UNIVERSITY OF IDAHO
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Building Layouts For Dairy Units

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THIS bulletin was prepared to provide some suggestions in planning dairy buildings and feeding arrangements for Idaho dairymen. Detailed drawings and material requirements for many types of dairy structures are available through the Farm Building Plan Service of the Idaho Agricultural Extension Service. Plans can be obtained through county extension agent offices or by writing direct to the Extension Service, Boise or Moscow.

Provide Ample Space for Dairy Animals

If cows are to be fed from two sides of the hay manger, rack, wagon or feed bunk, the width of the feeders shown in Table 1 should be increased by 6 to 10 inches. The width of feeders shown in the table are for animals fed from one side.

Table 1—Recommended space for dairy animals

	Barn	Loafing shed	Feed lot		Hay manger, Rack or wagon		Feed bunk		Water
	sq. ft.	sq ft.	Dirt sq. ft.	Paved sq. ft.	Length inches	Width inches	Length inches	Width inches	Per day gallons
Cows	25	60 to 70	300 to 1000	100 to 150	24 to 30	30	30 to 36	30	12
Yearlings	20	40	250 to 850	80	20	30	20 to 26	30	10
Calves	15	30	150 to 500	50	18	30	18 to 24	30	8
Herd Bulls	100	150	1 to 2 acres pasture		30	30	30	30	15

Location of Buildings and Lots

Build the structures and exercise lot on well-drained land. Avoid hollows and low places.

The main purpose of a loafing shed is to keep cows dry, free from drafts and to provide an area of dry, warm bedding where they can lie down. Loafing sheds in most areas of Idaho are faced to the south and southeast for maximum sunlight in cold weather, regardless of direction of prevailing winds. Construct the loafing shed of tight fitting materials to keep drafts at a minimum. Loafing sheds are used by cattle in summer time to get protection from heat and heel flies. The sheds should be at least 24 feet deep, preferably 30 feet deep.

The exercise lot, if dirt, should be well drained to keep the cows

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out of the mud in adverse weather. Tile lines, either of clay or concrete, can be installed to take off excess water from the top few inches of soil within a few hours after a storm. In particularly heavy soil, an inverted V-trough constructed of 2″ x 12″ rough lumber can be placed in a trench and back-filled with gravel and dirt for exceptionally good drainage. The lumber should be treated with a preservative and the bottom of the trench should be covered with a 6-inch layer of gravel upon which the inverted trough sits. The lower ends of the drain lines are connected to a common line which carries water to a low area for disposal.

Build Structures Adequately

Some of the common structural weaknesses of farm buildings are: (1) inadequate foundations, (2) lack of adequate anchorage of sills to foundations, (3) inadequate fastening of studs and posts to sills, (4) improper bracing of walls and roof, (5) roof rafters not properly fastened to plates or side walls, (6) roofing not installed properly, (7) decay and deterioration allowed to accelerate, and (8) weak mortar joints.

A list of publications dealing with methods of construction appears on the back page of this bulletin.

Build Up Straw Bed Early

A good straw bed should be built up well in advance of cold weather so that full advantage of the loafing shed can be realized. The bed will give ample protection against the freezing of cows' udders when cold weather strikes.

Cows Are Smart

In one state where experimental work was going on, the workers noticed that while cleaning out a bedded area in the winter the cows preferred to lie on the area remaining to be cleaned. Thermometers were put into operation, and they found the temperature of the bedding-manure pack was between 80 and 100 degrees. Little wonder the cows preferred the warm, soft bed in cold weather. Loose housing calls for a deep manure pack that is undisturbed during winter and early spring months. This is good manure-preservation practice, because early spring is the ideal time to apply manure on the fields.

Spray Unit for Lice and Flies

An inexpensive spray unit, constructed of standard ½-inch pipe and wide-angle nozzles was designed and tested at the University during 1956. The unit, composed of four lengths of pipe and short sections of hose for flexibility, is mounted at the exit end of a chute. A valve on the supply line leading from the pump, controls the spray so that waste of spray material is kept at a minimum. The spray unit is designed to give adequate penetration with the use

of spray pumps normally found on the farm. Plans for this unit are available from the Agricultural Engineering Department, University of Idaho.

Self-Feeding Bunker Silos

If a paved exercise lot is not installed at the outset, many dairymen construct self-feeding bunker silos in the feed area and pour the floors of concrete. As funds become available later, the wooden walls are moved to an adjacent location where another concrete floor is laid. In time, a complete concrete exercise lot is constructed for the benefit of the dairy herd.

Additional Publications on Related Subjects

Ext. Bul. 194—**Pole Frame Construction for Idaho Farm Buildings**

Ext. Bul. 236—**Plans for Idaho Farm Builders**

PNW Bul. 12—**Feed Handling Equipment**

Leaflet 12—**Electric De-icers for Farm Stock Tanks**

Leaflet 15—**Labor-Saving Ideas**

Ext. Cir. 104—**Idaho Dairy Barn and Milkhouse Requirements for Graded Milk Production**

F. B. 1772—**Use of Concrete on the Farm**

F. B. 1869—**Foundations for Farm Buildings**

A.I.B. 149—**Bunker Silos**

A. B. 98—**Loose Housing for Dairy Cattle**

F. B. 2046—**Farm Drainage**

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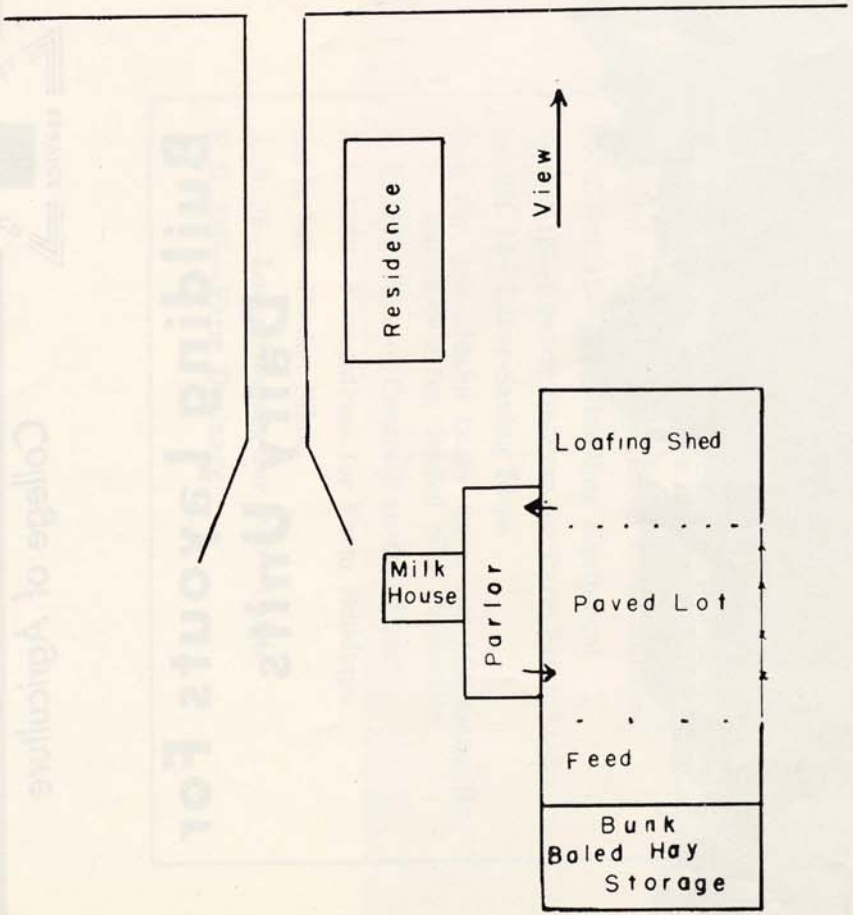

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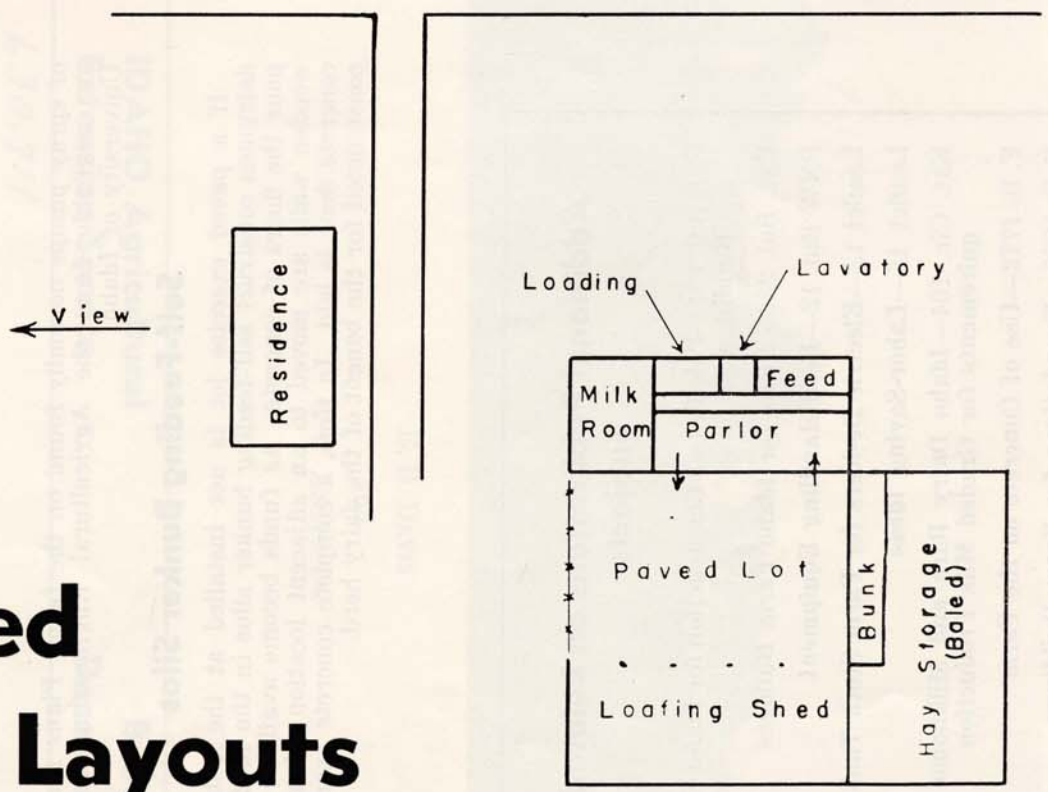

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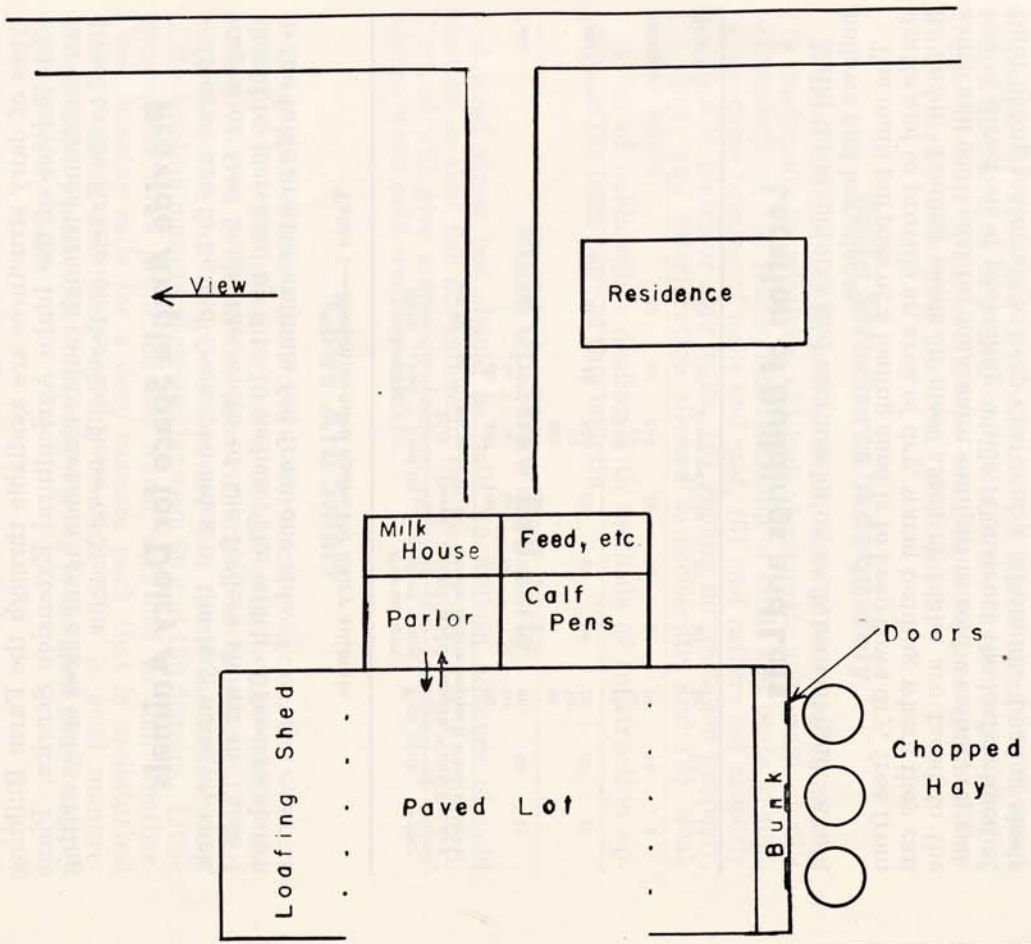
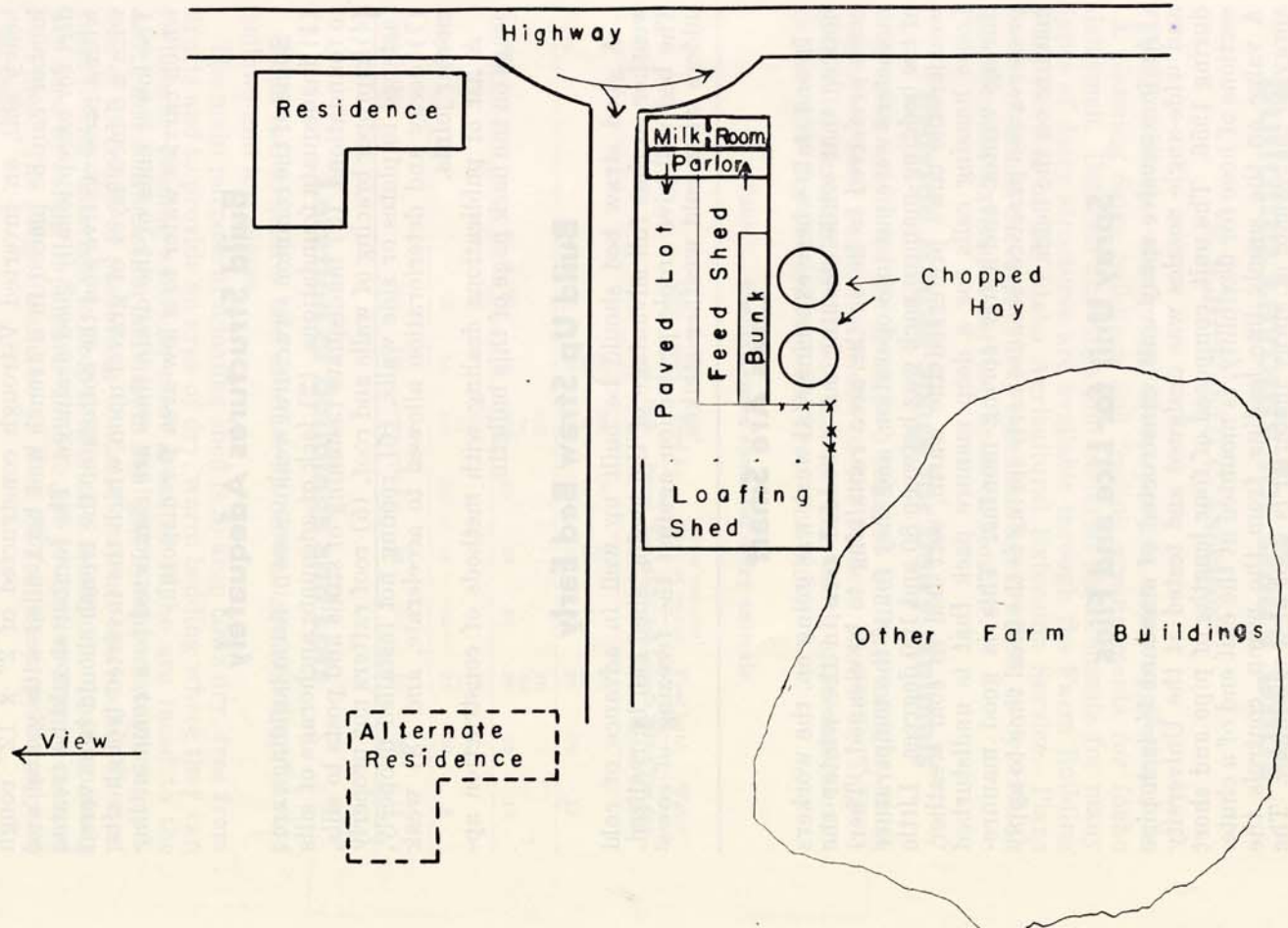

View
Residence
Milk House
Feed, etc
Parlor
Calf Pens
Doors
Chopped Hay
Loafing Shed
Paved Lot
Bunk


Highway
Residence
Milk Room
Parlor
Paved Lot
Feed Shed
Bunk
Chopped Hay
Loafing Shed
Other Farm Buildings
Alternate Residence
View