



ARCHITECTURAL DRAFTING 15.1300.20

TECHNICAL STANDARDS

An Industry Technical Standards Validation Committee developed and validated these standards on December 2, 2014. The Arizona Career and Technical Education Quality Commission, the validating authority for the Arizona Skills Standards Assessment System, endorsed these standards on April 16, 2015.

Note: Arizona's Professional Skills are taught as an integral part of the Architectural Drafting program.

The Technical Skills Assessment for Architectural Drafting is available SY2015-2016.

Note: In this document i.e. explains or clarifies the content and e.g. provides examples of the content that must be taught.

STANDARD 1.0 APPLY MEASUREMENT AND SCALE CONCEPTS IN DESIGN DRAFTING

- 1.1 Identify types of measurement instruments used by architects and engineers (e.g., architectural scale and engineering scale)
- 1.2 Select proper measurement tools used by architects and engineers
- 1.3 Perform field measurements with handheld instruments (e.g., tape measure, lasers, and digital applications)
- 1.4 Determine and apply the use of appropriate scales
- 1.5 Transcribe illustrations and/or field measurements accurately to a scale

STANDARD 2.0 INTERPRET TECHNICAL DOCUMENTS AND BUILDING SPECIFICATIONS USED BY ARCHITECTS AND ENGINEERS

- 2.1 Interpret dimensions, symbols, legends, scales, and directions/orientations
- 2.2 Read and interpret content and information communicated in schematics (preliminary concept) and technical drawings
- 2.3 Locate and interpret information on specific documents
- 2.4 Analyze schematics (preliminary concept) and technical drawings for clarity, completeness, and accuracy
- 2.5 Recognize cross-referencing on technical drawings (e.g., sections and details related to a floor plan)
- 2.6 Identify and describe basic types of drawings by trade (e.g., architecture, mechanical, and civil engineering systems)
- 2.7 Check documents for dimensional accuracy, completeness, and detail
- 2.8 Compare schematics to technical drawings (e.g., plumbing isometric schematic related to a plumbing plan)
- 2.9 Interpret legal land descriptions (plat and/or plot maps) needed for a site plan
- 2.10 Identify industry uniform standards, codes, and regulations used in architectural drafting

STANDARD 3.0 UTILIZE BASIC COMPUTER CONCEPTS, OPERATIONS, AND TECHNOLOGY APPLICATIONS

- 3.1 Use computer hardware/software for design drafting solutions
- 3.2 Apply electronic file management techniques
- 3.3 Use various formats (e.g., dxf, dxg, Tiff, gif, pcx, eps, spd, and pdf) to import and export data files
- 3.4 Prepare files for electronic transfer and/or storage
- 3.5 Use the Internet for file transfer/storage (e.g., FTP and Cloud)
- 3.6 Use a computer network for file management and file transfer

STANDARD 4.0 UTILIZE CADD (COMPUTER AIDED DRAFTING DESIGN), VDCM (VIRTUAL DESIGN AND CONSTRUCTION MODELING), AND/OR BIM (BUILDING INFORMATION MODELING) SYSTEMS TO MANAGE PROJECT

- 4.1 Compare and contrast services and processes provided by CADD, VDCM, and BIM systems
- 4.2 Analyze drawings using CADD, VDCM, and BIM software functions/commands
- 4.3 Use CADD, VDCM, and BIM software commands to set up drawing scale, format, dimensioning, etc.
- 4.4 Apply item properties, colors, line types, editing commands, and grouping techniques

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4.5 Incorporate standard parts, symbol libraries, and/or templates

4.6 Control viewing commands

STANDARD 5.0 DETERMINE THE COMPONENTS OF BUILDING SYSTEMS

5.1 Identify the components of a site plan

5.2 Identify different types/parts of foundations/footings

5.3 Identify different types of floor structures/systems

5.4 Identify components of a wall

5.5 Identify parts of a staircase systems

5.6 Identify different types/parts of roofs

STANDARD 6.0 CREATE TECHNICAL DRAWINGS

6.1 Identify, select, and use fundamental drafting techniques for drawings

6.2 Demonstrate freehand lettering technique

6.3 Identify and utilize line types and line weights

6.4 Create title blocks

6.5 Format a sheet set

6.6 Apply notes/annotations and dimensions as needed

6.7 Plot, print, or create digital drawings

6.8 Organize a sequence of drawings and supporting documents

STANDARD 7.0 APPLY DESIGN DRAFTING CONCEPTS AS RELATED TO ARCHITECTURAL DESIGN

7.1 Prepare a foundation/basement plan

7.2 Prepare a floor plan or model from a preliminary sketch

7.3 Prepare a roof plan

7.4 Prepare an electrical plan locating receptacle, switch, and lighting fixtures

7.5 Prepare a plumbing plan showing fixture location

7.6 Prepare a basic HVAC plan locating air handlers, condensers, and diffusers (vents)

7.7 Prepare a plan showing exterior elevation

7.8 Identify and prepare the components of door and window schedules

7.9 Assemble a set of working drawings for a residential or small commercial structure

STANDARD 8.0 PREPARE DRAWINGS OF SECTIONS AND DETAILS

8.1 Identify, create, and place longitudinal and/or cross sections and details

8.2 Prepare wall sections and details

STANDARD 9.0 CREATE PICTORIAL DRAWINGS, MODELS, AND RENDERINGS

9.1 Create isometric drawings using manual and/or electronic techniques

9.2 Select appropriate materials and render models

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