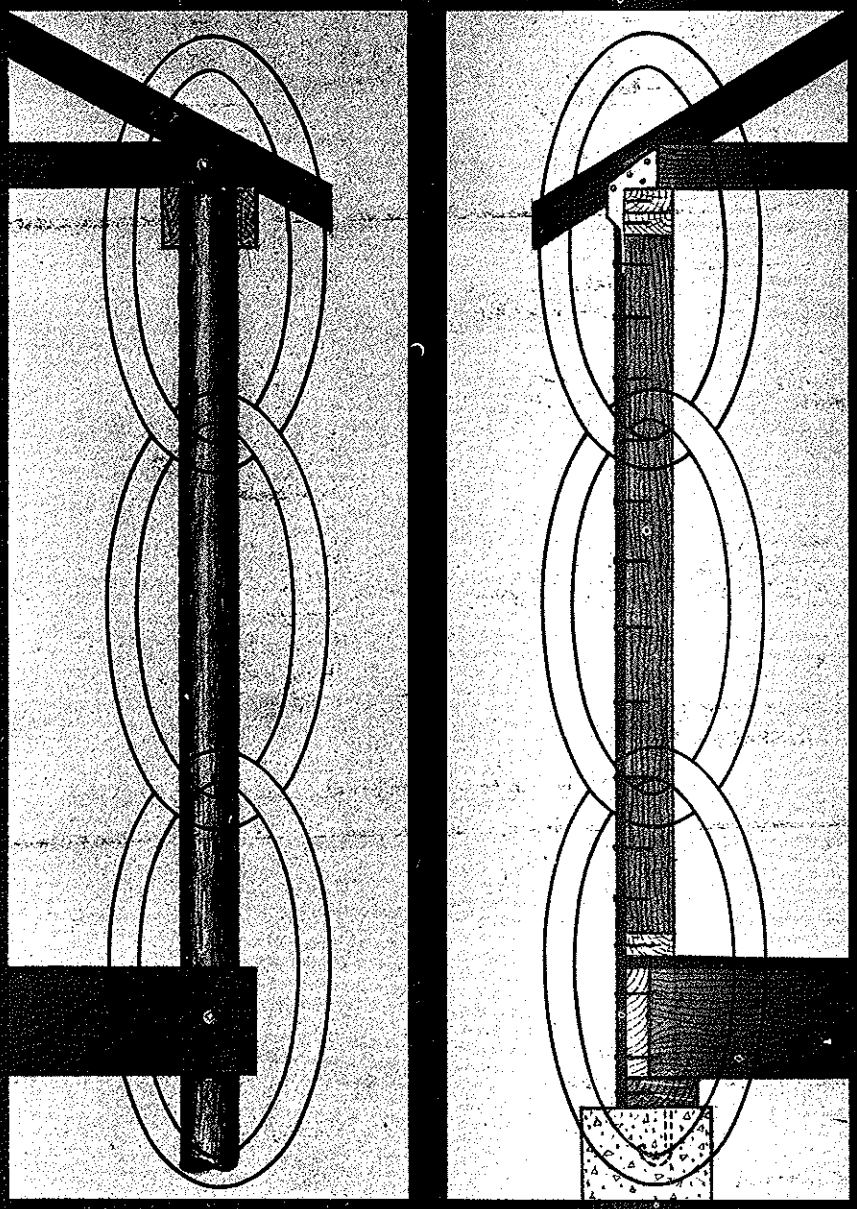
BF 35.04

How to Build Storm Resistant Structures



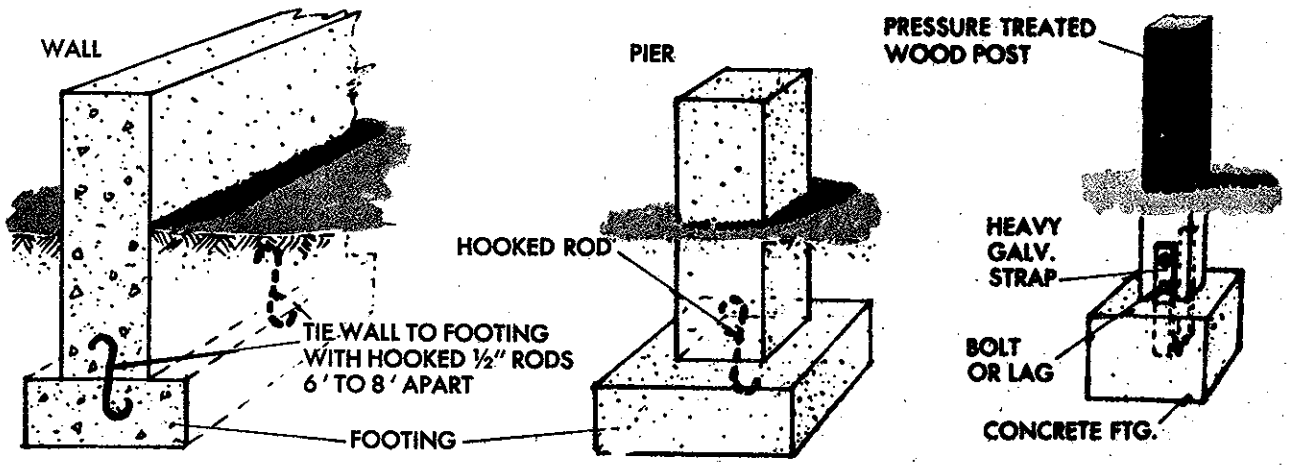
Homes and buildings which best withstand hurricane winds and tides generally fall into three categories:—1) High ground locations, 2) Elevated pole-frame systems, 3) Secure anchorage and fastenings from foundation to roof whether on high or low ground. These pages contain structural details on crucial links that increase safety and resistance to the ravages of storms and wear.

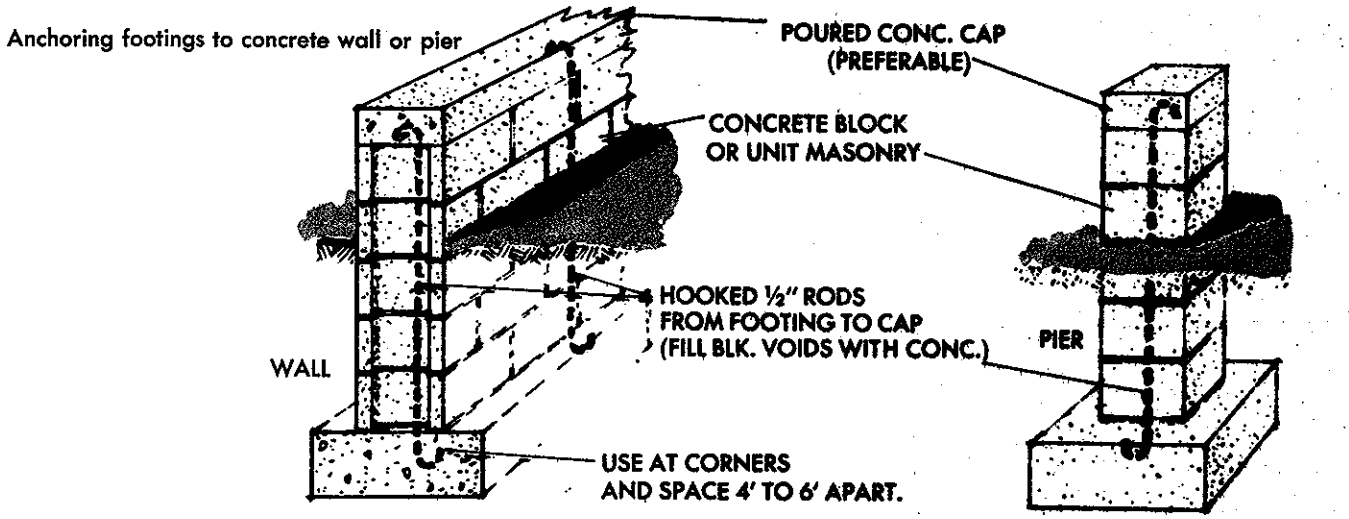
American Wood Preservers Institute,
1651 Old Meadow Rd.
McLean, Virginia 22101

National Forest Products Association,
1619 Massachusetts Avenue, N.W.,
Washington, D.C. 20036

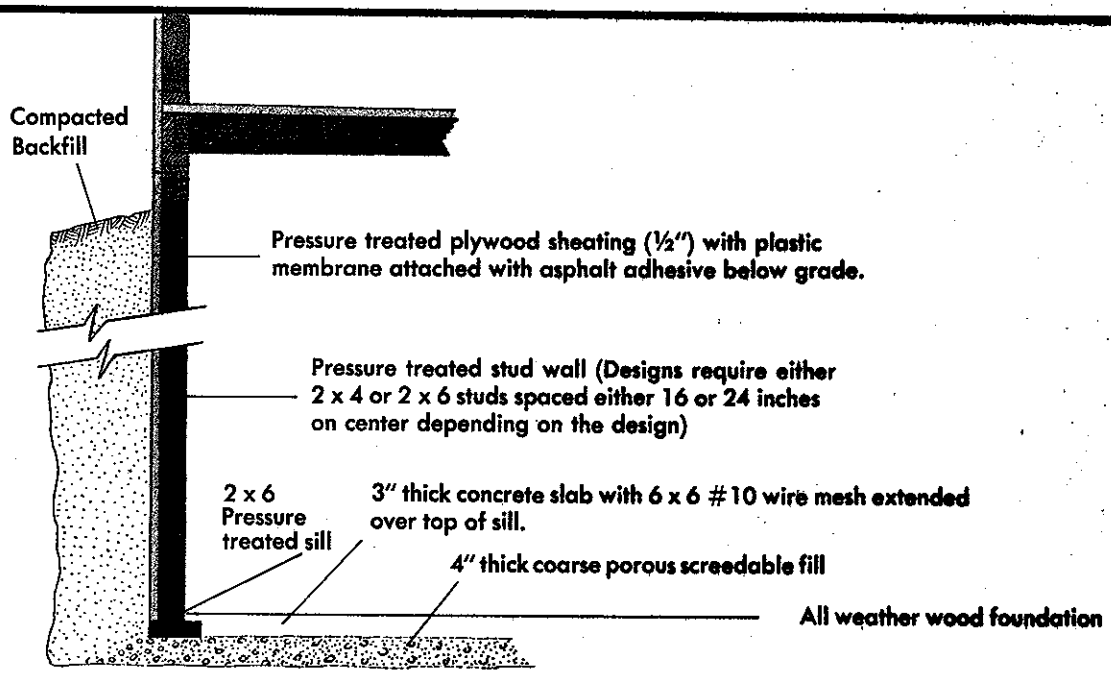
Southern Forest Products Association
P. O. Box 52468
New Orleans, Louisiana 70152

PROPER FOUNDATION ANCHORAGE

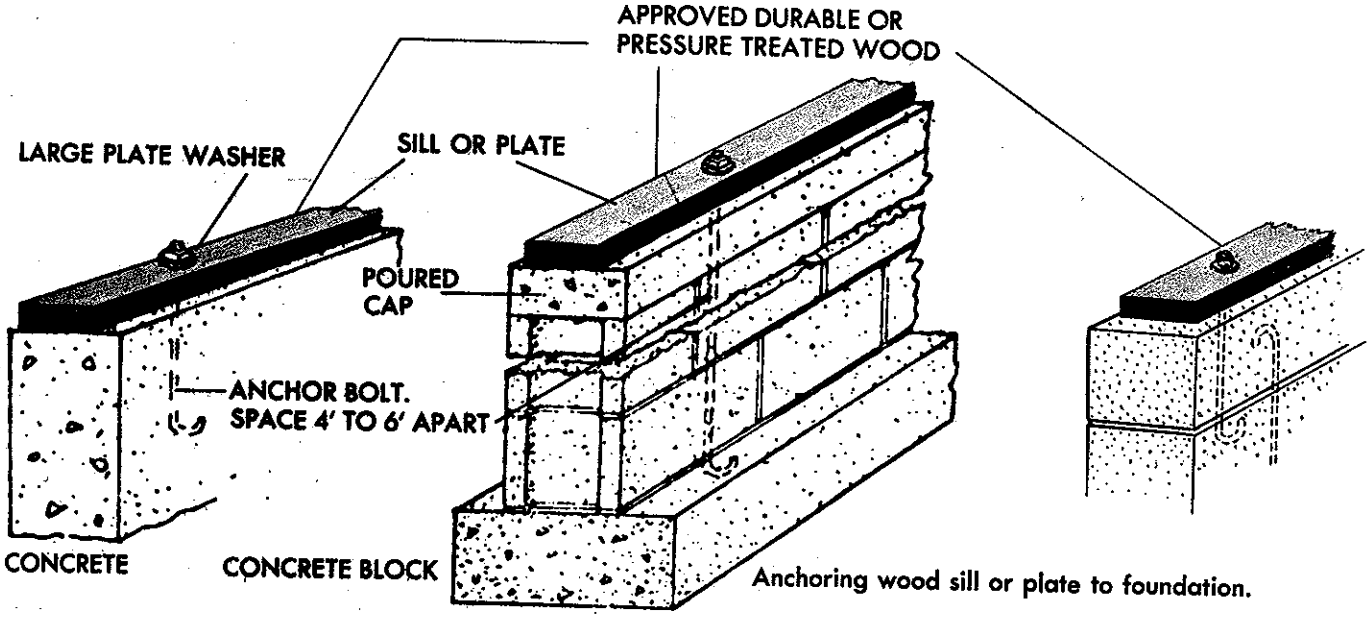




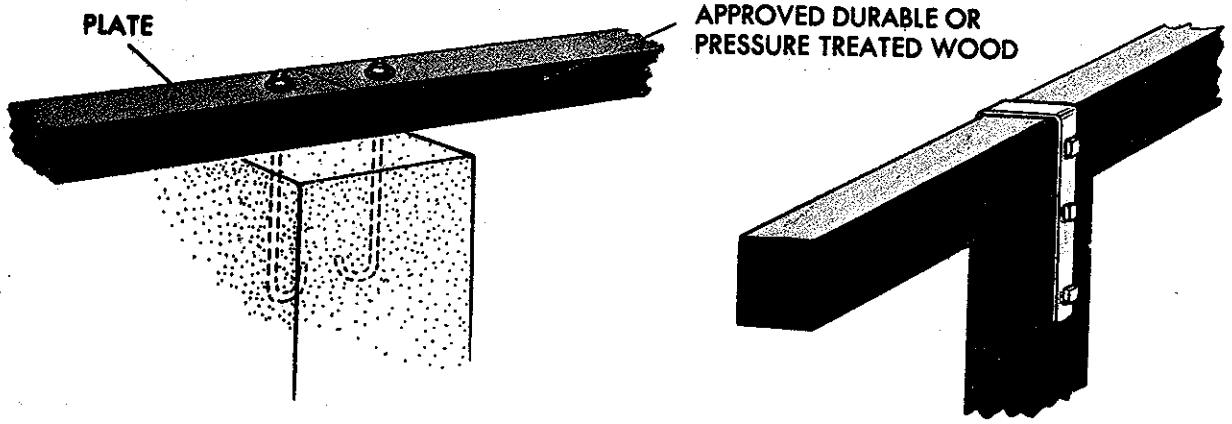
Anchoring footings to concrete block wall or pier

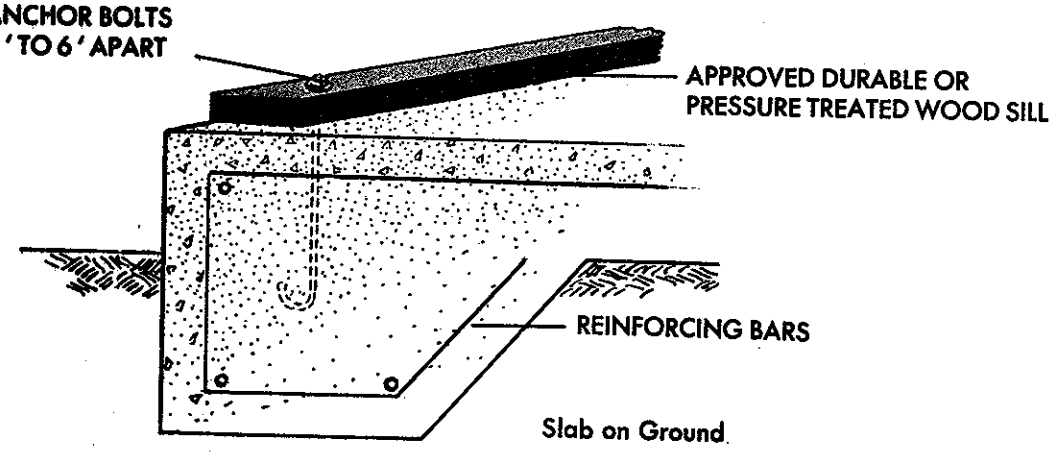


SECURING SILLS OR PLATES



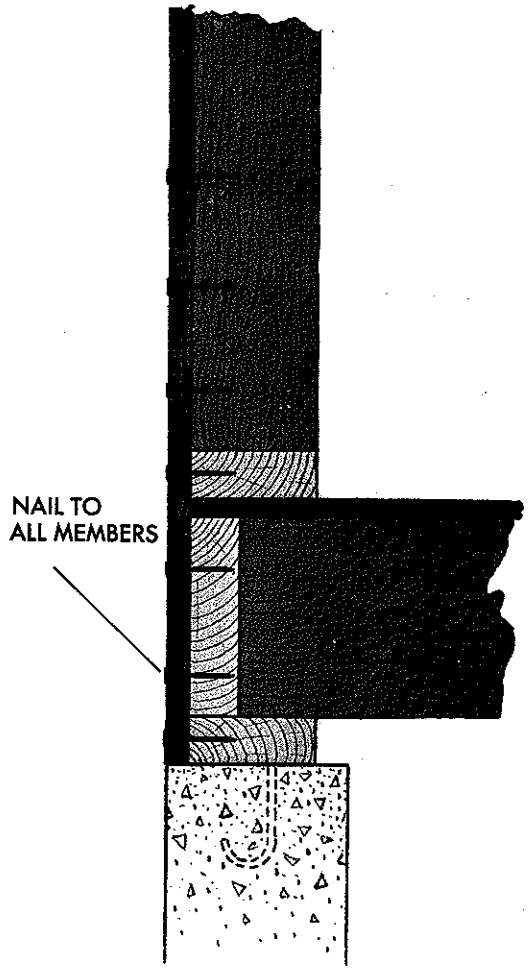
Anchoring wood sill or plate to foundation.

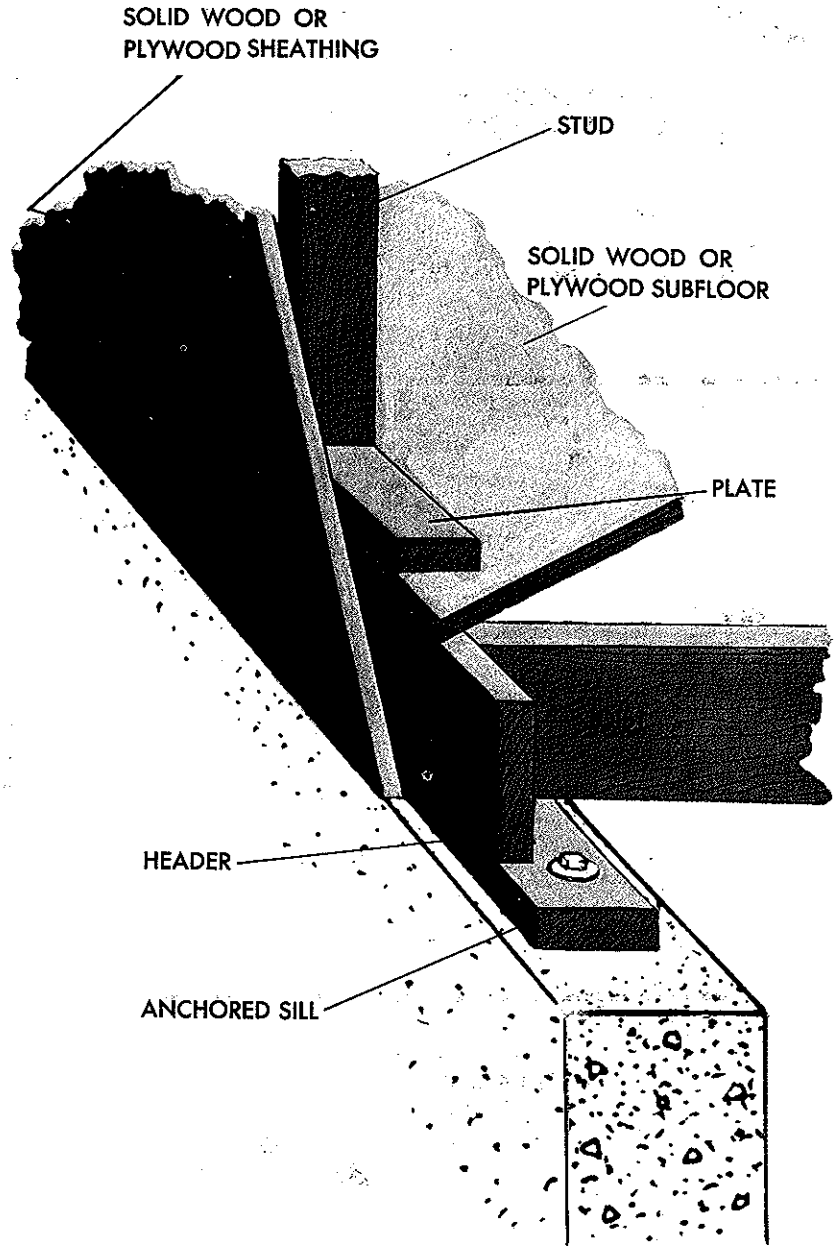




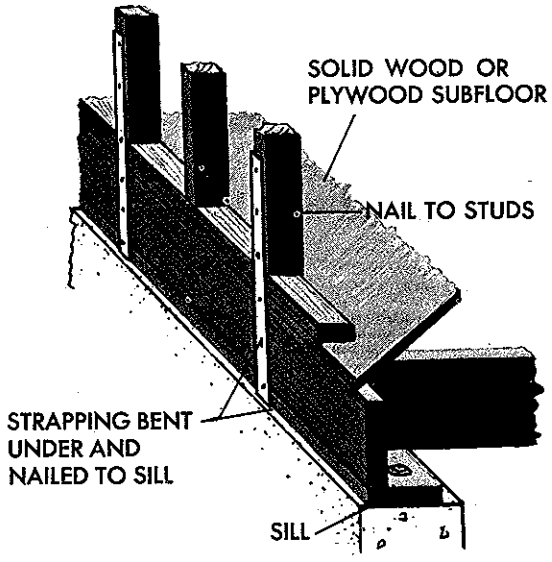
Slab on Ground

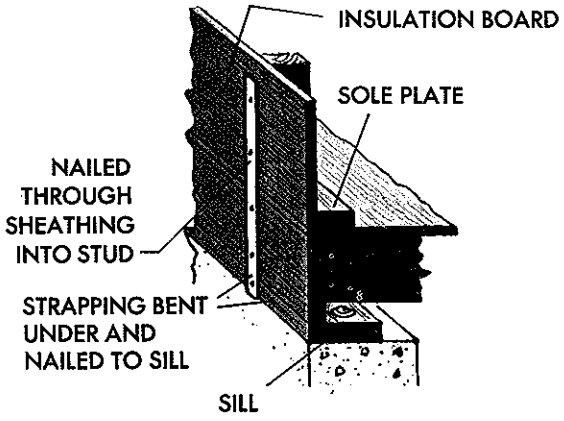
HOW TO TIE WALLS TO FLOOR FRAMING WITH SHEATHING OR SIDING



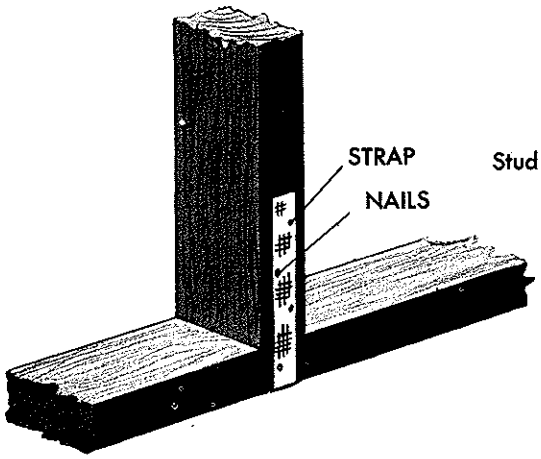


ANCHORAGE OF WALL TO SILL WITHOUT SHEATHING

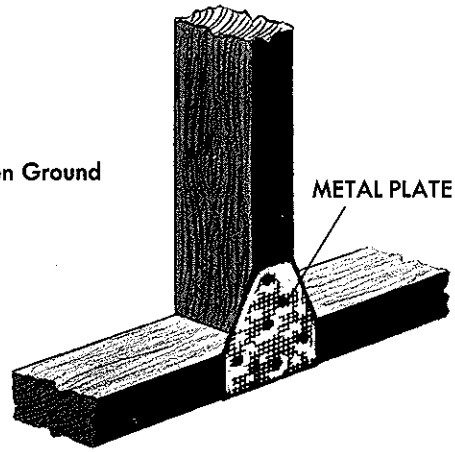


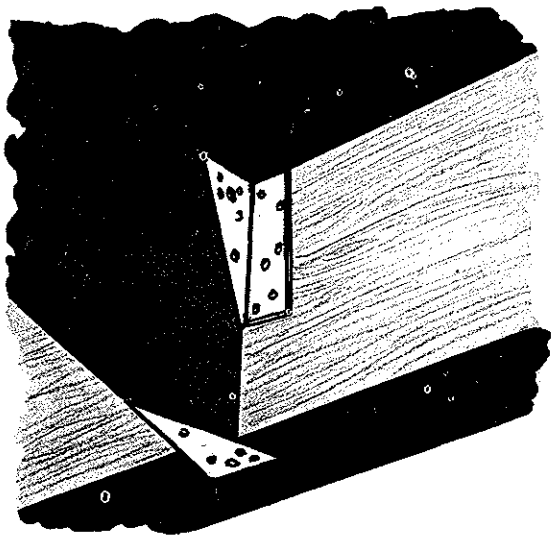


Stud wall to sill where nonstructural sheathing is used or does not extend to sill

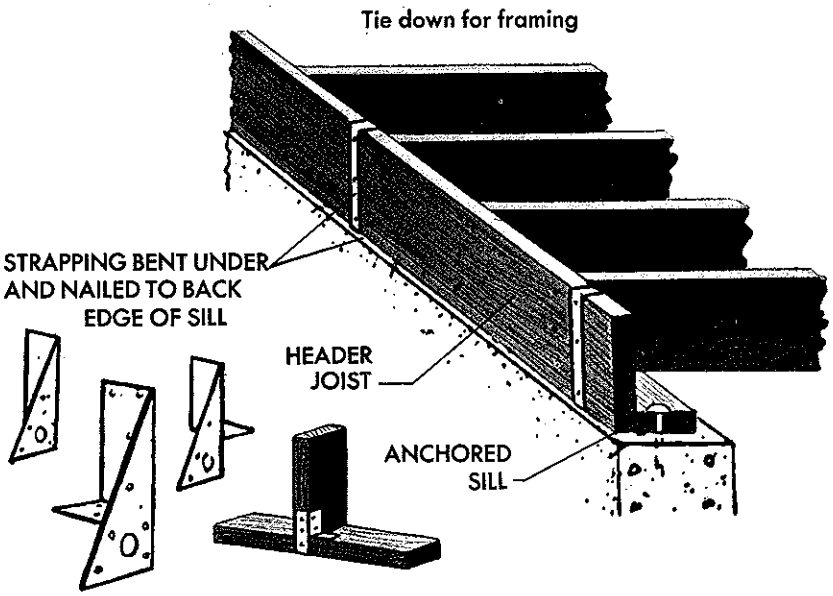


Stud to sill slab on Ground

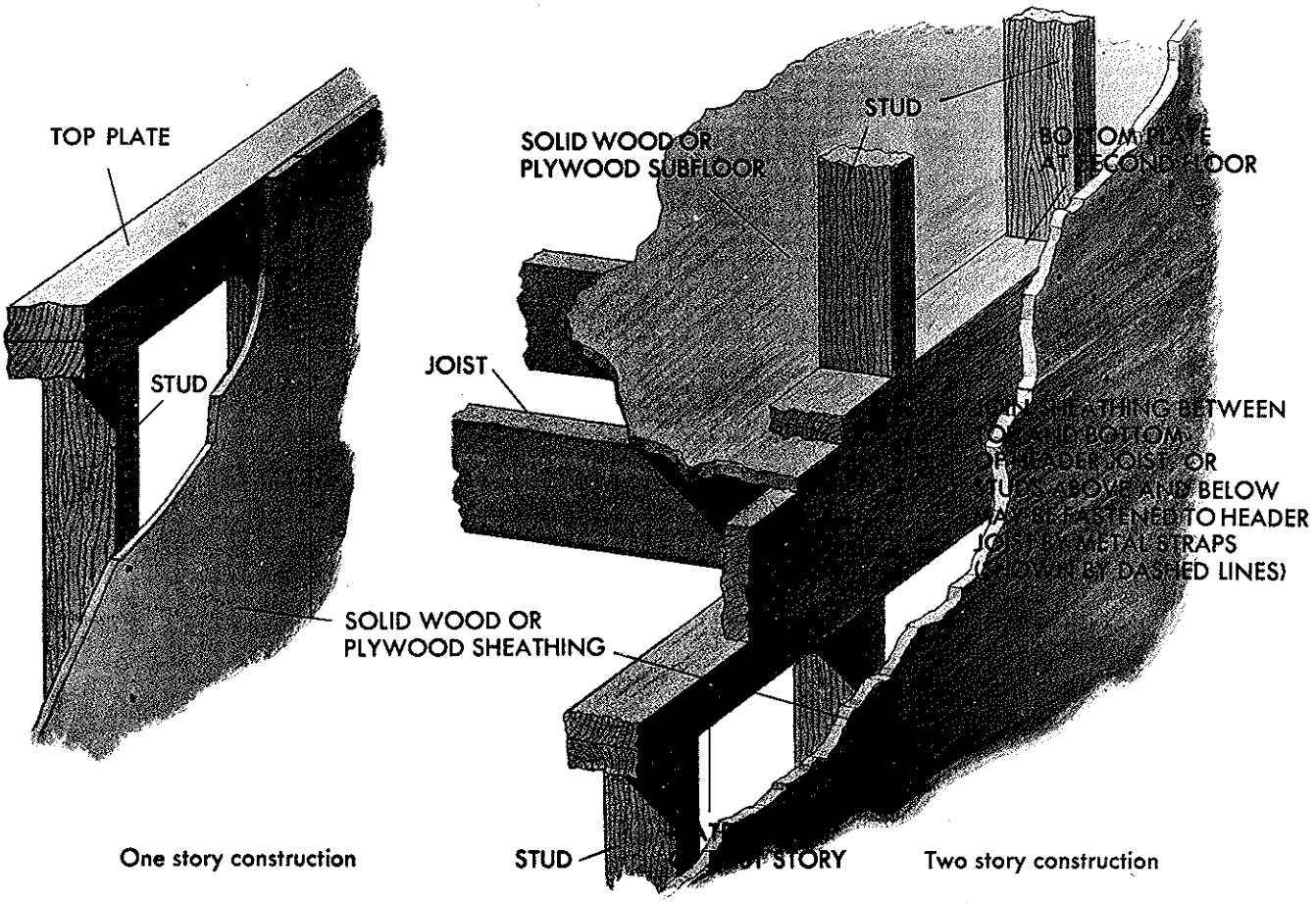




Tie down for framing

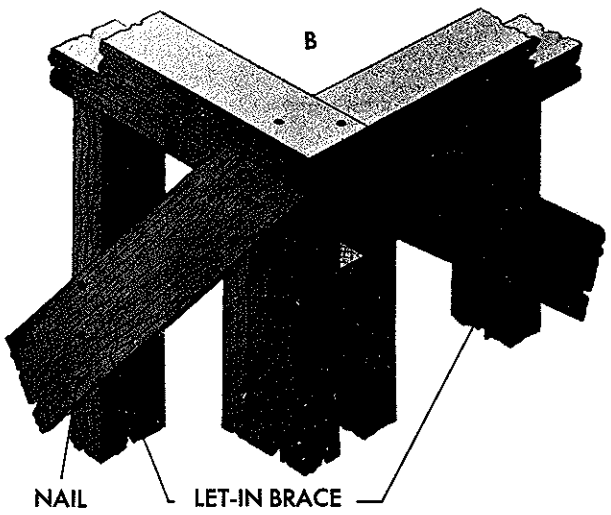


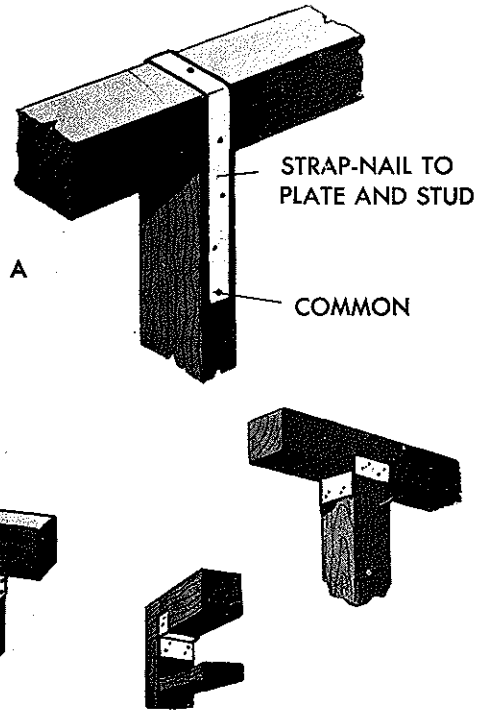
TYING TOP PLATE TO STUDS



One story construction

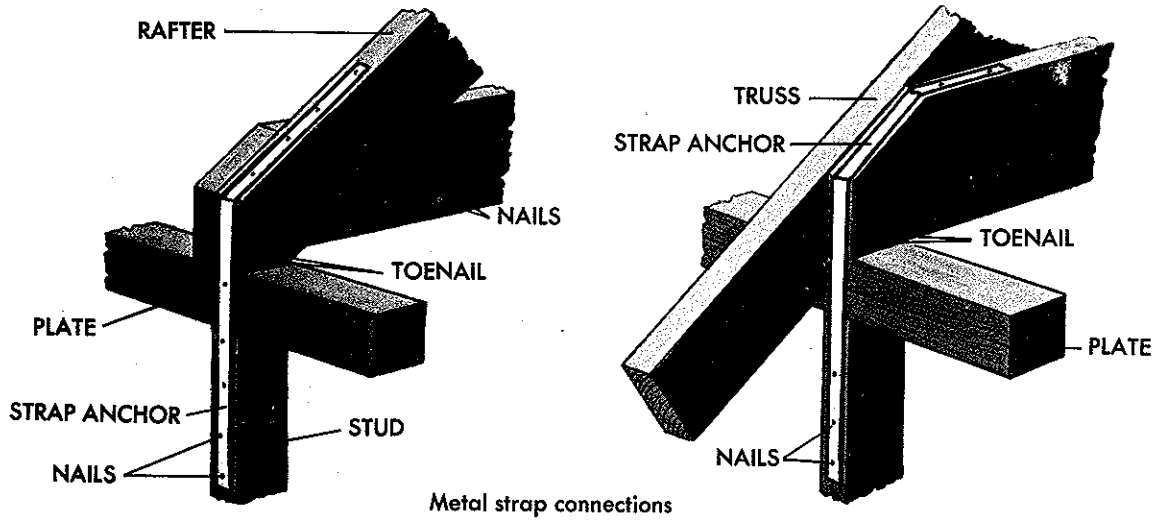
Two story construction



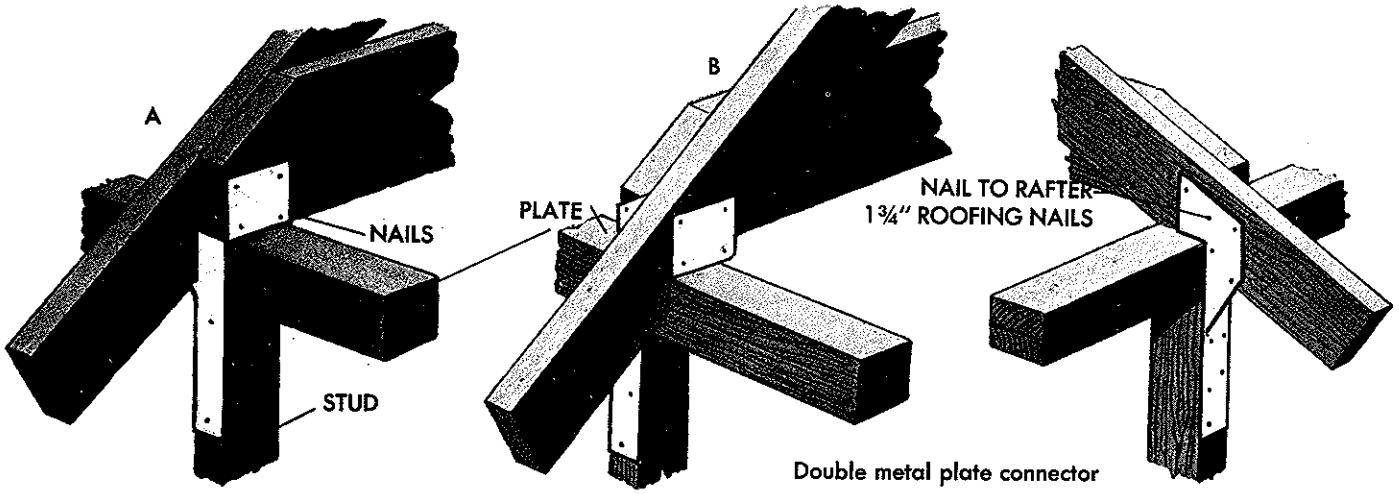


Top plate-to-stud connection by strap, A; by bracing at corner, B.

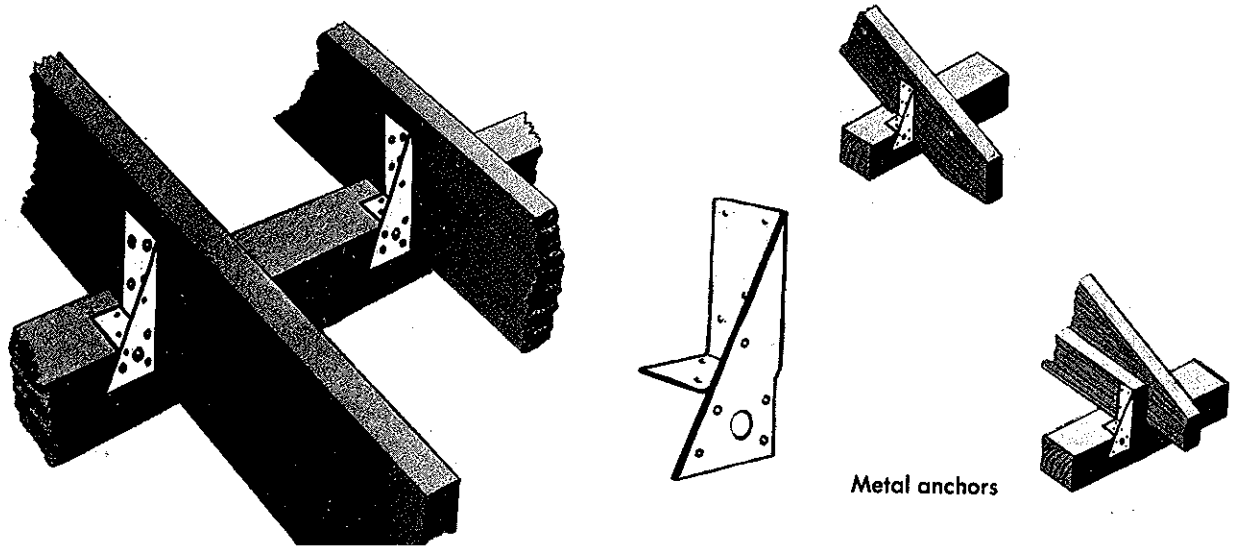
ANCHORAGE OF ROOF SYSTEM TO TOP PLATE



Metal strap connections

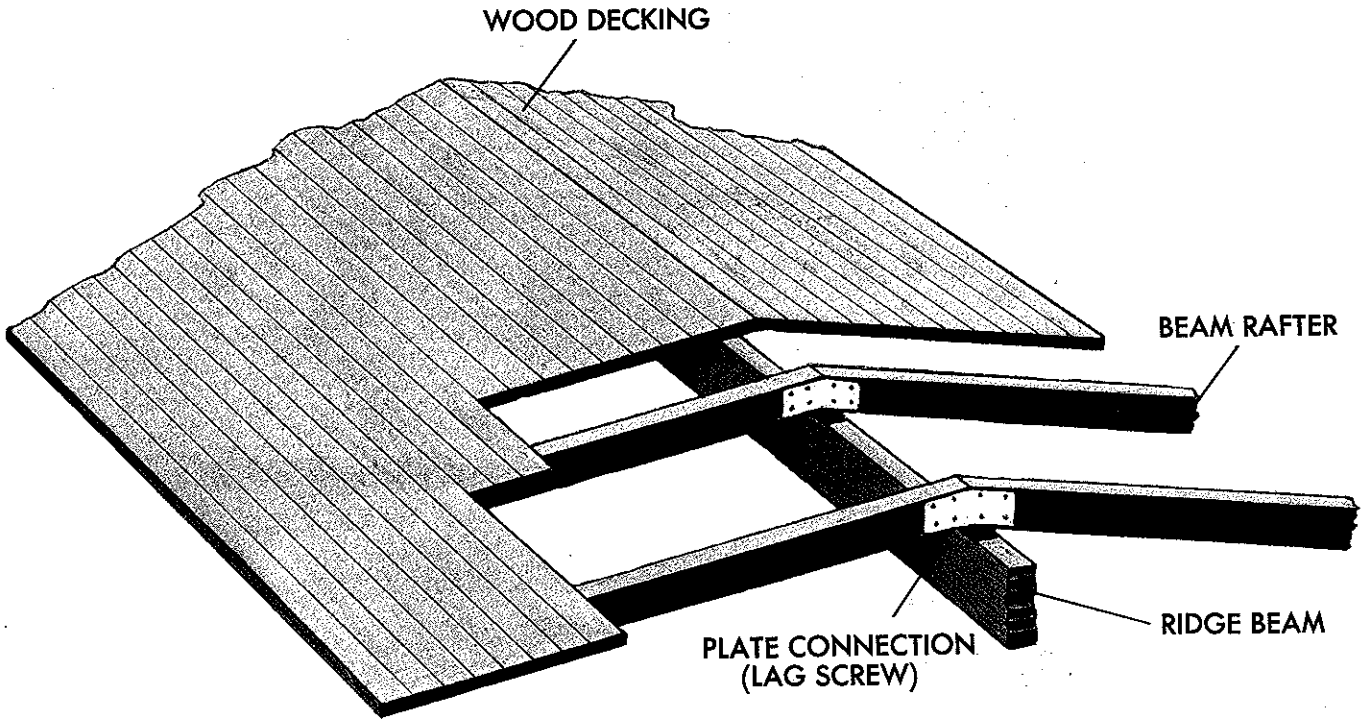


Double metal plate connector

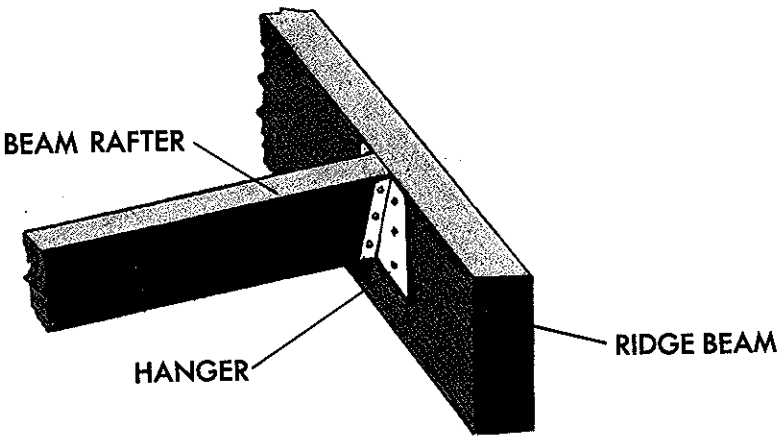


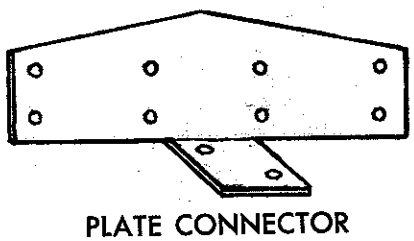
Metal anchors

TYING RAFTERS TO RIDGE BEAMS WITH LOW-PITCHED ROOFS

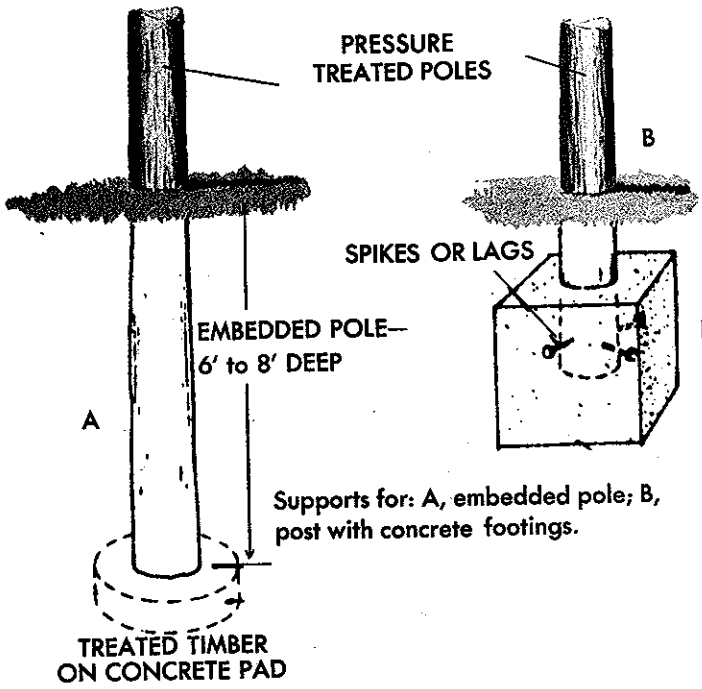


Ridge beam anchorage.

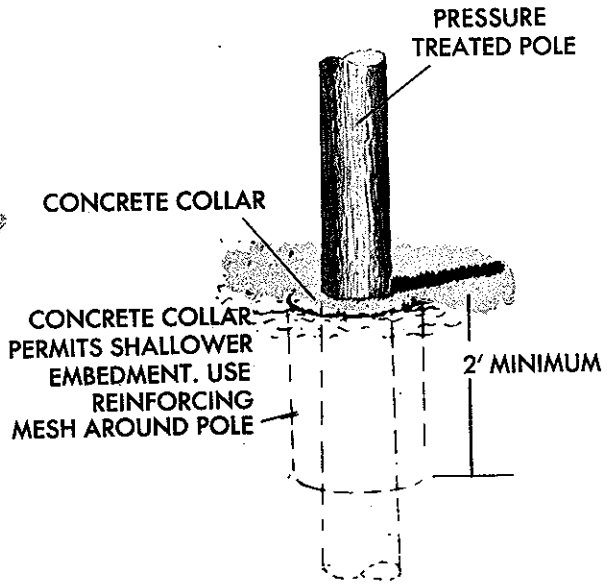




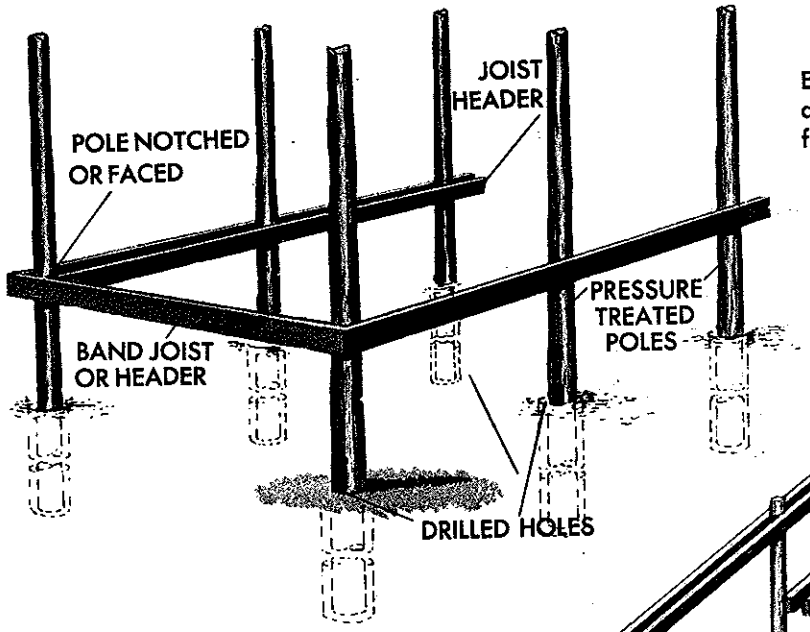
SAFETY FEATURES OF POLE-FRAME STRUCTURES



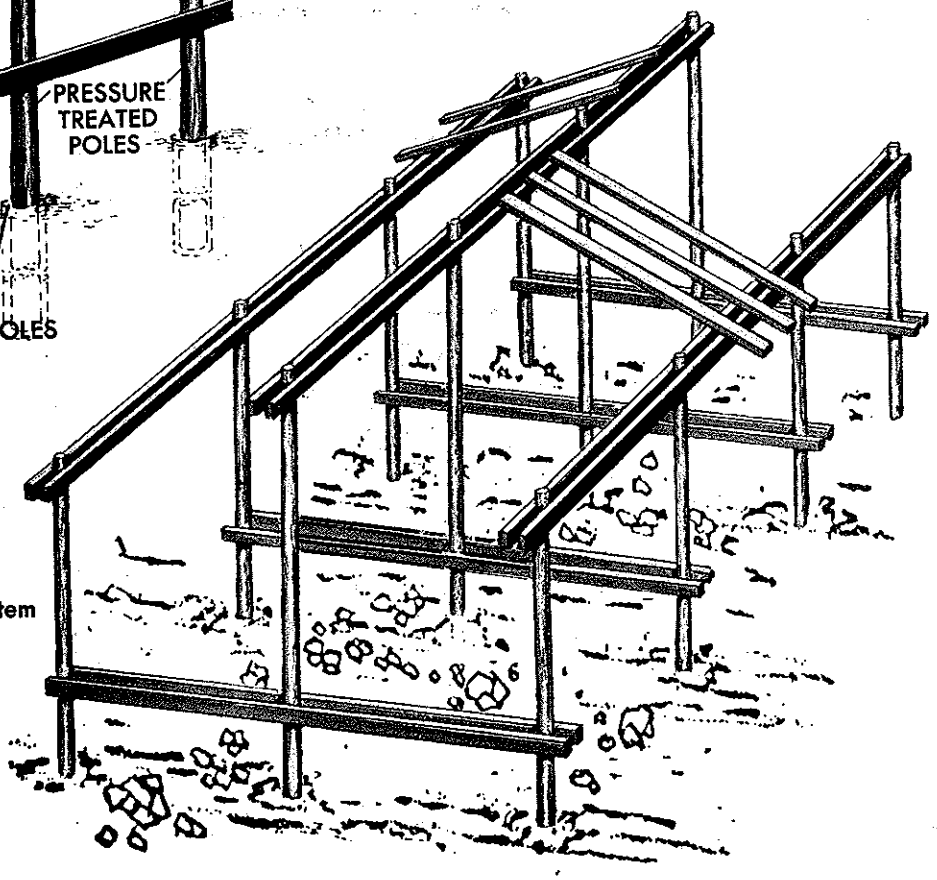
Supports for: A, embedded pole; B, post with concrete footings.



Concrete collar for pole permits shallower embedment.

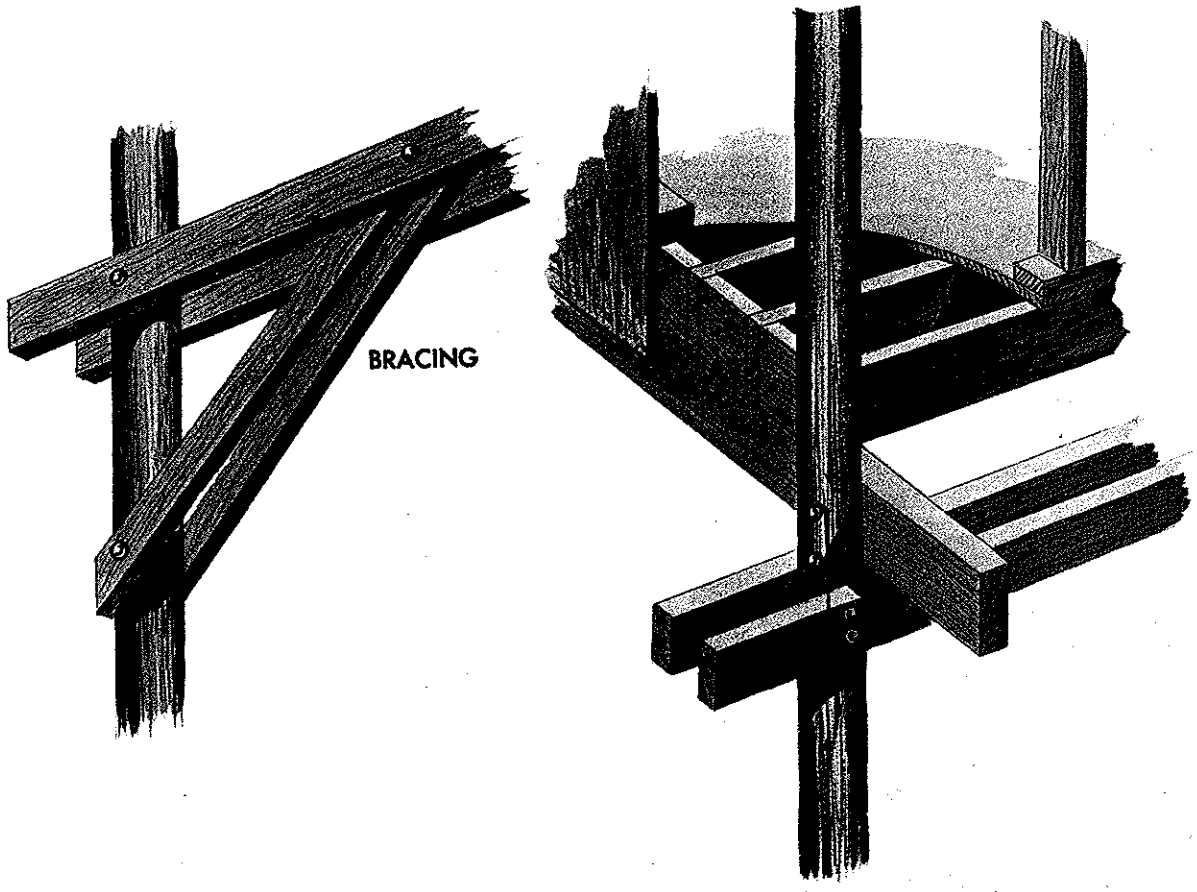


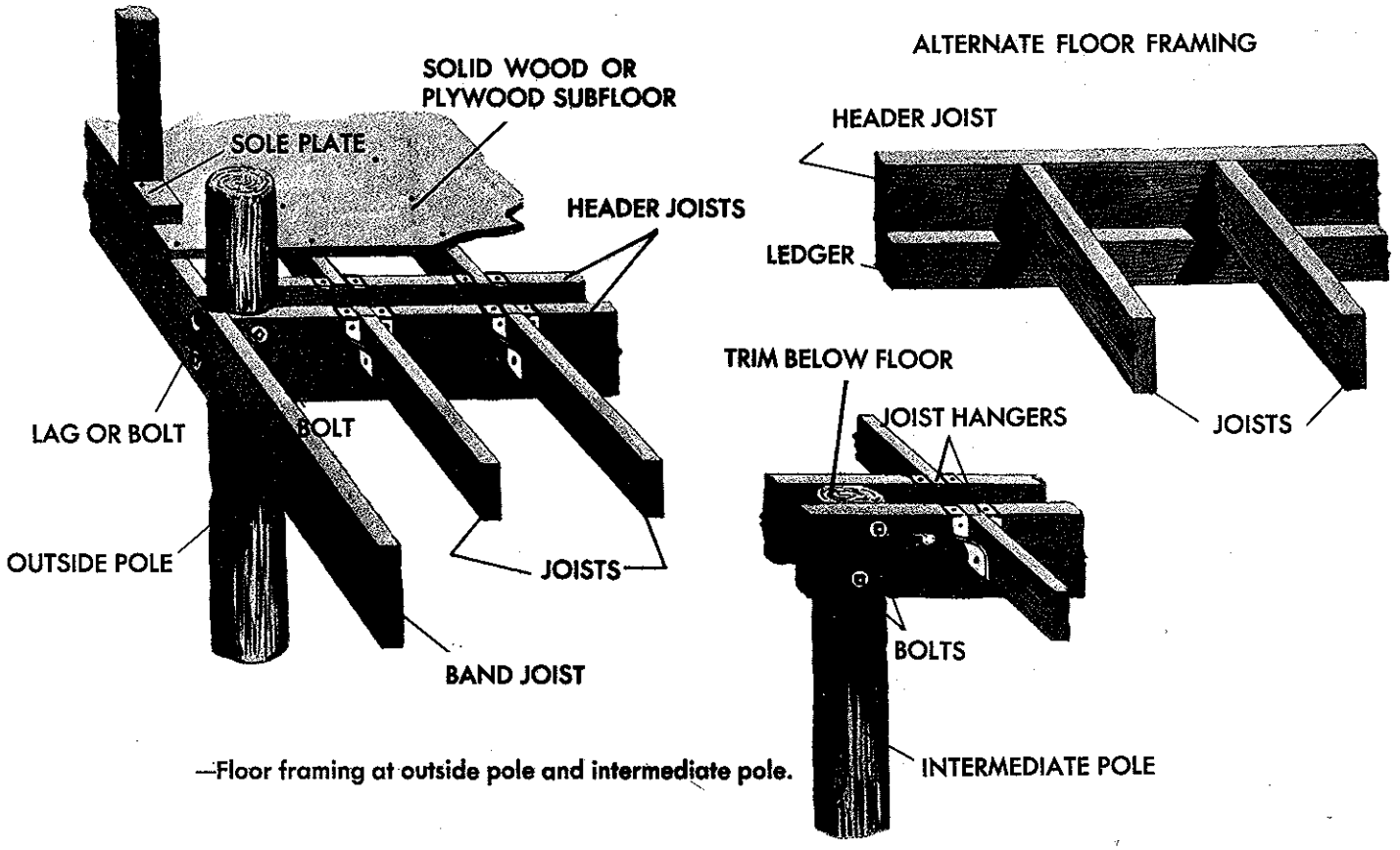
Embedment and alignment of poles. Depth of embedment depends on spacing and size of poles, wind loads, and so forth, and may vary from 5 to 8 feet.



Isometric Illustration of Framing System

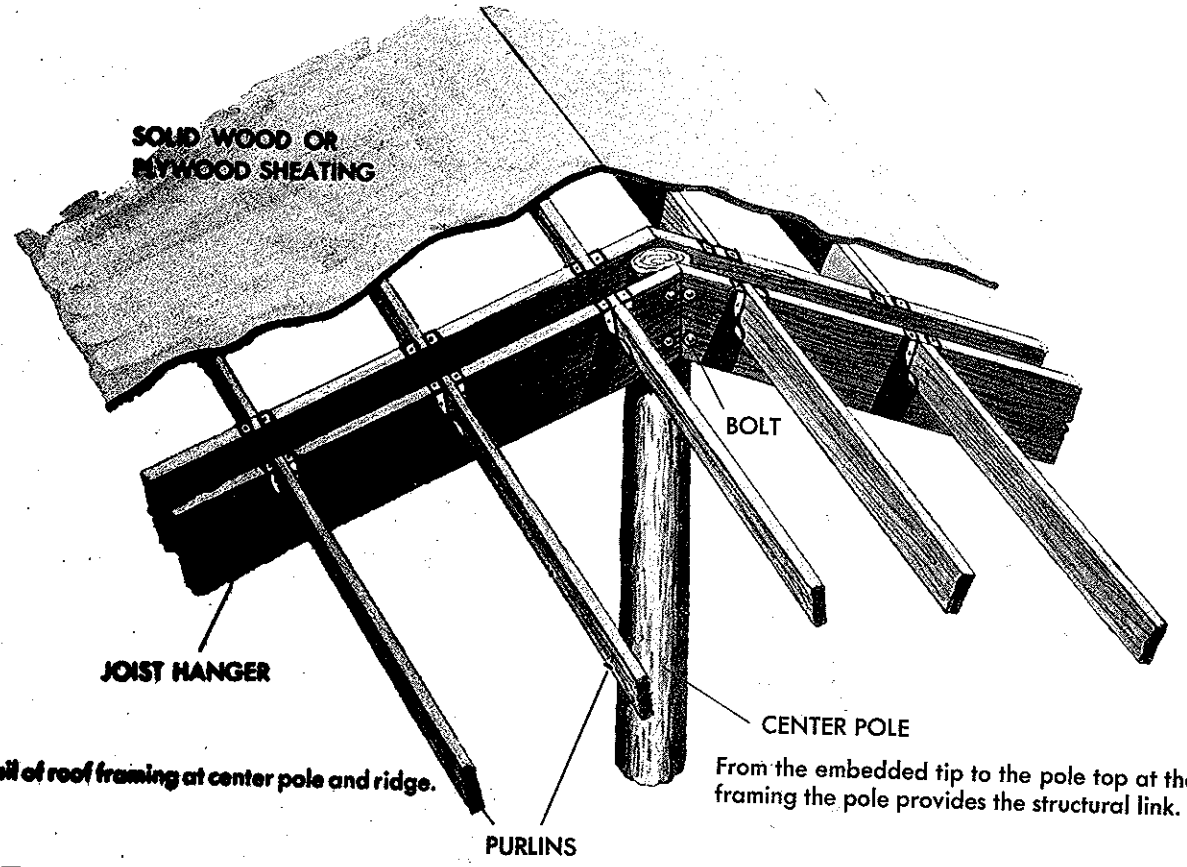
TYING FLOORS TO POLES





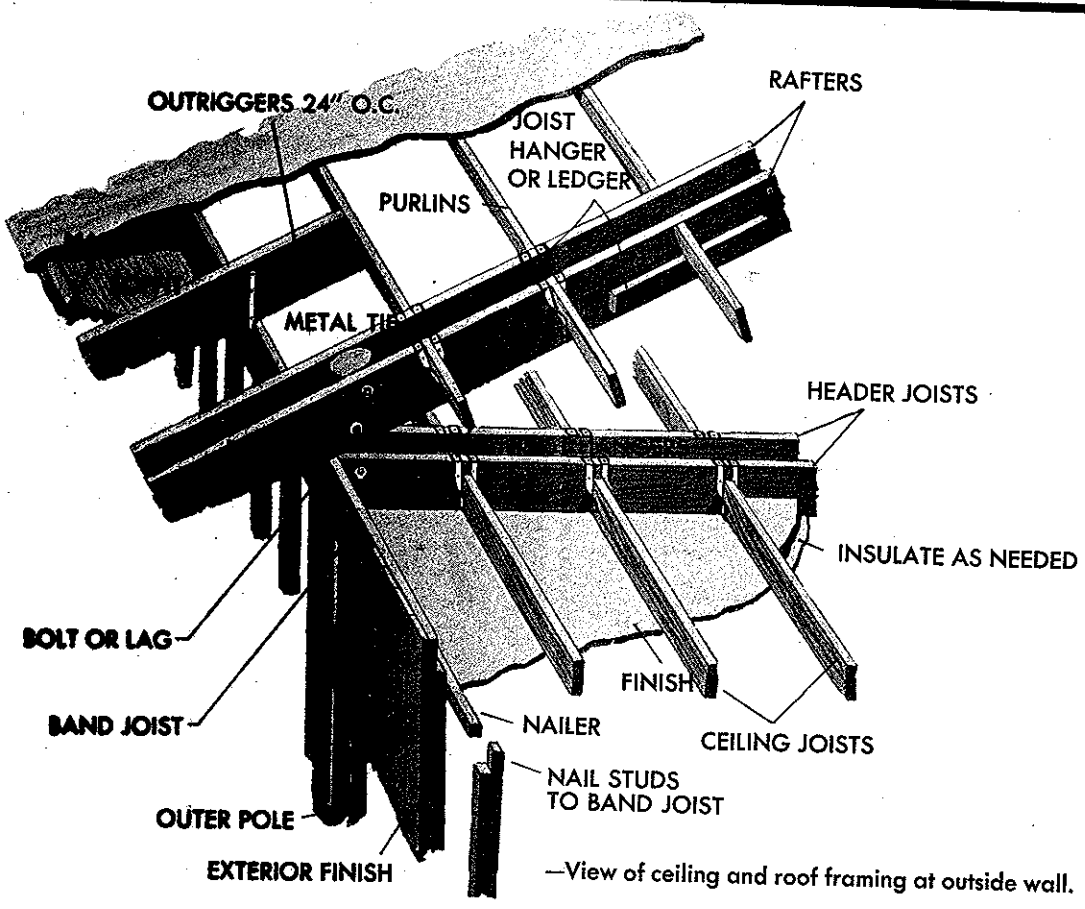
—Floor framing at outside pole and intermediate pole.

TYING ROOF TRUSSES, RAFTERS AND CEILING JOISTS TO POLES



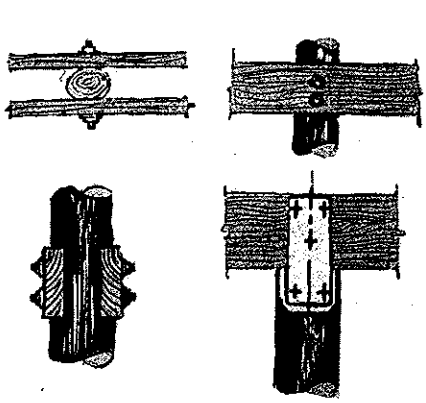
—Detail of roof framing at center pole and ridge.

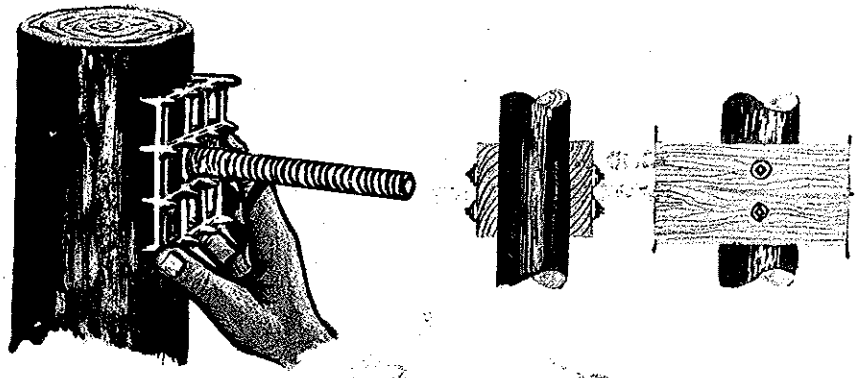
From the embedded tip to the pole top at the roof framing the pole provides the structural link.

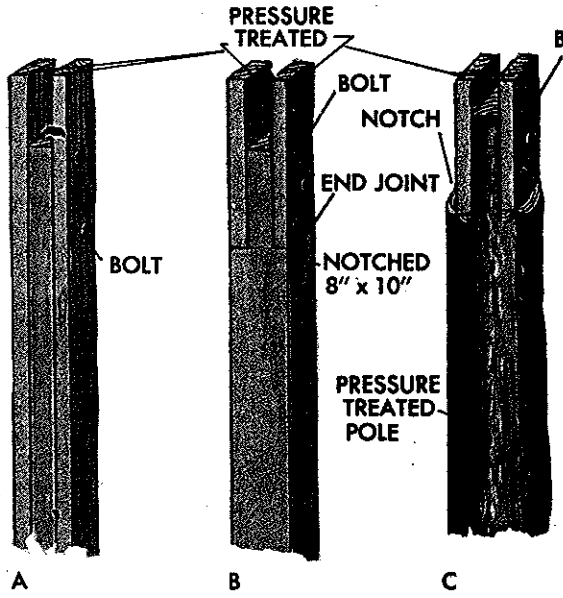


—View of ceiling and roof framing at outside wall.

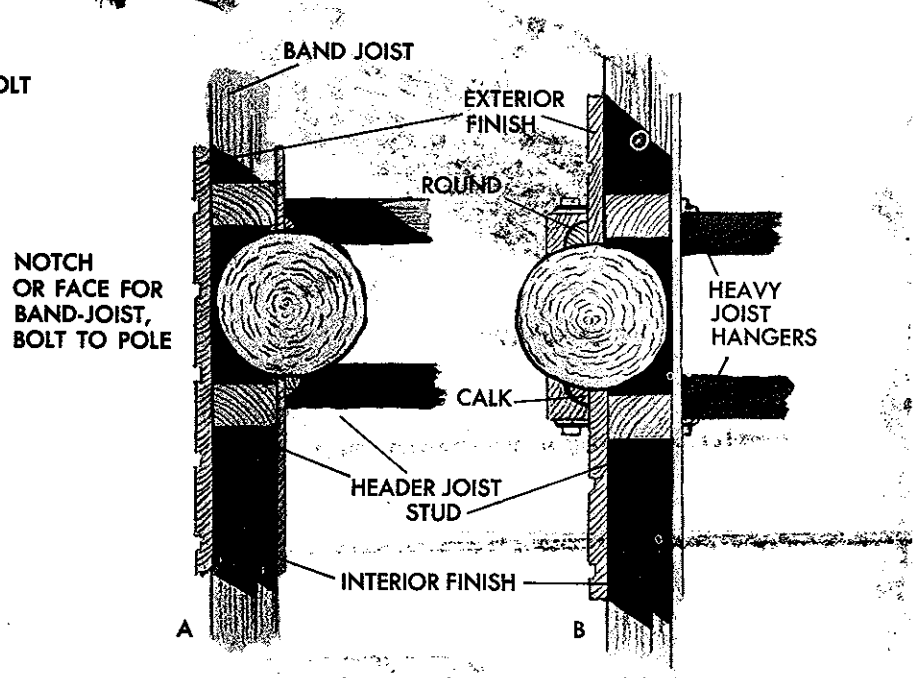
CONSTRUCTION DETAILS





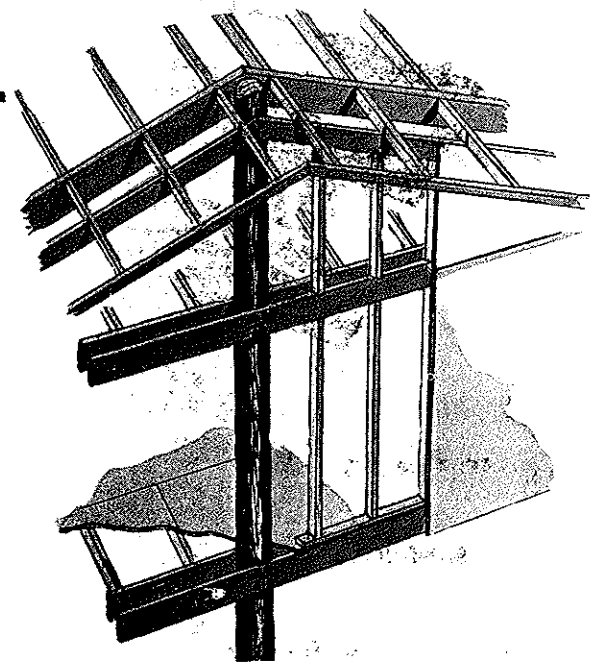


Connections for A, laminated timbers; B, notched solid timbers; and C, notched poles.



—Pole exposed on A, interior of the house; B, exterior.

FRAMING DETAILS



SUGGESTED REFERENCES:

1) "Houses Can Resist Hurricanes," FPL 33, Forest Products Laboratory, P. O. Box 5130, Madison, Wisconsin 53705 (Also from Southern Forest Products Association, P. O. Box 52468, New Orleans, Louisiana 70152

2) "Pole House Construction," American Wood Preservers Institute 1651 Old Meadow Rd. McLean, Virginia 22101

3) "When The Wind Blows," American Plywood Association, 119 A Street, Tacoma, Washington, 98401.