



# Illinois Department of Transportation

## Memorandum

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To: DEPUTY SECRETARIES, DIRECTORS AND BUREAU CHIEFS  
From: Dianna L. Taylor  
Bureau Chief of Personnel Management  
Subject: Technical Vacancy  
Date: March 16, 2017

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Attached are the Position Summary Sheet and Position Description for the vacant technical position listed below. Please post this vacancy announcement March 17, 2017 in the designated areas.

The deadline for applicants to submit their names for consideration is **4:30 p.m.** on **Thursday, March 30, 2017**. Applicants will not be accepted after that time and date.

**NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position. Please be advised that if a high volume of applications are received, the applications may be screened to establish a smaller pool of applicants for interview. The screening will be based on the information contained in the application.**

All applicants will receive a position description for the position they are applying for. If you have any questions, please contact the Bureau of Personnel Management at 217/782-5594.

CE V

Geotechnical Engineer  
Region 5/District 9/Project Implementation  
Highways Project Implementation  
Carbondale

Attachments  
41097

Technical Applications (PM 1080 rev 9/19/16) **must be received** by the Bureau of Personnel Management, Room 113, 2300 South Dirksen Parkway, Springfield, IL 62764 (Fax# 217/557-3134) or emailed to [DOT.CO.BPM.EmploymentApplications@Illinois.gov](mailto:DOT.CO.BPM.EmploymentApplications@Illinois.gov) by **Thursday, March 30, 2017, 4:30 p.m.** Please include address, daytime phone and position for which applying if not already listed on application. Applicants will be notified in writing to schedule interviews.

**NOTE: A copy of each applicant's ACTIVE Illinois Professional Engineer License must accompany application for this position. Please be advised that if a high volume of applications are received, the applications may be screened to establish a smaller pool of applicants for interview. The screening will be based on the information contained in the application.**



**Illinois Department  
of Transportation**

An Equal Opportunity Employer

## Position Summary Sheet

<b>Classification:</b>	<b>Civil Engineer V</b>	<b>Salary:</b>	<b>\$6,315 - \$8,263*</b>
<b>Position Title:</b>	<b>Geotechnical Engineer</b>	<b>Union Position:</b>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>Position Number:</b>	<b>PW115-23-59-203-10-01</b>	<b>IPR#:</b>	<b>41097</b>

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### Office/Central Bureau/District/Work Address:

Office of Highways Project Implementation/Region 5/District 9/Bureau of Project Implementation/2801 W Murphysboro Rd, Carbondale, IL

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### Description Of Duties:

This position is accountable for the effective design of earthwork and foundations, and that the intent of the design is carried out in the construction and future maintenance of highway projects; ensures adequate investigations are performed utilizing acceptable sampling and testing procedures; and ensures adequate nuclear density testing is performed to ensure proper placement and inspection of soils, granular embankments and bituminous mixtures on multiple highway and bridge construction projects funded by federal, state and local agencies.

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### Special Qualifications:

#### Required:

- Current Illinois Professional Engineer license
- Valid drivers' license
- Occasional district-side travel and possible statewide which may include overnight stays
- Occasional overtime during evenings and weekends

#### Desired:

- Nine years of experience in civil engineering of which at least five years should be in the specific area of highway engineering, three years of which should include the planning and supervision of significant engineering work
- Extensive knowledge of the principles and practices of civil engineering with special emphasis in the areas of materials, mixtures and soils
- Ability to develop and maintain cooperative relationships with departmental staff and the general public
- Ability to interpret and enforce divisional and departmental policies
- Strong management skills, and oral and written communication skills
- Strong problem solving and decision-making skills

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### Shift/Remarks:

7:00 am – 3:30 pm / Monday – Friday

**This position requires the ability to work in confined spaces, climb steep terrain, wade in water, deal with insects, rodents and snakes, and perform outdoor work in a variety of conditions including, but not limited to, inclement weather (hot, cold, wet, windy, muddy), active construction sites and roadways open to traffic.**

\*Individual salary offers are computed based on an applicant's current position and experience level in comparison to the posted title as well as internal equity of staff in the organizational unit.

**\*THIS POSITION IS COVERED UNDER THE REVOLVING DOOR PROHIBITION (RDP) POLICY.**

**ILLINOIS DEPARTMENT OF TRANSPORTATION  
POSITION DESCRIPTION**

<b>DATE:</b>	October 1, 2015	<b>POSITION:</b>	Geotechnical Engineer
<b>APPROVED BY:</b>	<u>Keith Roberts</u>	<b>OFFICE/DIVISION:</b>	Highways, District 9, Project Implementation
<b>CODE:</b>	PW115-23-59-203-10-01	<b>REPORTS TO:</b>	Materials Engineer

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***Position Purpose***

This position is accountable for the effective design of earthwork and foundations, and that the intent of the design is carried out in the construction and future maintenance of highway projects. Responsible for assuring adequate subsurface investigations are performed by subordinate staff utilizing acceptable sampling and testing procedures. Responsible for assuring that adequate nuclear density testing is performed by subordinate staff to assure proper placement and inspection of soils, granular embankments and bituminous mixtures on multiple highway and bridge construction projects funded by Federal, State and Local agencies.

***Dimensions***

Subordinate Personnel:	2 Direct; Up to 7 Indirect
Contract value of projects requiring soils reports:	\$1 - \$10 Million
Value of current construction program:	\$1 - \$10 Million
Value of preliminary engineering for 5 year program:	\$10 - \$30 Million

***Nature and Scope***

This position reports to the Materials Engineer. Reporting directly to this position are the Subsurface Investigations and Geotechnical Field Supervisors.

The incumbent provides, evaluates, and interprets the subsurface investigation of proposed highway locations leading to design recommendations concerning embankment configurations; structural foundations; pavement design; subsurface drainage requirements; sand drains; berms, soil removal or replacement; special treatments, such as soil modification or stabilization; or other remedial measures when needed. The position is unique in that soils mechanics and its application is not an exact science and requires years of soils experience and engineering knowledge in order to analyze, interpret, evaluate, and make sound decisions.

Typical problems confronting the incumbent involve occasional embankment failures, slope instability, sub grade stability, and foundation bearing capacity failures. The greatest challenge for the incumbent is to make effective use of the foundation and embankment materials available avoiding costly failures, costly over design, and costly overruns of construction costs. The incumbent's recommendations must provide the required degree of safety as well as consider the economic evaluation, the energy consumption, performance and benefits derived. Construction must be monitored for unanticipated conditions requiring design changes or use of valid construction expedients, and the incumbent must be able to recognize problem conditions and make timely and effective recommendations.

To provide the basis for the design recommendations, the incumbent personally performs stability analyses using data provided by subordinates; analyzes, interprets, and evaluates the information obtained from the stability analysis; makes recommendations for adequate embankment configurations, performs settlement computations; interprets and evaluates the consolidation information for design recommendations; reviews all bearing capacities of proposed foundations and structures to ensure adequate cost-effective designs; performs pavement analysis studies and makes recommendations to ensure long-term performance; reviews subsurface drainage requirements; investigates sub grade stability requirements, both long-term and short term

performance, with recommendations for any special treatments that may be required; and, recommends remedial measures, if needed.

The incumbent accomplishes his/her objectives through the following subordinate positions:

*Subsurface Investigation Supervisor* – who, with a staff of 2 to 3, is responsible for supervising the drilling of all borings in the District, analyzing and logging soil information sufficient for foundation design, arranging for permission to enter private property, supervising the maintenance and repair of the drill rigs, and aiding in the preparation of subsurface investigation reports and soil profiles.

*Geotechnical Field Supervisor* – who, with a staff of 3 to 7, is responsible for ensuring effective embankment construction practices and sub grade controls within the District. He/she is also responsible for the supervision of the nuclear density testing procedures and controls for bituminous concrete placement within the District.

Due to the highly specialized and technical nature of the knowledge required by the incumbent, he/she has unusually broad latitude to make recommendations and decisions in his/her field of authority. Usually only problems of policy are referred to a superior. He/she has the authority to recommend personnel changes and to purchase necessary supplies and services when needed. The incumbent sometimes acts for the Section Chief in his/her absence. The position operates under Departmental rules, orders, policies and specifications. This position requires a current IL Professional Engineer License; a valid driver's license; occasional travel inside and outside the district, with the possibility of overnight stays; and possible overtime during evenings and weekends; ability to work in confined spaces, climb steep terrain, wade in water, and deal with animals, insects, rodents and snakes; and to perform outdoor work in a variety of conditions including, but not limited to, inclement weather (hot, cold, wet, windy, muddy), active construction sites and roadways open to traffic.

Within the Department there are frequent contacts with the District Bureaus of Program Development, Operations, Local Roads and Streets, and the Central Bureau of Materials, Design and Environment, Operations and other District Geotechnical Engineers concerning soils related items. Outside contacts are with consultants, property owners, railroads, utilities, cities, counties, the Division of Aeronautics, Division of Waterways, Port Authorities, Illinois State Geological Survey, Soil Conservation, Division of Agriculture, Conservancy Districts, University of Illinois and Southern Illinois University, concerning soils or related items. Extensive travel is required within the District and also some travel statewide.

The incumbent's performance is based upon his/her ability to obtain, evaluate, and interpret subsurface soils information to recommend economical safe designs with a minimum of cost overruns due to unanticipated conditions. The incumbent's abilities can also be indicated by the acceptance of his/her recommendations by other authorities of the state of the art.

### ***Principal Accountabilities***

1. Gather soils data as required for the proper analysis, evaluation, and interpretation of soils and foundation conditions involving highway improvements.
2. Make special investigations of unusual and/or unanticipated soils problems encountered on construction projects, recommending remedial measures to solve the problem conditions.
3. Review soils and foundation surveys, reports, and consultant prepared plans for other agencies as required.
4. Analyze, compile data, and prepare geotechnical reports as required for highway improvement.

5. Make recommendations for the embankment and foundation planning and design.
6. Review all construction plans, and monitor embankment and foundation construction controls within the District.
7. Monitor all nuclear density testing procedures for embankment and bituminous concrete placement within the District.
8. Train, motivate, evaluate, and equip subordinate personnel.
9. Performs other duties as assigned.
10. Performs duties in compliance with departmental safety rules. Performs all duties in a manner conducive to the fair and equitable treatment of all employees.