

Engineering Technician

DATE: 2/2025

CLASSIFICATION:

Non-Exempt

DEPARTMENT:

Engineering

JOB DESCRIPTION:

Summary/Objective

The Engineering Technician shall provide construction observation for public improvement projects and any work on City property including all right-of-way, in addition to supporting the maintenance and dissemination of data and applications in the geographic information systems (GIS) environment. The Engineering Technician must exercise discretion and independent judgment in the day-to-day activities of the City infrastructure and development.

DISTINGUISHING CHARACTERISTICS:

The Engineering Technician aids in the inspections of City projects and helps generate maps and customized GIS applications to serve a variety of purposes. Incumbents of this classification work within a framework of established procedures and are expected to perform all the duties assigned to the position with only occasional instruction or assistance. The Engineering Technician will report to the City Engineer.

ESSENTIAL FUNCTIONS:

Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

- Observes construction projects including grading, asphalt and concrete pavements, sidewalks, storm and sanitary sewers, water mains and drainage ditches, using a city vehicle. Must be able to read and understand plans and plat maps in order to ensure projects meet specifications for quality materials and workmanship.
- Assists with inspecting all work within the city right-of-way and easements and proactively/retroactively coordinates placement of public/private infrastructure.
- Helps with the on-going spatial data maintenance and dissemination, end-user support and the generation of maps and other GIS reports and information product.
- Responsible for the creation of as-built municipal drawings using AutoCAD.
- Helps with creation of maps and graphs using GIS software and related equipment.
- Coordinate with staff to gather, analyze, and integrate spatial data from staff and determine how best the information can be displayed using GIS.
- Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project related meetings.
- Liaison; Serve as a City liaison with Contractor, working principally with the Contractor's Superintendent and assist in understanding the intent of the Contract Documents; and assist the engineer during construction. Assist in obtaining from the Engineer additional detail or information, when required by Contractor for proper execution of the Work.

- Shop Drawings and Samples: Receive samples, which are furnished at the site by Contractor, and notify the Engineer of availability of samples and examination. Advise the City and Contractor of the commencement of any Work requiring shop drawings or sample if engineer has not approved the submittal.
- Review of Work, Rejection of Defective Work, Inspection and Tests: Conduct on-site observation of the work in progress to assist the City in determining if the work is in general proceeding in accordance with the Contract Documents.
- Modifications to Drawings or Specifications - Gather, report and consider Contractor's suggestion for modifications and complete a report with recommendations to the City Engineer and Project Engineer. Transmit to Contractor decisions as issued by the City and/or Project Engineer.
- Report to the City Engineer if any work is deemed to be unsatisfactory, faulty or defective or does not conform to the Contract Documents or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made. Advise the City and Project Engineer of work that the Construction Observer believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
- Verify that test, equipment and systems start-ups and operating and maintenance training that are conducted in the presence of appropriate personnel, and that Contractor maintains adequate records thereof. Observe, record and report to the engineer appropriate details relative to the test procedures and startups.
- Accompany visiting inspectors representing public or other agencies having jurisdiction over the project, record the results of these inspections and report to the City Engineer.
- Interpretation of Contract Documents: Report to the City Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by the City or Project Engineer.
- Records: Maintain orderly files for correspondence, reports of job conferences, Shop drawings and samples, reproductions of original Contract Documents including all Work directive changes, addendums, Change Orders, Field Orders, additional drawings issued subsequent to the execution of the Contract, Engineers clarifications and interpretations of the Contract Documents, progress reports and other Project related documents.
- Keep a diary or log book, recording Contractor hours on the job site, weather conditions, date relative to questions of Work Directive Changes, Change Orders or changed conditions, list of job site visitors, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to the City and Project Engineer.
- Record names, addresses and telephone numbers of all Contractor's, subcontractors, and major suppliers of materials and equipment.
- Prepare a Weekly Reports of Working Days, if required, for distribution to the City Engineer, Contractor and the Project Engineer.
- Consult with the City Engineer and Contractor in advance of major tests, inspections or start of important phase of the work.
- Report immediately to City Engineer upon the occurrence of any accident.
- Review and certify quantity measurements for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to the City Engineer, noting particularly the relationship of the payment requested to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.
- Ensure Certificates, Maintenance and Operation manuals and other data required to be assembled and furnished by Contractor and applicable to the items actually installed and in accordance with the Contract Documents, and have this material delivered to Project Engineer for review and forwarding to the City prior to final payment for the Work.
- Ensure compliance with all Federal, State, local and related acts requirements are met, such as Davis-Bacon.
- Before completion of project, submit to the Contractor a list of observed items requiring completion or correction before issuing a Certificate of Substantial Completion.

- Conduct final inspection in the company of the Project Engineer and Superintendent and prepare a final list of items to be completed or corrected.
- Observe that all items on final list have been completed or corrected and make recommendation to the City Engineer concerning acceptance.
- Help update and maintain City GIS Mapping Program including input of utility and records data.
- Limitations of authority - do not authorize any deviations from the Contract Documents or substitution of materials or equipment, unless authorized by Supervisor or in some cases by council.
- Shall not undertake any of the responsibilities of the Contractor and or subcontractors.
- Shall not advise on, issue directions relative to or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction unless such advice or directions are specifically required by the Contract Documents.
- Shall not advise on, issue directions regarding or assumed control over safety precautions and programs in connection with the Work.
- Shall not accept Shop Drawings or sample submittals from anyone other than Contractor.
- Shall not authorize the City to occupy the Project in whole or in part.
- Shall not participate in specialized field or laboratory tests or inspections conducted by others expect as specifically authorized by Project Engineer.
- Prior to acceptance of the project ensure that all areas have been swept clean of debris or plans and specifications are in compliance.
- Assist other City departments and perform other duties as directed.
- Follow all safety rules and the use of safety equipment.
- Helps administer NPDES permitting process with periodic inspections and reports on drainage compliance according to the State of Iowa Department of Natural Resources MS4 permit on a quarterly basis.
- Follow up on expiring maintenance bonds and provide report to contractor for any deficiencies.
- Provide basic AutoCAD design for street improvements over the winter months.

QUALIFICATIONS, SKILLS AND ABILITIES (POSITION REQUIREMENTS AT ENTRY):

Knowledge of the principles and practices of construction observation with emphasis on construction quality control, compliance with plans and specifications, contract administration, plan review and providing constructability alternatives with the proficiency to manage administrative tasks associated with each project; ability to establish effective working relationships with City officials, employees, contractors and the general public; competency to communicate complete ideas effectively, orally and in writing.

Knowledge of:

- Construction methods and procedures pertaining to street, utilities, drainage and earthwork.
- GIS equipment
- Communication, Written, Oral, and Cartographic - The ability to convey GIS/spatial information to non-GIS/technical people.
- Attention to detail in order to maintain and enter data in a GIS database.
- SUDAS and Iowa DOT design and specifications
- Various types of site work and utility construction equipment and operation.
- Different types of soil and soil compaction.
- Concrete and asphalt construction procedures.
- Safety issues related to work activities.
- Basic Math skills to be able to calculate quantities
- Ability to research and locate needed information concerning construction projects.
- Ability to make independent decisions and coordinate with contractors, engineers, the general public and others as needed to expedite progress of construction projects and developments.
- Ability to read and interpret moderately complex civil engineering plans, maps and specifications.

- Ability to write neatly and concisely in order to fill out forms and write reports.
- Ability to establish and maintain effective working relationships with co-workers, contractors, contractor's employees and supervisors contacted in the performance of work.
- Ability to display orderly and professional manner and conduct at all times.
- Ability to work with the general public.
- Ability to work independently.
- Ability to plan and coordinate work projects.
- Ability to work weekends and holidays as needed.
- Ability to understand and conform to City, State and Federal laws.
- Use of computers and related software applications.
- Ability to quickly learn and put to use new skills and knowledge brought about by rapidly changing information and/or technology.

TRAINING AND EXPERIENCE (POSITION REQUIREMENTS AT ENTRY):

- High School diploma or GED Certificate and minimum two (2) year degree in construction or engineering related field, or minimum five (5) years of construction experience in public infrastructure.
- Construction background in roadway construction, utility installation or site work, or previous construction observation experience is a plus.

LICENSING REQUIREMENTS (POSITION REQUIREMENTS AT ENTRY):

Valid Iowa Driver's License and insurable driving record as need to operate a city vehicle to travel to various work sites. Certification by the Iowa Department of Transportation for Levels I & II Portland Cement Concrete (PCC), Aggregate Technician and Hot Mix Asphalt (HMA) Sampler is required within 2 years of employment date. Construction Site Pollution Prevention Inspector Training through the Iowa Stormwater training program or ability to become certified within 1 year. The city will pay for IDOT and ICCSPPI certifications.

ESSENTIAL PHYSICAL ABILITIES:

Job Classification: Light. See Appendix 1 for physical demand characteristics.

Requires the following with or without reasonable accommodation:

- Clarity of speech and hearing which permits the employee to communicate effectively.
- Sufficient vision which permits the employee to review a wide variety of written correspondence, reports and related material both in electronic and hard copy form.
- Sufficient manual dexterity which permits the employee to operate a keyboard and produces handwritten material and notations.
- Ability to traverse variable terrain conditions not accessible by vehicle including but not limited to, checking ceilings and roofs on steep slopes, and heavily vegetated areas.
- May be subjected to dirt/dust, fumes/ odors, moving machinery, noise, vibration, visual strain, wetness/humidity, working on uneven ground, mechanical hazards, chemical hazards, electrical hazards, fire hazards, and bodily injury. May be exposed to extreme temperatures.

SUPERVISORY RESPONSIBILITY:

This position has no supervisory responsibilities.

POSITION TYPE AND EXPECTED HOURS OF WORK:

This is a full-time position, and typical hours of work and days are Monday through Friday 7:30 a.m. to 4:00 p.m. Occasional evening and weekend work may be required as job duties demand. Summer hours may fluctuate depending on contractor needs.

CITY OF HIAWATHA, IOWA
CLASS TITLE: Engineering Technician
APPENDIX 1 Physical Demand Characteristics

ACTIVITY	0% Never	>0-10% Rare >0-10 min/hour (1 - 10 /shift)	11% - 33% Occasional 11-20 min/hour (11 - 100/shift)	34% - 66% Frequent 21-40 min/hour 101 - 300/shift	67% - 100% Constant 41-60 min/hour 301+/shift
1. SIT			X		
2. WALK				X	
3. STAND (stationary)				X	
4. CLIMB Ladder		X			
CLIMB Stairs			X		
5. BALANCE		X			
6. FORWARD BEND		X			
7. KNEEL		X			
8. CROUCH		X			
9. SQUAT		X			
10. CRAWL		X			
11. TWIST		X			
12. REACH Forward					X
REACH Overhead				X	
13. SIMPLE GRASP					X
14. FIRM GRASP			X		
15. PINCH			X		
16. DEXTERITY			X		
17. COMPUTER WORK					X

ACTIVITY	Never	>0-10% Rare (1x/hour)	11% - 33% Occasional (1x/15 minutes)	34% - 66% Frequent (1x/5 minutes)	67% - 100% Constant (1x/30 seconds)
18. WRIST MOTION				X	
19. BOTH HAND USE				X	
20. BOTH LEG USE				X	
21. HEARING					X
22. VISION					X
DEPTH/COLOR					X
23. INSIDE WORK				X	
24. OUTSIDE WORK				X	
25. HEAT EXPOSURE				X	
26. COLD EXPOSURE				X	
27. VIBRATION EXP.				X	
28. OPERATE MV					X
29. OTHER EQUIPMENT		X			

CITY OF HIAWATHA, IOWA
CLASS TITLE: Construction Observer
APPENDIX 1 Physical Demand Characteristics

ACTIVITY	Never	>0-10% Rare (1x/hour)	11% - 33% Occasional (1x/15 minutes)	34% - 66% Frequent (1x/5 minutes)	67% - 100% Constant (1x/30 seconds)
----------	-------	-----------------------------	--	---	---

LIFT/CARRY PUSH/PULL					
Up to 10 lbs.				X	
11 - 15 lbs.			X		
16 - 25 lbs.		X			
26 - 35 lbs.	X				
36 – 50 lbs.	X				
51 – 75 lbs.	X				
76 – 100 lbs.	X				
Over 100 lbs.	X				

OTHER DUTIES:

Please note this job description is not designed to cover or contain a comprehensive listing of activities, duties or responsibilities that are required of the employee for this job. Duties, responsibilities and activities may change at any time with or without notice.

SIGNATURES:

This job description has been approved by all levels of management:

Manager_____

HR_____

Employee signature below constitutes employee's understanding of the requirements, essential functions and duties of the position.

Employee_____ Date_____