

ENGINEER I

DISTINGUISHING FEATURES OF THE CLASS: This is an entry level engineering position requiring the performance of professional level duties to complete various engineering tasks and projects. The incumbent works under the general supervision of a higher level engineer, either in the field and/or in the office. General instructions are given for assignments such as engineering design, drafting, specification writing, and construction inspection. Performs related work as required.

TYPICAL WORK ACTIVITIES: (Illustrative Only)

Able to perform independently:

- Performs tasks and research relating to traffic projects, including counts, right-of-way studies and compiles data into reports for the City Engineer;
- Prepares background informational reports in support of large infrastructure projects;
- Prepares and maintains records and project data, maintains files necessary for the Engineering Department;
- Performs limited surveys in support of various City projects;
- Locates, inspects, and documents condition of structures and facilities using GPS equipment;
- Manages GIS database, updates mapping to include new data, updates mobile GIS for field maintenance crews, produces various maps and analyses for internal City departments and the public
- Completes watershed inspections, including field work and documentation of findings in report format with a table of maintenance tasks for follow-up;
- Performs flood damage inspections and documents condition of roads, culverts, bridges, and facilities;
- Prepares permit applications, researches background information, etc.;
- Operates a personal computer and utilizes a variety of software relative to work performed including word processing, spreadsheets and database software;
- Contacts a variety of public and private agencies or employees to obtain and relay information relative to construction and/or survey projects including building code information;
- Creates and maintains a variety of records and reports relative to the work;
- Performs a variety of physical activity including entering confined spaces, climbing ladders and using and carrying tools and materials such as shovels, picks and survey stakes;
- Utilizes a variety of standard office equipment including a fax machine, map plotter and photocopier;
- Operates a vehicle in the performance of duties.

Assists a higher level Engineer with the following:

- Develops engineering assessment and design of roads, bridges, culverts, pipelines, buildings, water & wastewater treatment facilities, processes, and related equipment;
- Develops plans, specifications, cost estimates, and contract documents for projects of varying difficulty using available tools such as AutoCAD, Excel spreadsheets, etc.;
- Interprets for contractor and field staff the intent of contract specifications and construction standards and resolves differences in interpretation;
- Inspects construction work for conformance with contract provisions, plans and specifications;
- Prepares estimates of quantities of materials and tracks progress of work;
- Utilizes computer applications relating to CAD, word processing, spreadsheet applications, project management, and database management;
- Develops CAD plans, profiles and related drawings of roads, bridges, culverts, pipelines, buildings, water & wastewater treatment facilities from surveys, computations or rough drafts;
- Develops CAD plans, sections, elevations and schematics for architectural, structural, mechanical and electrical systems for buildings and related facilities;
- Coordinates and schedules projects and material needs, including liaison with consultants, contractors, vendors and other internal City departments.

FULL PERFORMANCE KNOWLEDGE, SKILLS, ABILITIES AND PERSONAL CHARACTERISTICS:

Good knowledge of the principles of engineering theory; Good knowledge of procedures and practice of engineering including design and specification writing, hand and CAD drafting, inspections and surveys; Good knowledge of the terminology, tools and materials used in the construction of roads, bridges, culverts, pipelines, buildings, and water & wastewater treatment facilities; Good verbal and written communication skills, in private and public situations; Good organizational skills; Demonstrated proficiency using computer applications such as Word, Excel, Access, AutoCAD, and ESRI ArcGIS; Ability to develop innovative approaches to problem solving; Working knowledge of applicable codes, laws, rules, regulations and procedures governing engineering design and construction; Ability to prepare plans (using AutoCAD software), designs, specifications, right of way maps and narrative reports; Ability to establish cooperative relationships with contractors, consultants, vendors, co-workers and other staff; Ability to work independently; Accuracy and attention to detail.

MINIMUM QUALIFICATIONS:

- a) Graduation from a regionally accredited college or university or one accredited by the New York State Board of Regents to grant degrees, or one accredited by ABET with a Bachelor's Degree in engineering or engineering technology (*fields as described below; **OR**
- b) Graduation from a regionally accredited college or university or one accredited by the New York State Board of Regents to grant degrees, or one accredited by ABET with an Associate Degree in engineering or engineering technology (*fields as described below); AND two (2) years of experience performing either: 1.)

Engineering design and drafting of highways, bridges, culverts, and/or facilities, using AutoCAD software; or 2.) Field or construction inspection of roads, bridges, culverts, pipelines, and/or facilities; **OR**

- c) An equivalent combination of training and experience as defined by the limits of A) and B) above.

*Acceptable areas of engineering education include Civil Engineering, Structural Engineering, Environmental Engineering, Architectural Engineering, or a closely related field.

SPECIAL REQUIREMENTS FOR ACCEPTANCE OF APPLICATIONS:

- a) Possession of the appropriate level of New York State Driver's License at time of appointment, and must be maintained throughout the duration of employment; and
- b) Candidates must submit proof that they are eligible to take the New York State Fundamentals of Engineering (F.E.) at time of application, or have anticipated eligibility for taking this examination within eighteen months of application.

Adopted: CSC: 2/16/2017