

**CITY OF REDWOOD CITY  
ASSISTANT ENGINEER I  
ASSISTANT ENGINEER II**

**DEFINITION**

To perform routine to moderately complex professional engineering work in the design and construction of public works and related projects; serve as project engineer for assigned projects; and perform a variety of engineering support services work including plan checking, legal description work, preparation of bid summaries, cost estimating, and construction inspection.

**SUPERVISION RECEIVED AND EXERCISED**

**Assistant Engineer I**

Receives general supervision from a higher-level professional engineer. Technical or functional supervision may also be provided by higher-level professional engineer. Assignments may require indirect supervision of technical engineering positions.

**Assistant Engineer II**

Receives general supervision from a higher-level professional engineer. Exercises functional supervision over lower level professional and technical staff as assigned.

**DISTINGUISHING CHARACTERISTICS**

**Assistant Engineer I**

This is the entry-level professional engineer classification. Incumbents perform office and field engineering work of low to moderate complexity under general supervision in preparation for advancement to the next higher level of Assistant Engineer II. Assignments are generally performed within a framework of established procedures.

**Assistant Engineer II**

This is the first journey-level class in the professional engineering series. Positions in this class are filled by advancement from the lower class of Assistant Engineer II or by recruitment of individuals with prior experience. Incumbents of this class perform the moderately difficult professional engineering work. Assistant Engineer II's are expected to increase the breadth of their knowledge and experience, and are assigned increasingly complex and more responsible work.

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**ASSISTANT ENGINEER I-II (Continued)**

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**EXAMPLES OF IMPORTANT AND ESSENTIAL DUTIES**

Duties may include but are not limited to the following:

**Design and Office Work**

Design and prepare plans, specifications, and cost estimates for public works projects including pump stations, streets, storm drains, sewer lines, and related projects; research project design requirements; perform calculations and prepare estimates of time and material costs.

May serve as design team leader for a team assigned engineering projects of moderate size and complexity, including streets, sewers and storm drains.

May assign routine investigation, design and drafting tasks to technical subordinates; review completed work; assist in the solution of difficult problems.

Research publications and industry information sources.

Develop revised design and construction standards for public works structures and appurtenances.

Investigate field problems affecting property owners, contractors, and maintenance operations.

Request survey, mapping, and data collection.

Prepare estimates and feasibility reports for new or modified services and structures.

Participate in the plan check, review, and processing of plans for private developments affecting city streets, sewers, drains and related public works facilities and ensure that they meet all City-imposed requirements.

Prepare special engineering studies and reports.

Coordinate Engineering Division activities with other City departments, divisions and sections and with outside agencies.

May supervise and train professional and technical subordinates.

Prepare and check legal and technical descriptions of deeds, easements, and rights of way.

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Update City maps, limit lines, subdivision maps, and Block Books.

Prepare graphs, diagrams, and tables.

Perform related duties as assigned.

**Construction Inspection**

Review plans and specifications of assigned project with supervisor; attend pre-construction conferences.

Inspect materials for identification as conforming to specifications.

Take samples of materials for examination of analysis by laboratories; perform tests on soils and concrete.

Perform routine field tests.

Observe work during progress and upon completion.

Monitor manpower reports and payroll for compliance with state and federal regulations.

Respond to routine inquiries from developers, contractors, and the general public regarding City requirements relative to the construction, alteration and maintenance of public works facilities.

Inspect construction of various structures such as utilities, streets, sidewalks, gutters and other offsite construction; check line, grade, size, elevation and location of structures for conformance with specifications and regulations, and cathodic protection systems.

Record amounts of materials used and work performed; prepare necessary reports for progress payments.

Indicate location of various appurtenances on plans.

Inspect adjacent properties for damage from construction activity.

Confer with property owners regarding project schedule, hazards and inconvenience.

Coordinate work with other City departments and utilities.

Help locate other utility structures ahead of work sites.

Schedule service interruptions with least interference and least inconvenience to properties.

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Prepare daily activity records and reports.

Perform related duties as assigned.

**JOB RELATED AND ESSENTIAL QUALIFICATIONS**

**Knowledge of:**

Principles and practices of civil engineering as applied to municipal engineering.

Methods materials and techniques used in the construction of public works projects.

Modern developments, current literature, and sources of information regarding civil engineering.

Topographic and construction surveying.

Principles, methods, materials, equipment and safety hazards of construction and construction surveying.

Basic mathematics including algebra, geometry, and trigonometry.

Basic soil mechanics and geology.

Materials sampling, testing, and estimate procedures.

Applicable laws, regulations, codes and departmental policies governing the construction of assigned projects.

Principles and practices of civil engineering as performed by an engineering position.

Drafting techniques and surveying practices.

Real property legal descriptions.

Methods and techniques of engineering design, investigation, drafting, and estimating.

**Ability to:**

Understand and interpret engineering plans and specifications and prepare accurate engineering records.

Perform engineering design computations and check, design, and prepare engineering plans, studies, profiles, and maps.

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Use and care for drafting and surveying instruments.

Learn applicable laws and regulatory codes applicable to areas to assignment.

Prepare reports using technical data.

Learn and understand City engineering policies and procedures.

Make material and cost estimates.

Establish and maintain cooperative working relationships.

Deal firmly and tactfully with contractors, engineers and property owners.

Communicate clearly and concisely, orally and in writing.

Learn to test soils, concrete, and related material samples.

Perform the entire range of construction inspection activities with a minimum of supervision.

Perform technical research and provide reliable staff support for work on engineering projects.

Perform engineering calculations with speed and accuracy.

Prepare complete plans and estimates of routine public works projects.

Oversee the work of others.

Use and care for engineering and drafting instruments and equipment.

Prepare real property legal descriptions and other engineering records.

Assist with the preparation of plans, drawings, specifications, diagrams and sketches pertaining to public works development and maintenance projects. Operate construction surveying equipment.

Computer literacy or ability to acquire basic computer utilization skills such as spreadsheets, word processing for reports, specifications, memos, routine design, and drafting, after appropriate training and employee development has been provided. Computer programming will not be required. Complex computer work may only be required with adequate supervision and after appropriate training and development has been provided.

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**Physical Characteristics:**

Must be able to work in varying climactic conditions; must be in sufficiently good health to perform job duties, including inspection work.

**Assistant Engineer I**

**Experience and Education Guidelines:**

*Any combination of experience and education that would likely provide the required knowledge and abilities is qualifying. Typical ways to obtain the knowledge and abilities would be:*

**Experience:**

None required

**Education:**

Equivalent to a Bachelor's Degree from an accredited college or university in civil engineering or a closely related field or an Associate of Arts degree with two years paid experience as an Engineering Technician II with the City of Redwood City.

**Assistant Engineer II**

In addition to the qualifications for Assistant Engineer I:

**Knowledge of:**

Applicable laws and regulatory codes relevant to design construction in the area of assignment.

Supervisory and training techniques

Standards of street alignment, grade, and compaction requirements.  
Sewerage and sewage disposal systems.

Storm drain design and storm drain disposal systems.

Construction inspection.

**Ability to:**

Understand and apply City engineering policies and procedures.

Learn principles and techniques of supervision and training.

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Prepare reports encompassing raw technical data; make effective cost estimates and recommendations.

**Experience and Education Guidelines:**

*Any combination of experience and education that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:*

**Experience:**

Two years similar to that of an Assistant Engineer I in the City of Redwood City.

**Education:**

Equivalent to a Bachelor's Degree from an accredited college or university in civil engineering or a closely related field supplemented by specialized courses in public works engineering.

**License or Certificates:**

Possession of an Engineer-In-Training Certificate from the State Board of Registration is desirable.

Possession of, or ability to obtain, an appropriate, valid California Driver's License. Incumbent will be required to operate a City vehicle.

**Effective Date:** August 2001

**Bargaining Group:** Service Employees' International Union - Local 715