# DETECTOR LOOP REPLACEMENT

Revised on: 12/30/2024

This work shall be done in accordance with Section 886 of the standard specifications insofar as applicable and the following provisions. This work will take place at the following intersections:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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The detector loop layout shall be coordinated with the Engineer and the KDOT Traffic Engineer at 630-208-3139 (Phoebe Wu). For intersections maintained by the state, detector loop layout shall be coordinated with the Engineer and IDOT at 847-705-4451 (John Janikowski). See schedule of quantities for specific quantities.

The electrical contractor/sub-contractor whom is performing the work on County traffic signals shall be IMSA traffic signals Level 2 certified and be prequalified with IDOT for Electrical work.

Work on, or encroaching upon, County highways should only be performed during non-peak hours between 9am to 3pm, or as approved by the Engineer.

Revise Section 886 of the Standard Specifications to read:

“This work shall consist of replacing existing detector loops which are destroyed during grinding, resurfacing, or patching operations. If damage to the detector loop is unavoidable, replacement of the existing detection system will be necessary. This work shall be completed by an approved Electrical Contractor as directed by the Engineer.”

Replacement of the loops shall be accomplished in the following manner: The Contractor shall mark the location/layout of the replacement loops and the Engineer shall approve those markings. The Contractor may reuse the existing conduit (duct) located between the existing hand-hole and the pavement if it hasn't been damaged. All burrs shall be removed from the edges of the existing conduit which may cause damage to the new detector loop during installation. If the existing conduit is damaged beyond repair, or if it cannot be located, or if additional conduits are required to provide one lead-in duct for each proposed loop; the Contractor shall be required to drill through the existing pavement into the appropriate hand-hole, and install **32 mm (1.25")** coilable non-metallic conduit. This work and the required materials shall not be paid for separately but shall be included in the pay item DETECTOR LOOP REPLACEMENT. Upon establishment of the duct, the loop may be cut, installed, sealed and spliced to the twisted-shielded controller cable in the hand-hole.

Detector loop measurements shall include the saw-cut and the length of the loop lead-in leading to the edge of pavement. Unit duct, splicing, trench and backfill, and drilling of pavement or hand-holes shall be incidental to detector loop quantities. ***All loops installed in new asphalt pavement shall be installed in the binder course and not in the surface course.*** Should a loop lead-in cross into “existing to remain” pavement, the loop lead-in and required conduit into the appropriate hand-hole shall be redirected to a new path within the resurfacing limits. Should a loop be damaged which resides outside the resurfacing limits but the lead-in cable crosses into the resurfacing limits, the entire loop and loop lead-in shall be replaced and installed (cut) in the surface course and any associated work or materials to complete this work shall be considered included within the scope of this pay item. Under no circumstances should the detection part of a loop be split between new and existing pavement.

The edge of pavement or the curb shall be cut with a 6.3 mm *(1/4")* deep x 100 mm (4") saw-cut to mark location of each loop lead-in.

A minimum of seven (7) working days prior to the Contractor cutting loops, the Contractor shall have the proposed loop locations marked and contact the KDOT Traffic/Permitting Engineer at 630-208-3139 to inspect and approve the layout. Loop detectors shall be installed according to the requirements of the "District 1 Standard Traffic Signal Design Details." Saw-cuts from the loop to the edge of pavement shall be made perpendicular to the edge of pavement when possible in order to minimize the length of the saw-cut unless directed otherwise by the Engineer or as shown on the plan.

Failure to provide proper notification may require the KDOT Electrical Maintenance Contractor to be called to investigate complaints of inadequate traffic signal timing. All costs associated with these expenses will be paid for by the Contractor at no additional expense to KDOT according to Section 109 of the “Standard Specifications.”

The detector loop cable insulation shall be labeled with the cable specifications. Each loop detector lead-in wire shall be labeled in the hand-hole using a Panduit 250W175C water proof tag or approved equal secured to each wire with nylon ties. The lead-in wire, including all necessary connections for proper operation, from the edge of pavement to the hand-hole, shall be incidental to the price of the detector loop.

Loop sealant shall be a two-component thixotropic chemically cured polyurethane either Chemque Q-Seal 295, Percol Elastic Cement AlC Grade or an approved equal. The sealant shall be installed 3 mm *(1/8")* below the pavement surface, if installed above the surface the overlap shall be removed immediately.

Round loop(s) 1.8 m (six foot) diameter may be substituted for 1.8 m (six foot) by 1.8 m (six foot) square loop(s) and shall be paid for as 7.2 m (24 feet) of detector loop.

Resistance to ground shall be a minimum of 100 mega-ohms under any conditions of weather or moisture. Inductance shall be more than 50 and less than 700 microhenries. Quality readings shall be more than 5. Heat shrink splices shall be used according to the "District 1 Standard Traffic Signal Design Details."

Acceptance of Material.

The Contractor shall provide:

1. All material approval requests shall be submitted a minimum of seven (7) days prior to the delivery of equipment to the job site, or within 30 consecutive calendar days after the contract is awarded, or within 15 consecutive calendar days after the preconstruction meeting, whichever is first.
2. One (1) copy of a letter listing the vendor’s name and model numbers of the proposed equipment shall be supplied. The letter will be reviewed by the KDOT Traffic Engineer to determine whether the equipment to be used is approved. The letter or catalog cuts will be stamped as approved or not approved accordingly and returned to the Contractor.
3. One (1) copy of material catalog cuts.
4. The contract number, permit number or intersection location must be on each sheet of the letter and material catalog cuts as required in items 2 and 3.

**Method of Measurement:** Detector loop replacement shall be measured along the sawed slot in the pavement containing the loop and lead-in, rather than the actual length of the wire in the slot.

**Basis of Payment:** Detector Loop Replacement shall be paid for at the contract unit price per foot of DETECTOR LOOP REPLACEMENT and shall include drilling hand-holes, sawing the pavement, furnishing and installing unit-duct to the appropriate hand-hole, cable splicing to provide a fully operable detector loop, testing and all trench and backfill shall be included in this item.