



City of Kansas City, Missouri Job Class Specification

Job Title: ENGINEERING TECHNICIAN LEAD **Department:** MULTI
Job Code: 2026 **Status:** NONEXEMPT **Grade:** L-7

Summary

This is advanced and technical work involving the use of computer aided drafting and design (CADD) systems, automated mapping, or geographical information systems (GIS), to produce varied and complex engineering drawings, plans and maps, exhibits and reports. Employees of this class utilize a computer aided drafting and design system or GIS software to provide support to architects, engineers, and other personnel by providing technical assistance as well as producing construction and architectural drawings, maps and documents. Assignments are received in the form of general instructions and sketches from technical superiors and are performed with a considerable degree of independence and judgment. Work is reviewed by technical superiors upon completion to assure conformance with instructions, quality and accuracy.

OR

This is advanced and technical field or office work of a paraprofessional engineering nature in a wide variety of field surveys, construction inspection, traffic control, lighting and electrical systems or in the independent design of smaller projects or sections of larger projects. Work may involve leading a field survey party or construction inspection for the completion of technical work necessary to the location, design, construction, inspection, and preparation of legal documents for a wide variety of city construction projects. Work assignments are received orally, via work sketches, field notes or other written form. Employees are required to exercise broad independent judgment and discretion. Work is reviewed by technical superiors while in process and then by conferences and submitted reports upon completion to assure conformance to departmental standards and procedures.

Duties and Responsibilities

- Utilizes a computer aided drafting and design system or GIS to create, modify, delete, transfer, copy, store, and plot graphic and data files with emphasis on software and/or in the preparation of drawings and other related engineering data.
- Provides advice to architect/engineers and other technical personnel concerning support capabilities of specific time saving software programs, which can be used.
- Prepares sketches, profiles, and cross-sections for excavation, embankment, structures, and other features.
- Prepares maps and/or layouts identifying and locating utilities, utilities' controls, structures, collection and distribution systems and fire hydrants and places coordinates and property lines.
- Prepares renderings of preliminary plans, details and final plans for modifications for new or existing structures and buildings; develops road alignments and calculates alignment control data; calculates cut-and-fill quantities and adjusts alignments and profiles; develops street grades.
- Analyzes and evaluates drawings to determine their adequacy for meeting specified design requirements; integrates drawings and other documents from a variety of architectural/engineering areas to complete project packets.
- Prepares right-of-way and other land parcel descriptions using metes and bounds terminology.
- Assists in the preparation of contracts, specifications, land descriptions, and other documents.
- Coordinates work with other sections and divisions of the department to assure that designs and drawings are accurate and completed on schedule.

**Duties and
Responsibilities
(continued)**

- Designs street grades, storm sewer size, and layouts of the sewer system; performs other detail design work as instructed by project design engineer.
- Maintains accurate records of drawings.
- Studies maps, plans, aerial photographs, and terrain for data to aid in the establishment and location of proposed survey.
- Conducts a variety of preliminary, location and site surveys; establishes center lines, locations of monuments, curves, angular calculations, alignments, property lines and other reference points; stakes as required.
- Designs, approves and inspects traffic control, lighting and electrical system plans to meet national and local standards.
- Records field data, computations, topographical data; prepares site drawings and sketches; maintains field notes indicating lines, angles, distances, chords, traverses, benchmarks, monuments, layout stakes, and details of size, location and elevations of structures and facilities.
- Performs journeyman level inspection work to include water, sewer, street, sidewalk and bridge construction.
- Develops and recommends appropriate methods, procedures, and applications for the effective use of GIS technology
- Designs, writes, test, implements, and maintains programs for standard and customized GIS applications
- Performs complex analyses, modeling, and simulation scenarios through the use of GIS software and data sets
- Performs related duties as required.

Technical Skills

Considerable knowledge of

The terminology, methods, equipment, practices and techniques of general engineering drafting, automated mapping or geographical information systems.

Principals of municipal engineering or surveying as applied to public works or utility design and construction work.

Computer operating systems that are commonly used to operate CADD systems.

Mathematics such as geometry, trigonometry and mathematical formulas used in engineering operations.

The principals and practices of surveying, drafting or CADD and construction.

The materials, methods, standards and techniques of public construction and possible defects encountered, traffic engineering control, standards and practices.

Ability to:

Develop plotting pen tables and feature and attribute tagging protocols.

Reduce, interpret and apply field notes in performance of drafting duties.

Read and interpret maps, plans, aerial photographs, survey notes and other records.

Understand and work from oral and written instructions and sketches.

Apply all methods of general engineering drafting to computer-aided drafting and design.

Establish and maintain effective working relationships with associates, public officials and the general public.

Reduce, interpret and apply engineering notes in performance of duties.

Perform difficult technical computations, make cost estimates, perform material tests and compile routine engineering data.

Follow complex oral and written instructions.

Skill in:

Drafting highly complex engineering plans and drawings.

Use, care and adapting of computer aided drafting and design hardware and software.

Automated mapping and Geographical Information Systems (GIS).

Use of highly complex engineering, survey and testing instruments and equipment.

Education and Experience

High school graduation and five (5) years of related and increasingly responsible experience in engineering drawing, mapping, automated mapping, geographical information systems (GIS) and equipment, computer aided drafting and design (CADD), engineering, land survey, construction inspection and related fields.

OR

High school graduation, two (2) years of experience at the level of Engineering Technician and possession of one of the certifications listed below:

- Level II Engineering Technology Certification in any Civil, Electrical or Mechanical discipline as issued by the National Institute for Certification in Engineering Technologies (NICET)
- "Land Surveyor in Training" as issued by the Missouri Board for Architects, Professional Engineers, Professional Land Surveyors, and Professional Landscape Architects.
- Class B Wastewater Collections System Certification from the Missouri Water Environmental Association

OR

An equivalent combination of education and experience.

Certificates/ Licenses/Special Requirements

- Must pass a background check as prescribed by the City.
- Will be required to pass a pre-employment drug screen.
- Must pass a physical examination as preemployment drug screen.
- Must possess of a valid State –issued driver's license in accordance with the City of KCMO

policies.

**Supervisory
Responsibility**

May act as a lead worker.

**Supervision
Received**

Work is performed under general supervision.

Note: This job description should not be construed to imply that these requirements are the exclusive standards of the position. Incumbents will follow any other instructions, and perform any other related duties, as may be required. Reasonable accommodation will be provided to qualified individuals with disabilities. The City of Kansas City has the right to revise this job description at any time. The job description is not to be construed as a contract for employment.

Created

9/06

Revised

9/08, 12/18, 8/2022