ARCHITECTURAL DRAFTING (VIRTUAL)

PURPOSE
To evaluate each contestant’s preparation for employment and to recognize outstanding students for excellence and professionalism in the field of architectural drafting.

ELIGIBILITY
Open to active SkillsUSA members enrolled in programs with architectural drafting as the occupational objective.

Contestant’s number must be visible at all times.

CLOTHING REQUIREMENT
Contest Clothing Notes (Apply ONLY to Virtual Competitions):
- Official NYS SkillsUSA Competition Clothing recommended but NOT required.
- Contestant clothing options include the following:
  - Official Competition Clothing.
  - Trade Appropriate Clothing.
  - Professional Dress.
  - Business Casual.
- Clothing must meet industry safety standards.
- No identification of the contestant, school or state is allowed on clothing.
- No offensive, vulgar or inappropriate images or text are allowed on contestants clothing.
- No shorts or sleeveless shirts are allowed.
- Skirts must be at least knee-length.
- Proper Personal Protective Equipment (PPE) must be worn by contestant to meet all state, local and school requirements due to COVID-19.
- Scoring deductions may only be given and/or disqualification of contestant if clothing safety standards are not met.

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
   a. All necessary information and furnishings for judges and technical committees

2. Supplied by the contestant:
   a. Computer with high-speed internet capability and camera to use applications such as Zoom, Teams, etc. The minimum recommended internet bandwidth speeds for joining Zoom meetings, accessing on-demand curriculum and other online operations is 2.0 Mbps up and down. You can test your current internet speeds by following this link: www.speedtest.net. Allow the page to load and click on GO.
   b. A secondary camera(s) may be required to provide judges with the ability to view contestants from different angles.
   c. A contest Proctor will be required to be on site to assist judges. A local industry expert is preferred to serve as the Proctor and shall not be an individual that has been involved with the training of the contestant(s). The Proctor will serve as the onsite “hands and eyes” for the judges. Proctor will follow instructions from the judges for safety and operations related to the competition. Proctor may be asked by judges to perform several tasks such as operating a portable camera to show specific components or steps, measure parts, or any task that will provide judges with information needed to assist in accurate scoring of the contestant’s work or presentation. However, the Proctor shall not serve as a judge nor have any influence on contestant scores.
   d. The contestant’s instructor or advisor shall be on site to observe all competition activities to ensure a safe and healthy competition experience for all participants. That instructor or advisor will not be allowed to interact or interfere with the competitor unless a safety issue arises that requires interaction. Any other support or interaction between the contestant and the instructor/advisor will result in disqualification.
   e. The architectural drafting work station will consist of a table with a work area, space for reference material and a personal computer and a chair.
f. 110-volt electrical outlet

g. Output hardware: plotter or printer

h. Drafting paper/vellum

i. All necessary information and furnishings for judges and technical committees

j. PC-type computer, monitor and input devices. Computers may be obtained from any source. To have access to the most current technology, contestants and their schools are encouraged to develop a relationship with a hometown computer/software dealer who can serve as a contestant sponsor. It is advisable to have active virus-protection software on the contestant’s computer.

k. Removable data storage device (flash drive) or recordable CD

l. Architectural software of choice. Proof of licensing for every software program installed on the contestant’s computer must be provided to the technical committee at the contestant orientation meeting. School-owned computers must be set up to operate the software of choice independent of the school’s network.

m. Students may bring published reference books, tables and software manuals. Reference materials must not take up more than one cubic foot of space and may not be shared between contestants. Legal PDF copies of textbooks may be allowed if resident to the student’s computer hard drive and approved by the technical committee.

n. Typical personal drafting supplies desired for board drafting and freehand sketching subject to the approval of the technical committee

o. Battery-operated calculator

p. Multi-receptacle power strip

q. Students choosing to use board drafting equipment must bring their own drawing board, equipment and drafting supplies.

Note: The setup configuration and the tear-down of all contestant-provided equipment will be the responsibility of the contestant.

Knowledge Performance
The contest will include a written knowledge test assessing general knowledge of architecture and drafting. Written portions may also exist during the skills portion of the contest. Knowledge of terms and principles used in the architecture profession will be required for the skill demonstration portion of the contest.

Skill Performance
The contest will assess skill performance by providing a hand sketch and computer-generated problem that may be solved using either board drafting or CAD.

CONTEST GUIDELINES
Contestants number must be visible at all times

Note for Virtual Competitions: Contestants may not be required to perform all the standards and competencies listed in this and the following sections. However, contestants should be prepared to perform components in all areas. Prior to the competition, the technical committee may determine which standards and competencies contestants will be perform for the virtual contests. The technical committee will determine if additional information is needed for contestants prior to the competition. These changes will be posted on the SkillsUSA Championships contest update website at: http://updates.skillsusa.org.

1. Preparation of drawings will include proper dimensions and line type selection according to current drafting standards.

2. During the contest, the contestants will work independently; no assistance from other contestants, instructors or observers is allowed.

3. Limited technical assistance for computer or software malfunction may be given by appropriate manufacturers’ representatives or members of the technical committee.

4. Contestants will each be given the same amount of time to accomplish the problem. Everyone will begin at the same time and take the required lunch break, and no one will be allowed to work past the contest conclusion. (Additional time may be granted for equipment malfunction.)

5. Each contestant will be responsible for establishing plotting procedures at the
computer and for plotting his or her work to a plot file on a USB flash drive. Students must have a program on their computer to allow them to plot to a PDF if the program of choice does not allow this plotting option.

6. Criteria to evaluate skill performance are general in nature and will be done from plotted drawings, manual drawings and sketches. Specific criteria will be based on the demonstration of competency in those elements of accuracy and productivity included in the contest problem.

7. Competencies to be demonstrated may be selected from the Standards and Competencies below.

**Standards and Competencies**

**AD 1.0 — Demonstrate understanding of terms and principles used in the architectural profession**

1.1 Define and use terms commonly used in the architectural profession

1.2 Explain the application of geometric objects to building materials

1.2.1 Define the characteristics of an equilateral triangle and its application to architecture

1.2.2 Define the characteristics of an isosceles triangle and its application to architecture

1.2.3 Define the characteristics of a square and its application to architecture

1.2.4 Define the characteristics of a parallelogram and its application to architecture

1.2.5 Define the characteristics of an equilateral triangle and its application to architecture

1.2.6 Define the characteristics of a hexagon and its application to architecture

1.2.7 Define the characteristics of an octagon and its application to architecture

1.2.8 Define the characteristics of a circle and its application to architecture

of each line

2.2.1 Visible/Object Lines: Thick solid lines that represent visible edges or contours of the part. Visible lines of floor plans are medium thickness (0.6mm)

2.2.2 Hidden Lines: Hidden lines should always touch where the visible feature starts or ends (0.3mm). Hidden lines may be omitted from drawings for clarity purposes

2.2.3 Section Lines: Section lines represent the area of the part that would be cut in a section view (0.3mm)

2.3 Explain orthographic elevation projection

2.3.1 Architecturally, views are referred to as elevations

2.3.2 Roof plan is the top view and front elevation is the front view, etc.

2.3.3 Elevations are oriented on site with reference to true north or building north

2.4 Explain the terms and definitions used in detail drawings, working drawings and drafting

2.5 Define and describe the components that comprise architectural drawings

2.5.1 Necessary multi-views

2.5.2-Dimensional information

2.5.3 Specified materials

2.5.4 Revision block, title block and sheet size

2.5.5 Drafter/reviewer names

2.5.6 Enlarged views and sections showing detail

2.5.7 General notes with construction information

2.5.8 Schedules: doors, windows and room finishes

2.6 Define and describe the components that comprise architectural construction (working) drawings

**AD 2.0 — Interpret and apply conventional General Drafting Standards to architectural drafting situations**

2.1 Define function of each line in the Alphabet of Lines

2.2 Explain the graphical characteristics

**AD 3.0 — Develop a set of working drawings from a provided scenario with provided materials using competencies identified for drafting certification by the American Design Drafting Association**

3.1 Produce multi-view drawings with lines, curves, surfaces, holes, fillets, rounds, chamfers, runs outs and ellipses

3.2 Use standard drafting techniques to create section views to improve the
visualization of new designs

3.3 Clarify multiview drawings and facilitate the dimensioning of drawings

3.4 Summarize and apply the principles and procedures for adding size information to a drawing according to standard dimensioning practices

3.5 Draw and label site plans, floor plans, foundation plans, plumbing plans, mechanical plans, electrical plans and landscaping plans with elevations, sections, details, schedules and necessary multiviews