



CLASS SPECIFICATION

04-06-84 CIVIL ENGINEERING DRAFTING TECHNICIAN, 7232

Summary of Duties: Performs drafting in pencil and ink and the necessary mathematical calculations in the preparation of civil and structural engineering designs and plans; and does related work.

Distinguishing Features: The work of a Civil Engineering Drafting Technician is at the sub-professional level. The class is distinguished from Engineering Designer by the fact that it includes no work which involves engineering design responsibility, nor does it require a knowledge of construction. It is distinguished from Drafting Aide by the fact that duties are not limited to simple delineation, but involves work such as the reduction of field notes, reconciliation of field data with existing records and subsequent translation into drawing and report form, and detailing of civil translation into drawing and report form, and detailing of civil engineering and structural features. Although work primarily concerned with map making is normally performed by a cartographer, a Civil Engineering Drafting Technician may be required to prepare maps as an incidental duty. The work performed by an employee of this class may involve auxiliary mechanical, electrical, and structural features. However, problems in these areas are normally solved by the application of principles common to the general field of engineering drafting.

Examples of Duties: A Civil Engineering Drafting Technician:

- performs the drafting and computing operations involved in the preparation of a wide variety of engineering drawings and plans;
- checks and reduces field survey notes;
- records and processes field data;
- checks existing plans, profiles, and maps for data concerning areas to be drawn;
- obtains information from other public agencies, City, County, and State codes, manufacturers; catalogs, and other sources for use in preparing reports and drawings on diversified subjects;
- calculates distances, ties, angles, area curves, grades, slopes, elevations, coordinates, traverses, closures, alignments, stationing, and material and labor cost and quantities;
- plots contours, cross sections, profiles, boundary lines, and location of facilities;
- may input into a computer to obtain this data;
- prepares charts, graphs, contract drawings and occasional base maps in connection with the design, construction, alteration, maintenance and operation of transmission and distribution facilities, wastewater treatment plant facilities, office and industrial buildings, steel towers, docks and wharves, retaining walls, bridges, streets and sewers, dams, open channels, storm drains, lighting and water installations, airport runways and taxiways, traffic signs and signal devices, highways, traffic striping and

- pavement markings, and other engineering projects;
 - makes scale drawings of structural details and floor plan arrangements, including isometric, orthographic, perspective, and other drawings;
 - performs drafting which involves elements of electrical, mechanical, and structural engineering, but which does not require a technical knowledge of the elements portrayed;
 - prepares freehand sketches of designs from general instructions and design data;
 - prepares tracings; gives engineering information to the public;
 - makes field investigations;
 - researches land use records;
 - may act in a lead capacity over a small group of other drafting personnel.
- May occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications:

A good knowledge of:

- the principles, techniques, and nomenclature used in civil engineering drafting;
- plane trigonometry, particularly as applied to the computation of distances, angles, areas, and traverses in the reduction of survey notes.

A general knowledge of:

- the sources of engineering information;
- physics and the principles of civil engineering involved in drafting problems.

The ability to:

- use logarithmic, trigonometric, and curve data tables;
- perform drafting in ink and pencil and use drafting instruments, planimeters, slide rules, a scientific calculator, and calculating machines efficiently;
- do machine and free hand lettering;
- produce complete and professionally acceptable civil engineering drawings;
- keep records and make reports;
- follow written and oral instructions.

Minimum Requirements:

Two years of engineering drafting experience, one year of which was in civil or structural engineering drafting is required. Completion of 12 semester units in drafting and 6 semester units in mathematics at a recognized college, trade school, or technical school may be substituted for the experience requirement.

License:

A valid California driver's license may be required.

Physical Requirements:

Strength to perform average lifting of less than 5 pounds and occasionally over 15 pounds; good hearing and speaking ability; good eyesight; arm, hand, and finger

dexterity with both hands involved in drafting activities.

Persons with a medical limitation may, with reasonable accommodations, be capable of performing the duties of some of the positions in this class. Such determination must be made on an individual basis in light of the person's limitations, the requirements of the position, and the appointing authority's ability to effect reasonable accommodations to the person's limitations.

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 the duties and responsibilities of any position shall be.