

## CIVIL TECHNICIAN 1-2

### CLASS DESCRIPTION

#### General Responsibilities:

This is technical support work performed in a professional engineering and public works construction environment. The work involves performing field and office tasks such as: technical drafting of plans, maps, drawings and layouts; developing and/or using computer applications; making routine engineering computations; performing construction inspection activities; and performing other related field and office work. The work is performed under the direct supervision of higher level technical or professional staff.

Movement to the Civil Technician 2 level is based on increased independence and demonstrated ability to perform more complex and/or comprehensive technical support functions, generally after 2 years as a Civil Technician 1.

#### Civil Technician 1

This is basic technical support work performed in a professional engineering and public works construction environment. The work is performed under the close supervision of higher level technical or professional staff and is reviewed in progress and upon completion.

#### Civil Technician 2

This is skilled technical support work in a professional engineering and public works construction environment. The work at this level differs from that at the Civil Technician 1 level in terms of technical complexity, comprehensiveness of assignments and independence of action. The work is performed under the limited supervision of higher level technical or professional staff and typically is reviewed upon completion.

#### Examples of Duties and Responsibilities:

##### Civil Technician 1

Assist with the preparation of materials for public works construction projects by preparing basic sketches, drafting routine segments of overall plans, and making calculations, as assigned.

Draft construction plans and records for streets, sewer, landfills, and other public works projects using field and survey notes, aerial photos, existing plans and "as built", etc.

Collect and log field construction, maintenance, and repair data into record system (GIS; RDBMS; Spreadsheet; Enterprise Asset Management System)

Design visual aids and displays for research reports and public information meetings.

Use computer techniques and software, including Computer Assisted Drafting (CAD), Geographical Information Systems (GIS), RDBMS, and common office software to perform a wide range of technical support functions.

Calculate and estimate quantities for construction bids.

Maintain permanent storm and sanitary sewer record system for the Engineering Division.

Maintain permanent water record system for the Water Utility.

Perform minor maintenance and monitoring of landfill gas collection, gas incineration, and leachate collection systems and ground water systems.

Assist with construction inspection activities to ensure compliance with contract specifications and other requirements. Take measurements, monitor and record material quantities and other required information. Prepare "as built" drawings of completed construction projects.

Perform related work as required.

#### Civil Technician 2

Perform all the work of a Civil Technician 1 with a greater degree of independence, and demonstrated ability to perform more complex and/or comprehensive technical support functions.

Draft plans, maps, details, layouts and other materials for bid and construction purposes, records/map maintenance, preliminary project work, presentations and reports by hand and using computer-aided drafting/mapping software. Create and convert scaled drawings as requested. Lead other employees performing related work.

Organize, layout, and prepare complete project plans for construction of streets, highways, sewers, drainage system, water system, landfill, and/or other public improvement projects. Prepare specification documents for uncomplicated equipment purchase and public works improvements.

Perform construction inspection activities including: measuring, monitoring, and recording quantities; quality; time of delivery; and installation of construction materials to ensure compliance with contract specifications and other requirements.

Inspect, photograph, catalogue, and measure existing field conditions for inclusion in maps and plans. Measure and scale existing structures and/or topography to be used in maps, plans, reports and other materials.

Assist in the development of specialized computer applications.

Check horizontal and vertical alignments, estimates, material schedules, and construction time for public works projects. Interpret contract documents, contractor communications, and land records.

Assist with the design of streets using coordinate geometry to develop planimetric layouts. Calculate grades from vertical street alignments.

Research and provide information to the public and contractors in a variety of areas relating to the work of the agency.

Maintain and update the official map and official corporate limits. Draft sketches and details, prepare legal descriptions, prepare resolutions and schedule Common Council Action, draft and

process notices of public hearing and other related materials for street vacations, relocation orders and official map changes.

Maintain Water Utility maps and records related to specific programs such as Flushing and Lead Water Service Abatement.

Provide information to the general public, land surveyors, other municipalities, utility companies, the Department of Planning & Community & Economic Development and others relative to legal descriptions, easements, ownership of property, new plats and other areas of official record. Maintain related files and information.

Perform related work as required.

## QUALIFICATIONS

### Knowledge, Skills and Abilities:

#### Civil Technician 1

Working knowledge of and ability to use computer software applicable to the duties of the position, including familiarity with computer assisted drafting (CAD) and geographic information systems (GIS). Knowledge of the methods and techniques for inspecting public works construction projects. Knowledge of drafting techniques, materials and tools. Knowledge of standard engineering nomenclature and mathematics including geometry and trigonometry. Knowledge of surveying techniques and equipment. Ability to make neat and legible technical drawings. Ability to perform mathematical computations quickly and accurately. Ability to read detailed maps, plans and specifications. Ability to follow instructions and established procedures. Ability to establish and maintain effective working relationships with internal staff and with persons in other agencies, contractors and the public. Ability to perform field work including observations, measurements, data collection, survey crew work, and construction inspection activities. Ability to maintain adequate attendance.

#### Civil Technician 2

Working knowledge of the methods and techniques for inspecting public works construction projects. Working knowledge of drafting techniques, surveying, mapping, record keeping and related engineering practices, procedures, materials and tools. Working knowledge of and ability to use computer software applicable to the duties of the position, including familiarity with computer assisted drafting (CAD), geographic information systems (GIS), and RDBMS including basic SQL. Working knowledge of surveying techniques and equipment. Working knowledge of standard engineering nomenclature and mathematics including geometry and trigonometry. Ability to make neat and legible technical drawings. Ability to perform mathematical computations quickly and accurately. Ability to use calculators, and linear area calculating devices. Ability to read detailed maps, plans and specifications. Ability to oversee work performed by lower level staff. Ability to follow instructions and established procedures. Ability to establish and maintain effective working relationships with internal staff and with persons in other agencies, contractors and the public. Ability to contribute to the preparation of technical reports. Ability to perform field work including observations, measurements, data collection, survey work, and construction inspection activities. Ability to maintain adequate attendance.

### Training and Experience:

Generally, positions in this classification will require:

#### Civil Technician 1

Two years of experience performing technical office and/or field work in support of engineering activities. Such experience would normally be gained after completion of high school or equivalent (including two years of math and/or mechanical drawing). Vocational school or college training in the area of civil engineering technology or a closely related area may be substituted on a year-for-year basis for the experience. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of positions in this class will also be considered.

#### Civil Technician 2

Four years of experience performing technical office and/or field work in support of engineering activities, including at least two years in a position comparable to the City class of Civil Technician 1. Such experience would normally be gained after completion of high school or equivalent (including two years of math and/or mechanical drawing). Vocational school or college training in the area of civil engineering technology or a closely related area may be substituted up to two years of experience. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of positions in this class will also be considered.

Specific training and experience requirements will be established at the time of recruitment.

#### Necessary Special Qualifications:

Ability to meet the transportation and mobility requirements of the position.

#### Physical Requirements:

Employees in this position must be able to lift/carry objects weighing up to 20 pounds on a regular basis and objects weighing up to 75 pounds on occasion. In addition, employees must be able to frequently walk over uneven surfaces, stand, bend and squat. This position requires work outdoors in all types of weather. Ability to operate a CAD/GIS workstation with hand and eye coordination using a mouse and keyboard for inputting data.