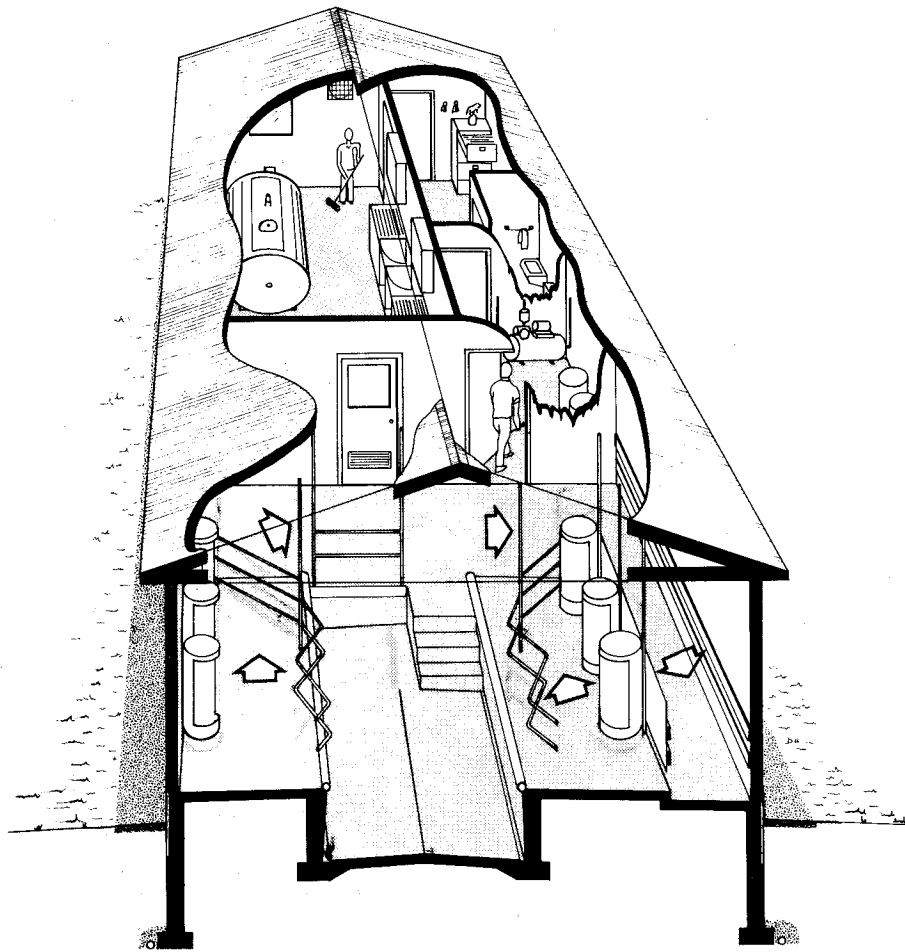




HERRINGBONE MILKING CENTER (SINGLE RETURN ALLEY)



This plan is for either a double-4 or double-8 stall herringbone milking parlor complete with milk room, office, mechanical equipment room and small washroom.

The plan gives one arrangement of the milking parlor, milkroom, office, washroom and equipment room. For the double-4 herringbone parlor, the building is 7.2 × 14.4 m, and for the double-8 parlor, it is 7.2 × 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.

HERRINGBONE MILKING CENTER (SINGLE RETURN ALLEY)

PLAN N-2501 NEW 84:01

Cows step up about 150 mm as they enter the milking parlor in groups of 4 or 8. 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 sloped to a sump pump at one end for drainage and is crowned slightly at the center to make it easier on the operator's feet and legs.

Where the milking parlor connects to a 'warm' ventilated barn, a wide overhead garage door may be substituted for the 3 doors shown between the parlor and barn. This is left open during milking and closed at other times.

The milkroom is 4.5 x 6-7 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 also 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. A separate waste disposal system is required; contact your provincial health authority for requirements and approval.

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 and 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 interior 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 for a gas trap at each floor drain. Connect all drains in straight runs under the floor to a sump pump at the lower end of the milking parlor. Use a high-capacity, float-operated electric sump pump with a 0.4 kW motor and 1/2 in. outlet pipe.

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 pump the tank out regularly to prevent plugging the disposal bed with solids.

In this plan, the cow milking platforms are sloped away from the operator's pit and are shown without a gutter and 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 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 for installing such a system are given in Leaflet and Plan Q-2503.

VENTILATION AND HEATING The compressor for the bulk tank may be attached to the tank as shown, or it may be remote. If it is attached, waste heat from the milk goes directly into the milkroom, reducing winter heating requirements. If remote, locate the compressor in the mechanical equipment room adjacent to a large screened opening in the outside wall, for summer ventilation. For winter, close the outside wall opening and circulate air from the equipment room to the milkroom with a baffled fan through the interior wall, and back again through a screened opening at the opposite corner of the same wall. For supplementary heating in the milkroom, use a fan-forced, ceiling-hung electric heater (3 to 5 kW) with built-in thermostat.

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

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.