Australian Government

CPPSSI5065 Design basic engineering structures

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 CPPSIS5065 Design basic engineering structures.

Application

This unit specifies the skills and knowledge required to design and create drawings for basic engineering structures. Basic engineering structures refer to small-scale designs for structures, such as rural or urban roads and sewer and stormwater drainage lines. It includes interpreting plans and design standards and specifications, organising resources, and developing a design. The unit also includes creating engineering drawings using design software functions and features.

This unit is suitable for skilled surveying technicians and skilled spatial information systems (SIS) technicians who use a broad range of cognitive, technical and communication skills to select and apply methods and technologies to analyse information and provide solutions to sometimes complex surveying/spatial information problems.

Surveying and spatial information skills are applied in a range of industry contexts, including town planning, civil construction, mining, engineering, health, agriculture and defence.

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 essential outcomes.	Performance criteria describe what needs to be done to demonstrate achievement of the element.
1 Organise resources for design work.	1.1 Access and analyse plans, maps, planning approvals, and design and drafting specifications to define type of engineering structure.
	1.2 Plan design work in consultation with appropriate persons to meet project specifications and safety requirements.
	1.3 Prepare the drawing environment by setting up the hardware and software system, drawing defaults and customising menus.
2 Develop design of basic engineering structure.	2.1 Review design specifications and supplied data calculations to determine drawings, views and scale required.
	2.2 Develop natural surface terrain model and cross-section and long section according to project specifications.
	2.3 Design vertical and horizontal alignment according to project specifications.
	2.4 Develop plot design, and long section plots according to project specifications.
	2.5 Calculate volume, gradients, grade intersections, and cut and fill according to project requirements.
3 Create engineering drawings.	3.1 Extract supplementary data from existing engineering drawings to meet project specifications.
	3.2 Create detailed views using various scales to meet project specifications.
	3.3 Produce plots at required scale to meet project specifications.
4 Finalise drawings of structure.	4.1 Generate report on set-out information and edit existing plans according to organisational requirements.

4.2 Finalise and check drawings and supporting documentation for compliance with project specifications.

4.3 Save drawing files in formats that meet organisational requirements.

4.4 Complete and archive documentation and spatial data according to 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 CPPSIS5065 Design basic engineering structures.

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