

Title	Describe trenching and demonstrate trench set-out requirements for water reticulation		
Level	4	Credits	4

Purpose	People credited with this unit standard are able to: describe safety requirements of water and drainage construction; demonstrate knowledge of trench set-out; and demonstrate knowledge of bed preparation, backfill, compaction, and reinstatement of trenches.
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Classification	Water Industry > Water Reticulation
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Available grade	Achieved
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Guidance Information

- 1 Legislation and references relevant to this unit standard include:
 Health and Safety at Work Act 2015, and subsequent amendments;
 SNZ HB 2002:2003 *Code of Practice for Working in the Road*, available from <http://www.standards.govt.nz>;
 NZS 4404:2010 *Land development and subdivision infrastructure*;
 both available from <http://www.standards.govt.nz>;
Excavation Safety – Good Practice Guidelines 2016, available from <http://www.worksafe.govt.nz/worksafe/information-guidance/all-guidance-items/excavation-safety-gpg>;
Code of Practice for Temporary Traffic Management, available from <http://www.nzta.govt.nz/resources/code-temp-traffic-management>;
 Local authority hygiene codes.
- 2 Definitions
Organisational procedures – instructions to staff, and procedures which are documented in memo or manual format and are available in the workplace. These requirements include but are not limited to – site specific requirements, manufacturers’ specifications, product quality specifications, and legislative or regulatory requirements.
Water reticulation – in this context refers to all pipe systems, pumping systems, and components that contribute to the distribution of water, and collection and disposal of wastewater and stormwater.

Outcomes and performance criteria

Outcome 1

Describe safety requirements of water and drainage construction.

Performance criteria

- 1.1 Personal protective equipment for water and drainage construction is identified and described in accordance with organisational procedures.
- 1.2 Hazards are identified and managed in accordance with the Health and Safety at Work Act 2015 and organisational procedures.
- 1.3 Trench shoring requirements are identified and described in accordance with contract drawings.
- Range trench depth, trench alignment, ground condition, material type.
- 1.4 Traffic control requirements are identified and described in accordance with Code of Practice for Temporary Traffic Management.

Outcome 2

Demonstrate knowledge of trench set-out.

Performance criteria

- 2.1 Methods and equipment used for setting depth and gradient of trenching are described in accordance with plans and specifications for the job.
- 2.2 Methods and equipment used for setting horizontal alignment is described in accordance with plans and specifications for the job.

Outcome 3

Demonstrate knowledge of bed preparation, backfill, and compaction of trenches.

Performance criteria

- 3.1 Materials used for bed preparation and trench backfill are described in terms of their properties, and suitability for specified situations and specified pipe materials.
- Range materials – hard fill, graded or bound, re-use of existing material; properties – grading, moisture content, compaction.
- 3.2 Bed preparation, backfilling, and compaction are described in terms of the equipment and procedures.
- 3.3 Bed preparation, backfilling, and compaction are described in terms of the implications of not following procedures for good practice.
- 3.4 Compaction is described in terms of the equipment used to test strength of layers.

Outcome 4

Demonstrate knowledge of reinstatement of trenches.

Range two different reinstatement materials.

Performance criteria

4.1 Trench surface reinstatement procedures and requirements are described in accordance with organisational procedures.

Replacement information	This unit standard and unit standard 24918 were replaced by unit standard 31518.
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This unit standard is expiring. Assessment against the standard must take place by the last date for assessment set out below.

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	26 October 2005	31 December 2016
Rollover and Revision	2	20 February 2009	31 December 2016
Rollover and Revision	3	21 July 2011	31 December 2018
Review	4	16 March 2017	31 December 2021
Review	5	29 November 2018	31 December 2021

Consent and Moderation Requirements (CMR) reference	0101
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.