PROBLEMS

1. Find the cross-sectional area of a pipe with diameter measuring 3.04 feet. Express the answer with the proper significant figures.
2. Compute the volume of pavement in a road measured to be 22.0 feet wide and 1.0 mile long. The measured pavement thickness is 0.650 foot. Express the answer in cubic yards using the proper significant figures.
3. If the depth of water in a stream is measured as $6\frac{1}{2}$ inches, find the depth in feet using the proper significant figures.
4. Find the volume of a cylinder with diameter measuring 1.30 feet and length measuring 60. feet. Express the answer in cubic feet using the proper significant figures.
5. Three different lengths of new curb are measured by three different inspectors as follows: 12.25 feet, 151. feet, and 25.0 feet. Find the total length of new curb using proper significant figures.
6. Find the cross-sectional area of a pipe with diameter measuring 36 inches. Express the answer in metric units using the proper significant figures.
7. A rectangular field has dimensions 45.00 feet by 125.00 feet. Find the area using the proper significant figures expressed as (a) square feet, (b) acres, (c) square meters, and (d) hectares.
8. A roadway is to be designed to carry normal vehicular traffic between two existing parallel roadways separated by a distance of approximately 250 feet. Using your imagination, outline as many factors as possible to consider in the design.
9. A pedestrian walkway (sidewalk) is to be installed along one side of an existing paved street. Outline as many factors as possible to consider in the design.
10. A culvert (pipe) is to be designed to convey a small stream through a new road embankment. Outline as many factors as possible to be considered in the design.

FURTHER READING

American Society for Testing and Materials. (1993). *Standard Practice for Use of the International System of Units (SI)*. Philadelphia: ASTM.

Cabrera, Enrique, Editor. (2010). *Water Engineering and Management through Time: Learning from History*. CRC Press.

Fagan, Brian. (2011). *Elixer: A History of Water and Humankind*. Bloomsbury Press.

Rogers, Jerry R. (2007). *Environmental and Water Resources: Milestones in Engineering History*. ASCE

Schodek, D. (1987). *Landmarks in American Civil Engineering*. Cambridge, MA: MIT Press.

Teisch, Jessica. (2011). *Engineering Nature: Water, Development, and the Global Spread of American Environmental Expertise*. The University of North Carolina Press.