



Australian Government

CPPSIS6022 Produce mine drawings

Release: 1

CPPSIS6022 Produce mine drawings

Modification History

Release 1.

Replaces superseded equivalent CPPSIS6022A Create mine drawings.

This version first released with CPP Property Services Training Package Version 3.

Application

This unit of competency specifies the outcomes required to use high-level design software program functions and features to produce mine drawings. The unit covers preparing the drawing environment by analysing project specifications; and setting up hardware, software, menus and drawing defaults accordingly. It also covers designing and creating mine drawings; producing drawing files that are saved in various formats; measuring and calculating mine volumes; and checking and validating the results to identify and resolve errors. The unit requires the ability to link drawing entities to database attributes and create and plot detailed views using various scales.

The unit supports those who work in a technical management role in a mining environment and take responsibility for liaising with clients and end users to meet project requirements.

Licensing, legislative, regulatory or certification requirements apply to this unit in some States where mining surveying must be undertaken under the supervision of a registered surveyor. Relevant state and territory regulatory authorities should be consulted to confirm those requirements.

Pre-requisite Unit

Nil

Unit Sector

Surveying and spatial information services

Elements and Performance Criteria

Elements describe the essential outcomes.	Performance criteria describe the performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the range of conditions.
1. Prepare drawing environment.	1.1. Project specifications are sourced and analysed; and objectives, deliverables, constraints and principal work activities are identified and documented in consultation with <i>appropriate persons</i> .

- 1.2. Hardware and software are set up and used according to organisational requirements.
 - 1.3. Menus and drawing defaults are customised to suit project specifications according to organisational requirements.
 - 1.4. Survey database is created according to organisational requirements.
2. Create mine drawings.
 - 2.1. Drawings for surface mine are created using available software **drawing functions and features** to meet project specifications.
 - 2.2. Drawings are designed to incorporate mines safety requirements according to project specifications and organisational requirements.
 - 2.3. Drawing entities are linked to database attributes to suit project specifications.
 - 2.4. Supplementary data is extracted from existing mining and engineering plans and drawings to meet project specifications.
 - 2.5. Detailed views are created using various scales to meet project specifications.
 - 2.6. Plots are produced at required scale to meet project specifications.
3. Produce output.
 - 3.1. Files are saved in various formats according to organisational requirements.
 - 3.2. Entities are produced from drawing files or database and listed in required format to meet project specifications.
 - 3.3. Identified spatial components are accurately measured or set out, and data is reduced to project reference system.
 - 3.4. Mine volumes are calculated and validated using captured data and measurements, and errors are resolved or contingencies managed according to specifications and organisational requirements.

4. Finalise drawings.
- 4.1. Drawings are finalised and checked for compliance with project specifications and organisational requirements.
 - 4.2. Appropriate persons are notified of results according to organisational requirements.
 - 4.3. Documentation is completed and spatial data archived according to organisational requirements.

Foundation Skills

This section describes the language, literacy, numeracy and employment skills essential to performance in this unit but not explicit in the performance criteria.

Skill	Performance feature
Initiative and enterprise skills to:	• translate specifications into drawing design.
Learning skills to:	• extract and output information from engineering plans.
Numeracy skills to:	• apply understanding of height, depth, dimension and position to actual operational activity and virtual representation • use statistics to reduce errors in measurements.
Oral communication skills to:	• liaise with clients and end users to identify drawing detail.
Reading skills to:	• interpret technical drawing standards.
Technology skills to:	• export drawings into different formats • operate hardware, including computers and plotters.

Range of Conditions

This section specifies work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included. Bold italicised wording, if used in the performance criteria, is detailed below.

- Appropriate persons*** must include at least one of the following:
- client
 - colleague
 - end user
 - registered or qualified surveyor
 - site personnel.

- Drawing functions and features*** must include at least eight of the following:
- arcs
 - area and volumes functions
 - creating output files using designs or survey pick-up data
 - dimensions
 - drawing features, such as polylines and texts
 - drawing functions
 - edit functions
 - grade reports
 - isometrics and perspectives
 - macros
 - methods for drawing lines
 - ore and waste reports
 - two-dimensional (2-D) coordinate plotting.

Unit Mapping Information

CPPSIS6022A Create mine drawings

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=6f3f9672-30e8-4835-b348-205dfcf13d9b>

Assessment Requirements for CPPSIS6022 Produce mine drawings

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Performance Evidence

A person demonstrating competency in this unit must satisfy the requirements of the elements, performance criteria, foundation skills and range of conditions of this unit. The person must also use a range of design software program functions and features to produce mine drawings that meet technical specifications for two different projects.

While producing the above mine drawings, the person must:

- define and document project objectives, constraints and main work activities
- prepare the drawing environment by setting up hardware and software system and drawing defaults, and customising menus
- communicate clearly with clients and stakeholders to clarify drawing requirements and detail
- apply mathematical concepts and skills to a range of surveying-related problems
- comply with standard operating procedures, drawing standards and organisational requirements relating to:
 - completing records and reporting
 - drafting mine drawings
 - protocols for saving and formatting drawing files
- create mine drawings that comply with design requirements, including:
 - data extracted from existing mining and engineering drawings
 - drawing entities linked to database attributes
 - incorporating mines safety requirements
 - producing drawings, views and plots at required scale
- exercise precision and accuracy in relation to measurements, tolerances and design
- save drawing files in formats relevant to software
- select and use appropriate equipment and software, as specified in the assessment conditions, to produce mine drawings.

Knowledge Evidence

A person demonstrating competency in this unit must demonstrate knowledge of:

- display principles in relation to mine drawings, including:

- colour
- composition
- font type
- legends
- media
- scale
- size
- text and line style
- drawing principles, capabilities and uses in relation to mine drawings
- industry-accepted drawing standards, data formats, and precision and accuracy requirements for preparing mine drawings using software
- methods for validating drawings and measurements to identify errors
- organisational, legal and statutory requirements relating to:
 - records and documentation
 - reporting
- standard engineering and mining plan design and presentation conventions
- techniques for incorporating surface mining methods and mines safety requirements into mine drawings.

Assessment Conditions

The following must be present and available to learners during assessment activities:

- Equipment:
 - personal computer, including drawing applications and software appropriate for producing mine drawings
 - hardware, including printer, scanner, plotter and multimedia devices and peripherals
- Specifications:
 - project and design specifications
 - organisational policies, procedures and documentation relating to legal requirements for mines safety
- Physical conditions:
 - access to equipped work station
- Relationships with team members and supervisor:
 - working in a team
- Relationships with client:
 - client consultation required.
- Timeframe:
 - as specified by the client and project requirements.

Assessor requirements

As a minimum, assessors must satisfy the assessor requirements in the Standards for Registered Training Organisations (RTOs) current at the time of assessment.

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