Chapter 9
Lumberyard Operations

Lumberyard operations are just as important to an efficient logging and sawmill operation as are the other operations discussed in this manual. The layout and construction of a lumberyard and the use of props for loading lumber on trucks, including sorting and piling of lumber, are important procedures for proper yard operation.

9-1. Layout. Figure 9-1 (page 9-2) shows a sample lumberyard layout. The yard should be easily accessible from the mill. A lumberyard should be on ground that is suitable for hauling lumber and for pile foundations. The yard should have air currents for drying lumber. Good air circulation and soil drainage and a level or slightly rolling surface are essential to meet these needs. Uneven or steeply sloping surfaces require excessive cribbing for pile foundations and grading of roads.

Green lumber, principally in the sapwood, will deteriorate unless treated with chemical fungicides and insecticides. The speed and extent of deterioration depend largely on temperature. Fungi and insects are most active during warm weather. Generally, when the moisture content of wood falls below 20 percent, fungi cannot develop, and the wood is less attractive to most insects. Therefore, to avoid fungus and insect attack dry the lumber quickly.

In a clear area, construct a road or an 8-foot fire lane around the perimeter of the yard. In a timbered area, construct a 30-foot lane area around the perimeter of the yard. Keep this area clear of vegetation as a safeguard against fire. In general, yard layout should provide wide alleys and ample spaces between piles to ensure good air circulation and adequate room for handling and hauling lumber. The layout should provide a clear space of 30 feet from temporary milling operations and 50 feet from semipermanent installations. Main alleys should be 16 feet wide to accommodate hand stacking and 30 feet wide for forklift hauling and stacking.

9-2. Lumber Prop. A lumber prop (Figure 9-2, page 9-2) is a quick and efficient aid when loading a truck. The yard supervisor should always emphasize the need for safety when using a lumber prop because it could spill the load if mishandled or bumped by a truck. As lumber comes from the mill, it is placed on a prop, one size to a prop. The prop is just high enough so that the vehicle's rear bunk contacts the load about 1 inch ahead of the prop. The load is then loaded on the vehicle and transported to the drying yard.

9-3. Pile Construction. Improving air-drying techniques will vary. Generally, the larger the mill, the more exacting piling stock according to species, grade, thickness, length, and width can be. For air drying, it is almost universal to pile stock flat so that most of the weight bears on the wide faces and not on the edges or ends. A flat pile may be level both crosswise and lengthwise. With this piling method, the drying rate is relatively slow, but the weight of the pile tends to keep the stock from warping. Flat piles maybe hand-stacked in a continuous pile from bottom to top or may be made up of several unit packages separated by bolsters. To prevent excessive warp, it is best to sort for length or to box the overhanging ends.

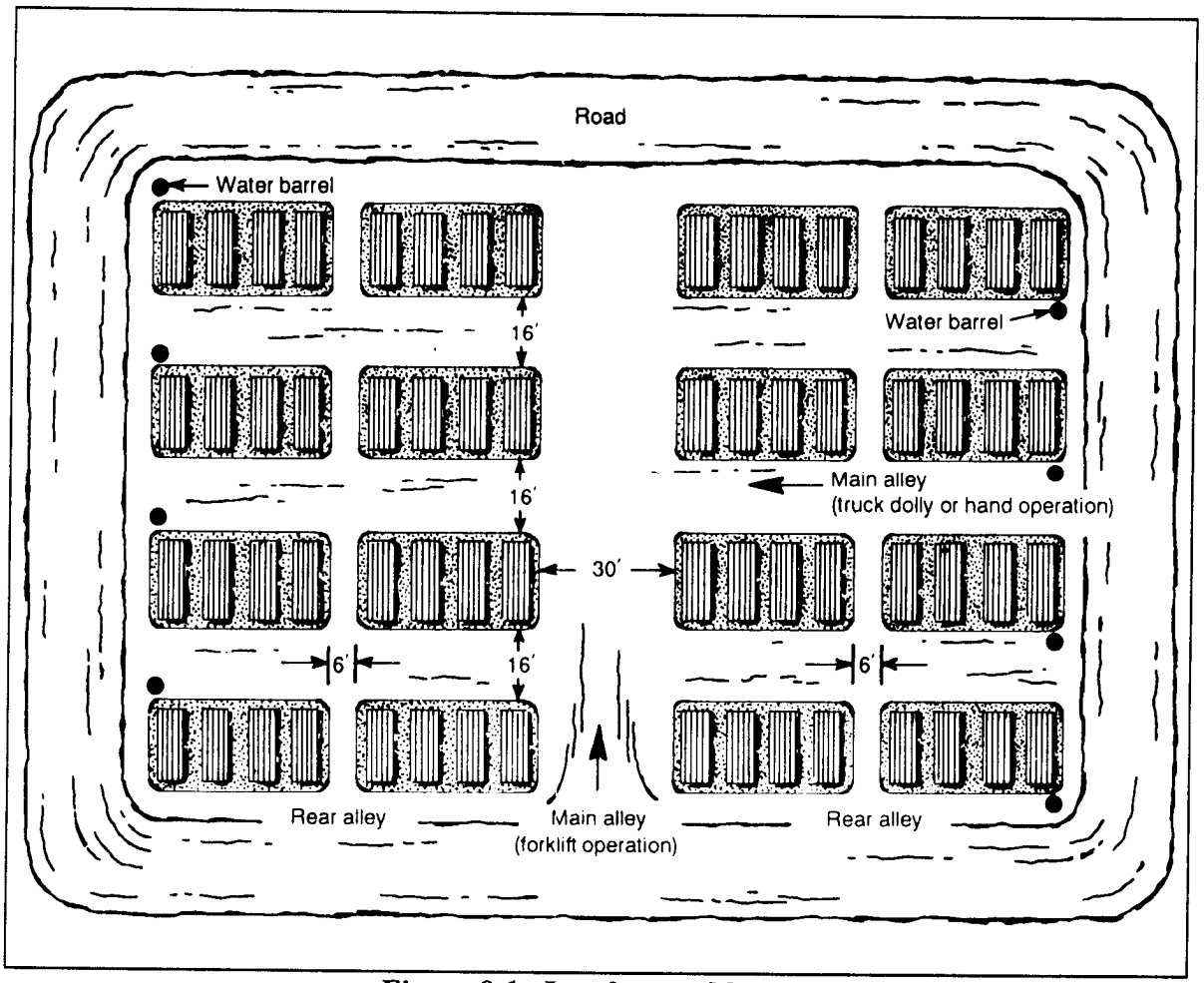


Figure 9-1. Lumberyard layout

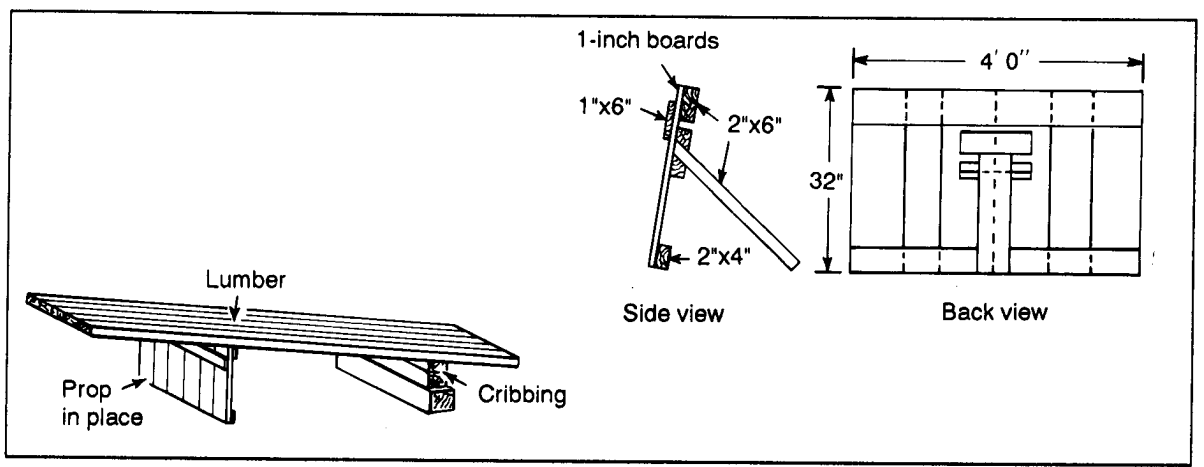


Figure 9-2. Lumber prop

For lumber that is susceptible to sap stain, you can use special piling methods that promote rapid partial drying: end piling, end racking, and crib piling. Figure 9-3 shows these three methods. With end piling, leave wide spaces between boards. (One person can handle end piling.) A disadvantage to end piling is that it may cause nonuniform drying from top to bottom and severe end-checking and surface checking in the upper parts of the boards, particularly in thick stock. End racking can cause excessive checking and warping. Once the stock has become dry enough to prevent sap stain, pile it flat to minimize checking and warping. Depending on the temperature and weather, drying should occur in 30 to 45 days. End-racked boards, however, are likely to stain where they cross. Crib piling may result in excessive stain where the boards cross, as well as warping.

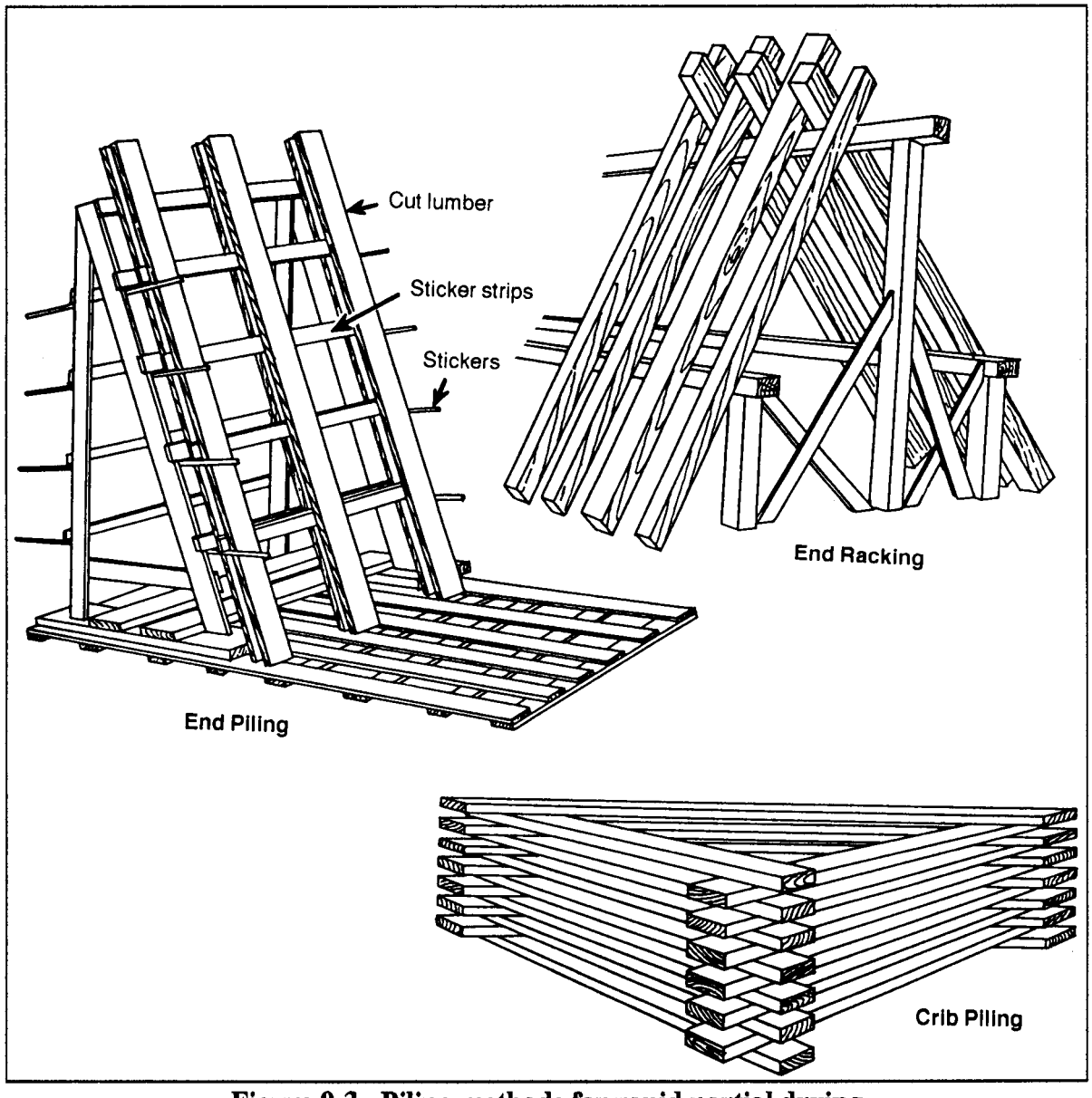


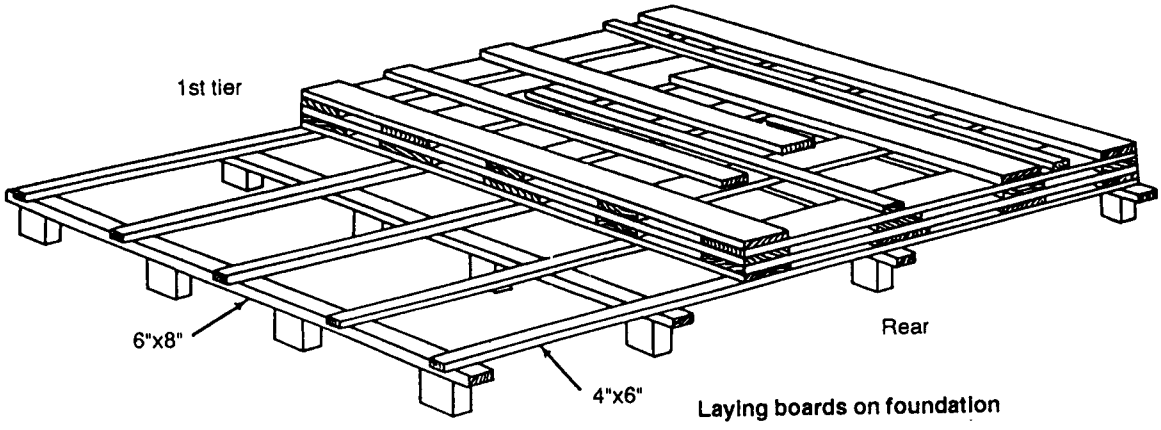
Figure 9-3. Piling methods for rapid partial drying

9-4. Box Piling. Box piling is recommended for hardwoods. To make a box pile, lay a sticker over each foundation crossbeam and place a full length board in each of the outside tiers. If enough stock is available for more than two full length boards to the course, place long boards regularly in the course. Figure 9-4 shows box piling. Place shorter boards in the inside tiers, with the ends alternately flush with the front and back of the pile. Since each tier is about 12 inches wide, it can contain an 8-inch and a 4-inch board or two 6-inch boards. One end of each board can rest on the sticker at either end of the pile. Tiers should be truly vertical, 4 to 6 inches apart. The front of the pile should be given a pitch of 1 inch per foot of height, This method of piling results in vertical flues that allow a free downward airflow from the top to the bottom of the pile. Both ends of the pile should be square with no projecting board ends.

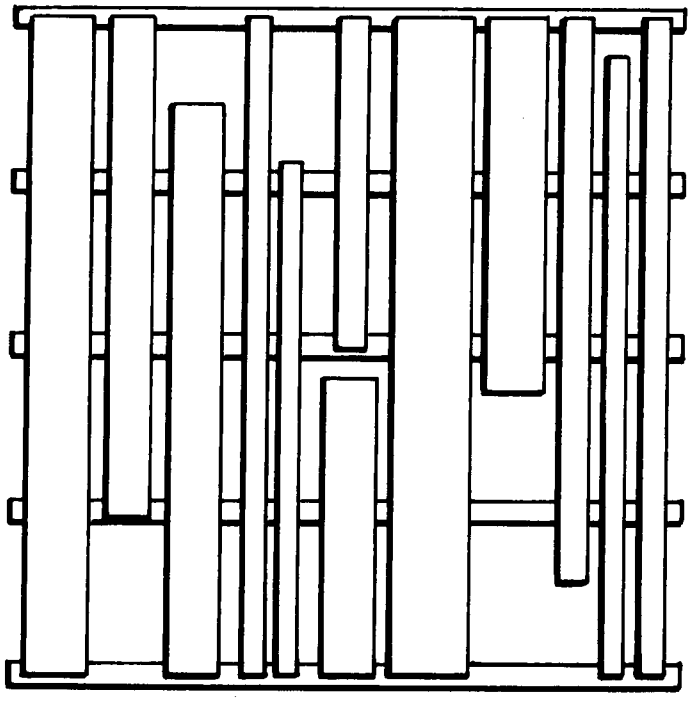
9-5. Sorted Length Piling. Sorted length piling, which closely resembles box piling, is recommended for softwoods. To make such a pile, lay a sticker over each crossbeam and place the first course of boards so that the front end of each board is flush with the front edges of these stickers. Space the boards in this course 2 to 3 inches apart. If there are two or more in the same pile, place the longest ones in the outside tiers and mix other long ones regularly in the course to give a well-supported pile. Succeeding courses are the same as the base course.

The front of the pile should pitch toward the main alley, 1 inch per foot of height. Each tier of stickers within a tier should be aligned parallel to the front one. Stickers within a tier should be directly above one another except for the slight, progressive offset required to follow the pith of the pile. The front of the pile should be free of projecting ends that would catch water and cause it to flow into the pile. If the boards are of uniform lengths and the piling has been well done, the rear of the pile will also be free of projecting ends.

9-6. Safety. Personnel handling rough lumber should always wear heavy gloves. Lumber should only be stacked on a proper foundation at moderate levels. Lumber stacked too high is hazardous. Smoking should not be allowed in the lumberyard. Lumberyard personnel should be reminded about sound safety practices on a steady basis.



Laying boards on foundation



Placing boards according to length (top view)

Figure 9-4 Box piling