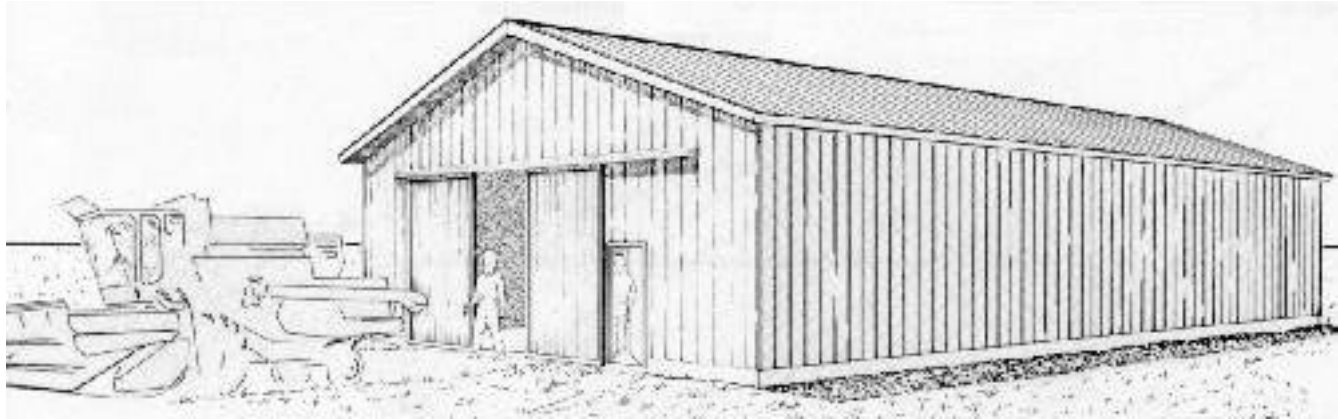


STUD WALL MACHINERY STORAGE (KNEE BRACED WIND BRACING)



This plan gives construction details for a stud frame farm storage building 9, 12, 15, 18 or 21m (30, 40, 50, 60 or 70 ft) wide, built on a concrete foundation. The roof is supported on clear-span nailed lumber trusses, making it convenient to arrange machines in storage. Prefabricated commercial wood trusses can be substituted for the site-built nailed trusses.

The plan shows an uninsulated storage area that can be built any length in multiples of 2.4 m (8 ft). The clear height from floor to truss may be 4.2 or 4.8 m (14 or 16 ft), depending on your requirements. Check the height of your tallest machines such as tractors or combines.

The building is designed for wind and snow loads, but not for the higher pressures caused by loose bulk materials such as grain or fertilizer piled against the walls. It is ideal for machinery storage and similar uses.

Large doorways may be located in side or end walls.

End doors are usually preferable because they are seldom blocked by snow sliding off the roof. Also, end doorways do not need a heavy head-beam to carry the roof load.

MACHINERY STORAGE AREA. A wide, clear-span storage works best with access doors approximately centred in both end walls. Machines that are more difficult to move should be parked first along both walls, leaving a passage down the centre. If this centre space is reserved for self-propelled machines such as trucks, tractors and combines, it will not be wasted and can easily be cleared for access to the machines along the walls.

End doors are easier to frame than sidewall doors because the end roof truss can support the door track without the heavier head beam required in load-bearing sidewalls. Side doors are therefore more expensive and are not recommended with the centre passage arrangement. For those rare farmsteads

COMPLETE INSTRUCTIONS

Canada Plan Service, an inter-provincial organization, promotes the transfer of technology through factsheets, design aids, and construction drawings that show how to plan and build modern farm structures and equipment.

For more information, contact your provincial agricultural engineer or extension advisor.

where a side door is unavoidable, the plan includes details for optional sidewall doors up to 4.8 m (16 ft).

End doorways have several widths as shown. Doorways over 4.8 m (16 ft) wide should have two sliding doors, or the doors become too heavy for one person to roll and stop them easily. Access doors for workers may be framed into the wall beside the sliding door, or into the sliding door itself. With pole construction, it is easier to frame these into a corner of the larger sliding door.

CONCRETE FOUNDATION. Pole construction is faster and cheaper, but some builders still prefer the traditional concrete foundation and stud walls used in this plan. Also, some situations are more favourable to a concrete foundation and stud wall design such as in areas with shallow soil over bedrock.

WIND BRACING. Unlike poles set deep in the soil (and sometimes braced by a concrete floor), stud walls have almost no sway resistance except the stiffening provided by the frame and cladding. Thus, knee bracing is required. This involves attaching the upper chord of the truss to the stud wall, improving the ability of the building to withstand wind pressure.