

**CITY OF SANTA CLARA, CALIFORNIA  
CLASS SPECIFICATION**

**TITLE: SENIOR ENGINEERING TECHNICIAN (JOB CODE 745)**

<b>DEPARTMENT</b>	<b>ACCOUNTABLE TO</b>	<b>FLSA STATUS</b>
Various	Various	Non-Exempt

**CLASS SUMMARY**

Senior Engineering Technician is the intermediate classification in the paraprofessional Engineering Technician series. Incumbents are responsible for the preparation of complex exhibits, plans, engineering calculations and cost estimates. This position may be filled within the Department of Public Works, Water & Sewer Utilities or Electric Utility Departments.

**DISTINGUISHING CHARACTERISTICS**

Senior Engineering Technician is distinguished from the lower-level Engineering Technician classifications in that the latter perform routine technical office and field work. Senior Engineering Technician is distinguished from the higher-level Principal Engineering Technician in that the latter performs the most difficult and responsible types of duties assigned to the Engineering Technician classifications. Positions at this level are distinguished from other Engineering Technician classifications by the level of responsibility assumed and the complexity of duties assigned. Employees at this level are required to be fully trained in all the procedures related to assigned area of responsibility.

**MINIMUM QUALIFICATIONS**

***EDUCATION AND EXPERIENCE***

- Graduation from high school or tested equivalent; and
- Two (2) years of full-time paraprofessional engineering experience at a level equivalent to City of Santa Clara Engineering Technician including at least one (1) year working with Computer aided Drafting (CAD) and/or Geographic Information System (GIS) tools and software.

***ACCEPTABLE SUBSTITUTION***

Possession of an Associate’s degree or higher OR minor in engineering or GIS may be substituted for one (1) year of the required experience

***DESIRABLE QUALIFICATIONS***

- Possession of an Associate’s degree or higher, including satisfactory completion of post-secondary courses in mathematics, engineering, CAD, GIS, and related subjects
- A certificate in CAD
- A certificate in GIS
- Experience using Supervisory Control and Data Acquisition (SCADA) systems
- Experience using Computerized Maintenance Management Systems (CMMS)

***LICENSES/CERTIFICATIONS***

Possession of an appropriate, valid California Class C driver's license is required at time of appointment and for the duration of employment.

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### ***OTHER REQUIREMENTS***

- Must be able to perform all essential functions of the job assignment, with or without reasonable accommodations.
- May be required to work shifts, weekends, and off and unusual hours in the performance of duties and in emergency situations.

### **TYPICAL DUTIES**

This description may not include all the duties listed below, nor do the examples cover all duties that may be performed.

Under general direction, the incumbent will:

- Prepare precision drawings of construction or preliminary plans from sketches or rough copy
- Prepare scaled and dimensioned plans based on sketches prepared by engineering staff
- Draft profiles, cross-sections, road and storm drainage alignment, right-of-way maps and topographical features
- Does limited design drafting on roadways, storm drainage, water and sanitary sewer facilities, buildings, and related structures following established criteria
- Performs computing and drafting operations involved in checking and reducing land survey notes
- Collect, research and interpret engineering data such as but not limited to legal descriptions, survey notes, graphs, maps, traverses, and as-built drawing documents
- Make field checks of existing facilities for construction purposes
- Maintain records of as-builts and updates existing City maps and records using CAD and/or GIS applications
- Prepare project cost estimates, including materials, equipment, and incidentals needed for installation
- Perform field investigations of existing improvements
- May assist in inspection of construction work
- May gather samples of construction materials and assist in running laboratory tests on materials
- Perform other related duties as assigned

When Assigned to the Department of Public Works

- Prepare drawings of proposed signal installations or other control devices using drafting instruments
- Check signal installations for conformance to established City specifications and standards
- Investigate public complaints and conducts field traffic studies to determine traffic volume, speed, effectiveness of signals, adequacy of lighting, and other factors influencing traffic conditions
- Prepare legal descriptions of property easement requests and rights-of-way from maps and official records

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- Maintain master map files, including such records of block maps, right-of-way maps, street-light maps, tract, and record-of-survey maps, and other maps
- Prepare standard property agreements for execution by property owners and prepares exhibits to accompany agreements
- Respond to requests from citizens, contractors, and developers wanting property information, including property line information and easement locations, and City facilities and utilities.
- Acts as instrument person on survey party
- Sets up, adjusts and operates a variety of survey instruments to establish or confirm lines, angles, distances, bearings, and elevations
- May be required to act as Chief of Party or Principal Engineering Aide Technician on routine assignments for brief periods of time

### When Assigned to the Electric Utility Department

- Perform computing and drafting operations involved in checking drawings of electric utility facilities
- Assist in conducting field inventory of existing primary and secondary conductors, transformers, switches, poles, pole attachments, manholes, and conduit locations
- Draw and updates generation facility, utility fiber, electrical schematic diagrams, panel wiring diagrams, substation layout drawings, and organizes associated documentation
- Prepare scaled and dimensioned plans based on sketches prepared by engineering estimating staff
- Maintain master map files, including such records of block maps, street light maps, fiber communication, electric utility single line and operating diagrams and other associated facility maps
- Render electrical drawings for construction of electric substation or generation facilities
- May be required to act as Principal Engineering Technician (Electric) on routine assignments for brief periods of time
- May assist in inspection of electric utility construction work

### When Assigned to the Water & Sewer Utilities Department

- Responds to water quality complaints
- Collects a variety of water samples and performs elementary laboratory procedures for water quality determination
- Maintains records of water production and well water levels
- Render drawings for construction of water distribution facilities
- Maintain diagrams of water and sewer facilities like groundwater wells, tanks, and pump stations diagrams and other associated facility maps
- Maintain record drawing and as-builts and update utility maps utilizing CAD and/or GIS applications
- Act as department liaison to the Information Technology (IT) Department for coordination of activities

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### **KNOWLEDGE, SKILLS, & ABILITIES**

Knowledge of:

- Mathematics, including algebra, geometry, and trigonometry
- Basic engineering practices, including simple engineering computations
- Principles, techniques, and terminology of surveying and GIS
- Principles, techniques, and terminology of engineering and drafting
- Office safety practices, procedures and standards
- Principles, techniques, and terminology of assigned specialty, such as civil engineering, traffic engineering, and/or water distribution design, electric utility

Ability to:

- Use available computer hardware and software to perform assigned duties, including but not limited to, computer aided drafting, spreadsheets, and word processing
- Use GIS tools, surveying and computing instruments
- Prepare neat and accurate drawings, diagrams, dimensions, representations, and schematics using GIS and CAD tools
- Understand and carry out written and oral instructions
- Read and interpret plans and specifications
- Communicate clearly and effectively
- Establish and maintain a cooperative working relationship with those contacted in the course of work, including the public
- Deal tactfully and courteously with others
- Respond appropriately to conflicts/complaints/management escalations from other City departments and the public
- Work in a team-based environment and achieve common goals
- Work independently, quickly, and efficiently
- Evaluate situations, identify problems, make logical decisions and follow through on resolution
- Effectively handle multiple priorities, organize workload, and meet strict deadlines
- Bend, stoop, reach, carry, climb and lift as necessary to perform assigned duties
- Walk or stand for extended period of time

### **SUPERVISION RECEIVED**

Works under the general direction of a Principal Engineering Technician, Engineer or higher classification as assigned.

### **SUPERVISION EXERCISED**

May assist in training of Engineering Technician or administrative support staff.

### **CLASSIFICATION HISTORY**

Established 4/1998; Revised 7/2017; Revised 10/2024