

CITY OF SANTA CLARA, CALIFORNIA
CLASS SPECIFICATION

TITLE: SENIOR ENGINEERING ~~TECHNICIAN Aide~~ (JOB CODE 745)

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

CLASS SUMMARY

~~Senior Engineering Aide Technician is This is the journey level intermediate classification in the paraprofessional Engineering Aide Technician series. Positions at this level are distinguished from other Engineering Aide Technician classifications within the series by the level of responsibility assumed and the complexity of duties assigned. Employees perform the more most difficult and responsible types of duties assigned to this series. Incumbents are responsible for the including preparation of the most complex exhibits, plans, engineering calculations and cost estimates. Employees at this level are required to be fully trained in all the procedures related to assigned area of responsibility. Work is performed under the general supervision of a professional engineer or Principal Engineering Aide who makes assignments and inspects work to ensure that it is conducted according to instructions and in conformity with accepted engineering standards. 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 Aide 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

~~For Public Works and Water & Sewer Utilities Departments~~

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

~~For Electric Utility Department~~

~~Graduation from an accredited junior college with an Associate's degree or higher in engineering or its equivalent, including satisfactory completion of college level courses in writing, mathematics, engineering, AutoCAD, GIS, and related subjects; and Two (2) years of full-time paraprofessional engineering experience utilizing AutoCAD and ESRI-based GIS tools with an electric utility~~

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ACCEPTABLE SUBSTITUTION

Possible Substitutions:

- ~~For Public Works and Water & Sewer Utilities Department~~
- ~~Possession of an Graduation from an accredited junior college with an Associate's/Associate's degree or higher OR minor or higher in engineering or GIS may be substituted for one (1) year of the required experience~~

For Electric Utility Department

- ~~Two (2) years of additional paid full-time experience with an electric utility utilizing ESRI-based GIS may be substituted for the required education requirement~~
- ~~One (1) year of paid, full-time experience as a draftsman or equivalent may be substituted for the AutoCAD drawing course required~~

DESIRABLE QUALIFICATIONS

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
- ~~For Public Works and Water & Sewer Utilities Department~~
~~Experience in using AutoCAD 2013 or higher~~
~~Experience with arc FM GIS tools~~

For Electric Utility Department

- A certificate in CAD 2013 or higher
- ~~A certificate in ESRI-based GIS~~
- Experience using Supervisory Control and Data Acquisition (SCADA) systems
- Experience using Computerized Maintenance Management Systems (CMMS)
- ~~Experience with arc FM GIS tools~~

LICENSES/CERTIFICATIONS

LICENSE

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

OTHER REQUIREMENTS

- Must be able to perform all ~~of the~~ 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

Duties may include, but are not limited to the following. This description may not include all the duties listed below, nor do the examples cover all duties that may be performed.

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Under general direction, the incumbent will: supervision:

- Prepares precision drawings of construction or preliminary plans from sketches or rough copy
- Prepare scaled and dimensioned plans based on sketches prepared by engineering staff
- Drafts 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, researchs and interprets engineering data such as but not limited to legal descriptions, survey notes, graphs, maps, and traverses, and as-built drawing documents
- Makes field checks of existing facilities for construction purposes
- ~~Prepares legal descriptions of property easement requests and rights-of-way from maps and official records~~
- ~~Maintains~~ records of as-builts and updates existing City maps and records using CAD AutoCad and/or tilizing ESRI-based GIS applications
- ~~Maintains 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~~
~~Prepares standard property agreements for execution by property owners and prepares exhibits to accompany agreements~~
- ~~Responds to requests from citizens, contractors, and developers wanting property information, including property line information and easement locations~~
- ~~Renders drawings for construction of water distribution facilities~~
- Prepares project cost estimates, including materials, equipment, and incidentals needed for installation
- Performs field investigations of existing improvements
- ~~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~~
- ~~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~~
- ~~Prepares drawings of proposed signal installations or other control devices using drafting instruments~~
- ~~Prepares cost estimates of materials, equipment, and incidentals needed for installation~~
- ~~Checks signal installations for conformance to established City specifications and standards~~

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- ~~• Investigates public complaints and conducts field traffic studies to determine traffic volume, speed, effectiveness of signals, adequacy of lighting, and other factors influencing traffic conditions~~
- May assist in inspection of construction work
- May gather samples of construction materials and assist in running laboratory tests on materials
- Performs other related duties as assigned

When Assigned to the For Department of Public Works

- Prepares drawings of proposed signal installations or other control devices using drafting instruments
- Checks 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
- Maintains 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
- Prepares standard property agreements for execution by property owners and prepares exhibits to accompany agreements
- Responds 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
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When Assigned to the For Electric Utility Department

- ~~• Prepares precision drawings of construction or preliminary plans from sketches or rough copy~~
- Performs computing and drafting operations involved in checking drawings of electric utility facilities
- ~~• Researches and interprets engineering data such as but not limited to legal descriptions, graphs, maps, and as-built drawing documents~~
- ~~• Makes field checks of existing facilities for construction purposes~~
- ~~• Reduces as-built information to record~~
- Assists in conducting field inventory of existing primary and secondary conductors, transformers, switches, poles, pole attachments, manholes, and conduit locations
- Draws and updates generation facility, utility fiber, electrical schematic diagrams, panel wiring diagrams, substation layout drawings, and organizes associated documentation

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- Prepares scaled and dimensioned plans based on sketches prepared by engineering estimating ~~staff/personnel~~
- ~~Maintains records of as-builts and updates existing City maps and records utilizing ESRI-based GIS applications~~
- Maintains 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
- ~~Responds to requests from citizens, contractors, and developers wanting property information including electric utility infrastructure information~~
- Renders electrical drawings for construction of electric substation or generation facilities
- ~~Performs field investigations of existing improvements~~
- May be required to act as Principal Engineering Aide-Technician (Electric) on routine assignments for brief periods of time
- May assist in inspection of electric utility construction work
- ~~Performs other related duties as assigned~~

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

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 ESRI-based-GIS
- Principles, techniques, and terminology of engineering and drafting
- Office safety practices, procedures and standards

~~For Public Works and Water & Sewer Utilities Department~~

- ~~Mathematics, including algebra, geometry, and trigonometry~~
- ~~Basic engineering practices, including simple engineering computations~~
- Principles, techniques, and terminology of assigned specialty, such as civil engineering, traffic engineering, and/or water distribution design, electric utility

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- ~~• Principles, techniques, and terminology of surveying and ESRI-based GIS~~
- ~~• Principles, techniques, and terminology of engineering drafting and map drafting~~
- ~~• Principles, techniques, and terminology of traffic engineering~~
- ~~• Principles, techniques, and terminology of water distribution system design~~
- ~~• Office safety practices, procedures and standards~~

For Electric Utility Department:

- ~~• Mathematics, including algebra, geometry and trigonometry~~
- ~~• Basic engineering practices, including simple engineering computations~~
- ~~Principles, techniques and terminology of engineering, drafting and map drafting~~
- ~~• Principles, techniques and terminology of ESRI-based GIS~~
- ~~• Principles, techniques, and terminology of electric utility system operations~~
- ~~• Office safety practices, procedures and standards~~

Ability to:

For all Departments

- Use available computer hardware and software to perform assigned duties, including but not limited to, computer aided drafting, spread-sheets, and word processing
- Use ESRI-based Geographic Information SystemsUse 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, both orally and in writing
- Establish and maintain a cooperative working relationship with those contacted in the course of work, including the general public
- Deal tactfully and courteously with others
- Respond appropriately to conflicts/complaints/management escalations from other City departments and the general public
- Work in a team-basedteam-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

For Public Works and Water & Sewer Utilities Departments:

- ~~• Use surveying and computing instruments~~

SUPERVISION RECEIVED

Works under the general directionsupervision of a Principal Engineering TechnicianAide, an Engineer or higher classification as assigned.

SENIOR ENGINEERING ~~TECHNICIAN~~AIDE (745)

SUPERVISION EXERCISED

May assist in training of Engineering [Aide-Technician](#) or administrative support staff.

CLASSIFICATION HISTORY

Established 4/1998; Revised 7/2017; [Revised 10/2024](#)