SECTION 953
TIMBER PILING
(Including Timber Sheet Piling)

953-1 General.

Piles shall be of timber which will stand the driving for which they are intended. They shall be sound and solid. Piling cut from southern pine shall contain at least 30% of summer wood.

Cypress piles used for purposes other than as foundation piling shall have, at the butt, a diameter of red or black heart of at least 12 inches [300 mm].

Douglas fir used for timber piling shall be Pacific Coast Douglas Fir.

Piles shall be cut above the ground swell, shall have a form taper, and shall not vary more than ±6 inches [±150 mm] from the specified length.

Specific requirements for timber sheet piles are contained in 953-6, herein.

953-2 Diameter of Butt and Tip.

For round piles the minimum butt diameter shall be 12 inches [300 mm], measured at a section 3 feet [1 m] from the end.

For piles up to 50 feet [15 m] in length the minimum tip diameter shall be 8 inches [200 mm]. For lengths in excess of 50 feet [15 m], a graduated reduction in tip diameter at the rate of 1 inch [25 mm] for each 10 feet [3 m] of length in excess of 50 feet [15 m] will be permitted. This reduction will correspond to 7 inch [175 mm] tips for 60 foot [18 m] piles and 6 inch [150 mm] tips for 70 foot [21 m] pile; at which length these allowable reductions shall cease. As an exception to the above, when so shown in the plans, 7 inch [175 mm] diameter tips on timber piles less than 60 feet [18 m] in length will be accepted. No piles shall have tips less than 6 inches [150 mm] in diameter. The maximum diameter at the cut-offs shall be 20 inches [500 mm].

953-3 Straightness Requirements.

A straight line drawn from the center of the butt to the center of the tip shall not, at any point, fall further away from the center of the pile than a distance equal to 1% of the length of the pile.

The surface of the pile shall not contain kinks greater than 1 inch [25 mm] in 5 feet [1.5 m], as measured by a straightedge.

953-4 Peeling and Trimming.

The pile shall be peeled soon after cutting. In the operation of removing the bark from the pile, not more than three annual rings of the solid wood shall be removed. All knots shall be trimmed close to the body of the pile.

953-5 Permissible Knots and Other Defects.

The diameter of sound knots shall not exceed one-third of the diameter of the pile at the point where the knot occurs.

In these specifications a sound knot shall be defined as a knot which is solid across its face, is as hard as the surrounding wood and shows no indication of decay. It may vary in color from red to black and may contain a pith hole not more than 1/4 inch [6 mm] in diameter.

An unsound knot may or may not be as hard as the surrounding wood, but contains decay, and will be allowed only in accordance with the restrictions in ASTM D 25.

Any defect, or combination of defects, which would be more injurious than the maximum allowable knot will not be acceptable.

Turpentine cuts will be allowed on all timber piles provided that no single cut shall exceed one-half of the circumference of the pile, and that the length of the cut shall not be more than 15% of the

length of the pile. Piles to be used as outside piles in timber bents shall not have more than one turpentine cut.

953-6 Timber Sheet Piles.

Unless a particular species of timber is called for in the plans, timber sheet piles may consist of any species which will satisfactorily stand driving. They shall be sawn with square corners and shall be free from worm holes, loose knots, wind shakes, decayed or unsound portions, and other defects which might impair the strength or tightness.

The piles shall be of the dimensions shown in the plans and shall be treated in accordance with Section 955.