

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ELECTRONIC TICKETING SYSTEM

COS:MRB

1 of 4

APPR:TES:KPK:04-22-22

a. Description. The Contractor may elect to utilize an electronic ticketing system (e-ticket system) for aggregate, concrete, and/or HMA materials. Ensure the following requirements are met by the e-ticket system for individual and cumulative material loads delivered to the project.

b. System Requirements.

1. The e-ticket system must create discrete material transport data (e-ticket) for each material load as stored data within secure password protected cloud storage.

2. Ensure the e-ticket system is fully integrated including calibration with the load read-out system of the scales and liquid metering system. Software and hardware must prevent alteration of the data inputs from the scales and liquid metering system, except for available space for the Contractor and Engineer to add comments pertaining to the material on each ticket. Record the user's name for all entered comments.

3. Ensure the e-ticket system is capable of generating printed paper tickets (in triplicate) as a redundancy if cellular or Wi-Fi capabilities are disrupted during the course of the work.

4. Ensure the e-ticket system is accessible to the Engineer and/or their representatives in real-time by way of a mobile device (iOS and Android) and a desktop computer.

5. The e-ticket system must allow individual tickets and daily summaries to be available and exported in real-time upon ticket creation as a comma separated value (CSV) or Microsoft Excel (XLSX) file.

6. Email delivery systems are not permitted.

7. Pictures or scanned representations of weigh tickets are not permitted.

8. Each truck delivering materials to the project site must have a unique truck identifier. The e-ticket system must provide the ability for the Engineer and/or their representatives to safely identify which load they are accepting with the associated e-ticket.

9. The e-ticket system must not require a license, fee, or other proprietary barrier for the Engineer to view, add comments, or download e-tickets.

10. Confirm all e-ticket system requirements are met at the preconstruction meeting or respective material preproduction meeting.

11. Incorporate the e-ticket system process into the Contractor's and/or Subcontractors applicable QC plan.

c. Training and Technical Support. Furnish the Engineer with the system specifications and all required documentation for data access. Provide a qualified representative for on-demand technical assistance during the initial setup, preconstruction verifications, and data processing as needed during the project. Furnish operator settings, user manuals, training videos, and required viewing/export software for review. Furnish training for the Engineer and their representatives prior to utilizing the system for work operations and placement of materials.

d. Materials. The e-ticket must contain the following minimum data fields:

1. Aggregate Tickets.
 - Project Number
 - Contractor's Name
 - Supplier Name and Pit of Origin Number
 - Sequential, Non-duplicate, Ticket Number
 - Type of Material Being Weighed by Class/Number
 - Date and Time Ticketed
 - Unique Truck Identifier
 - Mass (Weight), Gross
 - Mass (Weight), Tare
 - Mass (Weight), Net
 - Net accumulated tons shipped project daily total
2. Concrete Tickets.
 - Project Number
 - Contractor's Name
 - Producer Name and Plant Designation/Supplier Plant Code
 - Sequential, Non-duplicate, Ticket Number
 - Grade of Concrete
 - JMF Number (Supplier Product Code)
 - Batch Date and Time
 - Unique Truck Identifier
 - Maximum allowable on-site addition of water
 - Cubic yards of concrete being transported
 - Accumulated cubic yards shipped project daily total
3. HMA Tickets.
 - Project Number
 - Contractor's Name
 - Plant Name
 - Sequential, Non-duplicate, Ticket Number
 - Type of Material Being Weighed by Class/Number
 - JMF Number (Supplier Product Code)
 - Date and Batch Time Ticketed
 - Unique Truck Identifier
 - Mass (Weight), Gross
 - Mass (Weight), Tare
 - Mass (Weight), Net
 - Net accumulated tons shipped project daily total

e. Construction.

1. e-Ticketing Use. Notify the Engineer of the intent to use an e-ticket system by any Contractor, Subcontractor, and/or supplier and specify the material(s) and each respective e-ticket system at the preconstruction meeting. Determine the availability of required cellular service capabilities within the project limits prior to declaring the intent to utilize an e-ticket system. The Engineer may require conventional paper tickets if the e-ticketing plan is submitted after operations have commenced or training is not provided before operations commence.

e-Ticketing Cellular or Wi-Fi Service Verification. Field verify at existing project features within the project limits to determine the suitability of cellular or Wi-Fi connectivity for the purposes of utilizing any selected e-ticket system(s).

If the project contains locations with limited cellular service, furnish an alternative system to allow for continued and uninterrupted access to the e-ticket system, or immediate use of paper tickets will be required until uninterrupted service can resume.

2. e-Ticketing Plan. Any Contractor, Subcontractor, and/or suppliers using e-ticketing must furnish an e-ticketing plan to the Engineer at least 30 days prior to the start of work operations for material placement. The e-ticketing plan must indicate the selected e-ticket system(s); identify training requirements, including proposed training dates; identify the item(s) of work, and specific material(s) delivered for their respective e-ticket system; and confirm cellular or Wi-Fi service verification. The Engineer reserves the right to reject the e-ticketing plan or request additional information or clarification prior to the acceptance of the e-ticketing plan. Furnish Engineer access to the e-ticket system(s) after acceptance of the e-ticketing plan. Do not deliver any material to the project using the e-ticket system before obtaining the Engineer's acceptance of the e-ticketing plan.

3. e-Ticketing Meeting. At the discretion of the Engineer, a meeting with the Contractor and other involved parties (e.g., Engineer representatives, e-ticketing supplier representative, material supplier representative, contractor industry representatives, etc.) may be held prior to e-ticketing implementation for work operations. The purpose of the meeting is to discuss the implementation of the e-ticketing plan and exchange of electronic data. The Contractor or their representative must explain the operations and procedures for the e-ticketing technology, including contingencies should access to e-tickets become interrupted during the course of the work. The meeting attendees may also discuss the workflow for field verification, steps to be taken to resolve concerns with the e-ticket system, and compliance of e-ticketing operations with the contract.

4. Miscellaneous. Delays due to loss of cellular coverage or any other technical or mechanical issues with an e-ticket system, software, hardware, and/or other components will not be considered entitlement to any form of monetary adjustment or time extension. The Engineer may reject material at any time if e-tickets become unavailable or fail to provide appropriate and correctly formatted information at the time the e-ticket is transmitted. The Contractor, at their discretion, may substitute printed paper tickets in place of electronic tickets, provided the Contractor communicates to the Engineer why printed paper tickets are being issued, and all paper tickets comply with the requirements of section d. of this special provision.

f. Measurement and Payment. No separate or additional payment will be made for the use of e-ticket systems or printed paper weigh tickets. The costs to meet these specification

requirements including all e-ticket system supplier representation, training, software, hardware, and/or other system components are to be included in the price bid for other contract items.