Specification (Measurement)

Transport and Main Roads Specifications
MRS204 Vehicle Detectors

April 2015
1 Introduction
This Specification applies to the supply and installation of Vehicle Detectors.
This document applies to the following types of vehicle detectors:

- Loop Detectors
- Radar Vehicle Detectors, and
- Infrared Vehicle Detectors.

This Specification forms part of the Transport and Main Roads Specifications Manual and should be read in conjunction with MRS01 Introduction to Specifications, MRTS204 Vehicle Detectors and other Specifications as appropriate.

2 Measurement of works
2.1 Vehicle detectors
2.1.1 Standard Work Items
In accordance with the provisions of Clause 2 of MRS01 Introduction to Specifications, the Standard Work Items covered by this Specification are listed in Table 2.1.1.

Table 2.1.1 – Standard Work Items

<table>
<thead>
<tr>
<th>Standard Item No.</th>
<th>Description</th>
<th>Unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6841</td>
<td>Vehicle Loop Detectors: Supply of [rectangular</td>
<td>square</td>
</tr>
<tr>
<td>6842</td>
<td>Supply and Installation of [rectangular</td>
<td>square</td>
</tr>
<tr>
<td>6843</td>
<td>Installation of [rectangular</td>
<td>square</td>
</tr>
<tr>
<td>6844</td>
<td>Supply of Vehicle Loop Detector Equipment incorporating [1</td>
<td>2</td>
</tr>
<tr>
<td>6845</td>
<td>Supply and Installation of Vehicle Loop Detector Equipment incorporating [1</td>
<td>2</td>
</tr>
<tr>
<td>6846</td>
<td>Installation of Vehicle Loop Detector Equipment incorporating [1</td>
<td>2</td>
</tr>
<tr>
<td>6847</td>
<td>Supply of Loop Feeder Cable</td>
<td>m</td>
</tr>
<tr>
<td>6848</td>
<td>Supply and Installation of Loop Feeder Cable</td>
<td>m</td>
</tr>
<tr>
<td>6849</td>
<td>Installation of Loop Feeder Cable</td>
<td>m</td>
</tr>
</tbody>
</table>

Radar Vehicle Detectors
6852 Supply and installation of radar vehicle detectors as per manufacturer’s requirements | each |

Infrared Vehicle Detectors
6853 Supply and installation of infrared vehicle detectors as per manufacturer’s requirements | each |
### Ancillary Items

<table>
<thead>
<tr>
<th>Standard Item No.</th>
<th>Description</th>
<th>Unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6854</td>
<td>Provision of Vehicle Detection Spares [as listed in the contract documents or on drawing reference]</td>
<td>item</td>
</tr>
</tbody>
</table>

### Removal of Existing Vehicle Loop Detectors

<table>
<thead>
<tr>
<th>Standard Item No.</th>
<th>Description</th>
<th>Unit of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>6855</td>
<td>Removal of Vehicle Detection Equipment for re-use each</td>
<td>each</td>
</tr>
<tr>
<td>6856</td>
<td>Removal of Vehicle Detection Equipment for disposal</td>
<td>each</td>
</tr>
</tbody>
</table>

#### 2.1.2 Method of measurement

**Item 6841** Supply of [rectangular | square | quadrupole] loops in [concrete | asphalt] pavement

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) general equipment requirements stated in MRTS201, 204, 258 and 93.

**Item 6842** Supply and Installation of [rectangular | square | quadrupole] loops in [concrete | asphalt] pavement

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) general equipment requirements stated in MRTS201, 204, 258 and 93.

**Item 6843** Installation of [rectangular | square | quadrupole] loops in [concrete | asphalt] pavement

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) general equipment requirements stated in MRTS201, 204, 258 and 93.

**Item 6844** Supply of Vehicle Loop Detector Equipment incorporating [1|2|3|4|5|6|7|8] channel cards

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) general equipment requirements stated in MRTS201, 204 and 258.

**Item 6845** Supply and Installation of Vehicle Loop Detector Equipment incorporating [1|2|3|4|5|6|7|8] channel cards

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) general equipment requirements stated in MRTS201, 204 and 258.
Item 6846 Installation of Vehicle Loop Detector Equipment incorporating [1|2|3|4|5|6|7|8] channel cards

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) general equipment requirements stated in MRTS201, 204 and 258.

Item 6847 Supply of Loop Feeder Cable

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) general equipment requirements stated in MRTS201, 204 and 258

c) any applicable requirements of MRTS93, 204 and 258.

Item 6848 Supply and Installation of Loop Feeder Cable

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) general equipment requirements stated in MRTS201, 204 and 258;

c) any applicable requirements of MRTS93, 204 and 258.

Item 6849 Installation of Loop Feeder Cable

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) general equipment requirements stated in MRTS201, 204 and 258

c) any applicable requirements of MRTS93, 204 and 258.

Item 6852 Supply and Installation of radar vehicle detectors as per manufacturer’s requirements

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) general equipment requirements stated in MRTS201, 204 and 258

c) any applicable requirements of MRTS93, 204 and 258.

Item 6853 Supply and Installation of infrared vehicle detectors as per manufacturer’s requirements

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*

b) general equipment requirements stated in MRTS201, 204 and 258

c) any applicable requirements of MRTS93, 204 and 258.
Item 6854 Provision of Vehicle Detection Spares

[as listed in the contract documents or on drawing reference]

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) provision of Spares in accordance with the requirements of MRTS201 and as listed in the Scheme Documentation

c) transport of all components to the Principal’s storage facility.

Item 6855 Removal of Vehicle Detection Equipment for re-use

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) disconnection of electrical supply, including termination and ‘making safe’ of supply cable

c) disconnection of telecommunications connection

d) removal of internal cabinet equipment, supporting pole and associated cabinet enclosure

e) transport of all components to Principal’s storage facility or designated site storage area for re-use.

Item 6856 Removal of Vehicle Detection Equipment for disposal

Work Operations incorporated in the above item include:

a) Work Operations listed in Clause 2.1.5 of MRS01 Introduction to Specifications

b) disconnection of electrical supply, including termination and ‘making safe’ of supply cable

c) disconnection of telecommunications connection

d) removal of internal cabinet equipment, supporting pole and associated cabinet enclosure

e) transport of all components and disposal.

2.2 Method of measurement of Vehicle Detection Equipment

This specification provides Standard Work Items for:

a) Supply only of individual components

b) installation only of individual components

c) supply and installation of individual components, and

d) supply and installation of complete vehicle detection site on a lump sum basis.

Any combination of Standard Work Items relating to these methods of measurement may be used in the Schedule of Rates. However:

a) where a Standard Work Item for supply and installation of a particular component or group of components is included in the Schedule of Rates, no supply only, nor installation only, Standard Work Item shall also apply to that component or group of components as applicable, and

b) where a Standard Work Item for supply and installation of a complete vehicle detection site on
a lump sum basis is included in the Schedule of Rates, no supply only, installation only, nor supply and installation, Standard Work Item shall also apply to that work.

2.3 Supply of materials

Any materials to be supplied by the Principal will be as stated in the Principal Supplied Material List Form C6827. All other material shall be supplied by the Contractor.

The responsibility for transport to the Site of materials supplied by the Principal shall be as stated in the Principal Supplied Material List Form C6827. Transport to the Site of all other materials shall be the responsibility of the Contractor.

2.4 Removal of existing equipment

The Superintendent will inspect the salvaged materials at the storage site and will reject any materials which, in the opinion of the Superintendent, have been damaged during the salvage operation. The Contractor shall be required to reimburse the Principal for materials damaged during salvage.