

Job Title: CIVIL ENGINEER VI - MIXTURES CONTROL ENGINEER - IPR#45377

Agency: Department of Transportation
Closing Date/Time: 12/02/2021
Salary: \$7,085 - \$11,020 Monthly
Job Type: Salaried Full Time
County: Cook
Number of Vacancies: 1
Plan/BU: NR916

“Interested applicants must apply for this position on the Work for Illinois website, www.work.illinois.gov. Please direct any questions to the Agency Contact listed below.”

This position is a union position; therefore, provisions of the relevant collective bargaining agreement/labor contract apply to the filling of this position.

All applicants who want to be considered for this position MUST apply electronically through SuccessFactors. Applications submitted via email or any paper manner (mail, fax, hand delivery) will not be considered.

***This position is covered by the Revolving Door Prohibition Policy.**

Agency Mission Statement

The Illinois Department of Transportation is seeking to hire a Mixture Control Engineer.

The IDOT team works diligently to provide safe, cost-effective transportation for Illinois in ways that enhance quality of life, promote economic prosperity and protect our environment. We are problem solvers and leaders, constantly searching for innovations and improvements in support of our commitment to providing the best multimodal transportation system for Illinois.

Our team fosters a culture of inclusivity. We value diversity and hold ourselves to the highest ethical standards as we work together for a common purpose. Team members frequently collaborate with colleagues and others outside the department to best meet customer needs.

Employees enjoy excellent benefits, including health, vision and dental insurance; a retirement plan and deferred compensation options; state holidays and other time off; tuition reimbursement; flexible schedules; and pre-tax benefit programs. The department also offers extensive training and career advancement opportunities.

We invite qualified applicants to apply to become part of our team. We are confident that you will take pride in serving Illinois and its residents and visitors.

Job Responsibilities

This position is accountable for planning, coordinating and directing activities that ensure that Hot Mix Asphalt (HMA) and Portland Cement Concrete (PCC) mixtures meet the current Standard Specifications and applicable Special Provisions for use on all U.S. and state marked routes as well as local projects, where federal, state and Motor Fuel Taxes (MFT) are involved.

This position reports to the Bureau Chief of Materials. Reporting to this position are the Area Mixtures Control Supervisors, the District Laboratory Supervisor, and a Highway Maintainer.

Over 20 billion vehicle-miles are travelled annually on the 10,000 lane miles which constitute the district's highway network. This makes the function of designing durable PCC and HMA mixtures exceedingly important in terms of highway safety. The existence of a large number of local agencies and the required use of consultants for construction supervision and materials inspection on various types and volumes, rehabilitation of Quality Control and Quality Assurance (QA/QC), and Pay for Performance (PFP) projects establishes an unusual need to develop complete understanding of what constitutes acceptable PCC and HMA mixtures and placement methods for each product. An effective performance in this position is complicated by the increasing complexity of the mixtures control technology such as a new generation of Gyrotory Compactors, Thin Lift Nuclear Density Gauges and HMA Wheel Trackers. The candidate will be required to develop specifications and mix design criteria for sustainable and environmentally friendly HMA mixtures as well as a variety of specialty concrete mixtures.

Typical problems encountered in this position include ensuring acceptable mixture designs to improve skid resistant, durability and other properties. This includes safety and wears features of pavement surfaces, approving the design of new mixtures by the contractors and investigating new mixtures containing recycled and manufactured material for replacement of Natural Aggregates. The candidate will be required to develop and monitor the implementation of performance-based specifications and special provisions such as PFP and Quality Control for Performance (QCP). The greatest challenge to this position is responding effectively to a wide variety of mixtures and usage problems associated with the district's large accelerated program involving projects of high visibility that are particularly sensitive to the political directorate, the media, and the motoring public.

(Job Responsibilities continued)

The candidate monitors and evaluates the operation of various HMA and PCC production facilities, equipment, and whether these facilities meet specifications. He/she evaluates the effectiveness of consultant personnel and testing equipment engaged in material testing and inspection for PFP, QCP, and QCP as an improved QC/QA Specification.

Due to the rapid technological developments in the field, this position is constantly confronted with problems of correct interpretation and proper guidance with respect to new material inspection processes and demonstrating to contractors and consultants how these processes will result in the improvement in performance.

The incumbent personally: determines whether bituminous and PCC materials will be used on projects in those instances where questions have been raised as to material acceptability; approves HMA and PCC mixtures design to meet unusual projects demands; ensures prompt investigation and resolution of complaints regarding mixture design; approves new types of HMA compacting and manufacturing equipment where rapidly changing technology is occurring; establishes subordinate performance objectives and evaluates performance; determines staff training needs and recommends appropriate actions; provides work safety for employees by enforcing departmental safety requirements; investigates safety hazards and eliminates them; and has major input into the bureau's operating budget.

The incumbent accomplishes his/her accountabilities through the following personnel:

- Area Mixtures Control Supervisor: is responsible for directing and coordinating PCC and HMA proportioning inspection under the requirement of QC/QA, PFP and QCP Specifications, and conducting an Independent Quality Assurance Program to ensure that all mixtures produced, tested and documented meet the required specifications and special provisions on all contracts where state, federal, and MFT are utilized.
- District Laboratory Supervisor: is, with a staff of 8-14 laboratory technicians and one office coordinator, responsible for supervising those activities that ensure the proper testing and documentation of a variety of materials used in highway improvement projects throughout the district under programs such as QCQA, PFP, and QCP.
- Highway Maintainer: is responsible for picking up concrete and bituminous test specimens at construction sites and delivering them to the district lab for testing and reporting.

This position is constrained by departmental regulations. The incumbent operates within the guidelines included in the standard specifications but is required to exercise considerable independent technical judgment in designing and establishing appropriate inspection procedures for HMA and Portland Concrete mixtures, in establishing proper HMA density and compaction procedures, and evaluating the impact of substitute materials on the effectiveness of existing mixtures. The incumbent recommends time-in-grade promotions and participates in disciplinary actions.

(Job Responsibilities continued)

In order to coordinate schedules to ensure the timely and effective reporting of QC/QA and methods specification, the incumbent has frequent contact with the district Bureaus of Construction, Design, Maintenance, Local Roads, Programming, and Electrical Operations, as well as the Bureau of Investigations and Compliance. The incumbent negotiates the acceptability of special provisions covering unique mixture problems with the Bureau of Design, the central Bureau of Materials and the FHWA; deals continuously with contractors, consultants, material suppliers and local officials to ensure understanding of guidelines governing conditions of materials acceptability, usage and ensuring the correct application of new technology to materials used under the QC/QA guidelines. Overtime, night and weekend hours, district-wide and state-wide travel are necessary to fulfill the requirements of this position.

The effectiveness of this position is measured by pavement life and safety with respect to skid-resisting and wearing capabilities of HMA and PCC mixtures used on improvement projects with timely completion of the various contracts.

Principal Accountabilities

1. Verifies contractor QC/QA plans and designs of HMA and PCC mixtures that are for use on IDOT projects.
2. Monitors contractor inspection methods, density and compaction procedures that ensure material acceptability on various types of projects.
3. Ensures the correct application of new and revised technology to mixtures used on various projects.
4. Prepares special provisions to cover various mixtures not specified by Standard Specifications that are required for the solution of unusual problems.
5. Determines the acceptability of substitute materials and chemical additives in various concrete and HMA mixtures.
6. Continues the development of PFP and QCP Specifications in connection with QC/QA applications and monitors the field use of these specifications to ensure their acceptability for project use.
7. Establishes training methods to adequately prepare assigned personnel for field inspection assignments.
8. Provides the direction, counseling, training and motivation of staff so as to ensure a high level of productivity, effective performance, and continuous development for difficult assignments.
9. Provides for the safety of subordinate personnel in accordance with provision of IDOT safety code and established safe work practices.
10. Reviews Bureau of Design's plans for mixture compliance.
11. Performs duties in compliance with departmental safety rules. Performs all duties in a manner conducive to the fair and equitable treatment of all employees.
12. Performs other duties as assigned.

Qualifications

Position Requirements

- Education/Experience
 - Current registration as a Licensed Professional Engineer in the state of Illinois
 - Eight years of experience in civil engineering including three years supervising staff and managing engineering functions
- Valid driver's license
- Successful completion of the QC/QA training program for HMA Level I - III and PCC Level I - III
- Occasional night and weekend work hours
- District-wide and state-wide travel

Position Desirables

- Excellent oral and written communication skills
- Managerial skills and the ability to resolve conflicts

Work Hours: 8:00 AM - 4:15 PM Monday-Friday (45-minute lunch)

Work Location: 201 Center Ct Schaumburg, IL 60196-3169

Office: Office of Highways Project Implementation/Region 1/District 1/Bureau of Materials

Agency Contact: DOT.CO.BPM.EmploymentApplications@Illinois.gov

Job Function: Transportation

APPLICATION INSTRUCTIONS

Use the “Apply” button at the top right or bottom right of this posting to begin the application process. If you are not already signed in, you will be prompted to do so.

State employees should sign in to the career portal for State of Illinois employees – a link is available at the top left of the work.Illinois.gov homepage in the blue ribbon.

Non-State employees should log in on the using the “View Profile” link in the top right of the work.Illinois.gov homepage in the blue ribbon. If you have never before signed in, you will be prompted to create an account.

If you have questions about how to apply, please see the following resources:

State employees: Log in to the career portal for State employees[KS(1] and review the Internal Candidate Application Job Aid HERE[KS(2]

Non-State employees: on work.Illinois.gov – click “Application Procedures” in the footer of every page of the website.