

**CITY OF LOS ANGELES
CIVIL SERVICE COMMISSION**



CLASS SPECIFICATION
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CIVIL ENGINEERING ASSOCIATE, 7246

Summary of Duties: Performs professional civil engineering work in researching, checking, computing, conducting field work needed, and working with consultants in the preparation of plans, designs, details, specifications, cost estimates, environmental documentation, and various reports for the construction, maintenance, and operation of a wide variety of civil engineering projects including streets and street improvements, storm drains, sanitary sewers, sewage treatment and pumping plants, municipal buildings and facilities, bridges, retaining walls, tunnels, water supply, storage and distribution systems, grading and drainage, shops, commercial offices, airport facilities, harbor facilities, power generation, transmission, and distribution facilities; processes private development plans and development actions; issues engineering permits to the public; and does related work.

Distinguishing Features: Civil Engineering Associate I is the normal entry level to the class. Employees at this level usually have little, if any, experience or special training. They initially perform the less complex professional civil engineering work under close supervision while learning and assisting in a variety of routine duties. As employees become more experienced, they may work independently and may be responsible for one or more large projects. Positions at this level are designated as three-year temporary training positions under Civil Service Rule 5.30. Employees with two years of full-time City experience as a Civil Engineering Associate I and an Engineer-in-Training (EIT) Certificate, would automatically move to the Civil Engineering Associate II level.

Employees at the Civil Engineering Associate II level perform journey level civil engineering work requiring a broad knowledge of civil engineering skills. Individuals at this level usually work independently, receiving instructions in general terms, and may be responsible for one or more major City Projects having a wide impact and significant cost. Employees may serve as a lead over a small group of lower level employees.

Employees at the Civil Engineering Associate III level may supervise, or may serve as a lead over a small group of employees, or as a project manager or project engineer involved in work that is technically complex and requires considerable experience, skill and engineering knowledge. Two years of full-time

paid, professional experience at the level of Civil Engineering Associate II and registration as a professional engineer with the California State Board of Registration for Professional Engineers is required for advancement to this level.

Employees at the Civil Engineering Associate IV level are non-supervisory technical experts, who shall maintain the skills and expertise necessary to remain at the higher paygrade level. They may conduct extensive research into new technical developments and evaluate their suitability for City use, may prepare standards for technical design, may develop and conduct training for other employees about new procedures and techniques, or may act as an internal consultant to other

employees or on very difficult issues. These positions are designated by Department Management according to the Department's needs. Some positions require registration as a professional engineer with the California State Board of Registration for Professional Engineers, as determined by department management.

Example of Duties: A Civil Engineering Associate:

- performs or assists in research, drafting, computing, checking, and field work needed in the preparation and/or supervision of employees engaged in the preparation of plans, designs, profiles, cross sections, alignments, horizontal and vertical curves and other surveying computations, environmental documentations, geotechnical reports, estimates, and specifications for the construction, maintenance, and operation of a wide variety of civil engineering projects;
- participates in water rights acquisition efforts;
- interfaces with consultants, regulatory and permitting agencies regarding water rights acquisition, hydroelectric plant development, environmental and general civil engineering matters;
- does hydraulic design applicable to water supply and distribution, hydroelectric power plants, pumping plants, sewerage, sewage treatment and disposal plants, storm drains, and drainage structures;
- performs various facets of design on water and wastewater treatment facilities;
- evaluates and makes recommendations of City position on water supply and water quality legislation and regulations;
- does street, highway, harbor terminals, railroad, dredging, and airfield design, including calculating horizontal and vertical alignment and curves, preparing profiles and cross sections, and making quantity and cost estimates'
- does structural design for concrete, masonry, steel, timber and earthwork structures, including bridges, buildings, tunnels, retaining walls, wharves and dikes;
- checks plans for residential structures involving the less complex structural

- features for conformance to the Building Code and applicable State laws;
- checks plans to determine that required corrections have been made by the submitter;
 - directs a small group of subordinates in making computations on and adjustments to a triangulation system and in engineering activities related to subdivisions, right-of-way, easement, and property acquisition and disposal;
 - coordinates, manages and reviews plans, including structural, sewer, sewage treatment, water supply, grading, draining, structural, storm drain, airport facilities, and street plans prepared by architectural and engineering firms and/or private engineers, for project phasing, constructability and conformance with department standards, other government agencies and accepted engineering practices;
 - makes power capability studies in connection with hydroelectric power projects to ascertain the economical amount of power available, proper reservoir capacities, flood control and sedimentation reserve, stream depletions, and regulation of outflow for maximum efficiency;
 - estimates costs to complete power projects and annual charges applicable thereto to determine economic feasibility;
 - conducts soil and foundation investigations including seismicity evaluations and prepares reports thereon;
 - gathers and compiles basic office and field hydraulic and hydrographic data and data concerning the operating characteristics of water and sewage systems;

Example of Duties (cont.):

- reviews project status, initiates changes and provides advice and assistance to engineering and construction personnel;
- prepares plans and calculations for dredging projects;
- recommends corrosion control measures for metal wharves and steel piles;
- reviews civil/architectural plans for conformance with FAA criteria;
- assists in constructing and studying engineering models;
- checks private development plans for accuracy and compliance with all City rules and regulations;
- prepares legal descriptions for all types of planning and zoning action;
- reviews tract and parcel maps for accuracy and compliance with all rules and regulations;
- works with the public on the issuance of engineering permits;
- develops Public Works entitlement requirements for Planning Department;
- acts as construction manager;
- issues and processes field instructions or change orders;
- resolves job problems and claims;
- reviews shop drawing and construction schedules;
- determines characteristics of soils and construction materials by using standard field and laboratory testing techniques;
- makes engineering inspections and may direct inspectors;

- performs quality assurance/quality control work in factories and at construction sites to assure conformance of work with drawings and specifications;
- investigates, collects field data, and makes reports of various phases of public works projects during both the planning and construction stages;
- prepares or assists in the preparation of ordinances, specifications, and bids for City engineering projects;
- analyzes bids;
- obtains and analyzes engineering, statistical, and accounting data relating to the service, operation, valuation, and regulations of privately-owned and public utility companies;
- lays out angles and other complicated intersections;
- performs field work in connection with freeway location and design;
- designs storm drains, including those being constructed in connection with freeways;
- computes center line stationing and bearings;
- may prepare profiles, draw drainage maps, and prepare run-off tables;
- performs hydraulic design as applied to a variety of projects such as water supply and distribution facilities, reservoir spillways, hydroelectric power plants, sanitary sewers, sewage treatment and pumping plants, and storm drains;
- prepares and supervises the preparation of reports, studies, Board reports and other documents pertaining to award of contracts, project advertising, rejection of bids, and in conformance with many federal state and local environmental and land development laws, policies and procedures;
- coordinates the development of the five year Capital Improvement Program;
- coordinates with other governmental agencies to obtain grant funding for projects;
- may supervise the preparation, analysis, and evaluation of geohydrologic and hydrologic studies related to the City's groundwater supply;
- performs detailed review and study of the environment within which a project is to be located as applied to optimizing natural, economic and social resources;

Example of Duties (cont.):

- develops administrative systems and techniques to supervise, direct, maintain, and evaluate and report on civil engineering projects and/or a variety of engineering programs;
- acts as technical assistant to an employee of a higher class;
- acts as resident engineer on projects involving the supervision of field laboratory, survey, inspection, and office employees.

May occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications: Incumbents must have the following knowledges and abilities:

Knowledges of:

- civil engineering principles and practices, and the ability to apply them to the solution of specific engineering problems;
- the sources of engineering information;
- civil Engineering practices and procedures as applied to buildings, sewer and treatment plants, street and highway construction, harbors, airports, and water and power utilities;
- engineering mechanics, mechanics of materials, hydraulics, hydrology and hydrography;
- field survey and construction practices;
- structural engineering;
- current environmental law, procedures and techniques and general appreciation and sensitivity for environmental concepts within the context of civil engineering project impacts on a natural setting or critical resource limitations;
- principles of water quality and management of hazardous materials;
- governmental operations, organization, finance and project management/administrative concepts and techniques

The ability to:

- gather data and prepare technical reports, charts, and graphs;
- interpret and use field survey notes;
- interpret contract plans and specifications and resolve construction problems;
- apply computer technology in the solution of engineering of project management problems;
- deal tactfully and effectively with employees and the public;
- communicate effectively both orally and in writing;

Persons with disabilities may be able to perform the essential duties of this class with reasonable accommodation. Reasonable will be evaluated on an individual basis and depend, in part, on the specific requirements for the job, the limitations related to the disability, and the ability of the hiring department to accommodate the limitation.

Minimum Requirements:

Graduation from a school of engineering in a recognized four-year college or university with a degree in engineering, which includes at least 24 semester units or 36 quarter units of Civil Engineering core course; or possession of a valid

Engineer-in-Training Certificate issued by the California State Board of Registration of Professional Engineers.

License: A valid California driver's license may be required.

As provided in Civil Service Commission Rule 2.5 and Section 4.55 of the Administrative Code, this specification is descriptive, explanatory and not restrictive. It is not intended to declare what all of the duties, responsibilities, and required qualification of any position shall be.