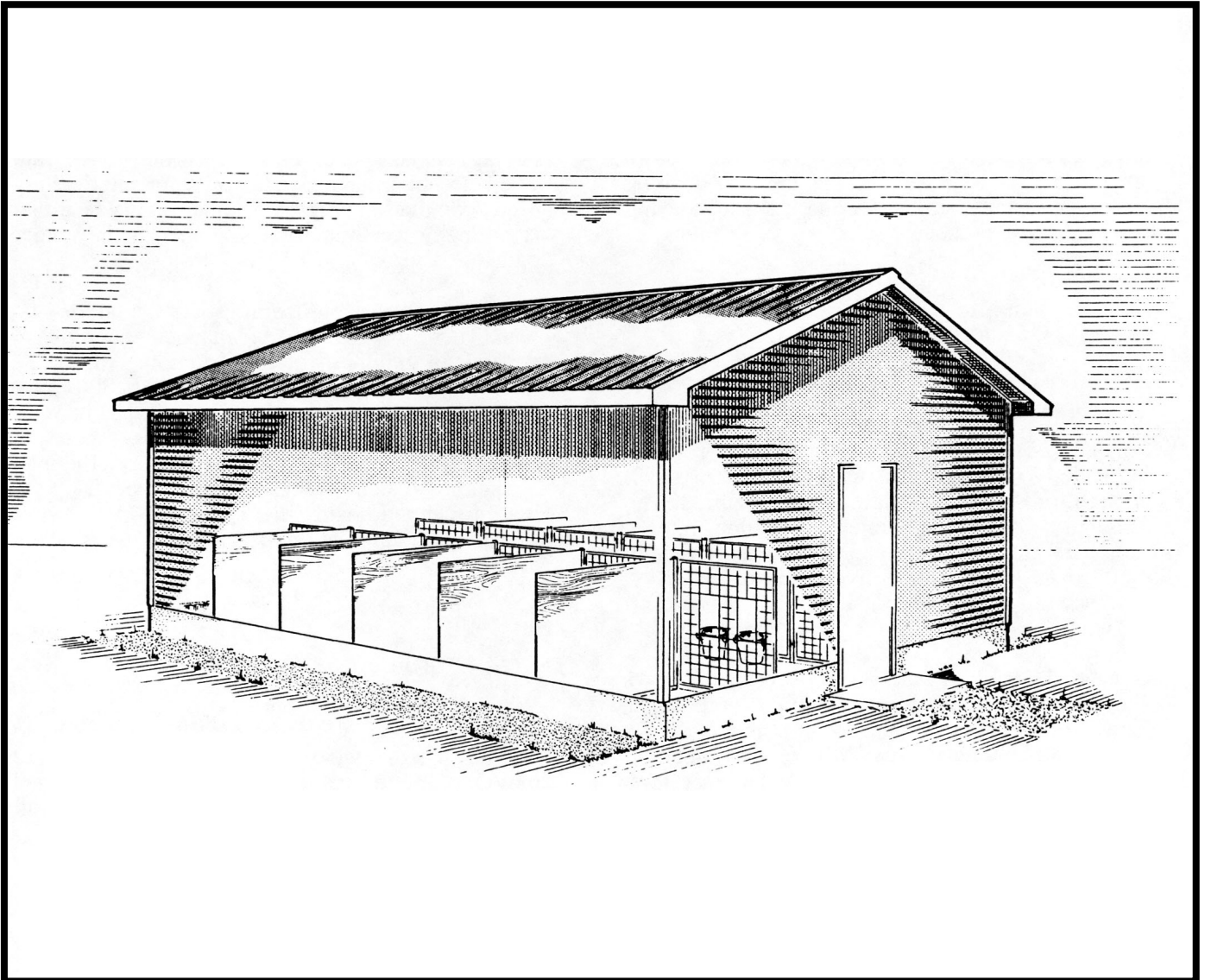


WARM CALF NURSERY - INDIVIDUAL PENS



DEVELOPED BY CANADA PLAN SERVICE

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CPS
PLAN M-2343 REVISED 06:77

This leaflet describes a plan for a fully insulated and fan-ventilated warm nursery for calves to about 3 months of age. The 6000 mm wide x 7500 mm long (20 ft wide x 25 ft long) building can house 12 calves in two rows of individual pens. This should be enough for a 100-cow milking herd, assuming only heifer calves are raised. Removable pen partitions permit running two or three calves together for a short time before leaving the nursery. This allows them to develop socializing habits before entering the next housing system, thus reducing some of the stress of moving.

Details relating to pen construction are given in Plan 326-36 (CPS Plan M-2834).

VENTILATION

Small calf barns are difficult to ventilate properly, particularly in winter. It is hard to find fans small enough for the low ventilation rates required. The minimum continuous winter ventilation rate is only 5 L/s (10 cfm) per calf. This is periodically doubled to 10 L/s (20 cfm) to control humidity. Summer rates should be at least 35 L/s (70 cfm) per calf.

One method of lowering the average Step 1 ventilation rate is to use a 10-minute-cycle timer between the thermostat and the continuous Step 1 fan. If, for example, only 80% of the rated fan capacity is required, adjust the cycle timer to 8 minutes ON, 2 minutes OFF. Odor level and moisture condensation on the walls and ceiling will indicate if there is enough ventilation.

Some small exhaust fans can be slowed by inserting a matching manual speed control into the fan supply circuit. This lets you reduce the Step 1 fan speed to match the requirements of the nursery.

See CPS Plan M-9701 (BC publication 306.460-1) for details and principles of using the 10-minute-cycle timer or the manual speed control with the Step 1 fan. The same plan also gives details for interlocking Step 2 ventilation with the supplementary heat that is normally required for calf barns in the colder parts of Canada.

Suggested inlet slot openings are given on the plan. These may have to be changed according to general air tightness of construction. Adjust the inlet to give an airspeed of about 4 m/s (800 fpm). A simple manometer installed in the barn is helpful when adjusting the inlet. A pressure difference of 12 Pa (0.05 in. water) across the inlet is required to achieve this velocity. Another option is to use an automatic inlet (Plan 306-48, CPS Plan M-9715) to maintain enough airspeed to prevent draftiness.

STRUCTURAL

With normal construction practice, the diaphragm action of the roof should be more than adequate to provide lateral wind resistance for this small building. If the size of the building is changed considerably, some changes in roof and endwall construction may be required. Obtain engineering advice for such changes.