



CITY OF URBANA
Human Resources Division

CIVIL ENGINEERING TECHNICIAN IV

JOB DESCRIPTION

Department: Public Works	Division: Engineering
Work Location: Urbana Public Works Department	Percent Time: 100%
Job Type: Civil Service	FLSA Status: Non-exempt
Reports To: Assistant City Engineer or designee	Union: Non-Union

JOB SUMMARY

~~Performs~~Under the direction of the City Engineer, the Civil Engineering Technician performs various engineering tasks and duties as an expert assigned. Involved in the planning, design, construction and/or rehabilitation of public works projects. Designs improvements and prepares construction plans and contract documents for implementation of municipal infrastructure projects; conducts improvement projects and maintenance programs; managing the City's regulatory programs; maintaining the City's compliance with state and federal regulations; conducting field investigations; prepares technical reports; monitors and inspections; collecting field data utilizing surveying techniques and instruments; monitoring construction work; and supervises work of engineering technicians and part-time staff assessing condition of infrastructure.

Defining Characteristics *of the Class*

Level IV: This is the most advanced level class within the Civil Engineering Technician series class. The incumbent performs professional level work which involves responsibility for coordinating drainage and/or transportation projects and programs in the Public Works Department. Assignments require the application of professional knowledge and technical skills to various public works engineering matters. Technicians of this classification level are expected to have a breadth of knowledge and experience to successfully complete projects independently. This position may include responsibilities for managing the scope, schedule, and budget of projects and programs; and managing the work of lower-level Civil Engineering Technicians and Engineering part-time personnel. Positions in this class level are normally filled by advancement from the Level III level, or when filled from the outside, by a technician with prior experience.

ESSENTIAL FUNCTIONS

In addition to duties Perform a range of *a Civil Engineering Technician III:*

- Exercises engineering related tasks requiring independent judgment and decision making in the review, analysis and coordination formulations of public works solutions to problems;
 - Perform measurements and calculations accurately;
 - Assist with planning and implementation of capital improvement projects;
 - Collects and analyzes field data, researches property histories and old project plans, prepares technical reports and cost estimates, and recommends improvements;
 - Collects and analyzes project data;
 - Designs and prepares plans, specifications, contract documents, and estimates of cost and monitors construction and maintenance of municipal infrastructure projects programs;
 - Monitors Assist with managing the City's regulatory programs, such as Utility / Right-of-Way Permits, Erosion Control Permits, and Development Review.
 - Assist with maintaining the City's compliance with state and federal regulations, such as National Bridge Inspections Standards (NBIS), National Pollutant Discharge Elimination System (NPDES) Permits, and others that may be identified in the future.
 - Assist with maintaining and updating data for the City's infrastructure assets.
 - Collect field data, such as existing topographical data, utilizing surveying techniques and instruments;
 - Obtain concrete samples for measurement of air entrainment and slump and cylinder testing; inspect manholes; drill cores; measure quantities; and calculate construction quantities and costs;
 - Monitor construction of contract work to ensure work is performed in compliance with contract plans and specifications and required quality is obtained; measures quantities and prepares pay estimates;
 - Conducts on-site observation Assist with design and development of bridge/structure construction plans, specifications, and contract documents;
 - Supervises work of survey parties, observing and recording data, establishing line and grade control;
 - Maintains files on correspondence and documentation on projects;
 - Provides Prepare exhibits, graphics, and special illustrations and attends public information meetings in conjunction with various City projects;
 - Draft plans for various contract projects from preliminary design stage through final "record" drawing stage;
- Prepare written analytical reports of a limited scope;

- Coordinate contract work on concurrent projects with other departments and agencies; assists with the preparation of news releases, letters, and any other communication tools distributed to property owners, residents and necessary public or private agencies to effectively and efficiently communicate with impacted parties on any project;
- Provide technical support to various City departments;
- Make public presentations to City Council, government agencies, project neighborhoods and other organizations;

-Facilitate public meetings to gather input from various shareholders;

- HandlesHandle requests for information, service or complaints over the phone, via electronic or regular mail and in person, or makes referrals to appropriate staff ~~in a concerned manner that reflects an effort to be helpful while at the same time acting responsibly~~ on behalf of the City of Urbana; ~~all calls are promptly returned; and~~
- PerformsEnsure that the City vehicle and other equipment to which he/she is assigned is maintained in clean, proper running condition; reporting to supervisor or other appropriate person when vehicle or other equipment is in need of repair;
- Provide leadership, guidance and supervision to lower-level Civil Engineering Technicians and Engineering part-time personnel;
and
- Perform other activities as assigned.

This job description reflects the general concept and intent of the classification and should not be construed as a detailed statement of all of the job requirements that may be inherent in the position.

JOB REQUIREMENTS:

In addition to qualifications for Civil Engineering Technician III:

PROFESSIONAL EXPERIENCE

- ~~Minimum of four (4) years' experience in Civil Engineering Technician III position or twelve (12) years' equivalent experience in municipal, county, state, or federal engineering, or engineering consulting.~~

Education & Experience

EDUCATION

- ~~Associate's Degree in Civil Engineering Technology or related field from an accredited college~~

~~or junior college program.~~

- ~~• Bachelor of Science degree in a related engineering or science field is preferred but not required.~~

LICENSES AND CERTIFICATIONS

GENERAL:

- ~~• Possess or obtain a valid State of Illinois Class D driver's license within fifteen (15) days of employment.~~
 - ~~• Successfully obtain certifications as an Successfully complete Illinois Public Service Institute or equivalent public works management training.~~

COMPUTER SKILLS

GENERAL:

- ~~• Proficient in Microsoft Office applications, including Word, Excel, Access, PowerPoint, and Outlook; AutoCAD or Microstation; and the Internet.~~
- ~~• Proficient with drainage analysis programs (e.g., Haestad Methods Programs and Hydraflow Storm Sewers).~~

DRAINAGE AND DEVELOPMENT ENGINEERING SECTION:

- ~~• Proficient with Granite XP Sewer Televising Software.~~
- ~~• Proficient with ArcGIS.~~
- ~~• Familiarity with drainage analysis software (e.g., U.S. Army Corp of Engineers HEC programs, StormCAD, PondCAD).~~

TRANSPORTATION ENGINEERING SECTION:

- ~~• Proficient with AutoCAD Civil 3D or Geopak.~~
- ~~• Proficient with IDOT Illinois Construction of Records System (ICORS) software.~~
- ~~• project management software (e.g., Microsoft Project), and vehicle turning movement software (e.g., Transoftsolutions AutoTURN).~~
- ~~• Familiarity with ArcGIS.~~

KNOWLEDGE & EXPERIENCE

Any combination of education and experience that would likely provide the required knowledge and abilities is qualifying. Typical ways the knowledge and abilities would be attained are:

- Four (4) years of experience in Civil Engineering Technician III position or twelve (12) years of equivalent experience in municipal, county, state, or federal engineering, engineering consulting, construction management, or related field.
- ~~• A bachelor of science degree in a related engineering or science field may substitute for four~~

(4) years of equivalent experience.

- ~~• Bachelor of Science degree in a related engineering or science field is preferred but not required.~~

Preferred Attributes

- ~~• Familiarity with ArcGIS~~
- ~~• Familiarity with Granite XP Sewer Televising Software~~

~~• **Knowledge of**~~

- ~~• Standard practices, procedures, materials, tools, and equipment used in the maintenance, repair, rehabilitation and construction of municipal infrastructure projects.~~
- ~~• Proficient in engineering drafting techniques and tools.~~
- ~~• Proficient in in the use of field survey instruments and techniques.~~
- ~~• Proficient in mathematics through trigonometry.~~
- ~~• Proficient in occupational hazards and safety precautions.~~
- ~~• Proficient at applying and interpreting Microsoft Office applications, including Word, Excel, Access, PowerPoint and Outlook~~
- ~~• AutoCAD or Microstation.~~
- ~~• Familiarity with ArcGIS is preferred.~~
- ~~• Familiarity with Granite XP Sewer Televising Software is preferred.~~
- ~~• Familiarity with City policies and procedures is preferred.~~

Ability to

- ~~• Operate equipment, such as a theodolite, level, metal detector, computer, scientific calculator, plotter and mobile radio;~~
- ~~• Layout construction projects, including sewers, new pavements, sidewalks and bridges/structures;~~
- ~~• Make quick and intelligent field judgments required during construction inspection;~~
- ~~• Stand for long periods of time while inspecting construction projects;~~
- ~~• Perform AutoCAD drafting and use computer spreadsheet and word processing software;~~
- ~~• Measure and calculate construction quantities and costs;~~
- ~~• Read figures quickly and accurately and make mathematical calculations;~~

- Follow oral and written instructions;
- Perform moderately complex technical tasks which are broad in scope and require application of fundamental concepts.
- Observe, compare, or monitor objects and data to determine compliance with prescribed operating or safety standards;
- Use graphic instructions, such as blue prints, schematic drawings, layouts, or other visual aids;
- Communicate clearly and concisely, both orally and in writing, applying strong verbal and written skills for the preparation of technical and administrative reports and the presentation of recommendations;
- Learn and interpret City policies and procedures, along with other standard policies and
- Determine which work processes and methods are most appropriate to accomplish technical assignments;
- Learn to manage work of paraprofessional staff;
- Learn to apply practical technical expertise toward the completion of projects.
- Interpret and apply City policies and procedures, along with other standard policies and procedures from other regulating agencies;
- Exercise independent judgment and decision making in the review, analysis and coordination of public works projects;
- Establish and maintain effective working relationships with those contacted in the course of work including City officials and the general public;
- ~~Proficient in Americans with Disabilities Act (ADA) regulations and experience with design, layout, and construction of ADA right of way facilities.~~
- Apply technical knowledge in making decisions in the review, analysis, coordination and delivery of public works projects;
- ~~Prepare written analytical reports of a limited scope;~~
- ~~Produce written documents in the English language with clearly organized thoughts using proper sentence construction, punctuation, and grammar;~~
- ~~Observe, compare, or monitor objects and data to determine compliance with prescribed operating or safety standards;~~
- ~~Use graphic instruments, such as blue prints, schematic drawings, layouts, or other visual aids;~~
- ~~Use a personal computer, engineering applications of a limited scope, and data management software;~~
- ~~Communicate clearly and concisely, both orally and in writing, applying strong verbal and written skills for the preparation of technical and administrative reports and presentation of recommendations;~~
- ~~Interpret Illinois Department of Transportation (IDOT) design and construction manuals;~~

~~standard specifications and highways standards as well as American Association of State Highway and Transportation Officials (AASHTO) design manuals, Standard Specifications of Water and Sewer Construction in Illinois and Manual on Uniform Traffic Control Devices (MUTCD) standards;~~

- ~~• Work effectively and cooperatively with others, monitor contractors, and manage work of paraprofessional staff;~~
- Manage work to conform with project scope, schedule, and budget;
- ~~• Facilitate public meetings to gather input from various shareholders;~~
- Work with confidential information;
- ~~• Make public presentations to City Council, government agencies, project neighborhoods and other organizations;~~
- Learn and apply procedures, methods and techniques of budget preparation and control;
- Learn and apply principles and practices of project management;
- ~~• Apply principles and practices of construction administration including inspection, materials testing, project scheduling and related functional areas;~~
- Learn - to prepare and administer assigned project budgets;
- Apply knowledge of supervisory principles and practices;
- Plan, direct, and coordinate the work of others;
- Learn to allocate limited resources in a cost-effective manner;
- ~~• Perform a variety of public works projects;~~
- ~~• Ensure contractual compliance as related to construction and other assigned activities;~~
- ~~• Inspect work sites to ensure compliance with all applicable federal, state and local laws, codes and regulations;~~
- ~~• Establish and maintain effective working relationships with those contacted in the course of work including City officials and the general public;~~
- ~~• Stand for long periods of time while inspecting construction projects;~~
- ~~• Perform AutoCAD drafting and ability to use computer spreadsheet and word processing software;~~
- ~~• Measure and calculate construction quantities and costs;~~
- ~~• Read figures quickly and accurately and make mathematical calculations;~~
- ~~• Draft plans for various contract projects from preliminary design stage through final “record” drawings stage; and~~
- ~~• Follow oral and written instructions.~~

RESPONSIBLE FOR:

- ~~Performing measurements and calculations accurately;~~
- ~~Observing contractor's work to ensure that work complies with contract requirements;~~
- ~~Ensuring that the City vehicle and other equipment to which he/she is assigned is maintained in clean, proper running condition; notifies supervisor or other appropriate person when vehicle or other equipment is in need of repair;~~
- ~~Investigating problems, designing improvements, and preparing construction plans and contract documents;~~
- ~~Monitoring construction of municipal infrastructure type projects;~~
- SupervisingSupervise the work of Civil Engineering Technicians and/or Engineering part-time personnel; ~~and~~
- ReferringRefer only the most complicated issues to higher levels.

Licenses, Certifications, and Memberships Required

- Must possess a valid Illinois driver's license or have the ability to obtain one within fifteen (15) days of employment and have the ability to operate a motor vehicle.
- Possession of at least one (1) of the following certifications (or the ability to obtain within one year of employment or promotion) is preferred:
 - American Public Works Association Certified Public Infrastructure Inspector.
 - Illinois Public Service Institute or equivalent public works management training.

CONTACTS: INTERNAL/EXTERNAL

- ~~Daily contacts with residents and contractor personnel during construction projects.~~
- ~~Regular contact with utility company personnel, businesses, citizens, other governmental agencies, consultants and other City departments.~~

WORK ENVIRONMENT:

- ~~Ability to work in varying climates. Job requires outside work in all weather conditions, winter and summer as well as inside office work.~~
- ~~Works around traffic and in and around heavy equipment in construction zones. Works around potentially hazardous fumes and caustic compounds.~~

Supplemental Information

Supervision received

- Works under the direction of the City Engineer; establishes procedures for attaining specific goals and objectives and is assigned responsibility for establishing the methods to

attain them. Generally in charge of an area of work, but does not have the authority for approving policy.

Supervision received

Level and complexity of supervision exercised

- This position may supervise lower-level Civil Engineering Technicians and Engineering part-time personnel.
- This position is not responsible for supervising any staff positions.

Physical Demands and Working ENVIRONMENT: Conditions

The work environment characteristics described herein are representative of those an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- The work will occur in Physical Demands: ability to lift and carry fifty (50) pounds; sit, stand and/or walk for extended periods and ability to walk on uneven terrain at construction sites and other surfaces; manual dexterity and eye-hand coordination needed to use a variety of office equipment such as computers, telephones, calculators, copiers, and topographic surveying equipment. Position requires visual acuity sufficient to read computer screens and printed documents and visually inspect work in progress and hearing in the normal audio range with or without correction.
- Working Conditions: Work generally occurs in both an office and field environment. Incumbents may be subjected to dusts, fumes, extreme temperatures, inadequate lighting, and intense noises. TypicalA typical work schedule: Monday - Friday, 7:00 a.m. - 4:00 p.m. with flexibility depending upon the needs of the department. May be required to work in excess of 40 hours a week and/or work irregular hours, particularly during construction projects or emergency situations. Job requires outside work in all weather conditions, winter and summer as well as inside office work. Work occurs around traffic, in and around heavy equipment in construction zones, and around potentially hazardous fumes and caustic compounds. Incumbents may be subjected to dusts, fumes, extreme temperatures, inadequate lighting, and intense noises.

PHYSICAL REQUIREMENTS:

The physical demands described herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Must be able to lift and carry fifty (50) pounds;
- Sit, frequently stand and walk for extended periods;
- Have manual dexterity and eye-hand coordination needed to use a variety of office equipment such as computers, telephones, calculators, copiers, and topographic surveying equipment;
- Have corrected vision in order to review plans and specifications and perform other essential functions of the job; and
- Walk on uneven terrain at construction sites, etc.

ADDITIONAL PHYSICAL REQUIREMENTS:

VISION AND HEARING

~~See in the normal visual range with or without correction; vision sufficient to read computer screens and printed documents; visually inspect work in progress. Ability to hear in the normal audio range with or without correction.~~

The physical demands

Job Dimensions

- General guidelines for work exist, but employee is increasingly responsible for determining the approach for performing the work.
- At the entry level, employee performs technical or trades-based work that requires a solid understanding of basic algebra and statistics at the para-professional level. Work complexity and independence increase relative to demonstrated proficiency and expertise. At advanced levels, employee performs work that encompasses advanced technical, scientific, legal, or mathematical concepts. Work directly contributes to the implementation of specific policies, programs, or initiatives of the organization.

The physical demands and work environment described herein are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

The duties listed above are intended only as illustrations of the various types of work that may be performed. The omission of specific statements of duties does not exclude them from the position if the work is similar, related or a logical assignment to the position.

The job description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.

Prepared By: John Zeman and Tim Cowan 03/22/2022
Signature Date

Class Specification History

New classification added: 02/10/2016.

General Revisions: 03/30/2022.

For HR/Finance Use

Title Code	Pay Grade
	<u>243</u>
EEO Category	
<u>3</u> -Technician	