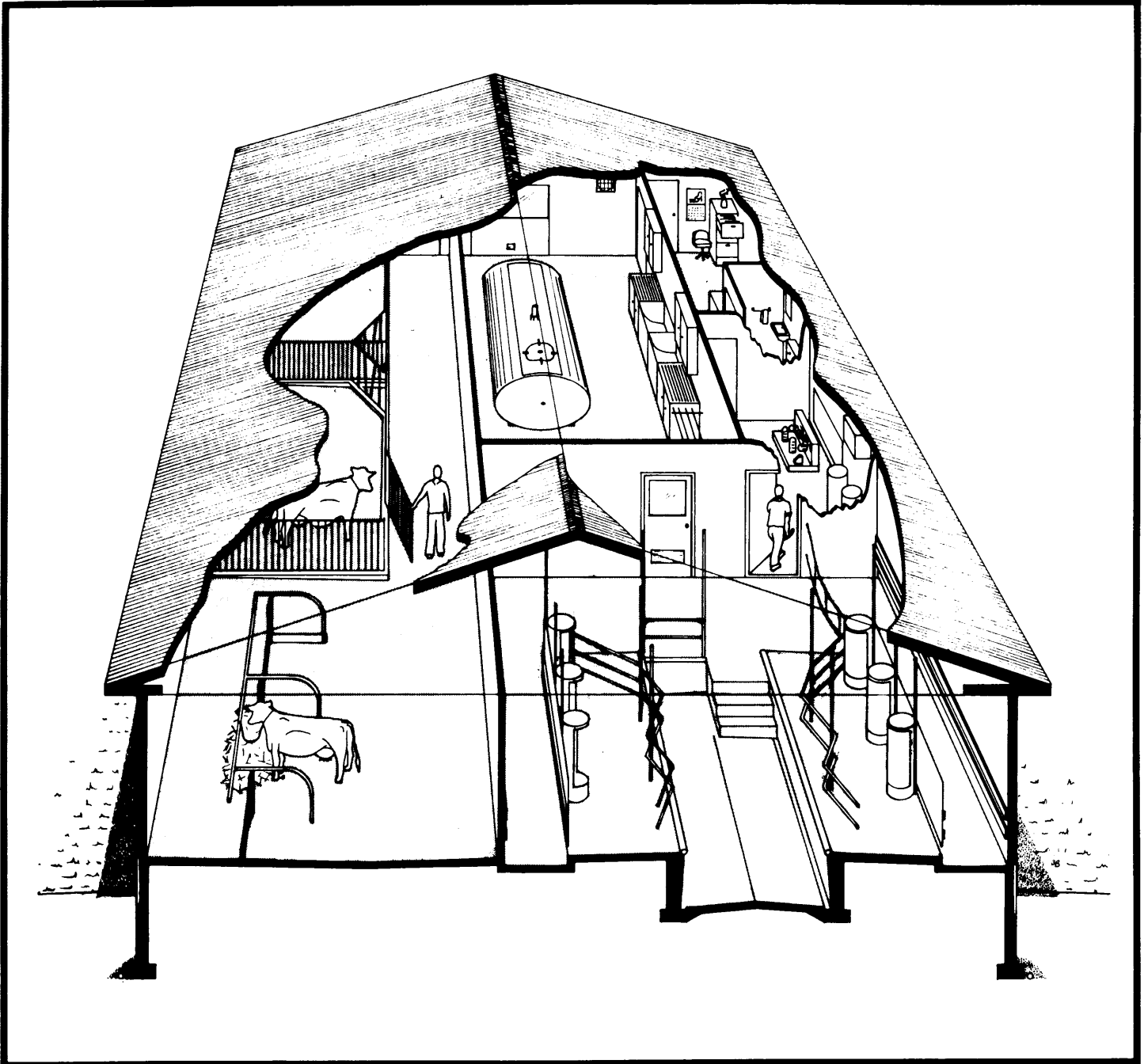


## HERRINGBONE MILKING CENTER (TWO RETURN ALLEYS)



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 (TWO RETURN ALLEYS)

PLAN 2502 REVISED 12:77

This plan is for either a double-4 or double-8 stall herringbone milking center complete with milk handling facilities and attached stall and pen area for cows needing special care and treatment. It replaces Plan 2143.

The plan gives one arrangement of the parlor, milk room, office, washroom equipment room and cow treatment area. For the double-4 herringbone parlor, the building shown is 44 x 48 ft and for the double-8 parlor, it is 44 x 60 ft. Dimensions of the parlor should be checked with the stall equipment supplier, since there are no standard dimensions for milking systems.

Cows step up about 6 in. as they enter the milking parlor in groups of 4 or 8. The operator's pit floor is dropped about 30 in. below the cow platforms at both sides. This arrangement keeps the operator's pit to a minimum depth to save steps; it also eliminates the troublesome cattle ramps which were used in older parlors to raise the cows for easy milking. The floor of the operator's pit is crowned at the center for more comfortable standing, and slopes to a sump pump at one end for drainage.

The milk room is about 16 x 24 ft; this could be adjusted depending on herd and bulk tank size. The plan shows a hand working arrangement for storage, wash sinks and traffic areas. Entrance to the milk house is gained through a small office-vestibule, which provides desk space and storage for records, medications and sanitation supplies.

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

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

### WALL AND ROOF CONSTRUCTION

Insulated frame construction is indicated for the outside walls and roof. With 6 in. (R-20) insulation in walls and ceiling, and a well-insulated foundation, the building can be kept warm with a minimum of supplementary heat. A pressure-treated wood sill prevents premature rotting at the base of the wood walls. Interior wall and ceiling surfaces should be fastened with dip-galvanized nails, and finished with a smooth waterproof coating, such as polyurethane or epoxy enamel. The local dairy adviser may have more specific recommendations for impervious-finish materials that have proven satisfactory.

### DRAINAGE

Slope all floors for drainage. Provide 4-in. floor drains with oversized slotted covers which 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. The bell-trap type is popular but is not recommended. A detail is shown using an inexpensive plastic dishpan to form a smooth, easily cleaned sump for collecting sediment. Use a 4-in. P-trap sewer pipe for a gas trap at each floor drain. It is suggested that all drains be led to a sump pump at the

lower end of the milking parlor. Use a high-capacity, float operated electric sump pump; a 1/2-HP motor and 1 1/2-in. pipe size are suggested. 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 tile with solids.

In this plan, the cow platforms are sloped away from the operator's pit and are shown *without* a gutter and grate at the rear of the cows. Many stall manufacturers recommend the stall gutter and grate to minimize splash, but this prevent any possibility of separating the manure solids from the wash water. It is simpler to construct floors as shown in Plan 2502; also, a careful operator can reduce the load on 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, and other floors should be 'wood-float' finished to give a textured, nonskid surface. Concrete should be top quality (specify at least 4000 psi if ordering ready-mix) and laid on well-compacted sand or gravel fill.

### 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. For winter, close the outside wall opening and circulate air from the equipment room to the milk room by a small baffled fan through the interior wall, and return air back through a screened opening through the opposite corner of the same wall. Use a fan-forced, ceiling-hung, electric heater complete with thermostat for supplementary winter heating in the milk room.

The plan shows a small fresh-air intake fan for positive pressure ventilation in the milk room to keep barn odors and flies out of the clean area. Consider also a larger exhaust fan (at least 3500 cfm) for hot weather ventilation from the milking parlor.

### TREATMENT AREA

It is handy to have an adjacent room for by-passing cows needing special treatment (artificial breeding, etc.) Here a combination of tie stalls and treatment pens provide for a variety of herd health problems. Some operators even prefer to use the tie stalls for claving; 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.