Architectural Reference Specification

Vehicle Detection Loops

While it is the intent of this specification to assist the professional specifier in making an informed choice of components and installation techniques, this is still a general specification. Certain details must be tailored to the specifics of the job site.

PART 1 GENERAL

1.1 Summary

This specification details the components and requirements for vehicle detection loops, incorporating:

A. Loop wire
B. Loop sealant
C. Installation technique

1.2 Quality Assurance

Installer Qualifications: Company specializing in performing the work of this section with minimum five (5) years documented experience.

Manufacturer's Warranty: All products in this specification must include a manufacturer's warranty to be free from defects for a minimum one year period. Individual products with extended warranties shall be detailed in the Products portion of this specification.

1.3 Submittals

Shop drawings, manufacturer's product data and samples, plan layout shall be submitted for approval.

PART 2 PRODUCTS

2.1 Manufacturers

The loop wire shall be manufactured by Therm-O-Link, Inc..

The loop sealant shall be manufactured by Rai Products.

Distributor: C-Gate Entry Systems, Ltd. of Sylvania, OH. 419-843-2990.

2.2 Materials

A. Loop Wire

The loop wire shall be Therm-O-Link item # SIS-16-26-T.

The wire shall be 16 gauge, stranded switchboard wire with a 600 volt composite jacket. The composite jacket is designed for use in chemical environments and is impervious to degradation from petroleum based products. This jacket protects the integrity of the loop wire when introduced into asphalt paving, as is common with vehicle detection loops.

B. Loop Sealant

The loop sealant shall be Rai Products Pro Seal 6006.

The loop sealant is a two part polyester sealant. The hardener (activator) is added to the sealant and the mixed product introduced into the loop slot. The sealant dries tack free within 30 minutes (depending on air temperature) and completely cures in approximately one hour. When dry, it achieves a tensile strength of 1,130 PSI. Due to the fact that the sealant essentially "cocoons" the loop wires, no backer rod is required or recommended.

PART 3 EXECUTION

3.1 Preparation

Prepare the surface of the paving by sweeping away all debris. The paving must be in good to very good condition and cannot be chipped or excessively cracked.

3.2 Layout

Loop shape is basically a rectangle with squared off corners to avoid sharp turns of the loop wire. The loop length shall be 6' smaller than the width of the driveway or gate opening, allowing 3' of open space on either side. The parallel leg of the loop nearest the gate shall be 4' to 6' away from the gate and the loop shall be 5' to 6' in width.

3.3 Installation

Once the rectangular loop is laid out, a ¼" wide by 1-1/2" to 2" deep cut is made with a concrete or asphalt cutting saw, including a return to the gate operator. At the ending point near the gate operator, drill a 1-1/4" hole approximately 4" deep for the flexible conduit that will house the loop wire return to the operator. Using a continuous piece of loop wire, feed the wire into the slot, start at the gate operator end with enough excess wire to reach the operator plus 6'. Continue feeding the wire into the loop slot, following the rectangle. Once the first complete "turn" is made, continue adding turns as follows. If the loop perimeter is under 13 linear feet, make 4 complete turns. If it is 14 to 26 feet, make 3 complete turns. If it is over 27 feet, make 2 complete turns. Each turn of wire must lay flat on top of the previous turn. Once the proper number of turns has been made, continue back to the gate operator and match the length to the excess wire where you began. Cut a piece of ½" flexible conduit to run from the bottom of the 1-1/4" hole to a knock out or drilled hole in the gate operator and attach an end fitting. The two ends of the continuous loop wire must be twisted together from the point where they exit the paving to their final connection point at the gate operator. Hand over hand, twist the wires so that there are a minimum of six twists per foot of wire. Feed the twisted wire through the flexible conduit, into the gate operator and insert the end of the conduit into the 1-1/4" hole. Mix the loop sealant per package directions and fill the loop slot and conduit hole to a point where it is flush with the paving surface.

3.3 Clean Up

Contractor shall clean the job site of excess materials and debris.