

NOTES:

1. The piezo sensor is to be assembled and tested prior to installation. Each piezo sensor's capacitance, dissipation factor and resistance are to be recorded and reported to the principal.
2. Slots for loops and piezo sensors to be cut using conventional loop cutting or milling type equipment. Under no circumstances percussion type equipment is to be used to form the slots.
3. Slots shall be cut in the pavement surface using a dry cut method and vacuum-cleaned simultaneously.
4. All slots for loops and piezo sensors shall be cut to nearest pit.
5. Brass linguini piezo sensors shall be sealed in the slots using PU200 resin.
6. The resin must not be stored below freezing point or above 30°C. After application, the resin and grouting compound needs to be maintained at 20°C to cure correctly.
7. Refer manufacturer's instructions for piezo sensor installation.
8. The piezo sensor is pre-fabricated with a cable. The end of the piezo sensor cable shall be connected directly to the logger's input terminal located in the cabinet. No cable joint is permitted between the piezo sensor and the logger.
9. Piezo sensors shall be perpendicular to the centre line of the road.
10. Loop detector and feeder cables are to be joined in pits. Joints are to be separately insulated and sealed (using slot sealant approved by Engineering and Technology Branch) to prevent ingress of water.
11. Where possible, there shall be a minimum 500mm gap between slot cuts for loops, piezo sensors and tails.
12. Loops shall be 2m x 2m installed centrally between the lane lines. The number of turns to be nominal 4 turns clockwise.
13. Leading and trailing edges of loops shall be perpendicular to the centre line of the road.
14. All loop feeder cables routed via any shared path (conduit or slot) must be terminated to the same detector card to avoid inter-card crosstalk.
15. Loops shall exhibit the following characteristics:
Inductance: 100 µH to 250 µH
Resistance: ≤ 2.5 Ω
Q factor: ~20 at 40 kHz
16. Five (5) metres spacing where posted speed limit ≤ 80 kph;
Seven (7) metres spacing where posted speed limit > 80 kph.
17. All sensors (loops and piezo) parameters to be measured from the cabinet before termination, and recorded. Check values are within tolerances prior to application of filler compound.
18. All dimensions are in metres (m) unless otherwise stated.

LEGEND

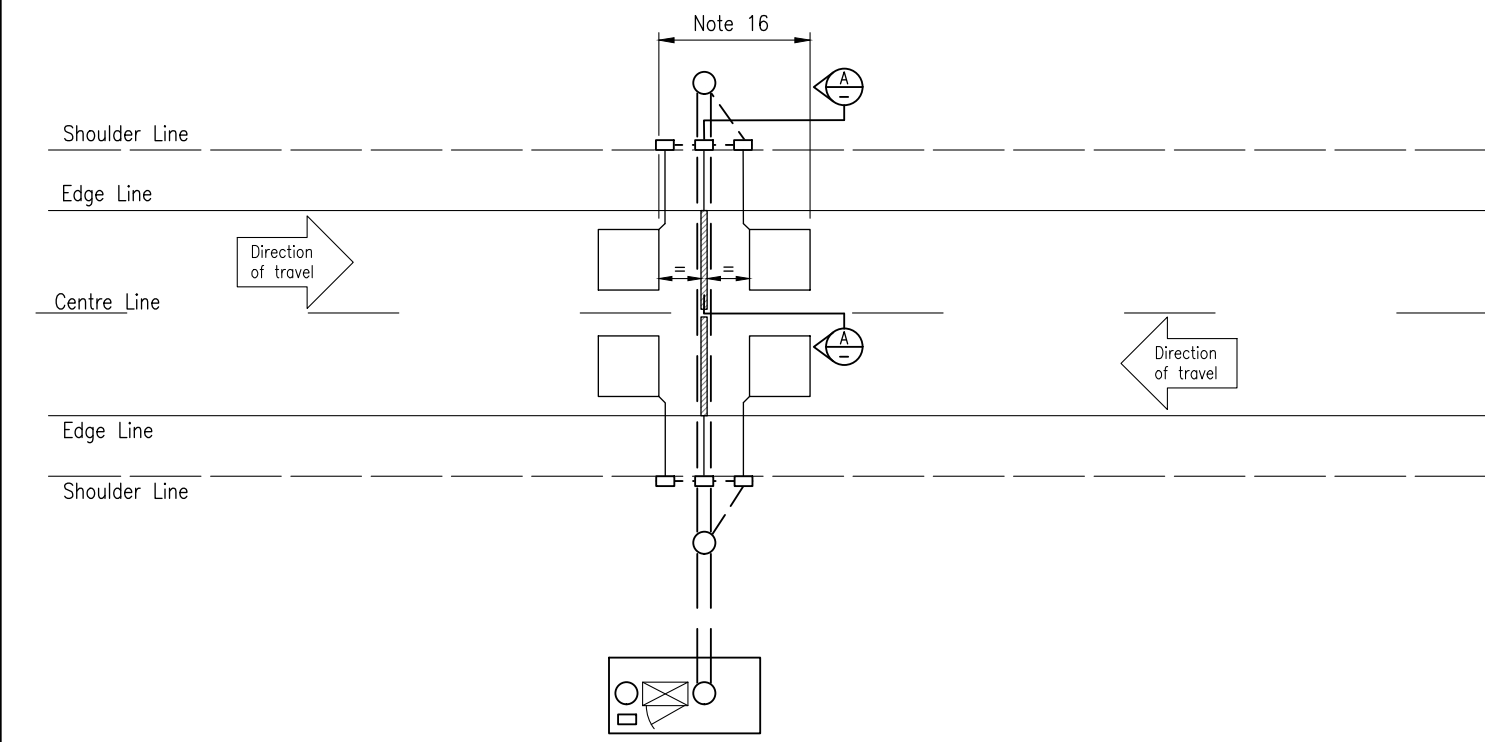
SYMBOL	DESCRIPTION
	Field Cabinet
	Type 3 Pit
	Circular Pit
	1x100 dia conduit (White)
	2x100 dia conduit (White)
	Cabinet concrete pad Refer standard drawings 1924 and 1925
	2m x 2m Loop
	Piezo Sensor

ASSOCIATED DEPARTMENTAL DOCUMENTS:

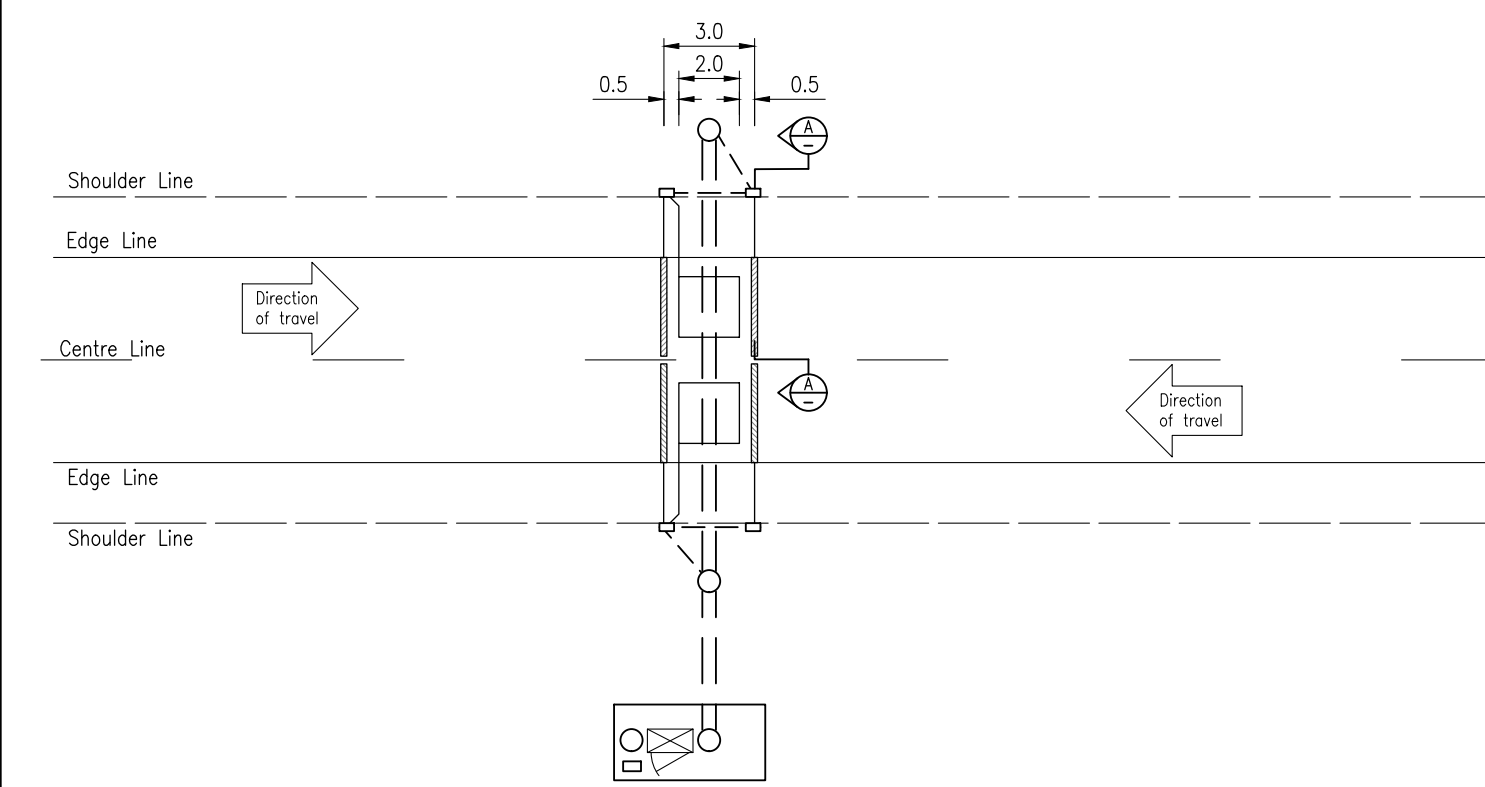
- Standard Drawings Specifications

REFERENCED DOCUMENTS:

- Departmental Standard Drawings:
- 1149 Traffic Signals/Road Lighting/ITS - Installation of Underground Electrical and Communications Conduit
 - 1314 Traffic Signals/Road Lighting - Cable Jointing Pit Drainage Details
 - 1424 Traffic Signals - Detector Loops Installation Details
 - 1440 Traffic Signals/Road Lighting - Cable Jointing Pit Rectangular Concrete Surround
 - 1631 Traffic Signals/Road Lighting - Cable Jointing Pit Types 1(J), 3, 4, 7 and 8
 - 1924 ITS - Vehicle Classifier Cabinet Installation - Solar Powered
 - 1925 ITS - Vehicle Classifier Cabinet Installation - Mains Powered
- Departmental Specifications:
- MRTS200 General Requirements for Intelligent Transport Systems (ITS) Infrastructure
 - MRTS201 General Equipment Requirements
 - MRTS251 Traffic Counter/Classifier



TYPICAL LOOP-PIEZO-LOOP SENSOR ARRAY



TYPICAL PIEZO-LOOP-PIEZO SENSOR ARRAY

INSTALLATION OF CONDUITS AND PITS IS THE RESPONSIBILITY OF THE LICENSED ELECTRICAL CONTRACTOR

Department of Transport and Main Roads			
ITS			
AXLE-BASED VEHICLE CLASSIFIER SENSOR INSTALLATION DETAILS		A3	Standard Drawing No
		Not to Scale	1916
		A	Date 7/2022

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