



Australian Government

Department of Education, Employment and Workplace Relations

RTF3217A Set out site for construction works

Release: 1

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Modification History

Not applicable.

Unit Descriptor

This competency standard covers the process of setting out a site for construction works in accordance with site plans and specifications. These tasks may be done in advance of proposed works or in conjunction with construction works already being carried out. The work is likely to be under limited supervision from others, with checking only related to overall progress.

The setting out of a site for construction works is normally done within routines, methods and procedures, where some discretion and judgement is required in the interpretation of site plans and specifications, and the equipment to be used to verify existing and proposed site features, dimensions and levels.

Application of the Unit

Not applicable.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

Not applicable.

Elements and Performance Criteria Pre-Content

Not applicable.

Elements and Performance Criteria

Elements and Performance Criteria

Element	Performance Criteria
1 Interpret site plans and specifications	1.1 The various components of the site plan and specifications are identified.
	1.2 Site plan and specifications are compared with other available plans to ensure accuracy of information.
	1.3 Equipment required for the setting out of construction works is determined from the site plan and specifications.
	1.4 Environmental impact of proposed construction works is considered in the interpretation of site plans.
	1.5 OHS hazards associated with the setting out of construction works are assessed for potential risks, and controls implemented accordingly.
2 Locate and mark out position of construction works	2.1 Existing site features are located from the site plan.
	2.2 Position of proposed construction works is located from the site plan.
	2.3 Scale measurements of lines, shapes, angles and dimensions are transferred from the site plan to site.
	2.4 The shape of proposed construction works is marked out on site according to the site plan and specifications.
3 Establish datum point and survey benchmarks on site	3.1 Datum point is established to ensure all existing and proposed construction works can be linked by survey equipment.
	3.2 Survey benchmarks are selected and established on positions/structures on site according to site plan and specifications.
4 Take and verify site levels	4.1 Levelling equipment is set up and checked for accuracy of readings.
	4.2 Instruments, which are out of specification, are

adjusted accordingly.

- 4.3 Levels are taken, verified and recorded in accordance with established datum point and survey benchmarks.
- 4.4 Levelling equipment is cleaned, maintained and stored according to manufacturers instructions.

Required Skills and Knowledge

Not applicable.

Evidence Guide

What evidence is required to demonstrate competence for this standard as a whole?

Competence in setting out a site for construction works requires evidence that site plans and specifications can be interpreted correctly, and that information can be transferred from a site plan onto a site. This transfer of information involves the locating and marking out of the position of proposed construction works, then the checking of horizontal and vertical levels prior to any works being undertaken.

The skills and knowledge required to set out a site for construction works must be **transferable** to a different work environment. For example, a person who can set out a site for the construction of drainage or irrigation systems, should be able to set out a site for the construction of retaining walls, garden beds or pergolas. This could include different landscape features, work site environment and enterprise procedures.

What specific knowledge is needed to achieve the performance criteria?

Knowledge and understanding are essential to apply this standard in the workplace, to transfer the skills to other contexts, and to deal with unplanned events. The knowledge requirements for this competency standard are listed below:

interpretation of symbols and use of a legend on site plans and specifications, particularly in relation to benchmarks and the location of existing features

understanding of compass directions, the difference between true North and magnetic North and how to locate North from a site plan

an awareness of other plans that may be referred to when setting out a site for construction works

an awareness of common levelling and surveying terms

environmental awareness associated with the preparation for construction works to ensure that the impact on the environment is minimal when works are implemented

OHS hazards associated with setting out a site for construction works.

What specific skills are needed to achieve the performance criteria?

To achieve the performance criteria, appropriate literacy and numeracy levels as well as some complementary skills are required. These include the ability to:

implement mathematical and geometrical principles when locating and marking out a site for construction works

use a range of surveyors instruments

analyse and interpret detailed site plans and specifications.

What processes should be applied to this competency standard?

There are a number of processes that are learnt throughout work and life, which are required in all jobs. They are fundamental processes and generally transferable to other work functions. Some of these are covered by the **key competencies**, although others may be added. The questions below highlight how these processes are applied in this competency standard. Following each question a number in brackets indicates the level to which the key competency needs to be demonstrated where 0 = not required, 1 = perform the process, 2 = perform and administer the process and 3 = perform, administer and design the process.

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| 1. How can communication of ideas and information (1) be applied? | The taking of site levels and recording of readings using surveyors instruments may need to be communicated to a fellow worker. |
| 2. How can information be collected, analysed and organised (1) ? | Site plans and specifications outline information that should be analysed and then transferred on to a site. |
| 3. How are activities planned and organised (1) ? | The setting out of a site for construction works may require a number of activities to be planned and organised. |
| 4. How can team work (1) be applied? | Team work may be required to mark out the shape of proposed construction works. |
| 5. How can the use of mathematical ideas and techniques (1) be applied? | Mathematical ideas and techniques, such as the reading of levelling equipment and the use of geometrical shapes, may be required. |
| 6. How can problem-solving skills (1) be applied? | Problems may arise when surveying instruments are out of specification and require adjustment. |
| 7. How can the use of technology (1) be applied? | Technology may be applied with the use of levelling equipment. |

Are there other competency standards that could be assessed with this one?

This competency standard **could** be assessed on its own or in combination with other competencies relevant to the job function.

There is essential information about **assessing this competency standard for consistent performance and where and how it may be assessed**, in the Assessment Guidelines for this Training Package. All users of these competency standards must have **access** to the **Assessment Guidelines**. Further advice may also be sought from the relevant **sector booklet**.

Range Statement

Range of Variables

The Range of Variables explains the contexts within which the performance and knowledge requirements of this standard may be assessed. The scope of variables chosen in particular training and assessment requirements may depend on the work situations available.

What **components** are likely to be included in site plans and specifications?

Components may include site location, scale of plan, north symbol, name of project, legend, associated plan references, plant lists, details of special features, existing vegetation and structures, and services above and below ground.

What **other available plans** may be referred to?

Other plans may include surveyors plans which may provide information on utility services, site levels, boundary lines, easements and rights of way, or engineers and architect plans that may show other proposed works.

What **equipment** is likely to be used when setting out a site for construction works?

Equipment may include tapes, a compass, pegs, string lines, line marking equipment, a lump or mash hammer, ranging rods, arrows, plumb bobs, levelling equipment, and personal safety equipment such as a coloured vest, safety boots, sun hat and sun screen lotion.

What could be considered an **environmental impact** in relation to proposed construction works?

Any construction works may impact on the environment in either a positive or negative manner. If it is drainage and irrigation, this may reduce excess water, nutrient and chemical flow into natural waterways. If the works involve excavation, then this may damage the soil structure and stability of the site.

What **OHS hazards** may apply to setting out a site for construction works?

Hazards may include solar radiation, uneven surfaces, strings, tapes and measures that may be tripped over, sharp equipment and surrounding obstacles.

How would existing site features be **located** from a site plan?

The location of features may include the use of baselines, offset measurements, angles and grids.

What **scale measurements** are likely to be

Metric scales may include: 1 metre to 10 metres = 1:10, 1 metre to 20 metres = 1:20, 1

used on site plans?

metre to 50 metres = 1:50, 1 metre to 100 metres = 1:100 and 1 metre to 200 metres = 1:200.

What **shape** are proposed construction works likely to be on a site plan?

Proposed construction works are likely to be basic geometric shapes including straight lines, curved lines, circles, squares, triangles, rectangles and ellipses.

How could the shape of the proposed construction works be **marked out** on site?

The shapes may be marked out or set out on the site by using paint from a spray can, lime, stringlines, pegs, stakes, rods and arrows.

What are the likely reasons for taking **levels** when setting out a site for construction works?

The reasons for taking levels may be to determine height above sea level or a datum of drainage outlets, areas and volumes in cut and fill operations, any changes in slope or gradient of the land, contours of the land, to provide the means for safe and efficient construction of structures, to achieve falls for drainage of stormwater from pavements, falls in pipe work or for installing sumps and drains, and to help set out of step risers, treads, goings, nosings, landings and hand-rails to Australian Building Regulations.

What **levelling equipment** is likely to be used to verify site levels?

Levelling equipment may include spirit levels, line bubbles, water levels, boning rods, dumpy levels, pegs, tilting levels, automatic levels, laser levels, plumb bobs, staves and tripods.

For more information on contexts, environment and variables for training and assessment, refer to the Sector Booklet.

Unit Sector(s)

Not applicable.