

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

Position Code

1.

## 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>  <b>TRANSPORTATION CENTRAL OFFICE</b>
<b>3. Employee Identification Number</b>   	<b>9. Bureau (Institution, Board, or Commission)</b>  <b>Bureau of Bridges and Structures</b>
<b>4. Civil Service Position Code Description</b>  <b>TRANSPORTATION ENGINEER-E</b>	<b>10. Division</b>  <b>Structure Preservation and Management</b>
<b>5. Working Title (What the agency calls the position)</b>  <b>Maintenance Structures Engineer</b>	<b>11. Section</b>  <b>Structure Preservation</b>
<b>6. Name and Position Code Description of Direct Supervisor</b>  <b>Creisher Jr., Jacob; ENGINEER MANAGER LICENSED-3</b>	<b>12. Unit</b>  <b>Statewide Region Support</b>
<b>7. Name and Position Code Description of Second Level Supervisor</b>  <b>Zakrzewski, Brian; ENGINEER MANAGER LICENSED-4</b>	<b>13. Work Location (City and Address)/Hours of Work</b>  <b>6333 Lansing Road, Lansing, MI 48917 / Mon - Thurs, 7:00 am - 5:30 pm (hours may vary)</b>

**14. General Summary of Function/Purpose of Position**

The Bureau of Bridges and Structures (BOBS) serve as the statewide structural authority for MDOT owned bridges, culverts, and special structures. The Statewide Region Support Unit provides active preservation efficiently and innovatively for our State of Michigan structural assets throughout the state. This position functions as an entry level structures engineer for the Michigan Department of Transportation (MDOT's) Statewide Region Support Unit providing routine statewide bridge maintenance program support, guidance, and engineering services for the 7 MDOT regions, contract agencies, local agencies, statewide region support unit, and bridge authorities and participating inspection, evaluation, and documentation of culvert maintenance repairs. This position requires statewide travel with overnight stays to various statewide jobsites.

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: 35

Provide routine statewide bridge maintenance program support, guidance, and engineering services for the 7 MDOT regions, contract agencies, local agencies, and bridge authorities. Routine support includes pressure relief joints (PRJ) which prevent the development of excessive compressive stress, pourable bridge joints, bridge deck penetrating crack sealers, silane and other waterproofing treatments, and shallow to deep concrete deck patches.

Individual tasks related to the duty:

- Travel statewide to assist in field reviews of maintenance activities by providing engineering expertise regarding the type of repair being done to ensure compliance with standards and further guarantee the structural integrity and durability of the repair over time (e.g., ensures correct process applied based on the specific material type as different materials require distinct processes).
- Participate in bridge maintenance Request for Action (RFA) activities when needed by providing engineering expertise regarding the type of repair being done to ensure compliance with standards and further guarantee the structural integrity and durability of the repair over time.
- Research and document bridge preventative maintenance strategies and national best practices to inform internal policy or procedure updates.
- Research and document state, federal, and local laws as they relate to bridge maintenance, construction, and mobility to support compliance and inform operational decisions.
- Assist in troubleshooting maintenance repairs with region bridge units and specialty crews.
- Assists with documentation of performance measurements with photos, written reports, spreadsheets and ArcGIS relating to bridge maintenance programs.
- Provide routine quality control review of region specialty bridge crews, contract agencies, and local agencies engaged in bridge maintenance tasks.
- Assist in training needs with region bridge personnel and local agencies to create statewide alignment.
- Assist in procurement of materials and transporting materials to region specialty bridge crews as needed.

**Duty 2**

General Summary:

Percentage: 30

Assist the Region Support Unit on specialized bridge and culvert maintenance repairs.

Individual tasks related to the duty:

- Travel statewide to assist in investigating, evaluating, and applying structure repairs by providing engineering expertise regarding the type of repair being done to ensure compliance with standards and further guarantee the structural integrity and durability of the repair over time (e.g., carbon fiber wrapping, concrete patching materials, carbon fiber jacketing, etc.).
- Assist in evaluating and troubleshooting maintenance activity repairs on bridge approaches and culverts by using special equipment that uses polyurethane for soil stabilization and slab lifting in project success. This position ensures the structural integrity of the bridge while maintenance activities are being performed (e.g., ensuring the bridge is level while equipment is being used to ensure further damage is not inflicted).
- Assist in sounding of bridge decks, beams, substructure units (non-destructive tests) to determine locations of de-bonded concrete areas. Provide interactive quality assurance in the epoxy injection of de-bonded concrete process.
- Evaluate crack widths on concrete superstructure and substructure elements for suitability of epoxy injection. Provide interactive quality assurance in the epoxy injection of concrete elements process as assigned.

**Duty 3**

General Summary:

Percentage: 30

Review and assist with developing necessary documents required for statewide alignment in bridge maintenance and preservation.

Individual tasks related to the duty:

- Review and assist with updating specifications related to the bridge maintenance program.
- Review and assist with updating special provisions for construction related to bridge maintenance activities.
- Review and assist with updating white papers for resolving and identifying maintenance problems.
- Assist with the development of budgetary tracking spreadsheets.
- Provide analysis of new and existing equipment technologies, prepare reports, and make recommendations to regions on the use of emerging technologies.

- Prepare detailed technical reports, white papers, and evaluations for training purposes, conference presentations, and technical committee approval that demonstrates bridge maintenance effectiveness.
- Assist in performing product trials of new bridge maintenance materials and methods. Monitor performance, record, and prepare evaluation reports and correspondence.
- Coordinate meetings and travel to regions to aid with selection of bridge maintenance projects.

**Duty 4**

General Summary:

Percentage: 5

Other duties as assigned

Individual tasks related to the duty:

- Other duties as assigned.

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

This position requires independent decision-making ability. For routine assignments, the position is required to perform duties with little or no immediate supervision in the field and at bridge sites. The position learns to provide directions to routine bridge maintenance to field crews statewide that impacts the work performed on bridges. This position makes independent judgement of materials and methods associated with routine bridge maintenance assignments.

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

Unique situations with no past policy or when existing policy is unclear. Assistance in mitigating controversies. Revision of program scope, budgets, and schedule.

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

Work requires the ability to travel statewide to MDOT and Local Agency bridge locations with overnight stays to perform field reviews of proposed or active bridge maintenance activities which requires traversing various types of terrain; exposure to dirt, fumes, adverse weather conditions, and heavy and high-speed traffic including moving in and out of traffic; working in permit required confined spaces; working above open water; and working from heights up to 150 feet from a bucket truck or reach-all unit. Ability to transport heavy or bulky loads, read plans and remain in a stationary position for extended periods of time working from a computer; overtime, heavy workloads working with specific deadlines. Position requires availability outside normal working hours based on operational needs.

**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):**

N Complete and sign service ratings.

N Assign work.

N	Provide formal written counseling.	N	Approved work.
N	Approve leave requests.	N	Review work.
N	Approve time and attendance.	N	Provide guidance on work methods.
N	Orally reprimand.	N	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 functions as a structures engineer for the Michigan Department of Transportation (MDOT's) Statewide Region Support Unit in a multitude of field-related maintenance aspects, providing technical advice and consultation to region staff in areas of bridge engineering and bridge preventative maintenance. This position participates in inspection, evaluation, documentation, and assists in repairs with the region specialty bridge crews, contract agencies, local agencies, and bridge authorities on preservation and maintenance projects. This position requires travel to various statewide jobsites and participants in specialized structure repairs (e.g. deck, beam, culvert, and substructure injections, soil stabilization, slab lifting, concrete beam patching, substructure patching). This position assists in the evaluation and implementation of new innovations in materials, equipment, and techniques related to the bridge preventive maintenance program. This position will help develop, review, and update documents for statewide alignment in bridge maintenance and that they are in line with established statewide policies and procedures. This position requires statewide and overnight travel with the Statewide Region Support Unit.

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?

The BOBS serves as the statewide structural authority for MDOT owned bridges, culverts, and special structures. The Statewide Region Support Unit provides active preservation efficiently and innovatively for our State of Michigan structural assets throughout the state. This position functions as a structures engineer for the MDOT's Statewide Region Support Unit in a multitude of field-related maintenance aspects, providing bridge maintenance program support, guidance, and engineering services and participating in inspection, evaluation, and documentation of specialized bridge and culvert maintenance repairs.

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 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:**

- MDOT design policies, procedures, and practices.
- Knowledge of engineering principles and practices used in the maintenance of all types of roads, bridges, and related structures.
- Ability to make mathematical computations.
- Ability to read and interpret engineering plans, specifications, and technical reports.
- Ability to maintain records and prepare reports and correspondence related to the duties.
- Communicate effectively in a professional manner.
- Ability to maintain favorable public relations.

**CERTIFICATES, LICENSES,****REGISTRATIONS:**

Possession of a valid driver's license is preferred.

*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.*

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Supervisor

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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.*

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Appointing Authority

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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.*

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Employee

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Date