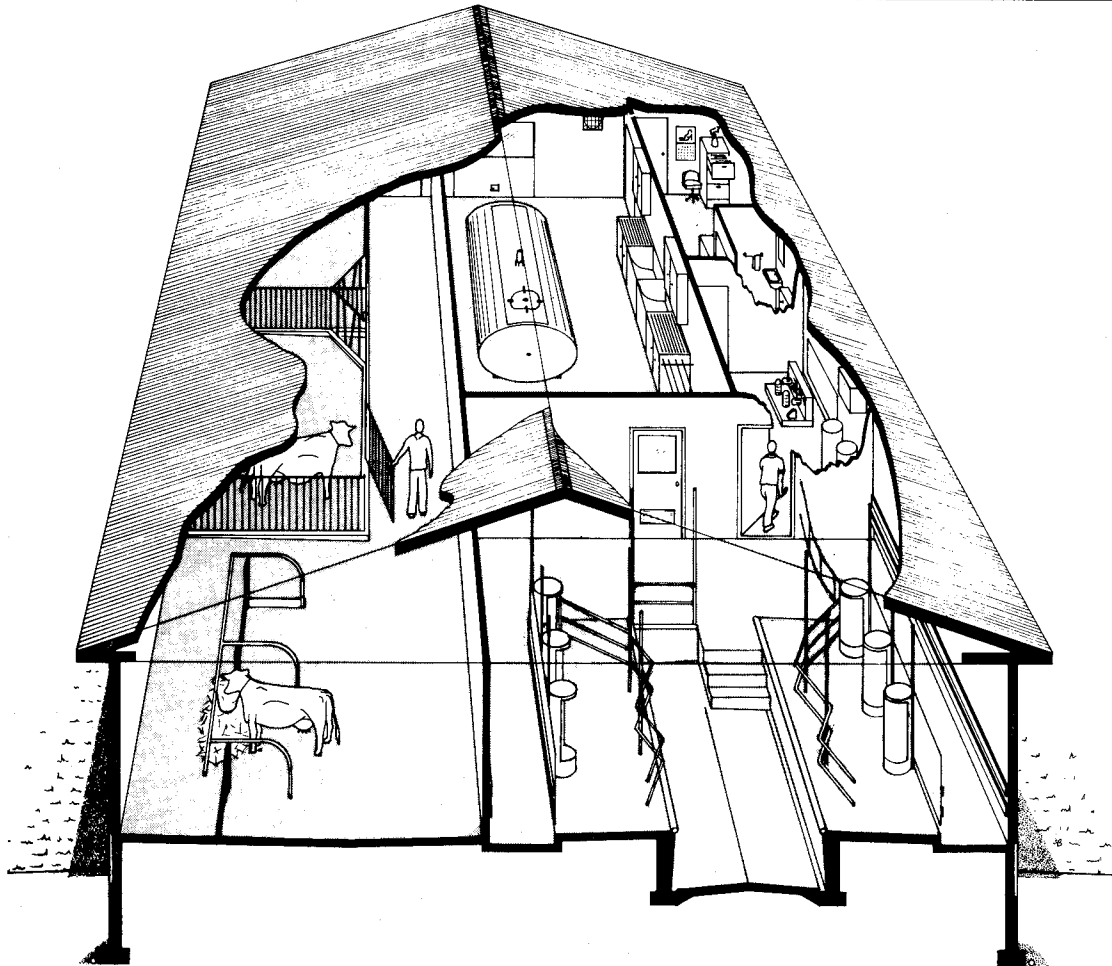


PLAN
M-2502

HERRINGBONE MILKING CENTER (TWO RETURN ALLEYS)



This plan is for either a double-4 or double-8 stall herringbone milking parlor complete with milk handling facilities, and an attached stall and pen area for cows that need special care and treatment.

The plan gives one arrangement of the milking parlor, milkroom, office, washroom, equipment room and cow treatment area. For the double-4 herringbone parlor, the building shown is 13.2×14.4 m, and for the double-8 parlor, it is 13.2×18 m. Dimensions of the parlor should be checked with the stall equipment supplier, since there are no standard dimensions for milking systems.



The Canada Plan Service prepares detailed plans showing how to construct modern farm buildings, livestock housing systems, storages and equipment for Canadian Agriculture.

This leaflet gives management information and describes one of these detailed plans. To obtain a copy of the Canada Plan Service detailed plan, contact your local provincial agricultural engineer or extension advisor.

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Cows step up about 150 mm as they enter the milking parlor in groups of four or eight. The operator's pit floor is about 750 mm lower than the cow platforms at both sides. This arrangement keeps the operator's pit to minimum depth to save him steps; it also eliminates the troublesome cattle walk-up ramps used in older parlors to raise the cows for easy milking. The floor of the pit is crowned at the center for more comfortable standing. The floor also slopes to a sump pump at one end for drainage.

Where the milking parlor connects to a 'warm' ventilated barn, wide overhead garage doors may be substituted between the parlor and barn. These are left open during milking and closed at other times.

The milkroom is 5.0 by 7-8 m, depending on herd and bulk tank size. The plan shows a handy working arrangement for storage, wash sinks and traffic areas. Access to the milkhouse is through a small office-vestibule that provides desk space and storage for records, medications and sanitation supplies.

A small washroom contains the toilet and wash-up facilities essential to a large dairy enterprise. Provincial health authorities require a separate waste-disposal system for this.

A mechanical equipment room has well-ventilated space for vacuum pumps, electrical service, refrigeration compressors, water heater and other related equipment.

WALL AND ROOF CONSTRUCTION Insulated frame construction is recommended for the outside walls and roof. With RSI-3.5 insulation in walls, RSI-4.9 in ceiling, and a well-insulated foundation, the building can be kept above freezing with a minimum of supplementary heat. A CCA-pressure-treated wood sill prevents premature rotting at the base of the wood walls. Interior wall and ceiling surfaces should be attached with rust-proof fasteners (such as dip-galvanized nails) and finished with a smooth waterproof coating (such as polyurethane or epoxy enamel). Caulk or seal wall panel joints and edges. Your local dairy advisor may have more specific recommendations for other impervious finishing systems that have proven satisfactory.

DRAINAGE All floors should slope for drainage. Install 100 mm pipe-size floor drains with oversized slotted covers that can be easily lifted off for maintenance. Commercial floor drains of cast iron may be used, but the inexpensive ones are usually too small to be practical. One detail shows an inexpensive plastic dishpan used to form a smooth, easily cleaned sump for collecting sediment. Use a 100 mm P-trap sewer pipe as a gas trap at each floor drain. Connect all drains to a sump pump at the lower end of the milking parlor. Use a high-capacity, float-operated electric sump pump (0.4 kW motor; 1/2 in. outlet pipe size).

Pump the wash water to the liquid manure storage or to a

sediment tank and field tile disposal bed. Check with local authorities for details of the tank and disposal bed, and be prepared to clean out the tank regularly to prevent plugging the disposal bed with solids.

In this plan, the cow platforms are sloped away from the operator's pit and are shown without gutter or grate behind the cows. Many stall manufacturers recommend the stall gutter and grate to minimize splash, but this prevents separating the manure solids from the wash water. It is simpler to build the sloped floors shown. Also, a careful operator can reduce the manure load in the sediment tank and field tile system by shoveling manure solids into the manure system before hosing the floors.

CONCRETE FLOORS Floors in the milking center should be smooth and easy to keep clean (but NOT steel troweled!). Floors in all cow traffic areas should be broom-finished perpendicular to the movement of cattle, with the rest 'wood-float' finished to give a textured, nonskid surface. Use top quality concrete (specify at least 30 MPa if ordering ready-mix) and lay it on well-compacted sand or gravel fill.

PARLOR GROUNDING SYSTEM To minimize the possibility of stray voltage problems, install a complete interconnected grounding system throughout the milking parlor. Details on materials and methods are given in Leaflet and Plan Q-2503.

VENTILATION AND HEATING For larger milking operations, the compressor for the bulk tank is usually remote. It is important to conserve the heat from cooling milk to reduce winter heating requirements. Locate the compressor in the mechanical equipment room adjacent to a large screened opening in the outside wall. In summer, a fan at least as big as the compressor fan circulates outside air through the equipment room to get rid of the milk heat. In winter, close the outside wall opening and circulate air from the equipment room to the milkroom with a small baffled fan through the interior wall, and back again through a screened opening at the opposite corner of the same wall. Use a fan-forced, ceiling-hung electric heater complete with thermostat for supplementary winter heating in the milkroom.

The plan shows a small fresh-air intake fan for positive pressure ventilation of the milkroom to keep barn odors and flies out of the clean area. Consider also a larger exhaust fan (at least 1750 Us) for hot weather ventilation from the milking parlor.

TREATMENT AREA It is handy to have an adjacent room for bypassing cows needing special treatment (artificial breeding, etc.). Here a combination of tie stalls and treatment pens can be used for treating occasional herd health problems. Some operators even prefer to use the tie stalls for calving; for this, it is better to omit the manure gutter and simply slope the floor to a large drain for easy sanitation.

LOCAL REGULATIONS This plan meets the requirements for most authorities having control of farm milk handling. However, approval of plans should be obtained from proper local authorities before construction of any milking center is started.