# RADAR VEHICLE DETECTION SYSTEM

Effective: July 01, 2015

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886.03TS

Description.

This work shall consist of furnishing and installing a radar vehicle detection system as specified and/or as shown on the plan. This pay item shall include all necessary work and equipment required to have a fully operational system including but not limited to the detector unit/s, the interface unit and all the necessary hardware, cable and accessories required to complete the installation in accordance with the manufacturer’s specifications.

The radar vehicle detection system shall work under all weather conditions, including rain, freezing rain, snow, wind, dust, fog, and changes in temperature and light. It shall work in an ambient temperature range of -34 to 74 degrees Celsius. It shall have a max power output of 75 watts or less. The detection system shall be capable of detecting stopped vehicles; this is often referred to as Frequency-Modulated Continuous Wave (FMCW). Each detector system shall be capable of recording volume (Count Data) and speed while gathering this data for each detection field/travel or turn lane configured in the device. Detection zones and corresponding output channels shall allow for the conditional filtering of actuations based upon speed and/or distance from sensor characteristics of each detected vehicle.

The radar vehicle detection system shall be compatible with the District’s approved traffic controller assemblies utilizing NEMA TS 1 or NEMA TS 2 controllers and cabinet components for full time operation. The radar vehicle detection system shall provide a minimum of one interface unit that has Ethernet connectivity, surge protection and shall be capable of supporting a minimum of **4** detector units. In cases where vender utilizes separate detector units between uptight and advance detection, Ethernet connectivity and surge protection shall be capable of connecting to all detector units using a maximum of two IP address unless otherwise approved by the engineer.

The stop bar radar vehicle detection system shall have true presence capabilities in which it can detect stopped, slow moving or turning vehicles similar to the Departments in-pavement detection. This is especially important at side streets where driveways are near the intersection. The radar shall be able to drop the call if the vehicle leaves the detection zone. A manufacture statement confirming proper operation is required along each catalog cut submittal. The Department will not allow substitutes for other types of detection.

The far back radar detection shall have a detection range of 400 feet or better. Stop Bar detection shall be capable of detecting vehicles in every receiving lane on a given approach where a sensor is aimed. Stop Bar detection shall adequately detect vehicles from at least 75 feet behind stop bar for all lanes of a given intersection approach and as many feet beyond stop bar as indicated on the plans.

A representative from the supplier of the radar vehicle detection system shall supervise the installation and testing of the radar vehicle detection system and shall be present at the traffic signal turn-on inspection. Once the radar vehicle detection system is configured, it shall not need reconfiguration to maintain performance, unless the roadway configuration or the application requirements change.

The mounting location/s of the detector unit/s shall be per the manufacturer’s recommendations. If an extension mounting assembly is needed, it shall be included in this item. All holes drilled into signal poles, mast arms, or posts shall require rubber grommets to prevent chafing of wires.

The radar vehicle detection system shall be warrantied, free from material and workmanship defects for a period of two years from final inspection.

Detector channel configurations, BIU assignments, and call phases to the controller shall be labeled on the face of the cabinet shelf containing the Detector Rack or Detection System Interface unit.

All applicable configuration files, user manuals (hardware and software), interface software, warranty certification specific to cabinet location shall be provided on USB flash drive to be left inside controller cabinet.

Basis of Payment.

This work shall be paid for at the contract unit price each for RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR; RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, FAR BACK; RADAR VEHICLE DETECTION SYSTEM, SINGLE APPROACH, STOP BAR AND FAR BACK, the price of which shall include the cost for all of the work and material described herein and includes furnishing, installing, delivery, handling, testing, set-up and all appurtenances and mounting hardware necessary for a fully operational radar vehicle detection system.