

Specification (Measurement)

**Transport and Main Roads Specifications
MRS06 Reinforced Soil Structures**

November 2018

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1 Introduction

This Specification applies to the design and construction of Reinforced Soil Structures (RSS) in roadworks. It does not apply to reinforced slopes or foundations, soil nailing of slopes and reinforced embankments.

This Specification shall be read in conjunction with MRS01 *Introduction to Specifications*, MRTS50 *Specific Quality System Requirements* and other Specifications as appropriate.

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

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
Reinforced Soil Structures		
33001	Design of Reinforced Soil Structure, [<i>structure number</i>]	lump sum
33002	Reinforced Soil Structure materials, [<i>structure number</i>]	lump sum
33003	Construction of Reinforced Soil Structure, [<i>structure number</i>]	lump sum
33004	Designer's inspection and certification, [<i>structure number</i>]	lump sum

2.2 Work Operations

Item 33001 Design of Reinforced Soil Structure, [*structure number*]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) design of the RSS in accordance with this Specification, and
- c) submission of design for permission to use in accordance with the Conditions of Contract.

Item 33002 Reinforced Soil Structure materials, [*structure number*]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply and fabrication of face panels
- c) supply and fabrication of soil reinforcing system components
- d) supply and fabrication of any precast capping elements, and
- e) supply and fabrication of all sundry items and other components necessary to complete the work of the Reinforced Soil Structure.

Note: supply of fill material is included in Standard Work Item 33003.

Item 33003 Construction of Reinforced Soil Structure, [structure number]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) supply of fill material
- c) supply and installation of pile liners, where applicable
- d) erection of RSS wall system
- e) placement and compaction of fill material
- f) pre-boring for piles, where applicable
- g) installation and/or construction of any capping elements and/or road furniture footings, and
- h) installation of all sundry items and other components necessary to complete the work of the Reinforced Soil Structure.

Item 33004 Designer's inspection and certification, [structure number]

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) provision of design certification in accordance with the Conditions of Contract.

2.3 Boundary of Reinforced Soil Structure

For the purposes of measurement and payment, an imaginary three-dimensional boundary between the RSS and the remaining work under the Contract shall be defined. This boundary is termed the "Boundary of Reinforced Soil Structure". The Boundary of Reinforced Soil Structure shall not be construed as a physical boundary.

Notwithstanding the position of the actual boundary of the RSS as designed and constructed by the Contractor, the calculation of quantities for the relevant Standard Work Items for work abutting the RSS shall include all work external to the Boundary of Reinforced Soil Structure.

Notwithstanding the extent of the Boundary of Reinforced Soil Structure, the Contractor shall remain responsible for all ground surface treatments and all treatments at the bottom of excavations within the plan dimensions of that Boundary and full payment for such treatments shall be deemed to be included in the Contractor's tendered lump sums for the relevant Standard Work Items.

The Boundary of Reinforced Soil Structure shall not be varied during the Contract.

The Boundary of Reinforced Soil Structure for the Contract shall be as shown on the Standard Drawings.

2.4 Payment for RSS and adjacent work

The lump sum amounts tendered by the Contractor and accepted by the Principal for the Reinforced Soil Structure under Standard Work Items 33001, 33002, 33003 and 33004 shall be deemed to be full payment for all work associated with the Reinforced Soil Structure whether within the Boundary of Reinforced Soil Structure defined in MRS06 *Reinforced Soil Structures* or not.

The remainder of the Works shall be measured up to the Boundary of Reinforced Soil Structure in accordance with the provisions of the Contract.

2.5 Times for payment of lump sums

Notwithstanding the requirements of the Conditions of Contract:

- a) the Contractor may claim payment under Standard Work Item 33001 only after permission to use the Contractor's Design has been granted by the Administrator under the Conditions of Contract or after such permission is deemed to have been given under the Conditions of Contract
- b) the Contractor may claim payment under Standard Work Items 33002 and 33003 in accordance with the requirements of the Conditions of Contract, and
- c) the Contractor may claim payment under Standard Work Item 33004 only after delivery to the Administrator of the documents listed in the Conditions of Contract.

