

City of Bellingham
Classification Specification - Civil Service or AFSCME

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| CLASS TITLE | Engineering Assistant |
| DEPARTMENT | Public Works\Engineering |
| UNION: | 114 |
| SG: | 14 |
| CS: | Yes |
| FLSA: | Y |
| EE04CODE: | PP |

NATURE OF WORK:

Performs technical design work and engineering computations for complex Public Works projects. Develops construction drawings and bid documents using a computer-aided design and drafting system (CADD) and engineering design software. Develops departmental CADD standards and coordinates production of digital base mapping by consultants. Conducts technical research. Responds to public inquiries and provides information to staff, citizens, contractors and consultants. Assists Project Engineers in developing engineering plans for capital projects. Assists in making presentations to the City Council and citizen groups.

DISTINGUISHING CHARACTERISTICS:

This class is distinguished from the GIS/CADD Specialist by its greater level of technical training in CADD and knowledge of civil engineering principles, practices and standards. Performs a variety of tasks including beginning design work using CADD and civil design software packages to support the Project Engineers. This classification also takes the lead role in assisting Project Engineers in obtaining permits on capital projects. The class is distinguished from the Project Engineer classification by the latter's responsibility for management of major capital construction projects and performance of more complex engineering work.

SUPERVISORY RELATIONSHIPS:

Reports to Engineering and Utility Manager. Works independently under general supervision, and in accordance with applicable City regulations, policies, guidelines and appropriate technical engineering standards. May also receive assignments from Project Engineer(s) and the Assistant Director of Public Works, Engineering.

ESSENTIAL FUNCTIONS:

1. Performs technical engineering design activities on Public Works projects. Uses field survey notes and electronic data, site inspections, Geographic Information System (GIS) and engineering records to convert design concepts into detailed construction plans. Interprets and translates raw field data into computerized drawings utilizing computer-aided design and drafting system (AutoCAD); uses engineering design software to create three-dimensional surface models, profiles and cross-sections. Performs preliminary project design tasks such as vertical and horizontal alignment, earthwork and quantity calculations, curb-return elevations, top and toe-of-slope calculations, and

- connections to existing improvements. Finalizes plans according to instructions from Project Engineer.
2. Facilitates the processing of permits required on Public Works projects. Assists Project Engineer in preparing permit applications and maintaining contacts with permitting agencies. Tracks permits and coordinates permit processing with staff.
 3. Coordinates production of digital base mapping and project files by consultants for capital improvement projects. Provides direction to, and scope of work for, consultants. Reviews consultant work products to ensure accuracy, completeness, quality and conformance with standards.
 4. Develops and maintains design, drafting and data collection standards for capital improvement projects. Defines methods and standards for digital drawings and project files. Creates and maintains an AutoCAD library of layering conventions, symbols and line types, lettering styles, and standard sheets. Also develops customized AutoCAD applications or routines.
 5. Researches and provides technical assistance and information to staff and consulting engineers, citizens, and private developers. Utilizes the geographic information system (GIS), AutoCAD, and a variety of database and spreadsheet applications to analyze data and generate customized reports and graphic presentations.

ADDITIONAL WORK PERFORMED:

1. Prepares check plots, maps, reports, exhibits or graphic displays as assigned.
2. Researches and prepares computer-generated graphics for engineering and City Council presentations, lawsuits, crime and/or accident scene maps, etc.
3. Performs related engineering duties within the scope of the classification.

KNOWLEDGE AND SKILLS:

- Knowledge of algebra, trigonometry and coordinate geometry to perform mathematical calculations and analysis.
- Knowledge of basic design and construction surveying and drafting techniques.
- Knowledge of cartography principles, terms, concepts, techniques and procedures
- Knowledge of GIS concepts and procedures.
- Considerable knowledge of a variety of civil engineering-related computer software programs including AutoCAD, GIS, automated mapping and data management applications; COGO (coordinate geometry) and design software, and computer equipment such as plotters, printers, digitizers, copiers, etc.
- Knowledge of engineering record management systems.
- Ability to convert civil engineering design concepts into detailed construction plans.
- Ability to perform technical design and drafting, produce and maintain computer-generated maps and other graphics.
- Ability to use GIS to analyze data and produce customized reports and maps.
- Ability to interpret maps, survey notes and legal descriptions.
- Ability to read, interpret, and apply a variety of written regulations and instructions.
- Ability to follow oral and written instructions and work independently with minimal supervision.
- Ability to communicate effectively, both orally and in writing.

- Ability to prioritize workload, solve problems, and to meet deadlines with a minimum of supervision.
- Ability to establish and maintain effective working relationships with diverse groups of people including citizens, public officials, employees, contractors, engineers, vendors, developers, and others.
- Physical ability to perform the essential functions of the job.

WORKING ENVIRONMENT:

Work is primarily performed in an office setting and requires sitting and working for extended periods in front of a computer terminal. Some visits to construction and land development sites required.

EXPERIENCE AND TRAINING REQUIREMENTS:

- An AA degree or equivalent in engineering technology, including course work in surveying, civil engineering design, drafting utilizing AutoCAD and mapping utilizing GIS
- AND -
- Four years of technical engineering experience involving transportation, water, sanitary sewer, and storm drainage improvement projects, of which two years must have been utilizing AutoCAD and GIS graphics, associated civil engineering applications, and digital mapping.
- OR -
- Baccalaureate degree in Civil Engineering or equivalent.
- A combination of education and experience which provides the applicant with the required knowledge, skills and abilities will be considered

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COMMISSION ADOPTION: _____