



Australian Government

Assessment Requirements for AHCARB512 Generate tree plans using computer-aided design software

Release: 1

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Modification History

Release	Comments
Release 1	This version released with AHC Agriculture, Horticulture and Conservation and Land Management Training Package Version 5.0.

Performance Evidence

An individual demonstrating competency must satisfy all of the elements and performance criteria in this unit.

There must be evidence that the individual has produced plans using computer-aided design software and calculated and plotted tree protection zones (TPZ) for at least 20 trees and 10 encroachments across two different sites.

There must also be evidence that the individual has:

- confirmed project requirements for drawings
- identified drawing requirements, purpose and scope, and confirmed with client
- prepared computer-aided design (CAD) software ready for drawing, including:
 - prepared the computer desktop user interface
 - determined the layering strategy for components
 - identified and selected component libraries
 - selected text and dimension styles according to workplace style guide
 - selected line types and weights
 - selected hatch patterns and types
 - set up title blocks for drawing sizes
 - set up reference schedules
- used two-dimensional (2D) CAD software program and functions to produce drawings using layers for different components. The tree protection CAD plan must contain:
 - TPZ
 - structural root zone (SRZ)
 - encroachments
 - imported digital text and drawing files from other software applications
- scanned and saved documents in digital format for import into 2D CAD drawings
- reviewed, edited and deleted incongruous elements
- recorded notes to drawings
- identified and applied dimensioning and scale to drawings

- identified and applied tree symbols with precision. Drawing must provide the following differentiations:
 - trees to be retained
 - trees to be removed
 - trees to be transplanted
- calculated areas of TPZ, SRZ and encroachments
- checked the drawing for accuracy and quality
- set page layout on printer, including:
 - scale
 - line weights
- set print parameters for the printer, including:
 - page size and paper quality
 - output print quality (fast, draft, best)
- created file storage directories according to workplace file management procedures
- named and saved drawing files to file directories according to workplace file management procedures and naming convention
- created drawing files and sent to external personnel for use in different software applications
- created exportable files for CAD software and document readers.

Knowledge Evidence

An individual must be able to demonstrate the knowledge required to perform the tasks outlined in the elements and performance criteria of this unit. This includes knowledge of:

- interpretations and planning of drawing needs for arboriculture projects, including:
 - types of drawings used in arboriculture
 - content and purpose of drawings
 - use of drawings and importance of accuracy
 - planning the design and drawing project
- sources of information for drawing development, including:
 - project personnel
 - site visits and survey plans
 - digital images and aerial photography
- basic principles of 2D CAD drawing, including:
 - 2D CAD software programs available
 - CAD drawing tools
 - principles of layers and a layering strategy
 - CAD libraries and standard detail and components
 - selecting and using fonts and styles in business and drawings
 - selecting and setting dimension size and styles

- line types, thickness and colour as a means to communicate and differentiate design elements
- entering text and notations into CAD drawings
- setting and maintaining accuracy in CAD drawings
- basic tools and setup of a CAD drawing program, including:
 - preparing the CAD desktop and user interface
 - CAD drawing tools, their use and menu options
 - preparing page layout for drawing size
 - selecting hatch patterns, fill and colour
 - creating and using title blocks
 - use of style guides in maintaining quality and standards for organisations
- adding, editing and changing CAD components in drawings, including:
 - drawing lines, shapes and polygons
 - editing and deleting lines, text and shapes
 - joining and breaking lines and shapes
 - adding and editing text
 - plotting and positioning trees and other symbols
 - entering and positioning dimensions
- quality control check and document control
- page layout and standard size paper, including:
 - International Organization for Standardization (ISO) and American National Standards Institute (ANSI) paper sizes and use in Australia
- standard file formats for drawings and file exchange between CAD software
- standard file formats for conversion of drawings for document sharing
- saving computer files, file directories and storage media, including:
 - methods of saving files
 - file retrieval and backup
 - importing and exporting files
 - organisational standards for naming, filing and file security
- scanning and importing documents and graphics into CAD software
- plan printers, plan plotters and printing requirements, including:
 - print page size
 - media type
 - print quality
- calculating and plotting TPZ, SRZ and encroachments.

Assessment Conditions

Assessment of the skills in this unit of competency must take place under the following conditions:

- physical conditions:

- two arboriculture work sites with trees as stipulated in the performance evidence, or an environment that accurately represents workplace conditions
- resources, equipment and materials:
 - computer with 2D CAD software, symbols libraries for architecture and arboriculture
 - digital scanner
 - plan printers and/or plotters
- specifications:
 - workplace safety policies and procedures for CAD drawing standards and file conventions
 - current drawing standards for page sizes and drawing conventions
- relationships:
 - client.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards. In particular, assessors must have:

- arboriculture vocational competencies at least to the level being assessed
- current arboriculture industry skills directly relevant to the unit of competency being assessed.

Links

Companion Volumes, including Implementation Guides, are available at VETNet: - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=c6399549-9c62-4a5e-bf1a-524b2322cf72>