

**Specification (Measurement)**

**Transport and Main Roads Specifications  
MRS140 Horizontal Directional Drilling (HDD)**

**July 2017**

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## 1 Introduction

This Specification applies to the installation of underground services and utilities using Horizontal Directional Drilling (HDD).

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 Specification 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 covered by this Specification are listed in Table 2.1.

**Table 2.1 – Standard Work Items**

Standard Item No.	Description	Unit of Measurement
<b>Horizontal Directional Drilling (HDD)</b>		
33301	Design of HDD boring installation system	lump sum
33302	Supply and installation of sleeving and carrier pipe	m
33303	HDD, all materials	m
33304P	HDD in hard ground, rate additional to rates for Work Item 33303 (Provisional Quantity)	m
33308	Removal of spoil material from HDD drive	m <sup>3</sup>
33309P	Addition of lime to spoil material in Acid Sulphate Soil area, (Provisional Quantity as directed)	m <sup>3</sup>
33313	Grouting outer annuls and space between the casing and carrier pipe	m <sup>3</sup>
33314	Sand fill the space between the casing and carrier pipe	m <sup>3</sup>
33315	Operation of HDD machine	lump sum
33316	Designer's inspection and certification	lump sum

### 2.2 Work Operations

Any other Standard Work Items other than given in Table 2.1 shall be in accordance with the relevant MRS, e.g., in accordance with MRS02 *Provision for Traffic* and MRS04 *General Earthworks*.

#### 2.2.1 HDD construction

##### Item 33301 Design of HDD boring installation system

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 HDD system in accordance with this Specification, and
- c) submission of design for approval to use in accordance with the Conditions of Contract.

**Item 33302 Supply and installation of sleeving and carrier pipe**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) supply and installation of sleeving and carrier pipe.

**Item 33303 HDD, all materials**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) boring through all materials.

**Item 33304P HDD in hard ground, rate additional to rates for Work Item 33303 (Provisional Quantity)**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) boring associated with hard ground in addition to that required for, in all materials.

**Item 33308 Removal of spoil material from HDD drive**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) removing all spoils from pits
- c) stockpiling of material considered suitable for re-use, and
- d) hauling and disposing of unsuitable material.

**Item 33309P Addition of lime to spoil material in Acid Sulphate Soil area, (Provisional Quantity, as directed)**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) mixing of lime into spoil material at the rate required to neutralise potential acid production (excluding supply of lime).

**Item 33313 Grouting outer annulus and space between the casing and carrier pipe**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) supply cementitious grouting and other associated materials and grouting the annulus and any void between casing and carrier pipe.

**Item 33314 Sand fill the space between the casing and carrier pipe**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*, and
- b) supply sand and filling the space between casing and carrier pipe.

### **Item 33315      Operation of HDD machine**

Work Operations incorporated in the above item include:

- a) Work Operations listed in Clause 2.1.5 of MRS01 *Introduction to Specifications*
- b) mobilizing and demobilizing HDD machine
- c) provide access road / working platform as necessary
- d) provide surveyors for checking the alignment
- e) supply, install and monitoring of instrumentations throughout the operations, and
- f) install of all sundry items and other components necessary to complete the work.

### **Item 33316      Designer's inspection and certification**

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 design certification in accordance with the Conditions of Contract, and
- c) addressing review comments and revising design.

## **2.3      Measurement**

### **2.3.1      Measurement of provision of traffic**

The provision of traffic shall be measured in accordance with MRS02 *Provision for Traffic*.

### **2.3.2      Measurement of General Earthworks**

The measurement of excavation and backfilling shall be measured in accordance with MRS04 *General Earthworks*.

## **2.4      Calculation of quantities**

Quantities shall be calculated in accordance with the provisions of Clause 2.1.1 of MRS01 *Introduction to Specifications*.

## **3      Measurement and payment**

### **3.1      Traffic management**

The measurement and payment shall be in accordance with MRS02 *Provision for Traffic*.

### **3.2      General earthworks**

The measurement and payment shall be in accordance with MRS04 *General Earthworks*.

### **3.3      All lump sums amounts**

The lump sum amounts tendered by the Contractor and accepted by the Administrator under Standard Work Items shall be deemed to be full.

### **3.3.1 Times for payments for lump sums**

Notwithstanding the requirements of the Conditions of Contract:

- a) the Contractor may claim payment under Standard Work Item 33301 only after permission to use the Contractor's Design has been approved 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 33302, 33303, 33304P, 33308, 33309P, 33313, 33314 and 33315 in accordance
- c) with the requirements of the Conditions of Contract, and
- d) the Contractor may claim payment under Standard Work Item 33316 only after delivery to the Administrator of the documents listed in the Conditions of Contract.

