

# Advanced Construction Technologies (2007)

Adopted 2007

## Lay Out Building Lines

- 1.1** Demonstrate the use and care of precision measuring instruments.

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- 1.2** Establish building lines.

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- 1.3** Use a builder's level or transit and differential leveling procedures to determine site and building elevations.

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- 1.4** Record site layout data and information in field notes using accepted practices.

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## Perform Concrete/Masonry Work

- 2.1** Prepare and pour a footing.

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- 2.2** Construct a foundation wall or pier.

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- 2.3** Lay brick/block to specification.

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- 2.4** Cut brick and block accurately.

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- 2.5** Demonstrate the process of depositing, spreading, consolidating, and striking off concrete in a form.

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- 2.6** Construct concrete formwork.

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- 2.7** Estimate the material needed for concrete/masonry work.

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## Lay Out and Install Floor Systems

- 3.1** Install sill plate(s).

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- 3.2** Set posts.

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- 3.3** Construct or place girders/beams.

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- 3.4** Match selected fasteners used in floor framing to their correct uses.

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- 3.5** Estimate the amount of material needed to frame a floor assembly.

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- 3.6** Lay out and construct floor assembly.

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- 3.7** Install joists for a cantilever floor.

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**3.8 Install a subfloor using butt-joint plywood/OSB panels.**

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**Demonstrate Wall and Ceiling Framing**

**4.1 Lay out wall lines including plates, corner posts, door and window openings, partition Ts, bracing and plan for installation of fire stops.**

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**4.2 Assemble wood stud walls.**

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**4.3 Assemble metal stud walls.**

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**4.4 Lay out, assemble, erect, and brace exterior walls for a frame building.**

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**4.5 Cut and install ceiling joists on a wood frame building.**

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**4.6 Estimate the materials required to frame walls and ceilings.**

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**Frame and Finish a Roof**

**5.1 Construct conventional roof and/or set truss systems.**

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**5.2 Install roof sheathing and coverings.**

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**5.3 Frame a roof opening.**

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**5.4 Demonstrate the techniques for installing a variety of types of roofing materials.**

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**5.5 Estimate the materials used in framing and sheathing a roof.**

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**Identify Thermal and Moisture Protection**

**6.1 Install insulation material.**

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**6.2 Install vapor barrier.**

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**6.3 Identify types and use of thermal insulation.**

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**Apply Exterior Finishes**

**7.1 Identify and/or install frieze boards or soffit.**

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**7.2 Install exterior moldings and trim.**

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**7.3 Install various types of siding.**

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**7.4 Apply correct installation to eliminate water intrusion.**

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**7.5 Install exterior stucco finish.**

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**Install Doors and Windows**

**8.1 Install door systems.**

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**8.2 Install door hardware.**

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**8.3 Install window systems.**

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**Install Interior Trim and Stairs**

**9.1** Install baseboards and casings.

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**9.2** Lay out and cut stringers.

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**9.3** Determine the number and sizes of risers and treads required for a stairway.

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**9.4** Build a small stair unit.

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**9.5** Lay out a skirt board.

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**Assemble Piping, Waste and Vent Distribution Systems**

**10.1** Assemble a soil, waste and vent system.

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**10.2** Assemble a water distribution system.

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**10.3** Install plumbing fixtures or equipment.

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**10.4** Demonstrate the ability to properly measure, cut, and join plastic and copper piping

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**10.5** Identify the major components of a drainage system; describe their functions and how they malfunction.

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**Install Electrical Component/System(s)**

**11.1** Identify electrical service entrance requirements.

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**11.2** Rough in switch boxes and outlet boxes.

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**11.3** Rough in feeder and circuit.

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**11.4** Install low voltage systems.

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**11.5** Trim out electrical devices and appliances.

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**11.6** Install lighting fixture(s) and ceiling fans.

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**Install Interior Wall and Ceiling Finish**

**12.1** Identify type and use of drywall.

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**12.2** Demonstrate the proper techniques for cutting drywall.

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**12.3** Fasten drywall to ceiling and walls.

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**12.4** Apply mud, use tape appropriately and install corner bead.

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**12.5** Demonstrate technique for paint application.

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