

Specification (Measurement)

**Transport and Main Roads Specifications
MRS92 Footings for Road Lighting, Traffic Signal and
Roadside Equipment Mounting Structures**

March 2025



**Queensland
Government**

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1 Introduction

This Specification applies to the construction of concrete footings and related works required for the installation of:

- road lighting poles rate 2 and rate 3
- pathway lighting poles
- CCTV poles
- joint use poles
- traffic signal mast arms
- combination traffic signal mast arms, and
- traffic signal posts, and traffic signal controllers.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications* and other Specifications as appropriate.

This Specification forms part of the Transport and Main Roads Specifications Manual.

The additional work items 60363, 60364, 60365, 60366 and 60367 to this Specification to allow conformance and as constructed survey requirements for the installation of footings for poles post and mast arms during construction of road infrastructure projects. The added sections also allow for surveying requirements for any existing underground assets that may be fully or partly exposed during construction works.

2 Measurement of Work

2.1 Standard Work Items

In accordance with the provisions of Clause 2.1.3 of MRS01 *Introduction to Specifications*, the Standard Work Items incorporated in this Specification are listed in Table 2.1.

Table 2.1 – Standard Work Items

Standard Item No.	Description	Unit of Measurement
Traffic signal footings		
60301	Traffic signal post footing	each
60302	Traffic signal mast arm footing	each
60304	Traffic signal mast arm footing extension for poor soil requiring specialist design	each
60308	Excavation in excessively hard material, rate additional to rate for Work Items 60301 and 60302	m ³
60311	Traffic signal controller base	each
60312	Backfilling around the footing with stabilised sand	m ³
Road lighting footings		
60351	Road lighting pole footing, [<i>diameter</i>] mm diameter	each

Standard Item No.	Description	Unit of Measurement
60352	Road lighting pole footing in concrete median barrier, [<i>diameter</i>] mm diameter	each
60354	Road lighting pole footing extension in poor soil requiring specialist design, [<i>diameter</i>] mm diameter	each
60358	Excavation in excessively hard material, rate additional to rate for Work Items 60351 and 60352	m ³
60361	Construction of retaining wall around footing	each
60362	Removal of road lighting pole footing	each
60363	Conformance and As Constructed survey for depth of footing	each
60364	Setting out and conformance for holding down bolts	each
60365	As Constructed survey for traffic signal post footing	each
60366	As Constructed survey for traffic signal mast arm footing	each
60367	As Constructed survey for road lighting pole footing	each
60368	Engagement of a Geotechnical Engineer for soil type confirmation	each
60369	Soil testing if ordered by the Geotechnical Engineer	each
60370	Backfilling around the footing with stabilised sand	m ³

2.2 Work Operations

Item 60301 Traffic signal post footing

Item 60302 Traffic signal mast arm footing

Item 60351 Road Lighting pole footing, [*diameter*] mm diameter

Item 60352 Road Lighting pole footing in concrete median barrier, [*diameter*] mm diameter

Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) excavation for footing
- c) disposal of excavated material
- d) provision of formwork, where necessary
- e) supply and installation of anchor cage or ragbolt assembly, as appropriate
- f) supply and installation of conduit to electrical pit or concrete barrier ends, as appropriate
- g) supply, placement and finishing of concrete, and
- h) stripping formwork and cleaning up.

Item 60304 Traffic signal mast arm footing extension for poor soil requiring specialist design

Item 60354 Road lighting pole footing extension in poor soil requiring specialist design

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) carry out specialist design for poor soil
- c) excavation for footing extension
- d) disposal of excavated material
- e) provision of formwork, where necessary
- f) supply of anchor cage extension
- g) installation of anchor cage extension, and
- h) supply, placement and finishing of concrete.

Item 60308 Excavation in excessively hard material, rate additional to rate for Work Items 60301 and 60302

Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Additional work associated with the excavation of footings in excessively hard material.

Excessively Hard Material Definition

Excessively hard materials refer to situations where the use of a large mechanical earth auger, which is in good condition and recommended by the manufacturer for excavating holes of the required diameter and depth, makes it impossible to excavate the holes without resorting to explosives or pneumatic picks.

If during excavation of a hole or socket or subsequent certification the material is found to be significantly stronger than that assumed in the design, a change in design may be proposed, changes shall be referred to the Designer and shall have approval of the Designer and the Administrator prior to finalising the new foundation design.

Item 60311 Traffic signal controller base

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) localised excavation
- c) provision of formwork
- d) supply of and installation of plinth with holding down bolts
- e) supply and installation of conduit to electrical and communication pits, where necessary

- f) supply, placement and finishing of concrete, and
- g) stripping of formwork and cleaning up.

Item 60358 Excavation in excessively hard material, rate additional to rate for Work Items 60351 and 60352

Work Operations incorporated in the above items include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) additional work associated with the excavation of footings in excessively hard material.

Item 60361 Construction of retaining wall around footing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) carry out localised excavation
- c) provision of formwork
- d) supply, placement and finishing of concrete, and
- e) stripping of formwork and cleaning up.

Item 60362 Removal of road lighting pole footing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) removal of footing
- c) disposal of footing, and
- d) backfilling of hole.

Item 60363 Conformance and As Constructed survey for depth of footing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 7.4 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

Item 60364 Setting out and conformance for holding down bolts

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 7.5.1 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

Item 60365 As Constructed survey for traffic signal post footing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 9 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

Item 60366 As Constructed survey for traffic signal mast arm footing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 9 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

Item 60367 As Constructed survey for road lighting pole footing

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 9 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

Item 60368 Engagement of a Geotech Engineer for soil type confirmation

Item 60369 Soil testing if ordered by the Geotech Engineer

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 7.3 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

Item 60370 Backfilling around the footing with stabilised sand

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) Work Operations listed in Clause 7.4 of MRS92 *Footings for Road Lighting, Traffic Signal and Roadside Equipment Mounting Structures*.

2.3 Classification of material to be excavated

Excavation for Standard Work Items 60301, 60302, 60351, and 60352 shall allow for excavation in all soils and weak rocks. In this specification, the definition of weak rock is any extremely weathered rock (XW) that can be excavated as soil excavation.

For the purpose of measurement and payment under Standard Work Items 60308 and 60358 excessively hard material shall be classified as follows:

- Excessively hard materials refer to situations where the use of a large mechanical earth auger, which is in good condition and recommended by the manufacturer for excavating holes of the required diameter and depth, makes it impossible to excavate the holes without resorting to explosives or pneumatic picks.
- Material shall not be classified as excessively hard material unless explosives or pneumatic picks are actually used in its excavation.

