGINEERING TECHNICIAN

*These specifications are intended to present a descriptive list of the range of duties performed by employees in this position. Specifications are not intended to reflect all duties performed within the job.*

#### **DEFINITION**

Under the general supervision of the Deputy District Engineer, perform a variety of routine drafting, surveying and technical and/or specialized field and office work; to monitor, review, and inspect workmanship and materials used in a variety of public works projects; to ensure conformance with plans, specifications, and regulations; to perform construction plan checking and survey work, and to provide technical and/or specialized assistance to assigned departments or divisions; performs other duties as required. This is an emergency response position.

#### **DISTINGUISHING CHARACTERISTICS**

This class functions as an entry level in the Engineering series.

#### **SUPERVISION RECEIVED AND EXERCISED**

Receives immediate supervision from District Engineer, Deputy District Engineer or Engineer. Exercises no supervision

#### **ESSENTIAL FUNCTION STATEMENTS**

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

- ❖ Prepare drawings from engineering sketches, survey field notes, and other data for use in design, construction, operation and maintenance of a variety of public works projects including water lines, canals, pumping plants, irrigation systems and storm drains.
- ❖ Prepare, assemble, and distribute copies of maps, charts, and blueprints as requested.
- ❖ Perform and check mathematical calculations related to drafting and basic civil or specialized engineering.
- ❖ Maintain and update a variety of maps and records including distribution pipelines, deliveries, canal, dams, reservoir, utility system, land use, crop and irrigation method maps.

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- ❖ Develop and maintain filing systems for maps and engineering drawings; develop and produce books of maps for field use.
- ❖ Compile water system and natural stream feature data; prepare condition diagrams.
- ❖ Conduct land use, crop and irrigation method surveys.
- ❖ Conduct hydraulic and hydrologic tests and measurements.
- ❖ Inspect various structures and public works, private, and capital improvement construction projects for conformance with specifications and regulations; check line, grade, size, elevation, and location of structures, roadway and drainage improvements, and underground utilities.
- ❖ Record amounts of material used and work performed; prepare necessary reports for extra work items, progress payments, and survey reduction.
- ❖ Review plans and specifications of various assigned projects; attend pre-construction conferences with contractors, utility companies, and District staff members for planning of construction project schedules.
- ❖ Monitor and participate in the performance of a variety of field tests for assurance including soil compaction, water pressure, chlorine, bacteria, and concrete compliance tests; perform survey and surveying activities.
- ❖ Conduct plan checking of public/civil works construction drawings; review various types of revisions to on going construction projects.
- ❖ Coordinate work with other agencies and utilities; confer with contractors, developers, landowners/operators and project engineers regarding compliance with District standards.
- ❖ Conduct and perform routine and specialized field inspections.
- ❖ Perform design evaluation and technical drafting work; maintain maps and plans.
- ❖ Prepare a variety of activity records and reports; maintain as-built notes for each set of plans; prepare and maintain engineering project and construction files.
- ❖ Perform related duties and responsibilities as assigned.

### **EMPLOYMENT STANDARDS**

#### **Knowledge of:**

- ❖ Surveying techniques and practices.
- ❖ Terminology, methods, practices, and techniques of drafting.
- ❖ Modern office procedures, methods, and computer equipment.
- ❖ Occupational hazards and standard safety practices necessary in the assigned area of work.
- ❖ Principles, methods, materials, and equipment used in construction, operation, maintenance, surveying, and inspection.
- ❖ Mathematical principles including algebra, geometry, and trigonometry as applied to engineering calculations performed in drafting, surveying, plan checking, inspections, hydraulics, hydrology and field tests.
- ❖ Soil mechanics and geology and their application to engineering activities.
- ❖ Principles practices, methods, techniques, and equipment used in materials sampling, testing, and estimating procedures.
- ❖ Pertinent Federal, State, and local laws, codes, and regulations governing the construction, operation and maintenance of assigned projects.

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### **Skill to:**

- ❖ Use, operate, and care for computer equipment and programs including but not limited to Areview and Autocad software, plotter, printer, and surveying and mechanical instruments and tools.
- ❖ Operate a motor vehicle safely.

### **Ability to:**

- ❖ Perform engineering drafting work using computer equipment and programs.
- ❖ Reduce, interpret, and apply field notes in performance of drafting and survey duties.
- ❖ Read and interpret property descriptions and maps and sketches.
- ❖ Read, interpret, and apply a wide variety of technical information from manuals, drawings, specifications layouts, blueprints, and schematics.
- ❖ Program plotter/printer.
- ❖ Understand and follow oral and written instructions.
- ❖ Communicate clearly and concisely, both orally and in writing.
- ❖ Prepare accurate engineering sketches, drawings, and records.
- ❖ Detect and locate faulty materials and workmanship and determine the stage of construction during which defects are most easily found and remedied.
- ❖ Take and record accurate and precise survey measurements and interpret survey calculations.
- ❖ Perform field inspections and survey work.
- ❖ Perform accurate engineering design and field survey and specialized calculations.
- ❖ Design, prepare, and check engineering plans and studies.
- ❖ Deal firmly and tactfully with contractors, engineers, property owners and operators.
- ❖ Establish, maintain, and foster positive and harmonious working relationships with those contacted in the course of work.

### **Experience and Training Guidelines:**

*Any combination equivalent to experience and training that would provide the required knowledge, skill, and abilities would be qualifying. A typical way to obtain the knowledge, skills, and abilities would be:*

#### **Experience**

Three (3) years of increasingly responsible experience performing a variety of engineering office and field work, including construction inspection, surveying, drafting, or related specialized technical work.

One (1) year of construction inspection experience is desirable.

#### **Training**

Equivalent to the completion of twelfth grade supplemented by at least 1 year of specialized training in mathematics, civil or agricultural engineering, or a related field.

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### **WORKING CONDITIONS**

*Essential duties require the following physical skills and work environment:*

#### **Environmental Conditions**

Office environment; exposure to computer screens; and field environment; travel from site to site; work in or with water; access and work in confined spaces and high areas; work in or around deep or fast moving waters; exposure to noise, dust, grease, smoke, fumes, gases, inclement weather conditions.

#### **Physical Conditions**

Ability to work in a standard office environment with the ability to sit, stand, walk, kneel, crouch, stoop, squat, crawl, twist, climb, and lift 70 pounds; exposure to noise, outdoors, vibration, confining work space, chemicals, mechanical hazards, and electrical hazards; ability to travel to different sites and locations.

### **SPECIAL REQUIREMENTS**

- ❖ Possession of a valid California Driver's License, Class C, as issued by the State of California Department of Motor Vehicles; and a driving record acceptable to the District's auto insurance provider.
- ❖ Obtain and maintain defensive drivers training certification (training provided by the District)
- ❖ Obtain and maintain CPR and First Aid training certification (training provided by the District)