88600600 DETECTOR LOOP REPLACEMENT (LCDOT)

Effective: January 1, 2007
Revised: May 19, 2014

Description: This work shall consist of replacing damaged traffic signal detector loops.

General: The work shall be performed according to the applicable portions of Section 816 [Unit Duct], Section 879 [Drill Existing Foundation or Handhole], and Section 886 [Detector Loop] of the "Standard Specifications", the details shown on the plans, and the following:

The Contractor shall notify the **County Traffic Engineer** at **(847) 377-7400** prior to the beginning of any operation that may damage existing detector loops. If damage to detector loop(s) is unavoidable, the Contractor shall be responsible for replacement of the damaged detector loop(s). The work shall be performed by an approved electrical contractor as directed by the Engineer.

A minimum of seven working days prior to the Contractor cutting loops, the Engineer shall mark the location of the proposed loops, and contact the **County Traffic Engineer** at **(847) 377-7400** to inspect and approve the layout.

To minimize the length of time that a signal operates without vehicle detection, detector loops for active traffic signal installations shall be installed in a timely manner. If in the opinion of the Engineer, construction conditions are suitable for loop installation(s), the Engineer shall notify the Contractor to proceed. The detector loops shall be installed and fully operational within 14 calendar days following notification to proceed by the Engineer. This 14 day period shall be in effect throughout the entire year, including the off-season, regardless of the Contractor's working day status. Failure by the Contractor to complete the loop installation(s) within the specified timeframe shall result in liquidated damages in the amount of **$500.00** per calendar day, per occurrence.

The Contractor may reuse the existing coilable non-metallic conduit (unit duct) located between the existing handhole and the pavement. If the existing unit duct is damaged or cannot be located, or if additional unit ducts are required to provide one lead-in duct for each proposed loop, the Contractor shall install new one inch coilable non-metallic conduit (unit duct). When installing new unit duct, the Contractor will need to drill through the existing pavement and into the existing handhole. The Contractor shall remove all burrs from the edges of new or existing unit ducts to reduce the potential for damaging the new loop wire.

Detector loop(s), to be installed in new asphalt pavement, shall be installed below the surface course. Detector loop(s) shall be located to miss existing pavement cracks, if possible. The location of each dive hole shall be marked on the face of the curb, the edge of pavement, or the handhole, with a saw cut ¼ inch deep by four inches long.

All new or replacement lead-in cables shall be connected to the loop interface panel using appropriate crimp-on, spade type connectors. The resistance to ground for new detector loops, measured at the traffic signal cabinet, shall be a minimum of 500 megaohms under any conditions of weather or moisture. Inductance shall be between 50 and 700 microhenries. Quality readings shall be more than five.

Saw cuts from the loop to the edge of pavement shall be perpendicular to the edge of pavement in order to minimize the length of the saw cut, unless otherwise directed by the Engineer and/or as shown on the plans.

All corners of the loop shall be drilled with a 2-inch diameter core to prevent sharp bends in the loop wire. Diagonal saw cuts of the loop corners shall not be allowed.

The detector loop cable insulation shall be labeled with the cable specifications. Each detector loop lead-in wire shall be labeled in the handhole using a Panduit 250W175C waterproof tag or an approved equal. The tag will be secured to each wire with nylon ties.

The loop sealant shall consist of a two component thixotropic, chemically-cured polyurethane. The sealant will be Chemque Q-Seal 295, Perol Elastic Cement A/C Grade or an approved equal. The sealant shall be installed 1/8 inch below the surface. Excess sealant, which accumulates on the surface, shall be removed immediately. Loop sealant used to reseal existing loops shall be composed of an asphalt-based compound. The sealant will be Doseal 230 or an approved equal.

Method of Measurement: The Detector Loop Replacement will be measured in place in feet of the length measured along the sawed slot in the pavement containing the loop and lead-in. *(For example, a 6-foot by 6-foot loop with an 8-foot lead-in will be paid as 32 feet of DETECTOR LOOP REPLACEMENT.) Round loop(s), 6 feet in diameter may be substituted for the 6 feet by 6 feet square loop(s) and shall be paid for as 24 feet of DETECTOR LOOP REPLACEMENT.*

Basis of Payment: This work will be paid for at the contract unit price per foot of DETECTOR LOOP REPLACEMENT. *The unit price shall include furnishing, installing, and testing the detector loop complete, in place. Drilling handholes, sawing the pavement, drilling the loop corners, furnishing and installing unit-duct, cable splicing, trench/backfill, and restoration of landscaping shall also be included in the unit price.*