Title	**Read, interpret, and update drawings and plans used in electronic security system installations**		
Level	**4**	**Credits**	**3**

Purpose	This unit standard is intended for the training and assessment of people working in or intending to work in the electronic security industry, and covers understanding and interpretation of drawing types, symbols, and diagrams used in the electronic security industry and related trades. People credited with this unit standard are able to: – demonstrate knowledge of drawing types used in electronic security installations, and in building and construction; – identify and show usage of symbols used in electronic security installations; and – use drawings to plan an electronic security installation and update drawings to reflect change.

Classification	Electronic Engineering > Electronic Security

Available grade	Achieved

Guidance information

1 This unit standard has been developed for learning and assessment on-job.

2 Definitions
CAD – computer aided design.
Electronic security installation – includes but is not limited to intruder detection systems, surveillance systems, access control systems, intercom systems.
Industry practice – practice used and recommended by organisations involved in the electrotechnology industry.
PIR – passive infrared detector.

3 References
a Either hand drawing or CAD may be used during assessment.
b Industry recognized symbols or industry adopted symbols may be used to define equipment types.
c All measurements are to be expressed in Système International (SI) units, and, where required, converted from Imperial units into SI units.

d All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:
   i legislation;
   ii policies and procedures;
   iii ethical codes;
   iv relevant industry standards;
   v applicable site, enterprise, and industry practice; and,
   vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of drawing types used in electronic security installations, and in building and construction.

Performance criteria

1.1 Explain drawing types in terms of purpose, application, and information contained for electronic security installations.

Range drawing types may include but are not limited to – layout drawing, location drawings, building plans, block diagrams, circuit diagrams, line diagrams, wiring diagrams, network diagrams, panel layouts, equipment schedules;
evidence of 5 drawing types is required;
information may include but is not limited to – position of devices, coverage of devices, electrical connection requirements, cable pathways, number and type of devices required, type of cabling required, cable terminations, zone references.

1.2 Explain drawing types in terms of purpose, application, and information contained for building construction.

Range may include but is not limited to – architectural, plumbing and drainage, mechanical services, fire services, electrical services, telecommunications, structural and civil.

Outcome 2

Identify and show usage of symbols used in electronic security installations.

Performance criteria

2.1 Identify and show usage of common symbols used in intruder alarm systems.

Range may include but is not limited to – control panel, keypad, PIR, microwave detector, dual technology device, motion sensors, internal sounder, strobe, external satellite, panic button, pressure mat, glass break detector, foil on glass detector, seismic sensor, ultrasonic transceiver, receiver, smoke detector, heat detector, emergency battery, mains power source;
evidence of 10 symbols is required.

2.2 Identify and show usage of common symbols used in access control systems.

Range may include but is not limited to – credential reader, biometric access reader, card reader with keypad, card reader with time and attendance, exit device, turnstile, revolving door, traffic arm, vehicle loop detector, electronic lock, electric door opener, doorbell, pushbutton;
evidence of five symbols is required.

2.3 Identify and show usage of common symbols used in surveillance systems and intercom systems.

Range may include but is not limited to – camera, motion detector, video monitor, video recorder, master intercom, intercom unit, door buzzer, electric door opener;
evidence of five symbols is required.

2.4 Identify and show usage of common symbols used in data networks.

Range may include but is not limited to – hub, switch, router, patch panel, firewall, computer, laptop, server, wireless access point, radio tower, satellite, internet, wan;
evidence of five symbols is required.

2.5 Identify and show usage of common symbols used by associated trades.

Range may include but is not limited to - construction, electrical, services, fire, network, architectural.
evidence of five symbols is required.

Outcome 3

Use drawings to plan an electronic security installation and update drawings to reflect change.

Range evidence of three electronic security system installations is required.

Performance criteria

3.1 Use drawings to plan an installation.

3.2 Identify the required components, equipment and cabling necessary to meet the job requirements.

3.3 Describe how the selected components meet security, safety, and environmental conditions.

3.4 Identify possible areas of hazard and conflict within the installation.

Range may include but is not limited to, electrical, plumbing, structural, network, fire protection, building services

3.5 Update drawings to reflect the as-built installation.

Planned review date	31 December 2026

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	24 January 2019	N/A
Rollover	2	26 September 2024	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@waihangaararau.nz if you wish to suggest changes to the content of this unit standard.