

NOTES CONTINUED:

21. Loop sealants shall be handled in a safe manner. This includes the use of personal protection equipment such as safety glasses, gloves, and respirators if and as necessary. Excessive or waste materials shall be handled and disposed of in an approved fashion.
22. Loops shall not be installed when the weather is outside those conditions recommended by the sealant manufacturer.
23. Loops shall be protected from traffic until the sealant has sufficient time to dry, cool or cure so no tracking of sealant is possible.
24. Once the loops and lead-in wires have been installed, the contractor shall perform the following tests on each loop in the presence of the Engineer before and after the sealant has been placed.
 - Insulation Resistance-to-Ground (or Insulation Resistance): The insulation resistance to ground for each loop shall be measured with a megohm meter connected to either loop lead in and to the nearest reliable electrical ground, such as a metal light pole or fire hydrant, or to a metal rod driven three feet into the ground between the roadway and the pull box. The insulation resistance to ground shall not measure less than 50 megohms at 500 volts DC. A high resistance of greater than 100 megohms is desired.
 - Series Resistance: The series resistance of each six by nine foot loop, measured by an ohmmeter, shall be between 0.1 and 0.5 ohm and the maximum resistance of any size loop, including lead-ins, shall typically be less than 5 ohms but not more than 100 ohms.
25. Test results for each loop shall be documented and the contractor shall submit two copies of the loop test reports to the Engineer.
26. The lead-in cable from the pull box back to the controller shall conform to the applicable requirements of IMSA Specification 50-2 with the exception that the cable can include up to 4 twisted pairs, not just one. The wire size shall be #14 copper stranded. The cable drain wire and shield shall be grounded at only one end (in the controller). The lead-in cable shall run continuously between the pull box and the controller without splices.
27. Lead-in cable to loop detector connections shall be soldered using an appropriate resin core solder. The solder connection shall then be made completely liquid-tight with an approved heat shrink connection kit that is specifically applicable to loop detector applications. Care shall be taken to heat the connection kit to the correct temperature without damaging the loop wire or lead-in wire insulation. Other types of connection are allowable if approved by the Engineer.
28. The lead-in access hole shall be backfilled and patched according to the detail shown on sheet 4. The contractor shall patch the existing pavement with an approved patch material (UPM or approved equal) in an acceptable manner. Care shall be taken not to damage loop wires. The patch shall be at least 1/4-inch (but not more than 1/2-inch) higher than existing pavement or it can be compacted flush if approved by the Engineer.

NO	DESCRIPTION OF REVISIONS	MADE BY	DATE	NO
1	2010 EDITION	C. COLE	03/10	3
2				4

NOT TO SCALE

DESIGN APPROVED	ARIZONA DEPARTMENT OF TRANSPORTATION INTERMODAL TRANSPORTATION DIVISION TRAFFIC SIGNALS AND LIGHTING STANDARD DRAWINGS	REVISION	03/10
APPROVED FOR DISTRIBUTION		DRAWING NO.	T.S. 6-4
	DETECTOR LOOPS AND PIEZOELECTRIC SENSOR DETAILS	SHEET NO.	2 OF 5