

 JOB DESCRIPTION	ENGINEERING APPLICATION: NON-UNION			
TITLE: Civil Engineer	REVISION DATE 11/19/2014	SUPERCEDE DATE 01/01/2006	APPROVAL DATE 11/19/2014	APPROVED BY: N. Peterson

SUMMARY

Employees in this job serve as an engineer able to design and oversee the construction of safe and efficient road, bridge and drainage projects. Perform a wide variety of fundamental and supportive professional engineering tasks.

There are four classifications in this job.

Civil Engineer I (Pay Grade 18)

This is the entry level. As a trainee, the employee carries out a range of professional transportation engineering assignments while learning the methods of the work and WCRC Procedures & Regulations.

Civil Engineer II (Pay Grade 22)

This is the intermediate level. The employee carries out an expanding range of professional transportation engineering assignments in a developing capacity.

Civil Engineer III (Pay Grade 26)

This is the experienced level. The employee performs a full range of professional transportation engineering assignments in a full functioning capacity including the management of projects. Considerable independent judgment is required to carry out assignments that have a significant impact on services and programs. Guidelines may be available, but require adaptation or interpretation to determine appropriate courses of action.

Civil Engineer IV (Pay Grade 28)

This is the advanced level. This position requires possession of a Professional Engineer License in the State of Michigan. The employee may oversee the work of professional staff by making and reviewing work assignments, establishing priorities, coordinating activities and resolving related work problems. Performs on a regular basis professional transportation engineering assignments and manages projects, which are recognized by the Director of Engineering as more complex than those assigned at the experienced level.

Note: Employees generally progress through this series to the advanced level based on satisfactory performance at preceding levels, meeting the minimum years of experience and by the recommendation of their supervisor.

SUPERVISION RECEIVED

Works under the general direction of a Senior Project Manager. Work is performed according to established rules, regulations and procedures. Work is checked through inspection, observation, records and reports.

SUPERVISION EXERCISED

Assigns and checks work of technicians, aides and/or intern students assigned to assist on projects and other activities.

RESPONSIBILITIES AND ESSENTIAL DUTIES AND FUNCTIONS

Note: The job duties listed are typical examples of the work performed by positions in this job classification. Not all duties assigned to every position are included, nor is it expected that all positions will be assigned every duty.

1. Assists in the collection, correlation and analysis of data regarding road and bridge projects.
2. Compiles and analyzes engineering data and prepares conclusions and recommendations.
3. Designs and oversees the construction of road, bridge and drainage projects in accordance with WCRC and MDOT guidelines, procedures, regulations and specifications.
4. Serves as project engineer/manager on design and construction projects.
5. Prepares and maintains reports, records, permits and documentation to satisfy project and WCRC requirements.
6. Assists in the review of designs proposed by others including but not limited to shop drawings, WCRC permit applications and public road development.
7. Operates AutoCAD and other design and engineering software.
8. Oversees soil borings performed by consultants and assists in analyzing and interpreting laboratory and field data from investigations.
9. Schedules and oversees material testing for construction projects.
10. Serves as field inspector, as needed.
11. Represents the Road Commission at public meetings.
12. Meets with local officials to present bridge, road and drainage designs.
13. Meets with design, construction, traffic and safety, permits and operations staff to determine pertinent information required for project plans.
14. Meets with utilities to coordinate these activities with construction.
15. Assigns tasks to co-op students, checking progress and correcting, as necessary.
16. Responds to citizen questions and complaints.
17. Assists in performing and/or overseeing bridge and culvert inspections.
18. Performs other related duties as required.

KNOWLEDGE, SKILLS AND ABILITIES

All of the following functions, qualifications, knowledge, skills, abilities (KSA's) and duties are essential. An employee in this class, upon appointment, should have the equivalent of the following:

Knowledge of principles and practices of Civil Engineering.

Knowledge of principles, practices and materials used in road and bridge design and construction.

Knowledge of the principles and practices of project management, administration and budgetary controls.

Knowledge of college-level algebra, plane and solid geometry, trigonometry, calculus, geodesy and least squares adjustment.

Knowledge of computer input forms and proper formatting of data.

Ability to organize work, set priorities for work assignments, assign and explain instructions to subordinates.

Ability to communicate effectively, to organize and present information.

Ability to work effectively with the general public and co-workers.

Ability to maintain favorable public relations.

Ability to apply required knowledge to specific situations.

Ability to write descriptive text using proper grammar, spelling and report writing techniques.

Ability to analyze field measurement for conformance with accuracy standards and determine when a measurement needs to be repeated.

Ability to interpret plats, plans, maps and drawings.

Ability to maintain records, prepare reports and conduct correspondence related to the work.

Ability to maintain equipment and tools.

Ability to perform appropriate level of mathematical computation including addition, subtraction, multiplication, division, trigonometry, geometry and calculus.

Ability to maintain and oversee a safe work environment for others.

Ability to handle stress.

WORKING CONDITIONS

Employee is sometimes exposed to unpleasant weather conditions, dirt, dust, as well as hazardous working conditions (working in traffic and on construction sites).

PHYSICAL REQUIREMENTS

Duties require physical mobility to work outdoors as well as in a normal office setting, vision to complete duties including the ability to distinguish colors, shapes and sizes and hearing and speech sufficient to communicate in person or over the telephone. Duties may require employee to exert up to 50 pounds of force occasionally, or a minimum of 25 pounds of force daily, to lift, carry, push, pull or otherwise move objects. Ability to stand, sit, climb, bend, reach, pull, push, walk, grasp, lift and have sufficient range of motion to physically perform all requirements of the position.

EDUCATION

Possession of a Bachelor's of Science degree in land surveying, civil engineering or related degree.

EXPERIENCE

Civil Engineer I – No specific type or amount of experience is required.

Civil Engineer II – A minimum of two years of professional experience equivalent to a Civil Engineer I.

Civil Engineer III – A minimum of three years of professional experience equivalent to a Civil Engineer II.

Civil Engineer IV – A minimum of five years of professional experience and possession of a current State of Michigan Professional Engineering License.

SPECIAL REQUIREMENTS, LICENSES AND CERTIFICATIONS

Must have a valid driver's license.

Desirable to have successfully passed the FE exam.