



JOB DESCRIPTION

Title: Electrical Engineer

Department: Electric

Reports to: Electric Superintendent

Pay Grade: 81

Date Adopted: January 10, 2020

Previous Revision Date:

Last Revision Date:

Type: ☒ Full Time

☐ Part Time

FLSA: ☒ Exempt ☒ Salary

☐ Non Exempt ☐ Hourly

Union: ☒ Yes

☐ No

Job Summary:

Responsible for engineering, drafting, and planning of electrical facilities. The work includes, but is not limited to, the preparation of designs, reports, studies, layouts, and estimates for the installation and maintenance of electric facilities and other electrical engineering work.

An employee in this classification is expected to exercise independent judgment.

Essential Functions:

1. Prepare preliminary and final design of electric construction and maintenance projects; estimate project costs; prepare specifications and bid documents; coordinate and inspect major construction projects to ensure specifications are being met.
2. Coordinate and oversee the installation and testing of electrical equipment and control systems.
3. Make recommendations concerning the engineering, design, operation, and maintenance of substations, transmission, sub-transmission, and electrical distribution networks.
4. Ensure compliance of the electric utility with local, state, and federal laws and regulations regarding safety and environmental issues.
5. Perform and/or supervise work involving major design installation, maintenance, and repair of transmission, sub-transmission and distribution lines, substation, capacitors, relays, circuit breakers, transformers, lighting equipment, generators, and related apparatus and systems.

6. Develop plans and specifications for construction and/or rebuilding of new electrical substation and transmission, sub-transmission, and distribution overhead and underground lines and services.
7. Balance loads on substation circuits; assures that circuit and load records, maintenance, and related records are on a current basis.
8. Initiate purchase orders for materials and components of the transmission and distribution system; maintains liaison with central stores to assure adequate stock.
9. Draft specifications for components of the transmission, distribution, and substation systems.
10. Prepare work orders and cost estimates, including personnel, material, and supply items for construction and maintenance projects.
11. Maintain system "as built" and layout maps; assist contractors and Building Inspector in determining loads and required capacity of services and installations, and the impact of added load on the system.
12. Operate and maintain testing devices; supervise line crews in emergency situations; perform related duties.
13. Review blueprints of new commercial buildings to ensure they meet the requirements and to determine the size of the electrical service and transformers.
14. Perform electric engineering for transformer loading, pole loading, fuse coordination, and system protection devices.
15. Performs special projects assigned by the Electric Superintendent.
16. Investigates and assists customers on power quality issues.
17. Ensure that electrical facilities are constructed to the National Electric Safety Code (NESC), the National Electric Code (NEC), and all other applicable local, state, and federal rules and regulations.
18. Design, plan, and produce drawings and estimates for complex metering installations.
19. Manages system analysis to maintain a safe and reliable electrical transmission, substation, and distribution line systems for the City.
20. Prepare construction plans for electric facility projects. Read plats, maps, and construction plans. Translate accumulated field data and engineering data into construction plans using standard drafting techniques and computer-aided-drafting system (CAD). Compute surveying and engineering mathematical problems. Analyze and recommend possible solutions to engineering problems.

21. Research property ownerships and legal documents. Investigate existing right-of-way and easements through documents located in the county courthouse or accessed through city and county computer records.
 22. Organize and manage archived construction plans and documents.
 23. Coordinate data collection to ensure that proper data is collected and in the correct format.
 24. Perform routine engineering design and mapping.
 25. Maintain maps regarding electrical facilities.
 26. Perform all phases of GIS data collection and pole/equipment placement. Place construction stakes. Traverse rough terrain. Travel to field locations.
 27. Keep confidential information confidential.
 28. Travel and tour City projects in adverse conditions, to include but not limited to, accident sites, construction sites, outdoor sites, remote sites, interior and exterior building inspections, etc.
 29. Work the days and hours necessary to perform all assigned responsibilities and tasks. Must be available to communicate with subordinates, supervisors, customers, vendors and any other persons or organization with whom interaction is required to accomplish work and employer goals.
 30. Punctual and timely in meeting all requirements of performance, including, but not limited to, attendance standards and work deadlines; beginning and ending assignments on time; and scheduled work breaks, where applicable.
 31. Perform other work which is consistent with the essential functions of the job.
 32. Perform other duties as assigned.
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Education and Special License(s)/Certifications:

Bachelor's degree in electrical engineering or a related engineering field of study from an accredited four (4) year college or university.

Registration as a professional electrical engineer in the State of Nebraska.

Master's degree in electrical engineering, public administration, or business is preferred.

Must possess a valid driver's license and maintain an insurable driving record.

Experience:

Experience in the practice of electrical engineering in a responsible supervisory capacity or any equivalent combination of training and experience which provides the desirable knowledge, abilities, and skills.

Thorough knowledge of the principles and practices of administration as applied to the design and construction of public works and utilities projects and facilities.

Thorough knowledge of the principles and practices of electrical engineering as they relate to public works and utilities engineering projects.

Thorough knowledge of materials, methods, and techniques utilized in the construction, maintenance, and operation of public works and utilities projects.

Auto CAD experience is preferred.

Skills:

1. Excellent oral and written communication skills.
2. Leadership skills.
3. Basic mathematical and accounting skills.
4. Analytical skills.
5. Project management skills.
6. Time management skills.
7. Facilitation skills
8. Organizational skills.
9. CAD skills.
10. Manual drafting skills.
11. Computer operation skills.
12. Good oral and written communication skills for working within the office and with the general public.
13. Knowledge of the routine principles, practices, equipment and materials used in technical civil engineering and line and computerized drafting.
14. Knowledge of the routine principles, practices, used in the operation of Computer Aided Design software.
15. Ability to perform accurate engineering mathematical calculations.
16. Ability to establish and maintain effective working relationships with city officials, other governmental agencies, superiors, coworkers, contractors, and the general public.
17. Knowledge of drafting methods and instruments.
18. Ability to draft maps and plot cross-sections.
19. Considerable knowledge of the use of Auto-Cad, spreadsheets, word-processing, and database.
20. Good listening skills.
21. Ability to work in office-cubical environment.
22. Manual dexterity.

23. Ability to read.
 24. Good customer/public relations.
 25. Ability to work independently.
 26. Knowledge of mathematics and survey techniques, instruments and tools.
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Mental Requirements:

1. Ability to read plat sheets and maps.
 2. Ability to read and comprehend City codes.
 3. Ability to analyze complex problems and recommend possible solutions.
 4. Exhibit diplomacy and judgment when working with citizens, contractors, or other public officials.
 5. Ability to understand computer commands and generated reports.
 6. Ability to compute mathematical calculations used in surveying and measuring.
 7. Ability to translate accumulated field data and engineering information into legible construction plans.
 8. Ability to work on several projects at once.
 9. Diplomacy and judgment.
 10. Mechanical aptitude.
 11. Ability to organize files and retrieve data effectively.
 12. Ability to learn and understand PC software applications.
 13. Alpha and numeric recognition.
 14. Ability to prioritize work.
 15. Logical reasoning.
 16. Patience.
 17. Ability to carry out assignments through oral and written instructions.
 18. Concentration.
 19. Ability to compute basic math computations.
 20. Ability to work under distracting conditions.
 21. Ability to exhibit tact, diplomacy, and judgment when dealing with co-workers, other City employees, and external contacts.
 22. Ability to analyze complex problems and recommend possible solutions.
 23. Ability to multi-task.
 24. Ability to work under pressure.
 25. Ability to work under distracting conditions when surveying or construction staking.
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Physical Requirements:

1. Hand/eye coordination adequate to operate surveying equipment.
2. Ability to place construction stakes with the use of manual tools.
3. Ability to traverse rough terrain.
4. Exposure to vehicle noise and fumes.
5. Exposure to extreme environmental conditions.
6. Ability to draw engineering plans manually or with the use of CAD.
7. Ability to visually review maps, plans, and plats.
8. Ability to operate print machine, plotter, and other drafting equipment.
9. Ability to operate City vehicles.

10. Ability to make and receive phone calls.
11. Ability to sit and be attentive for extended periods of time.
12. Ability to lift 20 pounds and transport 20 feet.
13. Visual stamina and acuity adequate to review maps, plans, plats, alpha/numeric data and spend long periods looking at computer screen.
14. Ability to operate basic office machines such as copy machine, computer, calculator, fax machine, cash register, etc.
15. Hand and eye coordination adequate to input computer data and operate various office equipment.

Supervisory Responsibility (Direct and Indirect):

None

Disclaimer:

This job description is intended to convey information essential to understanding the scope of the job and the general nature and level of work performed for individuals with this job title. However, this job description is not intended to be an exhaustive list of all qualifications, skills, efforts, duties, responsibilities, or working conditions associated with the position.

Approved:

Tobias J. Tempelmeyer, City Administrator

January 10, 2020