

## 805-T-191 MAGNETOMETERS AND MICROLOOP DETECTORS

*(Revised 04-25-21)***Description**

This work shall consist of furnishing and installing magnetometer or microloop vehicle detection, as specified in the plans.

**Materials**

Materials for microloop detectors shall be selected from the QPL of Traffic Signal and ITS Devices. The microloop detectors selected shall be capable of counting vehicles in addition to detecting vehicle presence.

Each microloop detector location shall include the following items:

1. Non-invasive probe, lead-in cable and carriers for microloop detector as shown on the plans;
2. 3-in. diameter schedule 80 HDPE conduit containing the probes, lead-in cable and carriers;
3. Buried service wire encapsulation kit compatible with microloop detector for all splicing between the lead-in cable and the home run cable;
4. Installation kit, one for each conduit containing probes;
5. All mounting hardware, conduit bushings, wiring, connectors, grounding wires, ground rods, and grounding cables necessary to complete the microloop detector location installation.

**Testing**

Before installation of magnetometer or microloop probes the Contractor shall confirm the adequacy of the magnetic field intensity, to be sure that the range is suitable for their operation.

The Contractor shall demonstrate that the microloop count data recorded in the controller's detector log is within 5% of count data obtained visually over a 15-minute period for every detector installation. The test shall be performed by the Contractor in the presence of the Engineer. If detector sensitivity or calibration settings are adjusted in order to meet this test, the new settings shall be recorded on the wiring diagram in the cabinet.

**Installation**

Arrangement of probes shall be located at maximum distance from metal objects as per manufacturer's recommendation. Probes shall be installed with their long dimension vertical, and with the cable end at the top. Probes shall be firmly supported, so the lateral and vertical motion is restricted. Probes shall be connected in series. The splice shall be soldered by means of hot iron, or pouring or dripping without flames, with rosin core solder and shall be insulated and waterproofed in accordance with the manufacturer's specifications.

Conduit for the microloop detector probes shall be directionally pushed beneath the pavement at the depth and slope determined by the manufacturer to ensure proper carrier and probe installation. The Contractor shall repair any damage to the pavement that occurs during the

installation. The microloop detector probe location in each lane shall be per the manufacturer's recommendation.

**Method of Measurement**

Magnetometer detector and microloop detector probe will be measured by the number of units installed.

Conduit and signal cable will be measured in accordance with 805.15.

**Basis of Payment**

If specified as pay items, magnetometer detector and microloop detector probe will be paid for at the contract unit price per each.

Conduit and signal cable will be paid for in accordance with 805.16.

Payment will be made under:

**Pay Item**

**Pay Unit Symbol**

Magnetometer Detector .....	EACH
Microloop Detector Probe .....	EACH

The cost of coring the pavement, sealant, and all work necessary for proper installation and operation of the in-pavement sensors shall be included in the cost of magnetometer detector.

The cost of the detector unit, lead-in cable, and all work necessary for proper installation shall be included in the cost of magnetometer detector or microloop detector probe.

The cost of all hardware and work required to provide and install signal cable from microloop detector probe, including extra-low voltage (home-run), from the handhole adjacent to the detector probe to the controller cabinet shall be included in the cost of signal cable.

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