

Summary of Duties : Performs subprofessional work with land survey crews or field engineering forces; and does related work.

Distinguishing Features : A Field Engineering Aide works, under close supervision, in making precise readings, measurements, and tests in the field. A Field Engineering Aide makes mathematical computations. The work of a Field Engineering Aide differs from that of an Office Engineering Technician in that the latter performs routine office engineering and drafting work. The duties of this class may involve strenuous physical work, exposure to adverse weather conditions, poison oak, snakes, and to personal injury while working on congested streets and in manholes, trenches, tunnels, over water, and at extended heights.

An employee of this class may perform office work which requires some knowledge of land surveys, engineering construction and inspection, and experience in them.

Example of Duties : Works on land survey party; sets and marks stakes, hubs, turning points, and bench marks; uses tapes, lead lines, meters, thermometers, hand levels, clinometers and other hand tools, and targets in the determination of lines, directions, elevations, and distances; uses level rods and stadia rods in the determination of relative elevations and distances; locates and digs for survey monuments or installs them; occasionally operates a transit, level, Electronic Distance Measuring device (E.D.M.) and other instruments for training or relief purposes; locates subsurface monuments and steel structures or obstacles with an electronic pipe finder; clears brush and other obstructions; cares for surveying instruments and tools; occasionally makes routine computations and sketches; sets aerial photogrammetric targets, electronic reflectors and invar tape stands for precise or geodetic direction or distance measurement; assists the recorder in triangulation, electronic measurements, and leveling; indexes and files survey notes, maps, plans and field books; assembles field books, maps, and plans for use of land survey parties; assists in hydrographic surveys through the use of fathometers and lead lines to determine depth of water in navigable channels;

Reads dam and reservoir surveillance instruments; prepares graphs, compiles records or readings and measurements pertaining to the safety of water storage facilities; inspects sites of proposed water service and main installations to determine conditions affecting installation; assists in establishing the elevation and location of pipe lines; records size, location, and type of pipes, fittings, hydrants, and valve gates for permanent records; assists in inspection work on construction jobs; takes soil samples and makes standard tests of soil, concrete, and asphaltic materials; checks soil compaction on earth-filled structures; checks reinforcing steel work, wooden forms,

and structures; checks amounts of construction materials delivered; keeps records of materials and labor; makes sketches showing physical dimensions and types of materials used in construction projects in progress; reads gauges and instruments or changes charts on automatic recording instruments such as water stage recorders, weirs, and Parshall flumes; takes flow measurements in City sewers; plots and computes velocity and volume of sewage flow using standard formulas and tables; sets grade from established designs for asphalt and rock and oil repaving of City streets and for other projects; may ask residents to move their parked vehicles from streets to be repaired; may communicate with public regarding work to be performed; performs safety inspections of dams, reservoirs, tanks and related facilities; measures strain gauges, weirs and other water flow devices; reads pressure meters, staff gauges, manometers, and tiltmeters; takes water samples, and participates in periodic inspections of water transmission facilities, such as tunnels and pipelines; assists in maintaining and servicing seismic strong motion recording instruments on dams; makes reductions of and adjustments to field data and prepares related graphs; maintains measuring equipment; assists in traffic control activities around work sites for resurfacing and reconstruction projects; assists in traffic control activities around work sites for resurfacing and reconstruction projects; may act as a supervisor on a resurfacing crew; and may occasionally be assigned to other duties for training purposes or to meet technological changes or emergencies.

Qualifications : A working knowledge of mathematics through trigonometry; a general knowledge of standard terminology, techniques, practices and equipment used in land survey operations; the ability to read precise measuring instruments accurately; the ability to make mathematical calculations quickly and accurately; the ability to work outdoors under a variety of physical and climatic conditions; the ability to follow written and oral instructions; and the ability to do lettering and routine drafting and make field notes, sketches, and field maps.

Successful completion of high school or college level courses in algebra, geometry, trigonometry and two courses in plane surveying, and one of the following: design graphics, technical illustration or drafting; or one year of full-time paid experience as a member of a land survey party.

License : A valid California drivers license and a good driving record are required.

Physical Requirements : Strength to perform average lifting up to and occasionally over 70 pounds; body agility and equilibrium involved in activities such as climbing and balancing under precarious conditions; arm, hand, and finger dexterity with both hands involved in activities such as reaching, handling, and feeling; good speaking and hearing ability, and good eyesight.

Persons with medical limitations 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 all of the duties and responsibilities of any position shall be.