CONTENT STANDARDS
as applied to
Construction Zone Workstations

National Standards
(Source of standards: *Standards for Technological Literacy*, International Technology Education Association, 2002)

- **Standard 1**

Students will develop an understanding of the characteristics and scope of technology.

Students will understand the significance of technology in creating solutions for housing and the building of various components of infrastructure. They will become familiar with the tools developed to solve challenges and problems in the construction arena.

- **Standard 2**

Students will develop an understanding of the core concepts of technology.

Systems - Students will acquire skills used in the construction process and understand the interaction of the various trades to produce a final product.
Resources - Students will learn to use appropriate tools, machines, and materials to accomplish each project. They will keep a record of time on project to understand allocation of resources. They will understand the type of training necessary to prepare people for the demands of the technology of each trade.
Requirements - Students will understand the safety requirements of the tools and processes required in construction.
Optimization and Trade-off - Students will gain experience using the appropriate and professional tools of each trade.
Processes - Students will understand the systematic sequence of actions used to combine resources to produce an output by performing activities following an established procedure. They will perform these activities in the virtual environment provided by the construction workstation.
Controls - Students will learn to judge the results of the processes they follow.

- **Standard 3**

Students will develop an understanding of the relationships among technologies and the connections between technology and other fields of study.

Students will understand the utilization of basic skills (such as mathematics) in the application of construction technology and the interaction of the various trades.

- **Standard 4**

Students will develop an understanding of the cultural, social, economic, and political effects of technology.

Students will understand that innovations in construction affect the type of housing and level of comfort in everyday society.

- **Standard 5**

Students will develop an understanding of the effects of technology on the environment.

- **Standard 6**

Students will develop an understanding of the role of society in the development and use of technology.

Students will recognize that construction processes are developed to meet the demands of individuals and communities.

- **Standard 7**

Students will develop an understanding of the influence of technology on history.

Students will understand that advancements in tools and materials have affected the level of comfort and lives of individuals and societies.

- **Standard 8**

Students will develop an understanding of the attributes of design.

By turning designs into actual projects, students will develop the capacity to judge the practical aspects of design.

- **Standard 9**

Students will develop an understanding of engineering design.

Students will use tools and develop skills that will help them understand how to turn ideas into finished products and systems.

- **Standard 10**

Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.

Students will acquire abilities and knowledge to use in problem solving and troubleshooting. They will also work in teams because teamwork allows individuals to pool their strengths in order to arrive at better solutions to problems.

- **Standard 11**

Students will develop abilities to apply the design process.

Students will use and construct two- and three-dimensional designs. They will test and evaluate designs to preestablished requirements. They will use tools and equipment to produce a product.

- **Standard 12**

Students will develop the abilities to use and maintain technological products and systems.

Students will learn to use tools, materials, and machines safely and use them to perform repairs. They may use computers as appropriate. They will document processes and procedures.

- **Standard 13**

Students will develop the abilities to assess the impact of products and systems.

- **Standard 14**

Students will develop an understanding of and be able to select and use medical technologies.

- **Standard 15**

Students will develop an understanding of and be able to select and use agricultural and related biotechnologies.

- **Standard 16**

Students will develop an understanding of and be able to use energy and power technologies.

Students will develop safe work habits and learn the proper safety procedures when working with energy technologies. They may work with devices that convert one form of energy to another.

- **Standard 17**

Students will develop an understanding of and be able to select and use information and communication technologies.

Students will become familiar with the use of symbols, measurements, and drawings as a means to express ideas. They will also learn the appropriate terminology for each trade.

- **Standard 18**

Students will develop an understanding of and be able to select and use transportation technologies.

- **Standard 19**

Students will develop an understanding of and be able to select and use manufacturing technologies.

Students will safely use various materials, tools, and processes in order to design, make, and assess their products.

- **Standard 20**

Students will develop an understanding of and be able to select and use construction technologies.

Students will understand that certain structures can be thought of as part of a much larger system that underlies the functioning of the entire society. They will be able to identify the various materials and systems that comprise buildings.

This ability will make them, as citizens, better able to assess the quality of homes and other structures and to perform periodic improvement to those structures.