Draft 0.1

This is our work-in-progress update to CPCCBC4018A Apply site surveys and set-out procedures to building and construction projects: https://training.gov.au/Training/Details/CPCCBC4018A.

We are working with industry experts to ensure the updated unit:

- meets current and anticipated industry needs
- complies with current Standards for Training Packages
- is written in clear understandable English.

Information on our training package review and development process is available here: http://www.artibus.com.au/project-stage.

Summary of changes from current endorsed unit

Re-templated to meet Standards for Training Packages 2012.

Sequenced Elements and Performance Criteria.

Specified what and how performance is demonstrated in Performance Evidence.

Captured critical Range Statement items and included industry relevant knowledge in Knowledge Evidence.

Stated mandatory conditions and specific requirements for assessment.

CPCCBC4018
Apply site surveys and set-out procedures to building and construction projects

Application

This unit of competency specifies the skills and knowledge required to use technical instruments and levelling and surveying techniques to accurately set-out a building on-site. It includes determining grid levels and developing contour plans.

This unit applies to builders, site supervisors and related construction industry professionals responsible for ensuring accurate application of site surveys and set-out of a residential or commercial building.

This unit is suitable for those using specialised knowledge to complete routine and non-routine tasks and using their own judgement to deal with predictable and sometimes unpredictable problems.

Prerequisite Unit

Nil.

Unit Sector

Construction.

Elements and Performance Criteria

1. Prepare for and conduct site set-out.	1.1	Source, read and follow current project plans and site set-out procedures.
	1.2	Select and use levelling devices in accordance with standard operating procedures.
	1.3	Apply the 'two peg test' to check the amount of error present in the instrument.
	1.4	Carry out reduction in a closed level run by rise and fall method and by height of plane collimation (HPC) method.
	1.5	Calculate accurate staff readings to enable a specific reduced level (RL) set-out.
	1.6	Identify and explain errors in measured distances due to site characteristics and measurement methods.
2. Develop a contour grid.	2.1	Determine set out grid and levels.
	2.2	Prepare contour plans from grid levels to specified tolerances and stated contour intervals.
	2.3	Determine surface area being levelled and calculate cut and fill volumes.
	2.4	Calculate and record trigonometric and geometric calculations commonly used with grid lines, off sets and right-angle triangles without error.

3. Determine grades and levels.	3.1	Draw longitudinal sections from reduced levels and running chainages.
	3.2	Determine levels and clearances from given grades and distances to specified tolerances.
	3.3	Calculation angles, percentages and run ratios expressed in grades.
	3.4	Determine calculations for batter levels from grades and distances.
	3.5	Construct longitudinal sections and determine associated grades and levels in typical drainage and pipeline situations.

Foundation Skills

As well as the foundation skills explicit in the performance criteria of this unit, candidates require:

- numeracy skills to:
  - extract, interpret and comprehend measurements and information form site and set out plans
  - use trigonometric and geometric calculations to calculate grid lines, off sets and right-angle triangles
- technology skills to:
  - use digital tools and devices to communicate and collaborate effectively with others
  - use equipment and programs to access, extract information and develop relevant documentation.

Unit Mapping Information

Supersedes and equivalent to CPCCBC4018A Apply site surveys and set-out procedures to building and construction projects.

Links

Companion Volume Implementation Guide: to be added.

Assessment Requirements for CPCCBC4018 Apply site surveys and set-out procedures to building and construction projects

Performance Evidence

To demonstrate competency, a candidate must meet the performance criteria of this unit by surveying and setting out a domestic or commercial building on-site.

In doing this, the candidate must:

- select and operate one surveying and one levelling device
- develop a topographic contour plan
- calculate cut and fill quantities:
    - area and volume of land to be levelled
    - area of land to be filled
    - volume of fill required

Knowledge Evidence

To be competent in this unit, a candidate must demonstrate knowledge of:

- working drawing, specifications and design principles
- relevant building codes and specifications
- linear and angular measurements, geometry and trigonometry
- principles of surveying and set-out
- operational and functional features of levelling and surveying devices:
    - electronic distance measuring (EDM) equipment
    - laser
    - optical plummets
    - theodolite

Assessment Conditions

Assessors must meet the requirements for assessors contained in the Standards for Registered Training Organisations.

Assessment of performance must be undertaken in the workplace or in a simulated workplace environment.

Candidates must be provided with:

- current project and site plans and specifications
- organisational quality documentation
- organisational surveying, set-out and associated documents
- sufficient materials and equipment to facilitate site survey and set out for a building and construction project.

Links

Companion Volume Implementation Guide: to be added.