

County Drainage/Assistant County Engineer

Department: Secondary Roads / Drainage

Reports To: County Engineer / Board of Supervisors (as applicable)

Job Summary

The County Drainage/Assistant County Engineer is primarily responsible for the planning, design, construction, inspection, maintenance, and overall management of the county's drainage systems and drainage districts. This position ensures that all drainage activities comply with local, state, and federal regulations, and are executed efficiently to protect public and private property, maintain agricultural productivity, and safeguard water quality. Additionally, as workload allows and under the guidance of the County Engineer, this role provides engineering support for county roadway projects. The Engineer serves as a technical expert and provides guidance to the Board of Supervisors, drainage district trustees, landowners, and the public on drainage-related and roadway matters.

Essential Duties and Responsibilities

- **Drainage System Management:**
 - Oversee the management, operation, and maintenance of all established drainage districts and county drainage systems.
 - Conduct regular inspections of existing drainage infrastructure (tiles, open ditches, culverts, structures) to assess condition and identify maintenance needs.
 - Prioritize and schedule routine maintenance, repairs, and improvements for drainage systems.
 - Respond to and investigate drainage complaints, determining root causes and recommending appropriate solutions.
- **Drainage Engineering Design & Construction:**
 - Complete Engineering reviews, reclassifications, annexations, and ROW acquisitions as drainage projects demand.
 - Perform preliminary and final engineering design for new drainage projects, improvements, and repairs, including open ditch profiles, tile layouts, and sizing.
 - Prepare detailed engineering plans, specifications, cost estimates, and bid documents for drainage projects.
 - Manage and oversee drainage construction projects, ensuring adherence to design specifications, timelines, and budgets.
 - Conduct final inspections and approve completed drainage work.
- **Roadway Engineering Support:**
 - Assist the County Engineer in the planning, design, and construction oversight of county road projects, including grading, paving, and culvert/bridge installations.

- Perform engineering calculations and prepare preliminary designs for roadway improvements.
- Assist with survey data collection and processing for road construction and maintenance.
- Support the preparation or review of plans, specifications, and estimates (PS&E) for road projects.
- Conduct site visits and inspections of ongoing road construction projects to ensure compliance with plans and specifications.
- Assist with traffic studies, sign inventories, and pavement management activities as directed.
- Provide technical support for general road maintenance and repair activities.
- **Regulatory Compliance & Permitting:**
 - Ensure all drainage and assigned roadway activities comply with applicable state drainage laws, transportation regulations, environmental regulations (e.g., Clean Water Act), and local ordinances.
 - Prepare and submit necessary permit applications to state and federal agencies (e.g., DNR, EPA, USACE, DOT) for drainage and roadway projects.
 - Stay informed of changes in drainage law, road standards, environmental regulations, and best management practices.
- **Technical Expertise & Consultation:**
 - Serve as the primary technical advisor to the County Board of Supervisors and drainage district trustees on drainage issues.
 - Provide expert testimony in drainage hearings and legal proceedings as required.
 - Conduct hydrologic and hydraulic analyses for drainage design and problem-solving.
 - Offer technical assistance and guidance to landowners regarding private drainage concerns, when appropriate.
 - Provide engineering input and analysis for general roadway challenges.
- **Financial & Administrative:**
 - Assist in the development and management of drainage district and, as assigned, roadway budgets.
 - Approve payment estimates for contractors and consultants for drainage and assigned road projects.
 - Maintain accurate records of drainage system and roadway project maps, designs, construction, and maintenance activities.
 - Prepare reports and presentations on drainage and roadway activities for the Board, public, and other stakeholders.
- **Public Relations & Collaboration:**

- Communicate effectively with landowners, contractors, government agencies, and the public regarding drainage and roadway projects and issues.
- Represent the county in meetings related to drainage and roadways at the local, regional, and state levels.

Qualifications

Education:

- Bachelor's degree in Civil Engineering, Agricultural Engineering, or a closely related field from an accredited college or university.

Experience:

- 3+ years of progressively responsible experience in drainage design, construction, and/or management, and/or roadway engineering, preferably within a governmental or agricultural setting, preferred.
- Experience with surveying, GIS, and CAD software for both drainage and roadway applications.

Licenses & Certifications:

- Possession of a valid Professional Engineer (PE) license in the State of Iowa is required, or the ability to obtain licensure within 12 months of hire.
- Valid State Driver's License.

Knowledge, Skills, and Abilities:

- Comprehensive knowledge of principles and practices of civil engineering as applied to drainage systems, hydraulics, hydrology, and roadway design and construction.
- Strong understanding of Iowa drainage laws and regulations, as well as state and federal roadway standards.
- Proficiency in interpreting engineering plans, specifications, and technical reports for both drainage and road projects.
- Ability to use surveying equipment and GIS/CAD software effectively for both disciplines.
- Excellent written and verbal communication skills, including public speaking and technical report writing.
- Ability to manage multiple projects concurrently and meet deadlines.
- Strong problem-solving and analytical skills.
- Ability to work independently and as part of a team.

Physical Demands

The physical demands described here 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.

- Work involves both office and field settings.
- Frequent standing, walking, bending, stooping, kneeling, and crawling, especially in field environments.
- Ability to lift and carry up to 50 pounds.
- Exposure to outdoor weather conditions, including extreme heat and cold, wet and muddy environments, and insects.
- Ability to navigate uneven terrain, ditches, and agricultural fields.
- Requires operation of a county vehicle or other light equipment.

Work Environment

The work environment characteristics described here 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.

- Primarily office environment with significant time spent in the field.
- Field work involves exposure to varied weather conditions, dust, noise, and agricultural settings.
- Requires interaction with diverse groups including landowners, contractors, and government officials.
- May involve irregular hours during peak seasons or emergencies.