<u>MATERIAL ELECTRONIC DELIVERY MANAGEMENT SYSTEM</u>

1. <u>DESCRIPTION</u>. This work shall consist of incorporating a Fleet Management System for all bituminous materials delivered to the project to monitor and report delivered loads during construction operations from the point of source measurement and load-out to the point of incorporation into the project.

    The provisions of this section do not preclude or dismiss the requirement of individual truck tickets as required under Section 406 unless otherwise authorized by the Engineer

2. <u>MATERIALS AND EQUIPMENT</u>. No fewer than 21 working days prior to the placement of any material covered herein, the Contractor shall submit technical information pertaining to a Fleet Management System, as well as the identity of all qualified representatives and users of the system, to the Engineer for acceptance. Qualified representatives and users shall provide on-site technical assistance prior to project material placement operations. This assistance shall include initial setup, pre-construction verifications, and calibrations. Additionally, assistance shall be available at the Engineer's request for any data management and processing consultations on an as needed basis for the duration of the project.

    Included with the above submittal, the Contractor shall provide operator settings, user manuals, and required viewing/export software, and shall provide evidence that:

    (a) A wireless fleet management system capable of monitoring all delivery vehicles (both Contractor owned and third party) and placement vehicles. Those vehicles are herein identified as all delivery trucks of any variety used to incorporate materials into the project. Any vehicle and inherent load of material not conforming to the above provision during construction operations will be removed from the project and the material rejected.

    (b) The Engineer will have the ability to access real time monitoring through the use of Agency-issued devices such as computers, tablets, and smartphones, and that training will be provided on the effective use of those devices.

    (c) The fleet management system is fully integrated with the Contractor's load read-out weighing system at the material source.

    (d) The system has an internal backup in case of power loss and shall additionally have the capability to store data if connectivity is lost and be able to transmit that data when connectivity is re-established.

3. <u>CONSTRUCTION REQUIREMENTS</u>.

    (a) <u>General</u>. The Contractor shall ensure that the following requirements are met:

        (1) All equipment is installed and is being operated in accordance with all manufacturer's specifications.

(2) All fleet management systems are functional in accordance with this provision.

(b) <u>Data Deliverables</u>. The Contractor shall provide the Engineer with a method with which to gather data and generate report summaries by way of apps, web pages, cloud based computing, or any other method proposed by the Contractor and approved by the Engineer. All data shall be accessible by the Engineer at all times during construction operations or as otherwise requested. Specific deliverables include, but are not limited to, the following:

(1) <u>Real-Time Continuous Data Items</u>. The Contractor shall provide the Engineer access to a fleet management system which displays the following information in real-time and compatible with both iOS and Windows environments. This real-time data applies to each project material delivery vehicle and includes the following required data:

a. Contractor name

b. Project name and number

c. Plant name and location

d. Date

e. Delivery vehicle identification

f. Delivery vehicle departure time from load source and arrival time at paver.

g. Description of material being delivered (e.g. Bituminous Concrete Pavement Type IVS, Bonded Wearing Course, etc.). If abbreviations are used, a key shall be provided.

h. Mix design ID

i. Asphalt cement content

j. Aggregate batch weights

k. Net weight of material being delivered (to 0.01 ton)

l. Running daily total of net weight delivered (to 0.01 ton)

m. Fillable fields to manually enter pavement temperature at plant and at paver.

(2) <u>Daily Data Summaries</u>. The Contractor shall provide the following summary information in an electronic format to the Engineer within one working day of the previous day's operations. All daily summaries shall be in such a format that each individual delivery vehicle utilized on the project is separately identified for the specific operations in which it was utilized. Daily summaries shall include the following information for each project material delivery vehicle:

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a.   Contractor name

b.   Project name and number

c.   Date

d.   Delivery vehicle identification

e.   Number of loads delivered

f.   Net weight for each individual load delivered (to 0.01 Ton)

g.   Mix temperature at time of loading

h.   Time loaded at facility

i.   Time unloaded at project

j.   Total quantity claimed for payment

k.   Total virgin AC used (to 0.01 Ton)

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4. <u>METHOD OF MEASUREMENT</u>. The quantity of Special Provision (Material Electronic Delivery Management System) to be measured for payment will be on a lump sum basis in the complete and accepted work.

5. <u>BASIS OF PAYMENT</u>. The accepted quantity of Special Provision (Material Electronic Delivery Management System) will be paid for at the Contract lump sum price. Payment will be full compensation for furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the work, including all required training and maintenance.

  (a) The first payment of 50% of the contract lump sum price will be made following the acceptance and approval of the contractor submittal by the Engineer.

  (b) The remaining 50% of the contract lump sum price will be paid on a prorated basis for the estimated duration of Contract work remaining.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Material Electronic Delivery Management System)	Lump Sum