



Australian Government

CPPSSI6035 Conduct complex engineering set-out surveys

Release: 1

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Modification History

Release 1 This version first released with CPP Property Services Training Package Release 12.0.

This unit supersedes and is equivalent to CPPSIS6035 Conduct complex engineering set-out surveys.

Application

This unit specifies the skills and knowledge required to conduct a complex engineering set-out survey based on specifications and client requirements.

It includes scheduling, recording, monitoring and reporting on the project. The unit also includes setting up and using specialised surveying equipment to measure, record and reduce surveying data using an established control network and spatial coordinate and reference systems. It also includes validation of the accuracy of data and identifying and resolving problems.

This unit is suitable for surveyors who use broad theoretical and technical knowledge to analyse information as well as interpret and provide solutions to unpredictable and sometimes complex surveying/spatial information problems. The unit supports those who work in a technical management role in a surveying team.

All work must be carried out to comply with workplace procedures, in accordance with relevant state/territory regulations that govern surveying work, as well as work health and safety (WHS) legislation and regulations that apply to the workplace.

Cadastral surveying must be undertaken under the supervision of a registered surveyor. Users must check with the relevant regulatory state/territory authority before delivery.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

Nil.

Unit Sector

Surveying and Spatial Information Services

Elements and Performance Criteria

Elements describe the Performance criteria describe what needs to be done to

essential outcomes.	demonstrate achievement of the element.
1 Plan and prepare for complex engineering set-out survey.	1.1 Analyse survey set-out specifications, including cross-sections and plans, and technical descriptions of surveying data. 1.2 Determine constraints, work activities, technologies and techniques to be used for set-out according to project specifications and client requirements. 1.3 Identify any special equipment or resource requirements according to characteristics of the operating environment. 1.4 Devise and apply risk management and contingency strategies to ensure project complies with legislative requirements, industry standards and organisational requirements. 1.5 Determine safe work requirements, including use of personal protective equipment (PPE). 1.6 Select and check surveying equipment to ensure correct operation and functionality according to manufacturer specifications.
2 Manage complex engineering set-out survey.	2.1 Set out identified project components accurately according to project specifications. 2.2 Conduct, validate and record set-out measurements and calculations using control network according to project specifications. 2.3 Liaise and collaborate with relevant persons. 2.4 Review project progress and implement agreed changes for consistency with project scope and timeframes. 2.5 Resolve problems and implement contingencies according to organisational requirements.
3 Finalise complex engineering set-out survey.	3.1 Finalise and check project for compliance with project and organisational requirements. 3.2 Notify appropriate persons of project results according to organisational requirements.

- 3.3 Complete documentation and archive spatial data according to project and organisational requirements.

Foundation Skills

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Unit Mapping Information

Supersedes and is equivalent to CPPSIS6035 Conduct complex engineering set-out surveys.

Links

Companion volumes to this training package are available at the VETNet website - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSSI6035 Conduct complex engineering set-out surveys

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Performance Evidence

To demonstrate competency a candidate must meet the elements and performance criteria of this unit by conducting two different complex engineering set-out surveys.

For each complex engineering set-out survey, the candidate must:

- conduct set-out measurements and calculations to meet engineering specifications using two of the following pieces of surveying equipment:
 - current meter
 - global navigation satellite system (GNSS)
 - level
 - tape
 - theodolite
 - total station.

Knowledge Evidence

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

- legislative requirements, and industry standards relating to engineering set-out surveys
- set-out considerations for:
 - civil works, including roads and pipelines
 - buildings, including curved structures and footings
 - cul-de-sacs
- methods for setting up, levelling and calibrating surveying equipment
- data capture, set-out and reduction techniques
- graphical and technical information in engineering plans
- accuracy and precision requirements for setting out surveying data
- methods for calculating surveying data and verifying its accuracy using primary and secondary controls
- industry-accepted methods for validating data to identify errors and discrepancies

- methods for establishing a control network that meets specified tolerances
- organisational policies and procedures relating to:
 - work health and safety (WHS) relating to surveying activities
 - reporting and documentation
 - using and allocating resources
 - using surveying equipment
- reference and coordinate systems for surveying data, including Australian Height Datum and Map Grid of Australia.

Assessment Conditions

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

Competency is to be assessed in the workplace or a simulated environment that accurately reflects performance in a real workplace setting where these skills and knowledge would be performed.

Candidates must have access to:

- personal protective equipment (PPE)
- survey specifications, including relevant engineering plans and drawings.

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