

## 2 2D Draw Produce a drawing set using 2D computer-aided design software

<b>Kaupae   Level</b>	4
<b>Whiwhinga   Credit</b>	5
<b>Whāinga   Purpose</b>	<p>This skill standard recognises the skills required to apply 2D computer-aided design (CAD) software to produce a drawing set for a structure and its components.</p> <p>This skill standard may contribute to the New Zealand Diploma in Detailing (Structural) (Level 5) with strands in Light steel, Structural steel, Precast concrete, and Reinforcing steel [Ref:4515].</p>

### Hua o te ako me Paearu aromatawai | Learning outcomes and assessment criteria

<b>Hua o te ako   Learning outcomes</b>	<b>Paearu aromatawai   Assessment criteria</b>
1. Apply 2D CAD practices to produce a drawing of a structure and its components.	a. The drawing is a dimensionally accurate representation of a structure and its components.
	b. Efficient use of CAD software interface, tools and functionalities.
2. Apply 2D CAD practices to produce a drawing set of a structure and its components.	a. Annotated and dimensionally accurate drawing set produced meets industry standard.

### Pārongo aromatawai me te taumata paearu | Assessment information and grade criteria

Assessment specifications:

CAD software is used to produce a drawing set that accurately represents a structure and its components to industry standard.

2D drawing produced using CAD defines a structure, component or connection using 3<sup>rd</sup> angle orthographic projection.

Drawing set includes a title page and index, plan, elevation and side elevation in 3<sup>rd</sup> angle projection, detail views and 3D view of the object.

A structure refers to a system of connected parts designed to bear loads, resist forces, and provide stability and support for buildings or other engineered constructions.

### Ngā momo whiwhinga | Grades available

Achieved

### Ihirangi waitohu | Indicative content

#### CAD System

- CAD software types

- Interface, tools and functionalities

### Drawing Types and Organisation

- Drawing types – general arrangements (mark plans), assembly, part & sequencing of drawing sets, fabrication, construction
- Steel drawings
- Concrete drawings

Drawing set organisation and compilation

### Drawing Practices

- Title blocks
- Scale and dimensions
- Legibility
- Layer organisation
- Symbols
- Detailed Annotations sections and cross referencing, view titles, dimensions, scales, notes, welds
- Dimensioning Standards
- Line styles
- Grid and Alignment
- Revision Control
- Hatching / shading
- Layers and Colours

### Templates and Printing

- Line & text formatting from templates
- Publishing and printing

### Rauemi | Resources

Programme guidance available from [qualifications@waihangaararau.nz](mailto:qualifications@waihangaararau.nz)

ISO 128-2:2022 Technical product documentation (TPD) — General principles of representation — Part 2: Basic conventions for lines

ISO 128-3:2022 Technical product documentation (TPD) — General principles of representation — Part 3: Views, sections and cuts

### Pārongo Whakaū Kounga | Quality assurance information

<b>Ngā rōpū whakatau-paerewa  </b> Standard Setting Body	Waihanga Ara Rau Construction and Infrastructure Workforce Development Council.
<b>Whakaritenga Rārangi Paetae Aromatawai  </b> DASS classification	Planning and Construction > Construction
<b>Ko te tohutoro ki ngā Whakaritenga i te Whakamanatanga me te Whakaōritenga  </b> CMR	0048

<b>Hātepe  </b> Process	<b>Putanga  </b> Version	<b>Rā whakaputa  </b> Review Date	<b>Rā whakamutunga mō te aromatawai  </b> Last date for assessment
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<b>Rēhitanga</b>   Registration	<type here>	[dd mm yyyy]	[dd mm yyyy]
<b>Arotakenga</b>   Review	<type here>	[dd mm yyyy]	[dd mm yyyy]
<b>Kōrero whakakapinga</b>   Replacement information	<type here>		
<b>Rā arotake</b>   Planned review date	[dd mm yyyy]		

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council at [qualifications@waihangaarau.nz](mailto:qualifications@waihangaarau.nz) to suggest changes to the content of this skill standard.