

FLORIN RESOURCE CONSERVATION DISTRICT/  
ELK GROVE WATER DISTRICT  
CLASS SPECIFICATION

*FRCD/EGWD is an equal opportunity employer.  
Employment is at-will.*

POSITION:	<b>Engineering Technician I/II/III</b>
DEPARTMENT/DIVISION	Technical Services
DIRECTLY REPORTS TO:	General Manager
FLSA:	Non-exempt
DIRECTLY SUPERVISES:	N/A

### **Job Definition**

Classifications in this series perform a variety of technical office and field duties involving drafting, surveying, mapping, and construction inspections; to develop and maintain the District's Geographic Information System (GIS); to update and maintain the Districts' asset management program; and to develop and maintain the District's water model.

### **Distinguishing Characteristics**

Engineering Technician I This is the entry level class in the Engineering Technician series. Positions in this class typically require little directly related work experience. Positions in this class work under close supervision while learning job tasks, progressing to relatively less supervision as procedures and processes of assigned area of responsibility are learned. Receives general supervision from the General Manager.

Engineering Technician II This is the journey level class in the Engineering Technician series. Employees at this level receive relatively less instruction or assistance and are fully aware of the operating procedures and policies within the work unit. Positions in this class are normally filled by advancement from the I level once the individual meets the qualification and performance standards of the II level, demonstrates an ability to perform all facets of the position, and meets any other assessment requirements to move to the II level. Receives minimal supervision from the General Manager.

Engineering Technician III This is the advanced journey level class in the Engineering Technician series. Positions at this level are distinguished from other classes within the series by the level of responsibility assumed, complexity of duties assigned, independence of action taken, by the amount of time spent performing the duties, and by the nature of the public contact made. Individuals perform the most difficult and responsible types of duties assigned to classes within this series, including project management and administering the District' GIS activities. Employees at this level are required to be fully trained in all procedures related to assigned areas of responsibility. Receives direction from the General Manager.

### **Examples of Essential Duties**

*Duties may include, but are not limited, to the following:*

- Prepares, updates, and revises engineering maps and drawings related to a variety of public capital improvement projects; perform preliminary engineering design work and calculations, including preparation of plans, charts, diagrams, graphs, tables, and sketches.

- Calculates quantities and cost estimates for assigned construction projects; obtain vendor/contractor price quotes, produce requisitions, and sign off on purchase orders for equipment, materials and supplies related to work assignment.
- Files and retrieves engineering and related plans, maps, exhibits and various documents; update files and maintain document reference and retrieval systems.
- Produces maps, tables and graphs for internal and external use; determine and execute the appropriate sequence of data processing tasks; use established Geographic Information System (GIS) to query data and produce documents.
- Uses Global Positioning System (GPS) equipment to acquire and record GIS positional and attribute data.
- Updates and maintains GIS databases according to District's policies and procedures; assist in cleaning up data and making corrections in response to changes and additional data sets integrated into GIS.
- Performs quality control checks to ensure the integrity of GIS data and applications; review and resolve conflicts in data; evaluate currency, usefulness, and completeness of data; participate in planning.
- Provides a variety of ad hoc queried data to departments and outside agencies.
- Conducts field inspections for District facilities including commercial/residential development and capital improvement projects, involving the inspection of pipelines, pumping stations, and treatment facilities, and other District projects; review and inspect construction plans to ensure compliance with approved plans, specifications.
- Maintains and updates the District's asset management program on an ongoing basis.
- Uses water modeling software to analyze the District's water system. Establishes and maintains effective working relationships using principals of good customer service to interact with developers and/ or contractors, assisting them with District processes and procedures and receiving, researching and responding to their questions and/or concerns.
- At the III level:
  - Serves as project manager, assisting with the bid process, selection and oversight of internal project staff and outside consultants, and project monitoring.
  - Develops and designs databases related to GIS database mapping functions and mapping layers. Develops and documents procedures for use of GIS functionalities; prepare related protocols; provide related training to a variety of GIS users.
  - Monitors GIS database performance against established standards; detect and troubleshoot problems.

## **Qualifications**

### Engineering Technician I

#### Knowledge of:

- Terminology, methods, practices and techniques used in technical engineering work, including drafting, surveying, mapping and construction inspection.
- Principles of algebra, geometry, and trigonometry.
- Environmental Systems Research Institute (ESRI)-based ArcGIS and Autodesk Auto Computer Aided Drafting (CAD).
- Scale representation on maps.
- Applicable equipment and instruments used in drafting, surveying, and mapping.
- Modern office practices, methods, and computer equipment including relevant software programs.

- Oral and written communication skills; business English including vocabulary, spelling, and correct grammatical usage and punctuation.
- Safe work practices.

Ability to:

- Perform a variety of technical office and field engineering work involving, drafting, surveying, mapping and inspections.
- Know and understand all aspects of the job; intermittently analyze work papers, reports and special projects; identify and interpret technical and numerical information including engineering calculations; observe and problem solve operational and technical policy and procedure; and explain regulations and procedures to others.
- Use CAD, GIS, GPS devices and other computer applications related to technical engineering work.
- Research sources of geographic data and collect, interpret and integrate cartographic data from different sources to prepare maps and reports.
- Effectively use water modeling software and its applications.
- Compile and analyze technical information and prepare technical documents and reports related to area of assignment.
- Perform mathematical calculations with speed and accuracy.
- Understand and carry out oral and written instructions and prioritize workload to meet deadlines.
- Read, write and comprehend the English language at a level necessary for effective job performance exercising correct English usage, vocabulary, spelling, grammar and punctuation.
- Operate, use and care for drafting, mechanical and modern office equipment and technology, including computer instruments and applicable software.
- Utilize appropriate safety procedures and practices for assigned duties.
- Contribute effectively to the accomplishments of District goals, objectives and activities.
- Communicate with District management, co-workers, and the public in written and oral form.

Engineering Technician II

In addition to the qualifications for the Engineering Technician I:

Knowledge of:

- Principles and practices of algebra, geometry and trigonometry as applied to the computation of angles, areas, distances and traverses.
- Practices of database design, maintenance and administration.
- Principles and practices of construction methods and techniques.
- Equipment and procedures used in digital map production, GIS mapping, and surveying.
- Proper inspection techniques to examine construction workmanship and materials for defects and faults.
- Policies and regulations related to construction, extension, and maintenance of a variety of public works and utility systems and facilities.
- Principles and practices of technical report writing and data presentation.
- Engineering maps and records.
- Construction materials and methods.

Ability to:

- Independently perform technical engineering duties.
- Use CAD, GIS, GPS devices and other computer applications at an intermediate skill level related to technical engineering work.
- Reduce, interpret and apply field notes in performing drafting work.
- Competently use relevant software, programs, and computer applications; import and export data; and use other data management tools.
- Maintain and develop geodatabases associated with the GIS base mapping and subsequent map layers.
- Compile and analyze technical information; problem-solve complicated engineering issues and identify alternatives and make related recommendations.
- Perform inspections of construction projects and enforce District standards.
- Perform technical GIS work involving quality assurance and control, data loading, editing and analysis.
- Assess vendor/contractor services, related equipment, and associated costs.
- Perform engineering and mathematical calculations with speed and accuracy.
- Establish and maintain cooperative working relationships with outside vendors and contractors.
- Communicate with outside vendors and contractors in written and oral form.

Engineering Technician III

In addition to the qualifications for the Engineering Technician II:

Knowledge of:

- Principles and practices of project management.
- Principles and practices of construction methods and techniques related to underground utilities, including tools and materials used in construction.
- Applicable Federal, State, and local laws, regulations, codes, and District policies governing the construction of assigned projects.

Ability to:

- Use CAD, GIS, GPS devices and other computer applications at an advanced skill level related to technical engineering work.
- Perform highly complex engineering and mathematical calculations with speed and accuracy.
- Perform database management tasks related to area of assignment.
- Prepare complete plans and cost estimates of a variety of public works improvement projects.
- Effectively manage construction projects.
- Communicate proficiently with District management, co-workers, the public, outside vendors and contractors in written and oral form.

**Physical Requirements**

- Perform simple grasping and fine manipulation.
- Lift, carry, push and pull 50 pounds.
- Bend, squat, kneel, twist, or climb while performing field work.
- Walk on uneven terrain.
- Sit for extended periods of time.
- Hear and see within normal ranges; use telephone and write or use keyboard.

## **Required Certifications and Licenses**

Possession of a valid Class C Driver's License.

## **Required Education and Experience**

### **Engineering Technician I**

Possession of an associate degree from an accredited college or university with major coursework in engineering, mathematics, GIS or another field of study applicable to the responsibilities and requirements of this job class.

### **Engineering Technician II**

Possession of an associate degree from an accredited college or university with major coursework in engineering, mathematics, GIS or another field of study applicable to the responsibilities and requirements of this job class. A bachelor's degree is desirable, and

Two (2) years of progressively responsible technical engineering experience that involved the use of GIS and AutoCAD comparable to the District's Engineering Technician I.

### **Engineering Technician III**

Possession of an associate degree from an accredited college or university with major coursework in engineering, mathematics, GIS, or another field of study applicable to the responsibilities and requirements of this job class. A bachelor's degree is desirable, and

Four (4) years of progressively responsible experience performing technical engineering duties that involved the use of GIS and AutoCAD comparable to the District's Engineering Technician II.