

**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.

2. Employee's Name (Last, First, M.I.)	8. Department/Agency TRANSPORTATION CENTRAL OFFICE
3. Employee Identification Number	9. Bureau (Institution, Board, or Commission) Bureau of Bridges and Structures
4. Civil Service Position Code Description Transportation Engineer - A	10. Division Structure Project Division
5. Working Title (What the agency calls the position) Fabrication Technical Engineer	11. Section Structure Construction Section
6. Name and Position Code Description of Direct Supervisor FILCEK, MATTHEW; ENGINEER MANAGER LICENSED-3	12. Unit Structural Fabrication Unit
7. Name and Position Code Description of Second Level Supervisor LIPTAK, RICHARD E; ENGINEER MANAGER LICENSED-4	13. Work Location (City and Address)/Hours of Work 8885 Ricks Road Lansing, MI 48917 / M-F, 7:30a to 4p (may vary)

14. General Summary of Function/Purpose of Position

The Bureau of Bridges and Structures (BOBS) Structural Fabrication Unit serves as the statewide fabrication authority responsible for implementing the Michigan Department of Transportation's (MDOT) quality assurance program for fabricated and manufactured bridge, culvert, and highway structural products supplied to MDOT projects. This position serves as the recognized resource Fabrication Technical Engineer. Fabricated/manufactured bridge, culvert, and highway structural products consist of steel bridge beam/girders; prestressed concrete bridge girders; bridge bearings (mechanical and high-load multi-rotational); bridge expansion joints (modular bridge expansion and finger joints); bridge railings; steel highway structures (cantilever, truss, dynamic message sign, traffic signal mast arm & pole, and bridge mounted signs); spun concrete poles; culverts; noise walls; mechanically stabilized earth wall panels; and precast concrete bridge element systems.

This position serves as the recognized resource responsible for reviewing advanced level fabricator/manufacturer technical documents and contract documents (e.g., corrective action request) to verify compliance with statewide and national industry standards related to fabrication and manufacturing. This position also participates in the development of and serves as a technical reviewer of fabrication related special provisions used for MDOT projects. Additionally, this position is responsible for assisting with troubleshooting fabrication issues related to materials, fabrication process, or design.

This position requires possession of a valid driver's license to perform fabrication facility visits and project site reviews.

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: 50

As the recognized resource, review advanced level fabricator/manufacture technical documents and contract documents. Assist supervisor ensure statewide alignment of bridge and structural products.

This duty requires possession of a valid driver's license to perform fabrication facility visits and project site reviews.

Individual tasks related to the duty:

- Reviews and accepts advanced level fabricator/manufacture technical documents (e.g., corrective action requests) based on Structural Fabrication Quality Manual (SFQM) and other MDOT contract requirements.
- Reviews fabricator/manufacture technical documents (e.g., request for information, nonconformance reports). This includes verifying technical documents meet MDOT submittal requirements and propose whether document should be approved/not approved. Submits to supervisor for MDOT's final disposition from a licensed engineer.
- Reviews concrete mix design submittals to verify qualification is compliant with contract requirements. Approves mix designs that meet the contract.
- Reviews welding procedure specification (WPS) submittals to verify compliance with contract requirements. Approves WPSs that meet the contract.
- Reviews standard fabricator/manufacture repair procedures to verify compliance with MDOT and industry standards. This includes verifying submitted repair procedures meet MDOT procedural and established technical requirements and proposing whether document should be approved/not approved. Submits to supervisor for MDOT's final disposition from a licensed engineer.
- In coordination with supervisor, utilize SFU's consultant contracts to provide fabrication technical document reviews as needed to maintain operational services.
- Maintains a database for tracking technical document reviews. Logs data from all technical reviews to create metrics for fabrication technical document reviews and document historical records. Metrics are shared throughout the year and used to show trends, potential issues, demonstrate effectiveness of changes, and support continuous improvements.
- Coordinates with other technical review groups, if applicable, when input from outside the Structural Fabrication Unit's fabrication and material expertise is required.

Duty 2

General Summary:

Percentage: 30

Reviews and ensures contract documents meet MDOT and industry best fabrication practices to improve project quality and minimize project risks. Participate in the development of and serve as a technical reviewer of special provisions.

This duty requires possession of a valid driver's license to perform fabrication facility visits and project site reviews.

Individual tasks related to the duty:

- Review contract documents at key milestones to ensure the quality of the documents related to fabrication (e.g., materials, constructability, welding, non-destructive testing, coating, concrete placement, etc.) conform to MDOT and industry standards and policies. Coordinate with other team members and supervisor as needed.
- Provide support to consultants performing technical document reviews and serve as a liaison between MDOT Consultants and MDOT.
- Provide feedback to Bridge Design, Ancillary Structures, Bridge Standards, and Regions/Transportation Service Centers (TSC) by sharing findings, trends, and other captured data of importance.
- Participate in the development of special provisions related to fabrication to promote statewide consistency and ensure quality.
- Perform technical reviews of special provisions.
- Develop and maintain a review log that categorizes findings to provide management with trends and other valuable metrics that support continuous improvements.
- Provide training on an as needed basis to support continuous improvement.
- Communicate project status to MDOT management through project data.

Duty 3

General Summary:

Percentage: 20

Other duties as assigned by the Unit Manager.

Individual tasks related to the duty:

- Supports troubleshooting of basic/intermediate level fabrication issues as needed.
- Participates and presents at annual fabrication quality assurance and fabrication industry workshops and other impromptu meetings.
- Coordinates and hosts annual statewide shop drawing calls to foster statewide shop drawing review alignment.
- Assists in troubleshooting fabrication issues by researching MDOT specifications and industry standards and propose recommended solutions to licensed engineer (supervisor).
- Develops and maintains logs and other management metrics that can be reviewed and shared at intervals throughout the year.
- Attends fabrication facility visits and project site visits as required.
- 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.

- Application of MDOT Structural Fabrication Unit's policy, program, standard operating procedures, and guidance documents.
- Scheduling and prioritizing supplier technical document and contract document reviews based on date received, expedited review requests, and other work priorities.
- Respond to supplier technical document questions using project logs, spreadsheets, and industry standards.
- Cases of engineering judgement for acceptance of corrective action requests.
- Determining overtime required to meet operational needs of the Department.

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

- Deviation from statewide fabrication policy, program, standard operating procedures, and guidance documents.
- Engineering judgement for acceptance of requests for information, nonconformance reports and/or fabricator repair procedures.
- Verifying if a potential conflict of interest exists with the utilization of the Structural Fabrication Unit's consultant contracts.
- Approval of purchases and training.
- Employee leave requests.

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.

- Requires some in-state and out-of-state travel. Work schedules and priorities can change, must be able to prioritize the work and keep supervisor informed when commitments are not met.
- Work occurs year around and in all weather conditions.
 - Shop work is required in fabrication plants where potentially hazardous conditions are present and in high traffic volumes. Field work can consist of traversing various structures and/or terrain.
- Ability to inspect or investigate various structures and/or sites.
- Ability to move equipment weighing up to 100 pounds.
- Fabricator and contractor work schedules vary. Position may require availability outside normal working hours based on operational needs.
- The position is required to visit fabrication facilities (in-state and out-of-state) and project sites which requires travel and office duties performed while at the remote work site using laptop computer and mobile devices.
- This position requires possession of a valid driver's license.

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 | Approve 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 serves as the recognized resource responsible for reviewing advanced level fabricator/manufacturer technical documents and contract documents (e.g., corrective action request) to verify compliance with statewide and national industry standards related to fabrication and manufacturing. This position also participates in the development of and serves as a technical reviewer of fabrication related special provisions used for MDOT projects. Additionally, this position is responsible for assisting with troubleshooting fabrication issues related to materials, fabrication process, or design.

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 work area is responsible for implementing MDOT's quality assurance program for fabricated/manufactured products that are required to be accepted based on "Fabrication Inspection" per the MDOT Materials Quality Assurance Program manual. This position is responsible for reviewing fabricator and manufacturer technical documents, reviewing contract documents (plans and specifications), and being a technical reviewer of special provisions. The position needs to engage Structural Fabrication Unit team members and consultants that are on contract to the work area while reviewing fabricator technical documents. Additionally, the position will be required to develop metrics related to their duties and share continuous improvement strategies with the supervisor.

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

EDUCATION:

Possession of a bachelor's degree in a field of engineering.

EXPERIENCE:

Transportation Engineering 12

Three years of professional engineering experience involved in transportation systems and programs equivalent to a Transportation Engineer, including one year equivalent to a Transportation Engineer P11.

KNOWLEDGE, SKILLS, AND ABILITIES:

Knowledge of:

- American Society for Testing and Materials (ASTM), American Association of State Highway and Transportation Officials (AASHTO), American Welding Society (AWS), Precast/Prestressed Concrete Institute (PCI), and other industry standards.
- Mathematics for testing calculations.
- Tools and basic maintenance.
- Computers to work extensively with a database for testing and reporting as well as managing sampling and texting logs.
- Structural analysis, design, and contract plan presentation.
- Fabrication inspection and engineering.
- Quality management systems.
- Material specifications and testing.

Ability to:

- Communicate effectively utilizing various communication devices.
- Operate testing equipment.
- Work closely with others in a team environment.

**CERTIFICATES, LICENSES,
REGISTRATIONS:**

- Possession of a valid driver's license is required and maintain throughout employment in the position.
- The following are required within 12 months of the date of hire into the position and must maintain throughout employment:
 - Michigan Concrete Association (MCA) Field Testing Technician Certification
 - American Concrete Institute (ACI) Field Testing Technician-Grade I Certification
 - American Welding Society Destructive Testing training course
 - Precast/Prestressed Concrete Institute (PCI) Level I & II Certification

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.

N/A

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