

Main Roads Specification

MRS06

Reinforced Soil Structures

SUPERSSEDED

TRADEMARKS ACKNOWLEDGEMENT

Terms mentioned in this document that are known or understood to be trademarks, whether registered or not, have been identified. Where trademarks have been confirmed as registered in Australia, this has been indicated by the addition of the ® symbol, otherwise the ™ symbol is used. While all care has been taken to identify trademarks, users should rely on their own inquiries to determine trademark ownership. Use of a term in this document as a trademark should not be regarded as affecting the validity of any trademark.

IMPORTANT INFORMATION

The requirements of this document represent Technical Policy of the department and contain Technical Standards. Compliance with the department's Technical Standards is mandatory for all applications for the design, construction, maintenance and operation of road transport infrastructure in Queensland by or on behalf of the State of Queensland.

This document will be reviewed from time to time as the need arises and in response to improvement suggestions by users. Please send your comments and suggestions to the feedback email given below.

FEEDBACK

Your feedback is welcomed. Please send to mr.techdocs@tmr.qld.gov.au.

DISCLAIMER

This publication has been created for use in the design, construction, maintenance and operation of road transport infrastructure in Queensland by or on behalf of the State of Queensland.

Where the publication is used in other than the department's infrastructure projects, the State of Queensland and the department gives no warranties as to the completeness, accuracy or adequacy of the publication or any parts of it and accepts no responsibility or liability upon any basis whatever for anything contained in or omitted from the publication or for the consequences of the use or misuse of the publication or any parts of it.

If the publication or any part of it forms part of a written contract between the State of Queensland and a contractor, this disclaimer applies subject to the express terms of that contract.

COPYRIGHT

Copyright protects this publication. Except for the purposes permitted by and subject to the conditions prescribed under the Copyright Act, reproduction by any means (including electronic, mechanical, photocopying, microcopying or otherwise) is prohibited without the prior written permission of the department. Enquiries regarding such permission should be directed to the Pavements, Materials, Geotechnical and Standards Division, Queensland Department of Transport and Main Roads.

© State of Queensland (Department of Transport and Main Roads) 2010



<http://creativecommons.org/licences/by-nc-nd/2.5/au>

Table of Contents

	Page
1 INTRODUCTION.....	1
2 MEASUREMENT OF WORK.....	1
2.1 Standard Work Items.....	1
2.2 Work Operations.....	1
2.3 Boundary of Reinforced Soil Structure.....	2
2.4 Payment for RSS and Adjacent Work.....	2
2.5 Times for Payment of Lump Sums.....	2

SUPERSEDED

SUPERSEDED

Reinforced Soil Structures

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* and other Specifications as appropriate.

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

2 MEASUREMENT OF WORK

2.1 Standard Work Items

In accordance with the provisions of Clause 2 of MRS01 *Introduction to Specifications*, the Standard Work Items incorporated in this Specification are listed in Table 2.2.

2.2 Work Operations

Table 2.2 – Standard Work Operations

Standard Item No.	Description	Unit of Measurement
Reinforced Soil Structures		
2781	Design of Reinforced Soil Structure, [structure number].	lump sum
2782	Reinforced Soil Structure materials, [structure number].	lump sum
2783	Construction of Reinforced Soil Structure, [structure number].	lump sum
2784	Designer's inspection and certification, [structure number].	lump sum

Item 2781 Design of Reinforced Soil Structure, [structure number].

Work Operations incorporated in the above item include –

- Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- Design of the RSS in accordance with this Specification; and
- Submission of design for permission to use in accordance with Clause 38 of the Supplementary Conditions of Contract.

Item 2782 Reinforced Soil Structure materials, [structure number].

Work Operations incorporated in the above item include –

- Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- Supply and fabrication of face panels;
- Supply and fabrication of soil reinforcing system components;
- Supply and fabrication of any precast capping elements; and
- 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 2783.

Item 2783 Construction of Reinforced Soil Structure, [structure number].

Work Operations incorporated in the above item include –

- Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*;
- 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 2784 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 Clause 37.15 of the Supplementary 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 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 2781, 2782, 2783 and 2784 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 Clause 42 of the General Conditions of Contract –

- a) the Contractor may claim payment under Standard Work Item 2781 only after permission to use the Contractor's Design has been granted by the Superintendent under Clause 37.9 of the Supplementary Conditions of Contract or after such permission is deemed to have been given under Clause 37.11 of the Supplementary Conditions of Contract;
- b) the Contractor may claim payment under Standard Work Items 2782 and 2783 in accordance with the requirements of Clause 2.2 of the Supplementary Conditions of Contract; and
- c) the Contractor may claim payment under Standard Work Item 2784 only after delivery to the Superintendent of the documents listed in Clause 37.15 of the Supplementary Conditions of Contract.