

SENIOR ENGINEERING TECHNICIAN

PURPOSE: Perform technical and para-professional engineering work in the areas of street, bridge, traffic, water, gas, sanitary sewer and storm sewer infrastructure systems.

FUNCTIONAL AREAS:

1. Perform surveying and data collection work.
 - * A. Analyze construction plans and specifications for survey purposes.
 - * B. Perform work to locate survey points.
 - * C. Prepare survey field notes.
 - * D. Direct the activities of other survey party members.
 - * E. Operate and maintain equipment to obtain accurate survey measurements.
 - * F. Collect, analyze, and record data.
2. Perform advanced engineering drafting and design work.
 - * A. Create construction plans, maps, and charts manually or using a computer-aided-design (CAD) system.
 - B. Process survey information, including computer data entry work.
 - * C. Estimate construction quantities and prepare appropriate charts.
 - D. Recommend upgrades and revisions to project procedures and practices.
 - E. Operate computer geographic information system (GIS) to determine user needs and to resolve problems.
 - F. Prepare individually-tailored hard copies of automated maps using computer base maps.
 - G. Lead personnel in drafting and design work as assigned.
 - H. Maintain engineering plans and survey files.
3. Perform construction inspection work.
 - * A. Coordinate work activities with contractors, outside agencies, other City personnel, and property owners.
 - * B. Monitor and inspect construction projects to ensure conformance.
 - * C. Maintain daily log of construction activities and write progress and final reports.
 - * D. Prepare change orders and supplemental agreements for approval.
 - * E. Document construction quantities.
 - F. Perform quality control tests on construction materials.
 - G. Lead personnel in construction inspections as assigned.
 - H. Locate underground utilities including water, gas, sanitary sewer and storm sewer systems.
4. Conduct research and maintain records.
 - A. Act as lead worker in assigned responsibilities.
 - * B. Review construction plans and specifications for compliance with City standards.
 - * C. Maintain, revise, and research manual or computer records.
 - D. Develop computerized record keeping procedures.
 - * E. Issue required permits.
 - F. Investigate complaints, inquiries, and requests, and recommend solutions.
 - G. Prepare and interpret property descriptions.
 - H. Assist in the development of long-range infrastructure studies and plans, maintenance management plans, and environmental assessments.
 - * I. Participate in technical engineering studies and provide recommendations.
 - J. Study and report findings, conclusions, and recommendations in oral and written form.

JOB REQUIREMENTS

Education & Experience Requirements

- ◆ A. Classified as a City of Duluth Engineering Technician, pay grade 28, Step E; or
- ◆ B. Completion of a two-year Civil Engineering Technology degree or equivalent; and five (5) years of verifiable work experience in an engineering position; or
- ◆ C. A combination of education and/or experience determined to be equivalent.

License Requirements

- ◆ A. Possession of a valid Minnesota Class "D" driver's license or privilege by date of appointment and thereafter in order to operate survey vehicle.

Knowledge Requirements

- ◆ A. Knowledge of algebra, geometry, and trigonometry.
- ◆ B. Knowledge of technical engineering principles and practices.
- ◆ C. Knowledge of the principles, methods, equipment, and materials used in construction of streets, sidewalks, water and gas mains, sanitary and storm sewers, and various public works structures.
- ◆ D. Knowledge of traffic engineering principles.
- ◆ E. Knowledge of design and layout methods.
- ◆ F. Knowledge of regulatory agencies affecting design and construction.
- ◆ G. Knowledge of applicable safety principles and practices.
- ◆ H. Knowledge of the principles of technical writing.
- ◆ I. Knowledge of federal, state, and local legislation affecting departmental operations and appropriate professional design standards.
- ◆ J. Knowledge of principles of surveying.

Skill Requirements

- ◆ A. Skill in drafting, mapping, and surveying.
- ◆ B. Skill in the operation of drafting and surveying equipment.

Ability Requirements

- ◆ A. Ability to operate computers and CAD systems.
- ◆ B. Ability to apply standard engineering principles to utility and other public work improvements.
- ◆ C. Ability to prepare specifications, plans, technical reports, resolutions, and petitions.
- ◆ D. Ability to perform supervised design and layout work.
- ◆ E. Ability to communicate effectively in oral and written forms.
- ◆ F. Ability to attain and maintain state certification requirements.
- ◆ G. Ability to establish and maintain effective working relationships with co-workers, supervisors, contractors, consultants, outside agencies, and the general public.
- ◆ H. Ability to provide training to co-workers.
- ◆ I. Ability to transport oneself to, from, and around work sites.
- ◆ J. Ability to work outdoors year round.
- ◆ K. Ability to walk for long distances.
- ◆ L. Ability to transport and erect survey equipment up to 50 pounds.

- * Essential functions of the position
- ◆ Job requirements necessary the first day of employment

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| HR: JA | Union: Basic | EEOC: Technicians | CSB: 11/05/2008 | Class No: 1801 |
| WC: 9410 | Pay: 31 | EEOC: Utilities/Transportation | CC: 01/05/2009 | Resolution: 09-0017R |