

**CITY OF MADERA**  
**ENGINEERING TECHNICIAN II**

*Class specifications are only intended to present a descriptive summary of the range of duties and responsibilities associated with specified positions. Therefore, specifications **may not include all** duties performed by individuals within a classification. In addition, specifications are intended to outline the **minimum** qualifications necessary for entry into the class and do not necessarily convey the qualifications of incumbents within the position.*

**DEFINITION:**

Under general direction, performs a variety of para-professional office and field engineering tasks and duties, including production of plans and contract specifications for City projects, field surveying, plan checking of maps and deeds, and other routine engineering and drafting work; demonstrates a complete understanding of all applicable policies, procedures and work methods associated with assigned duties; performs other related duties as required.

**DISTINGUISHING CHARACTERISTICS:**

The **Engineering Technician II** is the journey level class responsible for performing responsible office and field engineering activities. This classification is distinguished from the next lower classification of Engineering Technician I by the performance of the full range of duties working with minimal supervision and performing the more complex assignments in all areas.

**SUPERVISION RECEIVED/EXERCISED:**

Receives supervision from the Associate Civil Engineer, Assistant Engineer or designated personnel. Incumbents of this class do not routinely exercise supervision.

**ESSENTIAL FUNCTIONS:** *(include but are not limited to the following)*

- Prepare topographical plan and profile maps of property and pertinent features from survey notes and legal descriptions; ink, trace and letter charts, graphs, maps, plans, and other drawings;
- prepare illustrative graphics such as charts, illustrations, graphs for reports, drawings for design manual, etc.;
- prepare drawings of various public works improvements, including right-of-way plats; check calculations used in designs and estimates; measure distances to be used in the determination of locations of boundaries, easements, improvements, structures, and topographic features; maintain written record of measurements;
- respond to public inquiries regarding engineering activities;
- perform basic design tasks required in the drafting of plans and drawings such as horizontal and vertical layout for infrastructure facilities; calculate construction quantities and cost estimates;
- prepare easement and right-of-way descriptions from calculations and information provided; verify location of utilities, easements, property lines, etc., on City engineering plans;

## ENGINEERING TECHNICIAN II

Page 2

- research and compile data from field verifications or office engineering records for inclusion in engineering reports and studies, or in response to public inquiry;
- operate Ozalid blueprint, KROY and LeRoy lettering machines;
- operate Computer Assisted Drafting software to create and modify engineering drawings, topographic maps, improvement plans and illustrative graphics; assist in designing and writing computer software sub-programs using existing purchased software; operate computer spreadsheet, database, and word processing software to generate engineering reports;
- prepare written reports and correspondence; perform algebraic and trigonometric engineering calculations to determine distances, areas, volumes, grades, hydraulic flows, etc.;
- investigate traffic complaints and requests for traffic controls; conduct traffic studies and surveys such as turning movement counts, speed and delay, and radar speed surveys; recommend corrective traffic control to mitigate traffic problems;
- maintain and update miscellaneous engineering records, files, maps, and logs; issue and prepare permits such as driveway, revocable, encroachment, excavation, and street-lane closures; generate engineering reports;
- perform routine materials testing; soil, water, and landfill gas testing.
- Other duties may be assigned

### **WORKING CONDITIONS:**

Position requires prolonged sitting, standing, walking, reaching, twisting, turning, kneeling, bending, squatting and stooping in the performance of daily office activities. The position also requires grasping, repetitive hand movement and fine coordination in preparing statistical reports and data using a computer keyboard. Additionally, the position requires near and far vision in reading correspondence and using the computer, and acute hearing is required when providing phone and face-to-face service. The need to lift, drag and push files, paper and documents weighing up to 25 pounds also is required.

**QUALIFICATIONS:** *(The following are minimal qualifications necessary for entry into the classification)*

#### **Education and/or Experience:**

Any combination of education and experience that has provided the knowledge, skills and abilities necessary for an **Engineering Technician II**. A typical way of obtaining the required qualifications is to possess the equivalent of two years of experience comparable to an Engineering Technician I with the City of Madera and six (6) semester units in college-level mathematics which includes at least three (3) semester units in trigonometry or above. (Successful completion of either the Engineer-in-Training (EIT) or the Licensed Surveyor-in-Training (LSIT) examinations may substitute for the trigonometry requirement.)

-OR-

Three years of experience in related para-professional engineering work and/or drafting, and six (6) semester units in college-level mathematics that includes at least three (3) semester units in trigonometry or above. (Successful completion of either the Engineer-in-Training (EIT) or the Licensed Surveyor-in-Training (LSIT) examinations may substitute for the trigonometry requirement.) Survey field experience is not considered qualifying unless supplemented with six (6) semester units in college-level drafting or engineering graphics.

-OR-

Two years of experience in related para-professional engineering work and/or drafting, and a certificate of completion from an accredited technical vocational school or community college in drafting or engineering, or a minimum of twenty (20) semester units in college-level drafting and engineering related courses. Course work is to include a minimum of six (6) semester units in college-level mathematics that includes at least three (3) semester units in trigonometry or above. (Successful completion of either the Engineer-in-Training (EIT) or the Licensed Surveyor-in-Training (LSIT) examinations may substitute for the trigonometry requirement.)

**License/Certificate:**

Possession of, or ability to obtain, a valid class C California driver's license.

**KNOWLEDGE/ABILITIES/SKILLS:** *(The following are a representative sample of the KAS's necessary to perform essential duties of the position)*

**Knowledge of:**

Principles of engineering, algebra and trigonometry; surveying techniques and practices; terminology, methods, practices and techniques of drafting; office equipment used for reproducing maps, charts and other graphics; engineering maps and records; modern office equipment including a computer, and applicable software; occupational hazards and standard safety procedures.

**Ability to:**

Read and understand plans and maps; perform basic engineering and mathematical calculations with speed and accuracy; utilize City codes and ordinances; perform engineering drafting work; operate a computer; learn computer aided design and drafting; understand and follow oral and written instructions and sketches; communicate clearly and concisely, both orally and in writing; establish and maintain effective working relationships.

**Skill to:**

Operate an office computer and a variety of word processing and software applications.