

CIVIL ENGINEER

FUNCTION OF THE JOB

Under supervision, to perform professional engineering work in the development, planning, design, construction, and maintenance of transportation or soil and water conservation facilities; performs other duties as required.

CHARACTERISTIC DUTIES AND RESPONSIBILITIES

1. Prepares environmental assessments detailing the impact of proposed transportation projects.
2. Provides detail such as cost estimates, traffic, and drainage studies for evaluating and recommending future highway projects.
3. Assists in the preparation of the five-year highway capital plan.
4. Conducts research for design projects as required by federal and state regulations.
5. Prepares right-of-way plats, legal descriptions, roadway plans, cross-sections, and specifications.
6. Performs complex engineering computations and usage of office automation systems including: computer assisted surveying, drafting and design systems (CADD), computer mapping geographic information systems (GIS), and other automated engineering applications.
7. Analyzes and evaluates traffic flow data, and uses the information to design traffic signal installations and complex intersections.
8. Conducts drainage studies for proposed projects.
9. Prepares and reviews specifications, plans, and engineering practices, and inspects contractor's work for highway construction projects.
10. Inspects and tests construction and maintenance materials used in highway and bridge construction.
11. Prepares and administers contracts including ensuring that all specifications are met, resolving disputes, managing consultant filed personnel, inspecting and approving work, and approving payments and change orders.
12. Assists in managing assigned elements of the department's computerized highway asset management system.
13. Keeps accurate records and prepares complex and detailed documents and reports.
14. Establishes and maintains effective working relationships with the staff, consultants, contractors, municipal and state agencies, other county departments, and the public.
15. Maintains prompt, predictable, and regular attendance.
16. Performs other duties as required.

QUALIFICATIONS

Essential Knowledge and Abilities

1. Considerable knowledge of the engineering theories, principles, and practices applied in the design, construction, maintenance, and repair of highways, bridges, and other transportation structures including Wisconsin DOT and AASHTO standards, traffic engineering or biological principles and practices relating to watershed protection, stormwater management, soil erosion control, nonmetallic mining restoration, flood control, farm runoff management, non-point source water, pollution abatement, and management of natural resources.
2. Considerable knowledge of federal, state, and local statutes and regulations governing highway design and construction, access, traffic engineering, land drainage, water resources, subdivision platting, and land acquisition.
3. Considerable knowledge of environmental issues including erosion control, hazardous waste, wetland mitigation, and flood plain, wildlife, and agricultural impacts.

QUALIFICATIONS

Essential Knowledge and Abilities (Cont.)

4. Considerable knowledge of right-of-way plat preparation and the land acquisition process.
5. Considerable knowledge of computerized engineering software, and database, Internet access, spreadsheet, and work processing programs.
6. Working knowledge of project management including project scoping, scheduling, cost estimating, contract negotiations, contract law, and project budgeting.
7. Ability to utilize word processing, database, and spreadsheet programs.
8. Ability to manage and coordinate multiple moderate sized projects.
9. Ability to research, analyze, and evaluate comprehensive data, plans, reports and designs; and to make appropriate recommendations.
10. Ability to make complex mathematical computations, and to use surveying, drafting, and design technology.
11. Ability to keep accurate and detailed records and field notes; and to prepare and present detailed written and verbal reports and presentations.
12. Ability to establish and maintain effective working relationships with the staff, consultants, contractors, municipal and state agencies, other county departments, and the public.
13. Ability to effectively interact with sensitivity with persons from diverse cultural, socioeconomic, educational, racial, ethnic, and professional backgrounds, and persons of all ages and lifestyles.

Training and Experience

1. Graduation from a recognized college or university with a bachelor's degree in civil or environmental engineering or closely related field.