

SENIOR CADD EQUIPMENT OPERATOR

Definition:

Under general supervision performs skilled, computer generated drafting work, operates computer-aided design and drafting (CADD) programs, develops modifications to civil engineering design and drafting work; prepares final engineering drawings, plans and maps related to public utility, construction and improvement projects and performs related work as required.

Essential Duties and Responsibilities:

The responsibilities and essential duties performed on a frequent and recurring basis by an incumbent include the following:

Operates a personal computer and uses a variety of GIS and CADD software and related equipment to produce, store, back up and retrieve basic, custom and advanced civil engineering related materials including working drawings, plans, maps, records, charts/graphs, exhibits and related documents.

Reviews existing plans, drawings, utility locations, public improvements and specifications to develop final plans and detail/engineering notes.

Organizes, lays out, plots and confirms existing topography from field survey notes.

Produces detailed layouts, finished drawings, design calculations and estimates from preliminary design sketches and field survey notes.

Performs technical and mathematical checks related to the accuracy of data and calculations submitted by others.

Reviews and verifies CADD digital files and related databases for accuracy, completeness and format compliance.

Determines the most effective presentation of information and selects appropriate cartographic elements including map projection, scale, color, shading, images, graphs and overlays.

Participates in field inspections, verifies project layout and design specifications and compares working drawings to physical conditions.

Develops and modifies CADD programs for specific work applications and trains departmental staff in program application and equipment operation.

Computes material quantities required and prepares cost estimates.

Maintains departmental computer networks and upgrades computer work stations related to applicable CADD programs/issues.

Derives macro-level programs related to engineering calculations including grading computations and vertical/horizontal alignments.

Operates a variety of specialized plan and map related equipment.

Responds to telephone and public counter inquiries from developers, contractors, architects and the public.

Maintains a variety of related records and prepares reports.

Lifts and moves boxes/records weighing 30 pounds or less.

Drives a vehicle on City business.

Other Duties and Responsibilities:

Performs other projects/tasks as assigned.

Class Characteristics:

Senior CADD Equipment Operator is a multi-incumbent technical class in the Engineering Department. Incumbents perform a variety of basic, custom and advanced CADD functions and are differentiated from the Engineering Drafter / CADD Equipment Operator by the Senior's higher level of duties and responsibilities.

Contacts and Relationships:

A Senior CADD Equipment Operator establishes and maintains contact with staff in the Engineering Department and staff in other City departments. Contact with consultants, contractors, vendors and the public will occur during the course of some work assignments.

Qualification Guidelines:

The knowledge and abilities which are required to perform the duties and responsibilities of this class are as follows:

Knowledge of:

Principles, practices and techniques for operating CADD programs for civil engineering applications within a municipality.

Civil engineering design principles and drafting techniques.

Practices, procedures and techniques involved in developing macro-level applications programs.

Street, sewer and storm drain features and functions.

Engineering mathematics to include algebra, geometry, trigonometry and statistics as applied to sub-professional engineering related tasks.

English usage and spelling.

AND

Ability to:

Operate a personal computer and use applicable software to include CADD software to perform difficult tasks for civil engineering applications.

Design and modify application programs at the macro-level to facilitate engineering design, layout and quantitative computations.

Read and interpret legal descriptions, engineering drawings, survey notes and related material.

Analyze computer design and drafting needs, determine appropriate applications and implement program changes.

Communicate and demonstrate applications and functions of computer-aided design programs to others.

Apply engineering formulas, determine material quantities and prepare cost estimates.

Understand and carry out oral and written instructions and work in accordance with established policies and procedures.

Communicate effectively orally and in writing.

Establish and maintain effective relationships with those contacted in the course of work.

Meet the public with courtesy and tact.

A typical way to obtain the knowledge and abilities is as follows:

Education:

Associates Degree or two years of study at an accredited college or university with major course work in engineering, mechanical drafting, mathematics or surveying to include training in computer-aided design and drafting application programs, hardware and software configuration and related programming applications.

AND

Experience:

Two years of progressively responsible technical experience at the Engineering Drafter / CADD Equipment Operator level or a similar position.

Special Requirements Include:

Valid and appropriate California Drivers License and acceptable driving record at time of appointment and throughout employment in this position.

Must be able to work a flexible schedule to accommodate City needs.

Physical Tasks and Working Conditions Include the Following:

Work is performed indoors in an office environment and on-site in the field. When work is performed outdoors there is exposure to the elements. An incumbent drives a vehicle on City business, sits for extended periods of time, operates a computer, keyboard and related equipment, stands, walks, reaches, bends, kneels, twists, crouches and grasps, lifts and carries boxes of records weighing 30 pounds or less. An incumbent must be able to meet the physical requirements of the class and have mobility, balance, coordination, vision, hearing and dexterity levels appropriate to the duties to be performed.

Fair Labor Standards Act Designation: Non-exempt.

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