

**VEHICLE DETECTION SYSTEM.****(REV 12-20-16)**

ARTICLE 660-2 is expanded by the following:

**660-2.5 Truck Parking Detection System:** Furnish and install a truck parking detection system in accordance with the details shown in the Plans. The detection system must be capable of the following:

1. Detecting vehicle occupancy, including partial occupancy, for each parking space.

2. Detecting FHWA Vehicle Class 2 and above vehicles.

3. Vehicle detection in all weather conditions including heavy rain, fog, snow, ice, and high winds.

All materials furnished, assembled, fabricated, or installed must be new products.

**660-2.5.1 Technology Type – Wireless Magnetometer:** Meet the requirements of 660-2.1.2.4.

**660-2.5.2 Mechanical Requirements:** Meet the requirements of 660-2.1.3.

**660-2.5.3 Environmental Requirements:** Meet the requirements of 660-2.1.4.

**660-2.5.4 Performance Requirements:** Turnover accuracy is defined as the detector's ability to identify parking events correctly (ingress and egress). Occupancy accuracy is defined as the percentage of time the detector reports the status of the parking spaces correctly (vacant or occupied).

Each detection system must be tested to meet the following minimum performance requirements, conducted over two 15-hour (6:00p.m. to 9:00 a.m.) sessions:

Turnover Accuracy – 90%

Occupancy Accuracy – 95%

**660-2.5.6 Installation Requirements:** All components must be installed in accordance with the manufacturer's requirements.

Wireless detection must be activated and communicating with the repeaters/relay nodes and access point/data collector/data aggregator before installing them into the ground. Provide evidence of functionality to the Engineer prior to installation. Loop sealant used must be listed on the Approved Product List (APL).

All above ground components must be placed on new poles and have a minimum mounting height of 15 feet above ground level.

Cabinets provided must be listed on the APL.

**660-2.5.7 Security Requirements:** Provide a Cyber Security Plan to the Engineer that includes security for all interfaces within the Department's communications network, as well as all Department server vulnerabilities introduced by the proposed system.

**660-2.5.8 Warranty:** Meet the requirements of 660-4. All wireless magnetometer batteries must include a five year warranty.

**660-2.5.9 Method of Measurement:** The Contract unit price for each wireless magnetometer detection system will include furnishing, placement, and testing of all components, materials and equipment, and for all tools, labor, equipment, hardware, operational software packages and firmware, supplies, support, personnel training, shop drawings, warranty documentation, and incidentals necessary for a complete and accepted installation.

**660-2.5.10 Basis of Payment:** Price and payment will be full compensation for all work specified in this Section. Payment will be made under:

Item No. 660-5      Vehicle Detection System – Wireless Magnetometer –  
each.