Missouri Department of Transportation Job Description

Job Title: Structural Hydraulics and Preliminary Design Engineer

Title Code: R05430

Salary Grade: 13

Exemption Status: Exempt

Supervisory Responsibilities: Full Supervision

District/Division: Central Office - Bridge

Effective Date: 10-16-2025

Replaces (Effective Date): 01-16-2025

General Summary

The structural hydraulics and preliminary design engineer serves as a staff specialist in a specific area of expertise as needed to investigate complex issues and conditions encountered in the design and operation of the department's transportation structures and is responsible for supervising the engineers and technicians responsible for preliminary designing and detailing. Responsibilities are performed under general supervision.

Minimum/Required Qualifications

- Bachelor's degree in civil or structural engineering from an ABET-accredited college or university curriculum.
- Licensed as a Professional Engineer in the State of Missouri.
- Nine years of experience in civil engineering with a demonstrated proficiency in structural or seismic design, hydraulics, or engineering application software. An advanced degree in civil engineering with an emphasis in structures, seismic design, hydrology/hydraulics, or engineering applications programming may be substituted for a maximum of two years of experience.

Special Working Conditions/Job Characteristics

- Job requires occasional, statewide and/or national, overnight travel.
- This title requires advanced accreditation or licensure which is only available to holders of specific postsecondary degrees.

Examples of Work

1. Supervises engineers and technicians responsible for preliminary designing and detailing; makes hiring and other employment related decisions, assigns work, disciplines, conducts performance management, and trains employees in the preliminary design section.

2. Determine resource needs and works with other division staff to commit resources to design teams and make production decisions.

3. Coordinates the scheduling of bridge memo conferences, bridge design layout conferences and other bridge related meetings.

4. Serves as expert technical resource in the specialty area of hydrology and hydraulics.

5. Participates in the review of research projects in the specialty area of hydrology and hydraulics.

6. Develops and recommends design procedures and policies based on new research, new best practices, and observed problems with existing guidance.

7. Evaluates and recommends responses to requests for exceptions to department policy.

8. Serves as an expert witness, participates in hearings, and otherwise advises department legal staff on matters involving impact of proposed legislation, claims, and litigation for area of expertise.

9. Serves as a liaison with department personnel, other state and federal agencies, consultants, and other resources in the areas of hydrology/hydraulics, structural design, and seismic design.

10. Develops, coordinates, and leads training classes for engineers in both design software and design procedures in specialty area as needed.

11. Negotiates and manages contracts for engineering services; signs and seals structural plans and/or related documents as necessary.

12. Performs supervisory responsibilities.

13. Performs other responsibilities as required or assigned.