

**State of Michigan  
Civil Service Commission**  
Capitol Commons Center, P.O. Box 30002  
Lansing, MI 48909

<b>Position Code</b> 1.
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## POSITION DESCRIPTION

This position description serves as the official classification document of record for this position. Please complete the information as accurately as you can as the position description is used to determine the proper classification of the position.	
<b>2. Employee's Name (Last, First, M.I.)</b>	<b>8. Department/Agency</b> TRANSPORTATION CENTRAL OFFICE
<b>3. Employee Identification Number</b>	<b>9. Bureau (Institution, Board, or Commission)</b> Bureau of Bridges and Structures
<b>4. Civil Service Position Code Description</b> TRANSPORTATION ENGINEER-E	<b>10. Division</b>
<b>5. Working Title (What the agency calls the position)</b> Bridge Unit Design Engineer	<b>11. Section</b> Bridge Design
<b>6. Name and Position Code Description of Direct Supervisor</b> OCCHIUTO, CHARLES or MAHDAVI, ALI; ENGINEER MANAGER LICENSED-3	<b>12. Unit</b> Bridge Design
<b>7. Name and Position Code Description of Second Level Supervisor</b> WAGNER, BRADLEY; STATE ADMINISTRATIVE MANAGER-1	<b>13. Work Location (City and Address)/Hours of Work</b> 425 W. Ottawa Street, Lansing, Michigan 48933 / M-F, 7:30 a.m. – 4:30 p.m. (hours may vary)
<b>14. General Summary of Function/Purpose of Position</b>	
<p>The Bureau of Bridges and Structures (BOBS) serves as the statewide bridge authority for both MDOT owned bridges as well as local agency bridges, tasking every BOBS team member with efficient and innovative design, construction, and active preservation of our State of Michigan structural assets throughout the Great Lakes State.</p> <p>This position provides engineering functions in the specialized area of bridge design and is responsible for designing and preparing preliminary and final plans, proposal material, and cost estimating for bridge construction projects or miscellaneous facilities utilizing standard design practices and computerized programs (Microstation, Open Bridge Modeler, Power GEOPAK, ProjectWise, AASHTOWARE). Work is performed under general guidelines.</p>	

15. Please describe the assigned duties, percent of time spent performing each duty, and what is done to complete each duty.

List the duties from most important to least important. The total percentage of all duties performed must equal 100 percent.

**Duty 1**

**General Summary:** **Percentage: 85**

Prepare bridge design plans.

**Individual tasks related to the duty:**

- Design and prepare preliminary and final plans for the bridges and miscellaneous highway facilities using MDOT's current version of Microstation, Open Bridge Modeler, and Power GEOPAK, in conjunction with MDOT's sample plans.
- Design and prepare contract documents utilizing electronic survey data for state trunk line bridge and miscellaneous highway facility construction projects following American Association of State Highway and Transportation Officials (AASHTO) and MDOT's current manuals and guides for design (Standard Specifications for Construction, Bridge Design Manual, Bridge Design Guides, Standard Plans, Special Details, etc.)
- Compute quantity calculations.
- Calculate contract quantities for cost estimates and add those quantities to the plans in conjunction with MDOT's Plan Quantity Spreadsheet.
- Provide cost estimates for all major milestones utilizing AASHTOWARE.
- Estimate preliminary and final bridge costs.
- Design bridge elements utilizing bridge design computer programs, Mathcad, Excel, Leap Bridge, and MicroStation software.
- Manage project related documents utilizing ProjectWise, JobNet, and Outlook software.
- Participate in project meetings and field site visits.

**Duty 2**

**General Summary:** **Percentage: 10**

Perform on-site field inspections.

**Individual tasks related to the duty:**

- Assist in field inspection of assigned projects to determine existing conditions.
- Provide recommendations for scope of work, construction methods, traffic problems, and specifications for materials and special equipment.

**Duty 3**

**General Summary:** **Percentage: 5**

Miscellaneous duties.

**Individual tasks related to the duty:**

- Perform quality control reviews as required by supervisor for unit projects.
- Assist the supervisor as needed on various tasks within the unit.
- Research information to stay up to date on design standards, drafting standards, and computer applications.
- Attend training that is relevant to the position as requested by the supervisor.
- Duties as requested by supervisor or related to the work unit.

16. Describe the types of decisions made independently in this position and tell who or what is affected by those decisions.

Proper application of design theory. Solutions to unexpected design problems occurring during construction.

17. Describe the types of decisions that require the supervisor's review.

When accepted policies or procedures are not applicable to current design requirements.

18. What kind of physical effort is used to perform this job? What environmental conditions in this position physically exposed to on the job? Indicate the amount of time and intensity of each activity and condition. Refer to instructions.

Work involves normal physical effort of bending, stooping, and reaching for plans; moving heavy or bulky loads, sitting for long periods of time in front of a computer; overtime, heavy workloads working with specific deadlines. Field reviews of proposed or active road/bridge construction projects requires traversing irregular terrain; exposure to dirt, fumes, heavy and

high-speed traffic, or adverse weather conditions. Must have corrected vision to read plans or perform field related duties. Valid driver's license is required. Ability to perform the essential job functions with/without reasonable accommodations.

19. List the names and position code descriptions of each classified employee whom this position immediately supervises or oversees on a full-time, on-going basis.

Additional Subordinates

20. This position's responsibilities for the above-listed employees includes the following (check as many as apply):

- |   |  |
|---|--|
| <input type="checkbox"/> Complete and sign service ratings. | <input type="checkbox"/> Assign work.                      |
| <input type="checkbox"/> Provide formal written counseling. | <input type="checkbox"/> Approve work.                     |
| <input type="checkbox"/> Approve leave requests.            | <input type="checkbox"/> Review work.                      |
| <input type="checkbox"/> Approve time and attendance.       | <input type="checkbox"/> Provide guidance on work methods. |
| <input type="checkbox"/> Orally reprimand.                  | <input type="checkbox"/> Train employees in the work.      |

22. Do you agree with the responses for items 1 through 20? If not, which items do you disagree with and why?

Yes.

23. What are the essential functions of this position?

This position provides engineering functions in the specialized area of bridge design and is responsible for designing and preparing preliminary and final plans, proposal material, and cost estimating for bridge construction projects or miscellaneous facilities utilizing standard design practices and computerized programs (Microstation, Open Bridge Modeler, Power GEOPAK, ProjectWise, AASHTOWARE). Work is performed under general guidelines.

24. Indicate specifically how the position's duties and responsibilities have changed since the position was last reviewed.

25. What is the function of the work area and how does this position fit into that function?

Preparation of plans and contract documents for the construction and rehabilitation of structural highway facilities of all classifications in conformance with federal, state, or local requirements. To ensure the accuracy and completeness of the documents for bidding and construction purposes.

26. What are the minimum education and experience qualifications needed to perform the essential functions of this position.

**EDUCATION:**

Possession of a bachelor of science degree in engineering.

Possession of a bachelor of science degree in civil engineering or in civil and environmental engineering is preferred.

**EXPERIENCE:**

**Transportation Engineer 9**

No specific type or amount is required.

**Transportation Engineer 10**

One year of professional engineering experience involved in transportation systems and programs equivalent to a Transportation Engineer 9.

**Transportation Engineer P11**

Two years of professional engineering experience involved in transportation systems and programs equivalent to a Transportation Engineer, including one year equivalent to a Transportation Engineer 10.

**Alternate Education and Experience**

**Transportation Engineer 9 - 12**

Possession of a registered professional engineer license as required by the State of Michigan may be substituted for 6 months of experience at the Transportation Engineer 9-12 levels. This substitution may only be used once for any employee for qualification of appointment or early reclassification.

**KNOWLEDGE, SKILLS, AND ABILITIES:**

Ability to:

- Communicate both orally and in writing.
- Maintain favorable public relations.
- Work in a team environment.
- Utilize existing computerized technology in the completion of assigned objectives.

**CERTIFICATES, LICENSES, REGISTRATIONS:**

Possession of a valid driver's license is required.

*NOTE: Civil Service approval does not constitute agreement with or acceptance of the desired qualifications of this position.*

*I certify that the information presented in this position description provides a complete and accurate depiction of the duties and responsibilities assigned to this position.*

\_\_\_\_\_  
Supervisor

\_\_\_\_\_  
Date

**TO BE FILLED OUT BY APPOINTING AUTHORITY**

Indicate any exceptions or additions to the statements of employee or supervisors.

None

*I certify that the entries on these pages are accurate and complete.*

\_\_\_\_\_  
Appointing Authority

\_\_\_\_\_  
Date

*I certify that the information presented in this position description provides a complete and accurate depiction of the duties and responsibilities assigned to this position.*

\_\_\_\_\_  
Employee

\_\_\_\_\_  
Date