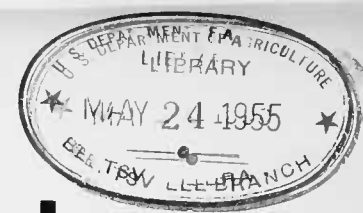
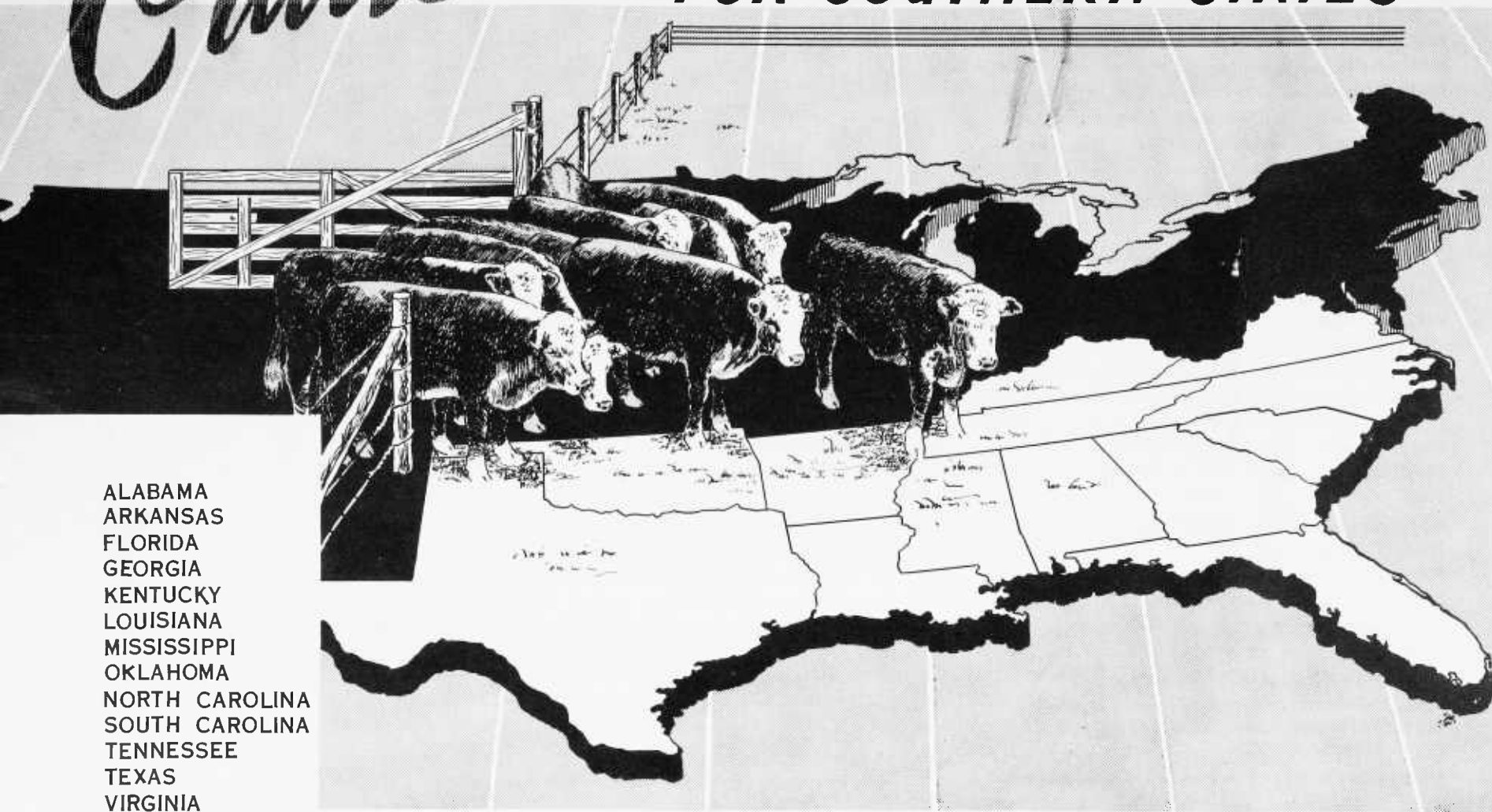


84A1
81



Cattle

shelters and equipment *FOR SOUTHERN STATES*



ALABAMA
ARKANSAS
FLORIDA
GEORGIA
KENTUCKY
LOUISIANA
MISSISSIPPI
OKLAHOMA
NORTH CAROLINA
SOUTH CAROLINA
TENNESSEE
TEXAS
VIRGINIA

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURE HANDBOOK NO. 81

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CATTLE SHELTERS AND EQUIPMENT FOR SOUTHERN STATES

Compiled by . . . THE AGRICULTURAL RESEARCH SERVICE AND THE FEDERAL EXTENSION SERVICE, UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH THE AGRICULTURAL ENGINEERING DEPARTMENTS AND THE COOPERATIVE EXTENSION SERVICES IN AGRICULTURE AND HOME ECONOMICS AT THE FOLLOWING COLLEGES AND UNIVERSITIES.

Alabama Polytechnic Institute	Auburn, Ala.
College of Agriculture, University of Arkansas	Fayetteville, Ark.
College of Agriculture, University of Florida	Gainesville, Fla.
College of Agriculture, University of Georgia	Athens, Ga.
University of Kentucky	Lexington, Ky.
Louisiana State University	University Station, Baton Rouge, La.
Mississippi State College	State College, Miss.
North Carolina State College	Raleigh, N. C.
Oklahoma Agricultural and Mechanical College	Stillwater, Okla.
Clemson Agricultural College	Clemson, S. C.
College of Agriculture, University of Tennessee	Knoxville, Tenn.
Agricultural and Mechanical College of Texas	College Station, Tex.
Virginia Polytechnic Institute	Blacksburg, Va.

UNITED STATES DEPARTMENT OF AGRICULTURE
Washington, D. C., April 1955

INTRODUCTION

FARM BUILDING PLAN SERVICES are organized in four regions—the South, West, Northeast, and Midwest. These plan services are conducted cooperatively by the United States Department of Agriculture, the State extension services, and in some States the agricultural engineering departments of the State agricultural colleges. The best plans for various types of farm buildings developed by the State colleges or the Department of Agriculture are made available to farmers through the plan services within the region for which they are suited.

How plans were selected

The plans illustrated in this publication were selected by a committee representing the State agricultural colleges of the southern States listed on page 3. Included are various types of buildings and equipment for beef cattle production. These plans incorporate the latest research findings and the best available information on the arrangement and construction of such buildings and equipment.

Planning for local conditions

The plans shown in this handbook are generally adapted to conditions in the southern States. A few designs, however, may not be suitable for particular parts of the region without some modification.

Climatic conditions differ in various parts of the South. Although very cold weather is not usually a serious consideration in the South some snow and freezing weather may be expected in the northern part of the region and will have an effect on roof loads and on the depth of foundations. Wind loads are an important consideration, especially in those areas subject to hurricanes, and will affect the size and fastening of framing members, and the fastening of sills and posts to foundation walls and piers. Soil conditions and rainfall should also be considered in planning foundations.

Before selecting a plan the prospective builder should consult his county agricultural agent. The county agent can help select the plan and recommend any modifications that may be necessary due to local climatic conditions or other factors.

Many States have additional plans not shown in this publication. The county agent can also give information about such plans and about bulletins and other material on building construction. Special drawings to meet individual needs are not ordinarily furnished by the agricultural colleges, although some States provide this service in special cases.

Selection of materials

Many of the structures for which plans are shown can be built or covered with a variety of materials. Choice may depend on availability and prices as well as the skill of local builders. Homegrown timber may be used in the form of poles, logs, or sawed lumber. Any wood in contact with the ground should be treated with preservatives to give long life, and poles to be set in the ground should preferably be pressure treated with preservatives. Sawed lumber should be properly piled and thoroughly seasoned before use.

HOW TO ORDER WORKING DRAWINGS

Working drawings for buildings and equipment listed in this publication may be obtained through the county agents or from the Extension Agricultural Engineer at the State agricultural colleges in the southern region. In many of the States there is a nominal charge for these plans.

In ordering plans be sure to give the number of the plan wanted as well as the title.

If you are unable to obtain working drawings of the plans you want from your own State college, the name of the nearest State college handling the plans may be obtained by writing to the U. S. Department of Agriculture, Farm Buildings Section, Plant Industry Station, Beltsville, Maryland.

The Department of Agriculture does not distribute working drawings for any of these plans and can only refer you to one of the State colleges where they may be obtained.

POLE BARN

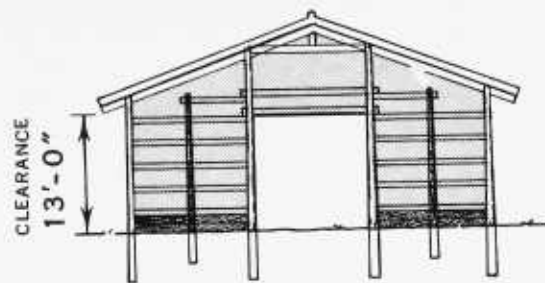
(Ridge centered between poles)

This barn was designed to use a minimum amount of material and is intended primarily for use as a feeding barn for beef cattle. It may also be used as a resting barn for dairy cows.

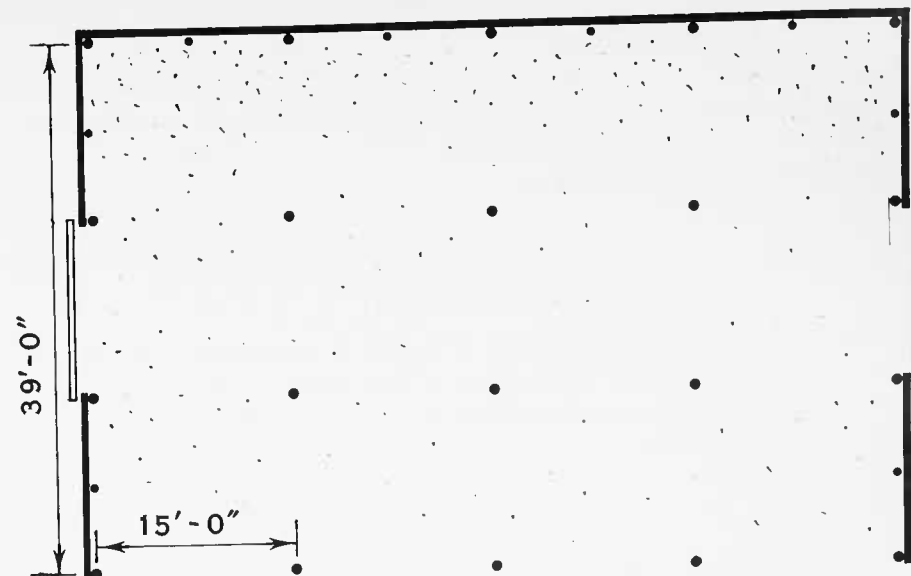
It may be 39 or 52 feet wide and any length, in 15-foot sections. The ridge is centered between rows of poles to permit use of a hay track. If hay track is used a hay door should be provided.

As a self-feeding barn it will accommodate about 5 tons of loose or 10 tons of baled hay per 13- by 15-foot bay and 7 to 10 head of stock per 15 feet of length. Where cows and calves are fed limited amounts of hay allow $2\frac{1}{2}$ to 3 feet of rack space per mature animal.

Movable hayracks as shown on Plan 5781 may be used.



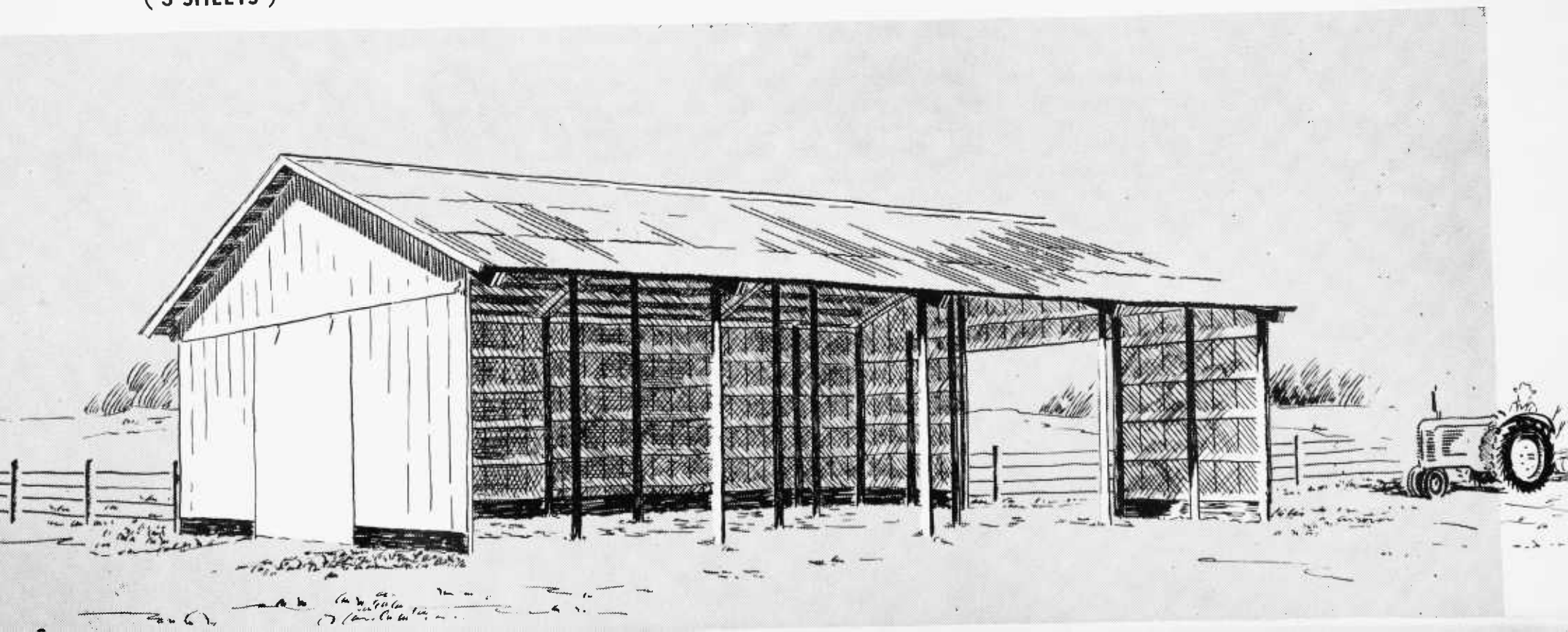
CROSS SECTION
SHOWING END WALL

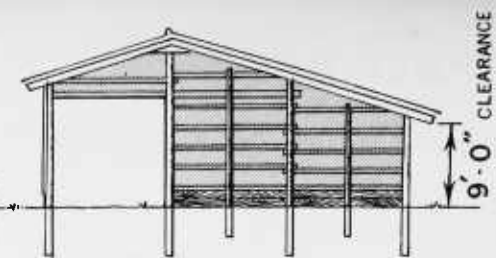
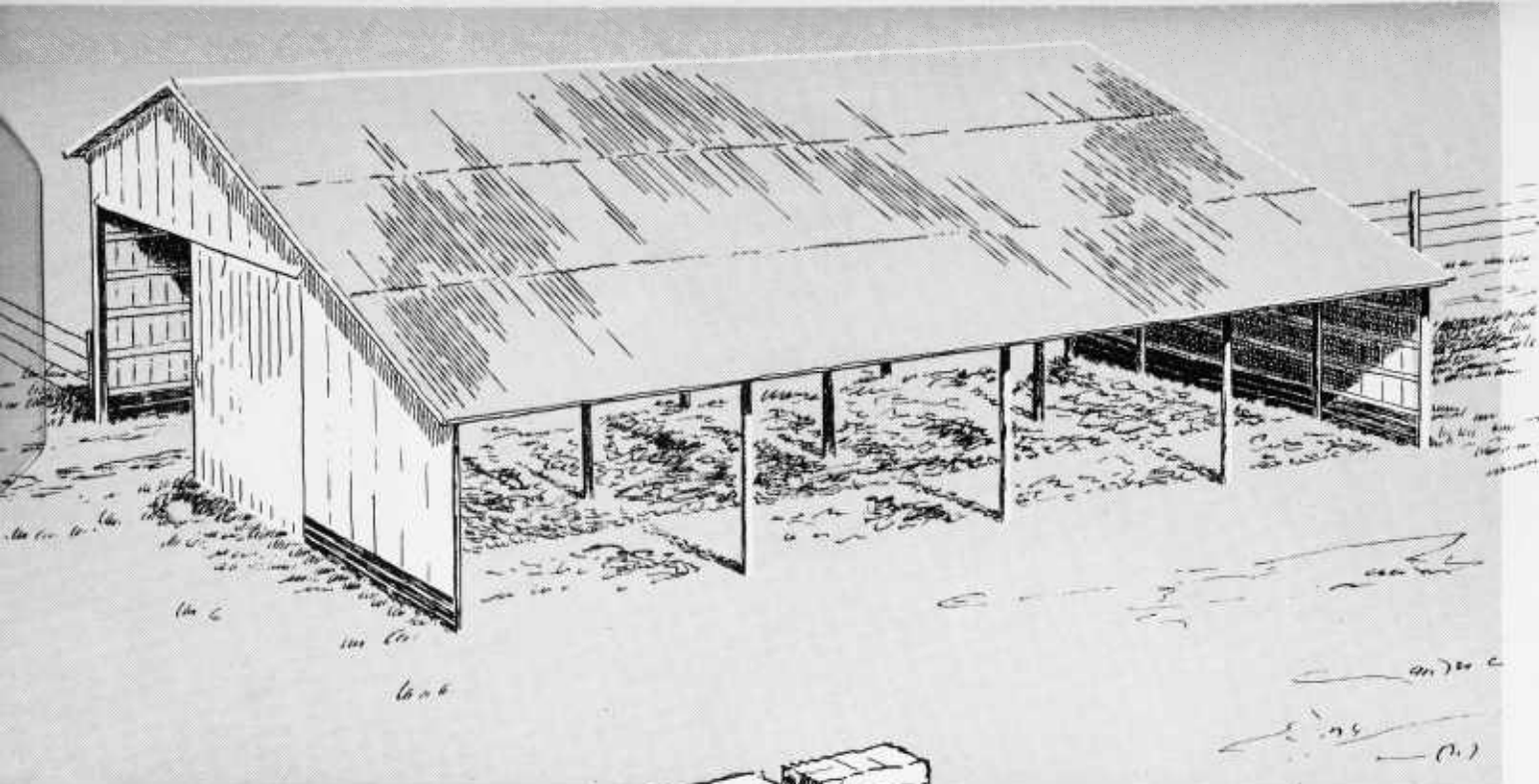


PLAN

PLAN NO.5780

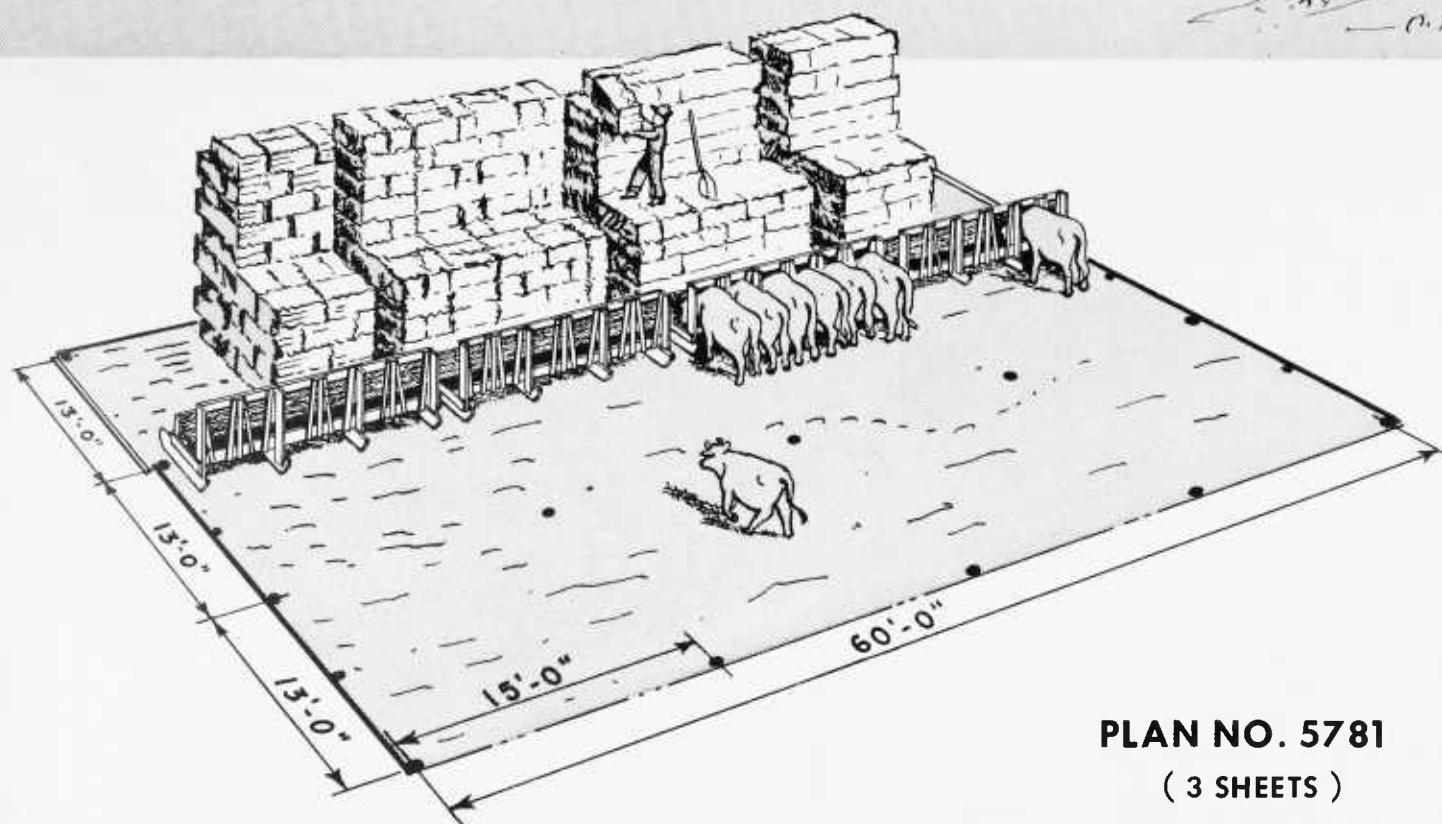
(3 SHEETS)





CROSS SECTION
SHOWING END WALL

POLE BARN (Ridge centered on pole)

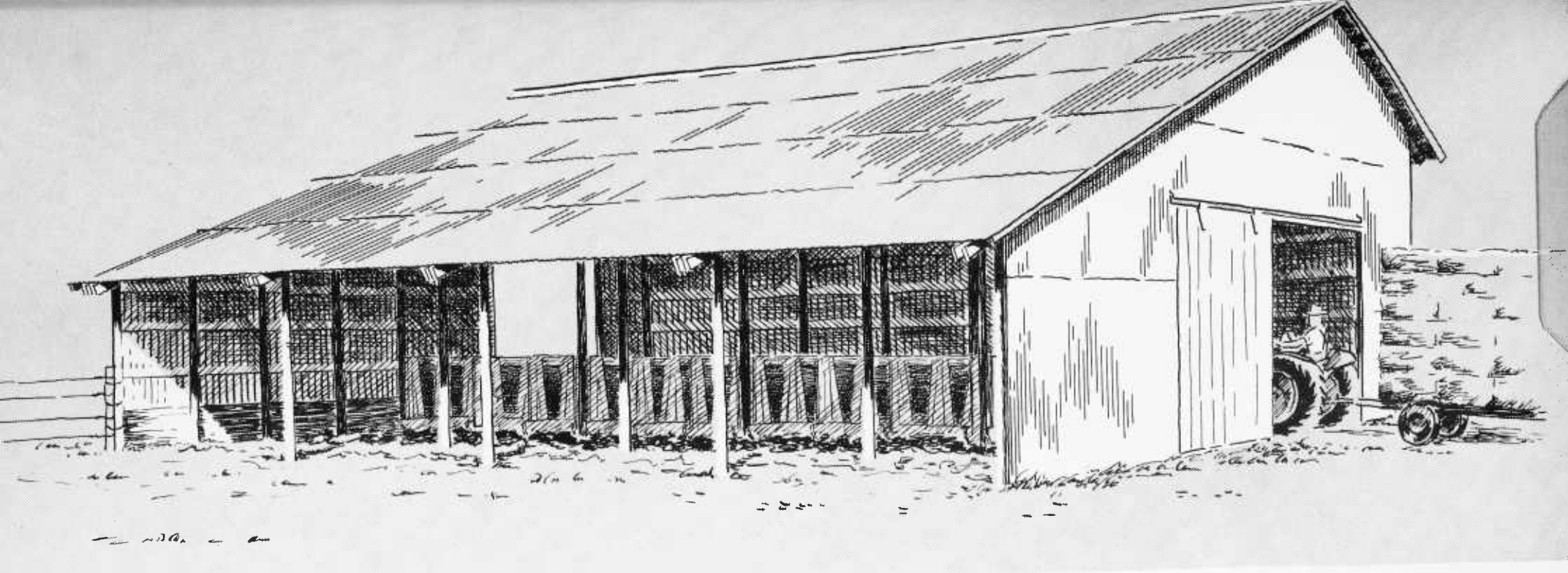


PLAN NO. 5781
(3 SHEETS)

This barn may be built in widths of 26, 39, and 52 feet. The length is variable in 15-foot sections. It is suitable as a feeding barn for beef cattle or resting barn for dairy cows. The 26-foot width can be used for hay or implement storage.

Hay capacity is about 5 tons of loose or 10 tons of baled hay in each 13- by 15-foot bay.

As a self-feeding barn, it will accommodate 7 to 10 head per 15 feet of length. If cows and calves are fed limited amounts of hay, allow $2\frac{1}{2}$ to 3 feet of rack or manger space for each mature animal. As a resting barn for dairy cows the 39-foot width will handle about 9 head and the 52-foot width about 12 head per 15 feet of length, with some space for straw storage.



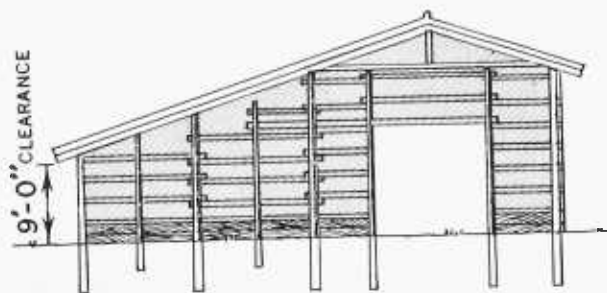
POLE BARN (Trussed Roof)

This barn may be built 26, 39, or 52 feet wide, and any length, in 15-foot sections. Roof trusses eliminate one row of poles.

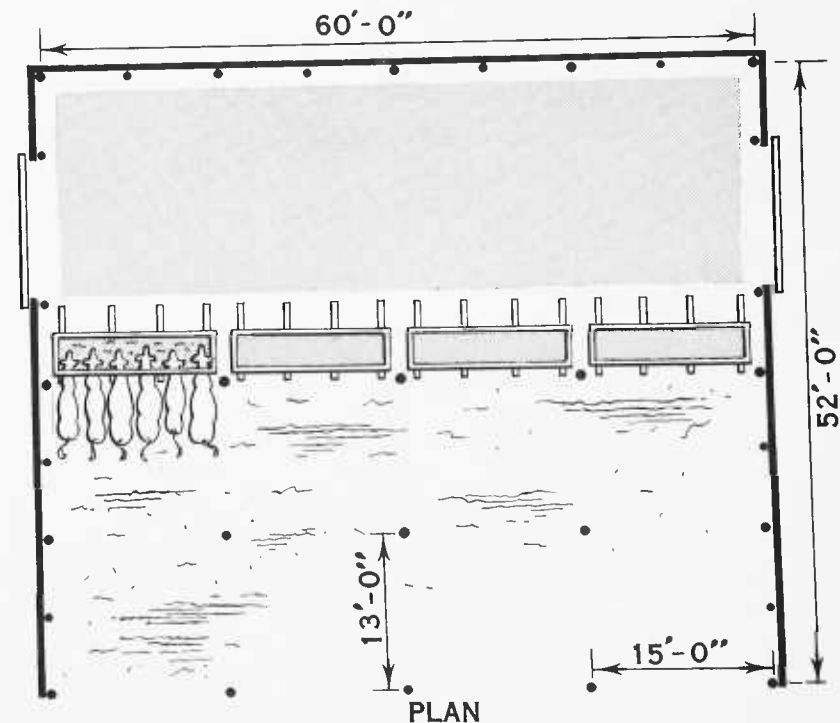
It is suitable as a hay and feeding barn for beef cattle or resting barn for dairy cows. The 26-foot width may also be used for hay or implement storage.

Hay capacity is about 5 tons of loose or 10 tons of baled hay for each 13- by 15-foot bay.

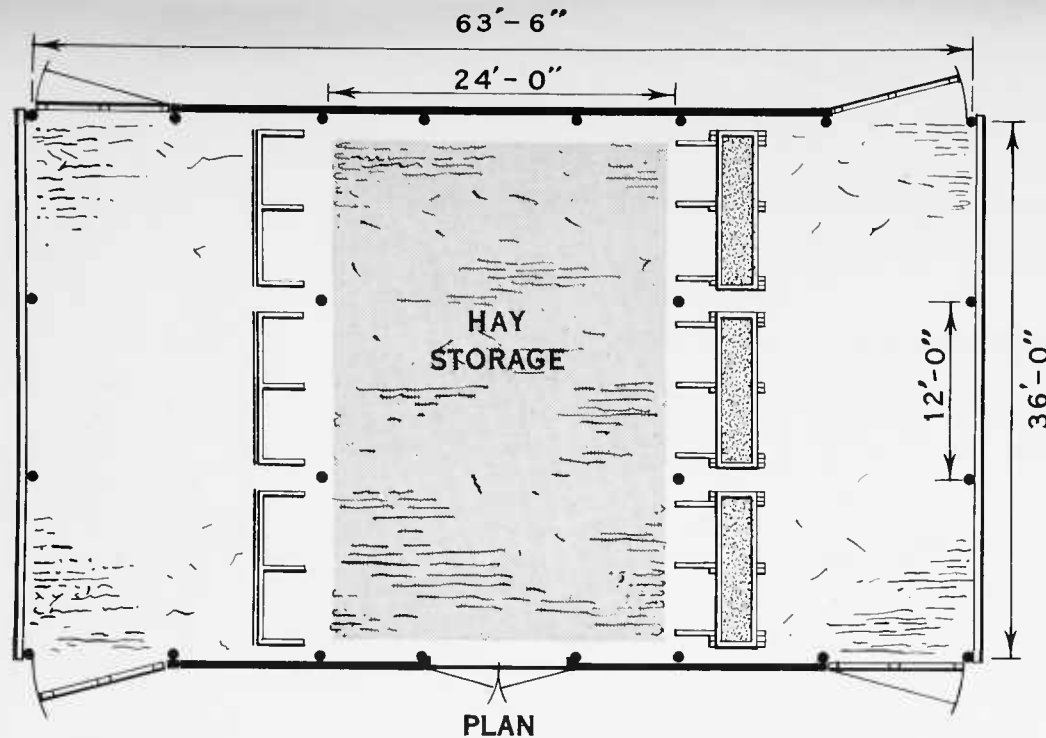
As a self-feeding barn, it will accommodate 7 to 10 head per 15 feet of length. Where cows and calves are fed limited amounts of hay, allow $2\frac{1}{2}$ to 3 feet of manger or rack space per mature animal. As a resting barn for dairy cows, the 39-foot width will handle about 9 head and the 52-foot width about 12 head per 15 feet of length, with some space for straw storage.



CROSS SECTION
SHOWING END WALL



PLAN



CATTLE BARN

(Pole Construction)

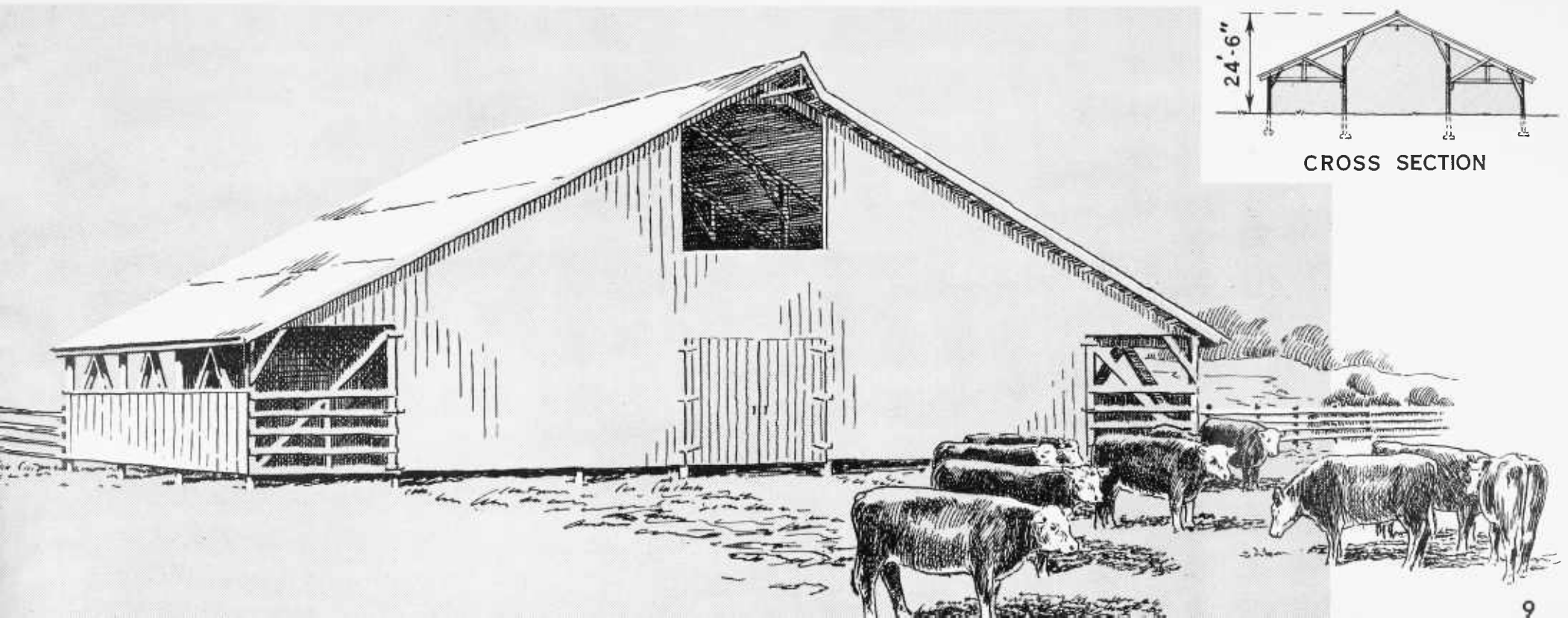
This feeding barn is framed on four rows of poles with large areas of unobstructed floor space. The length may be increased in 12-foot sections.

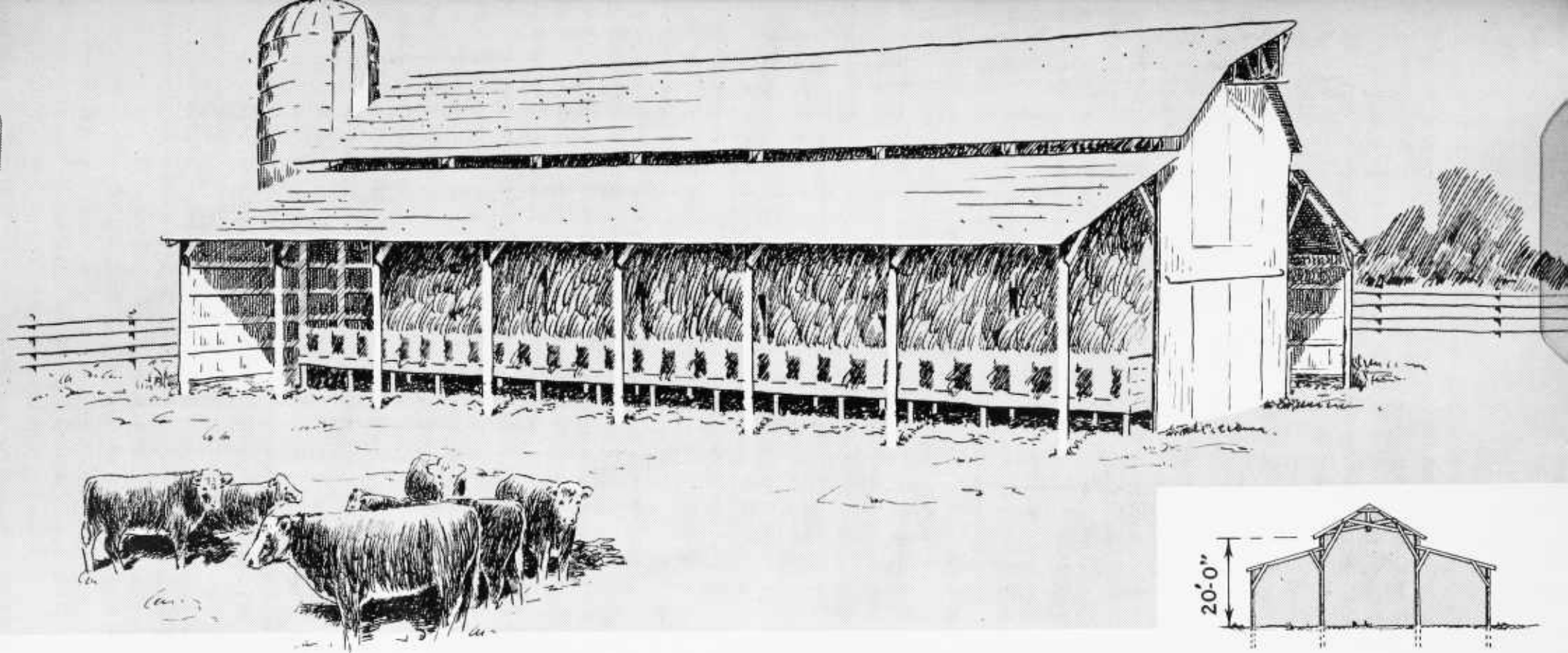
If used as a self-feeding barn for beef cattle it will accommodate 12 to 16 head for each 12 feet of length. If cows and calves are fed limited amounts of hay, allow $2\frac{1}{2}$ to 3 lineal feet of manger or rack space per mature animal.

Capacity is about 1 ton of loose hay or 2 tons of baled hay per foot of barn length when stacked 24 feet wide.

Either movable feed racks or feeding fences may be pushed up to the stack as feed is consumed or permanent feed bunks can be installed for feeding both hay and silage.

PLAN NO. 5754
(3 SHEETS)





CATTLE FEEDING BARN (Pole Construction)

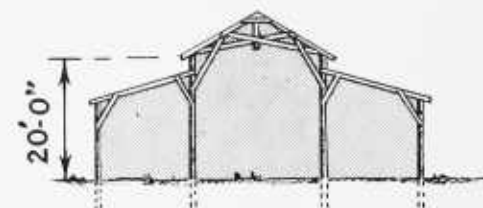
This pole barn, which may be built any length in 12-foot sections, has a center hay-storage section 24 feet wide with feeding sheds.

The hay capacity is about 10 tons of loose or 20 tons of baled hay for each 12-foot section.

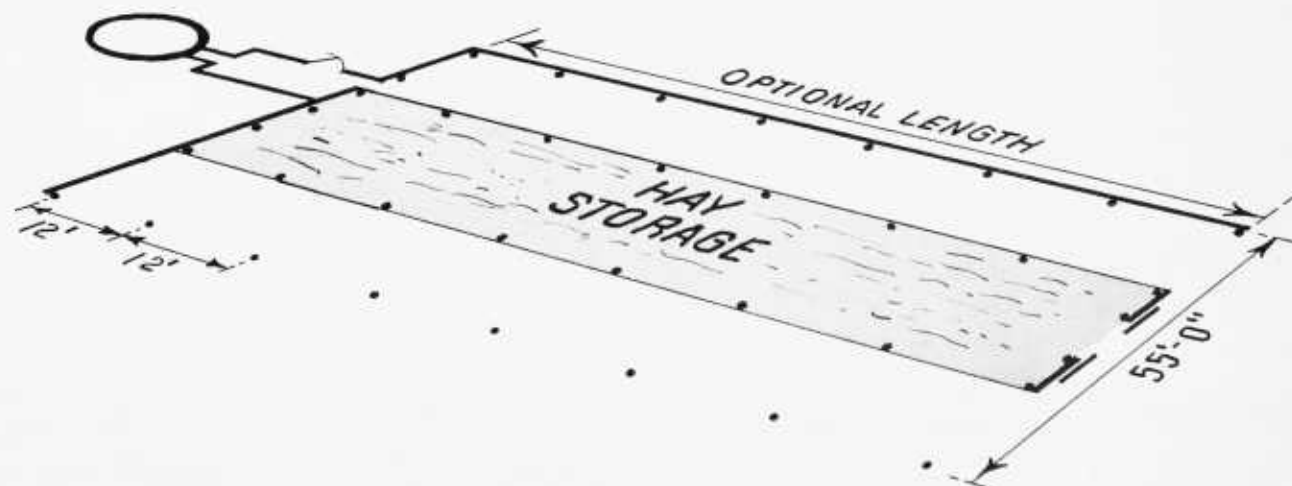
In determining the size of barn needed for any herd, allow $2\frac{1}{2}$ to 3 lineal feet of manger for each mature animal.

The plans show stationary mangers for feeding hay, grain, or silage, although movable feeding fences could be used if desired.

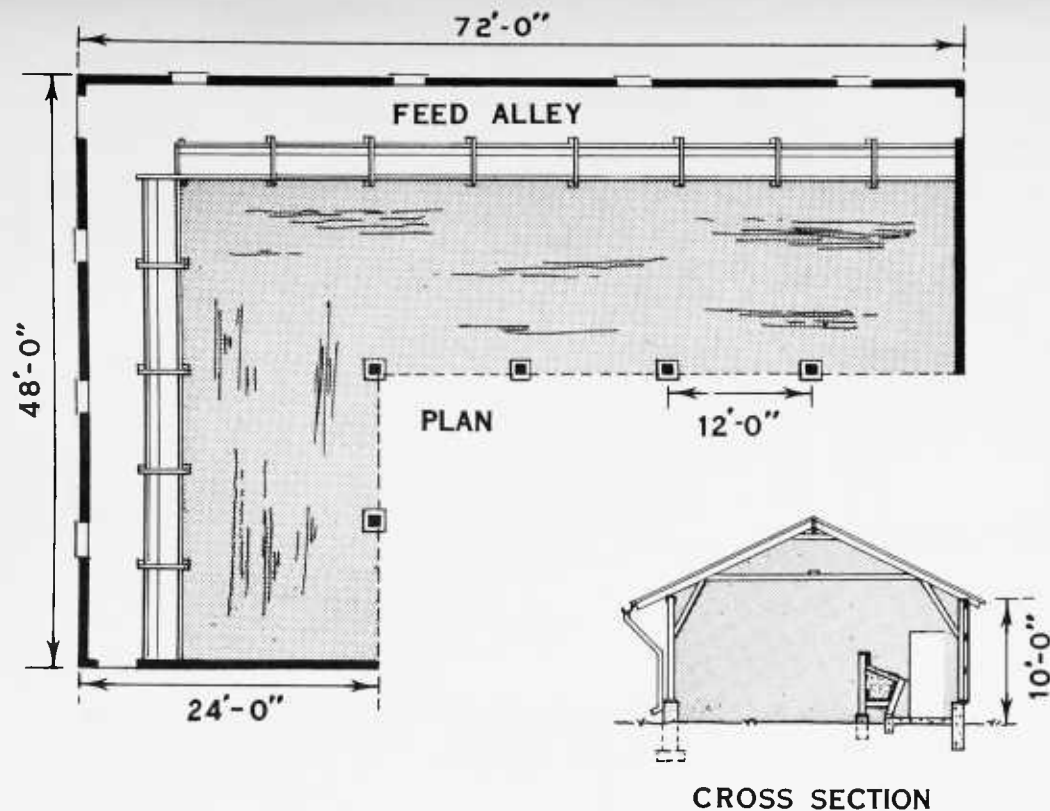
The barn may also be used as a feeding and resting barn for dairy cows by providing a second bay along each side to serve as bedded area.



CROSS SECTION



PLAN NO. 5765
(2 SHEETS)



CATTLE SHED

(Frame Construction)

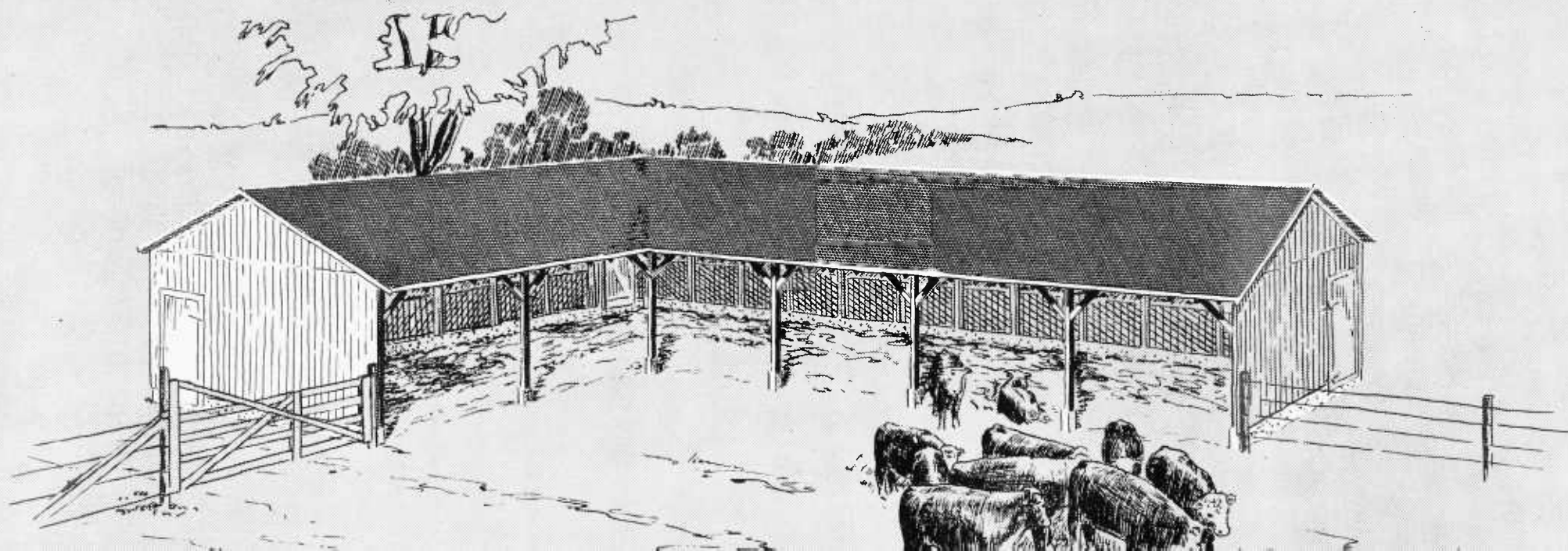
This shed is especially useful as a cattle feeding shed in the northern part of the region since it provides an excellent windbreak. It may also be used as a sheep shelter, hay shed or implement storage.

When used as a feeding shed, capacity is about 12 to 16 head per 12-foot section, if animals have free access to feed.

Feed racks and alley shown on the plans may be omitted if cattle are to be fed outside.

Although plans show frame construction, masonry block could be used for the walls.

PLAN NO. 5637
(1 SHEET)

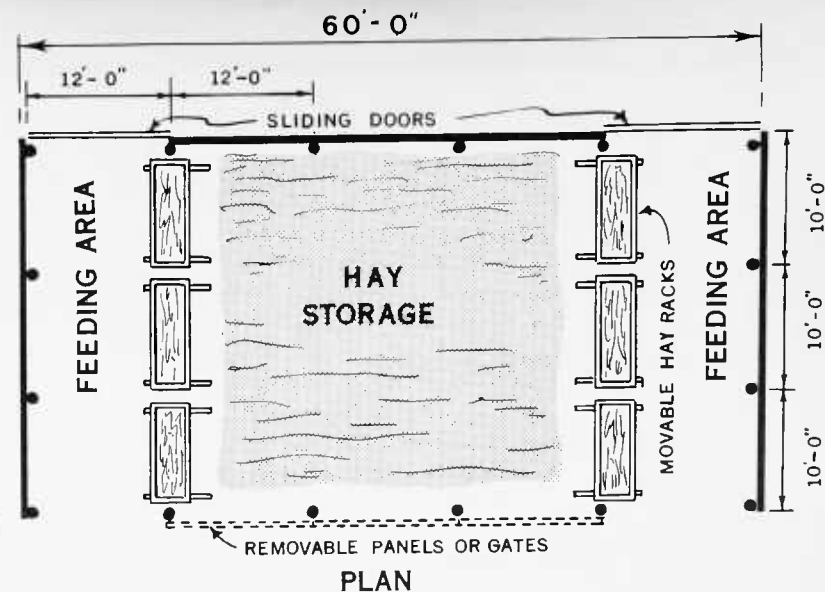
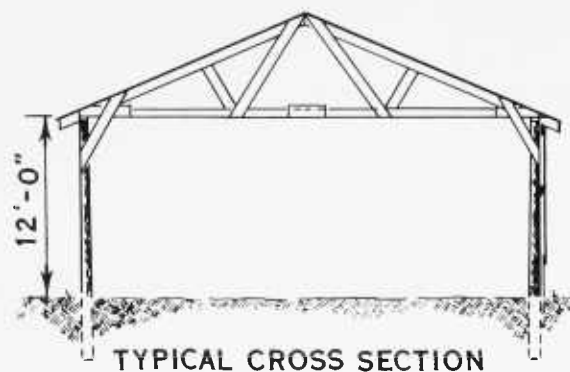


MULTI-PURPOSE BARN

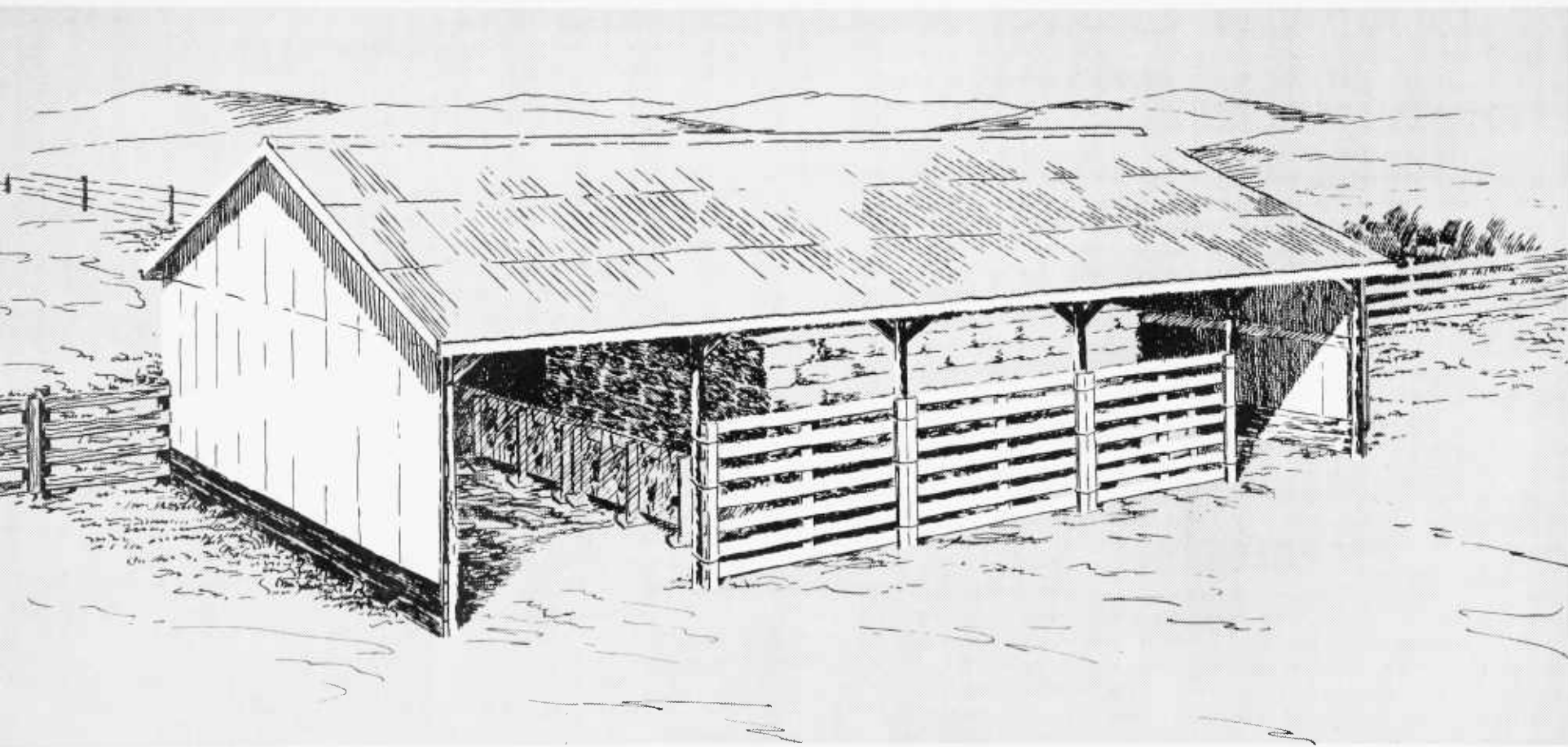
(Pole Construction)

This barn is useful for the farmer who needs a building that can be used for more than one purpose. The illustration shows the building used as a self-feeding barn for cattle using movable feed racks. As such it has a capacity of 24 to 32 head.

The plans also show how the building may be used as a sheep barn and a machinery shed.

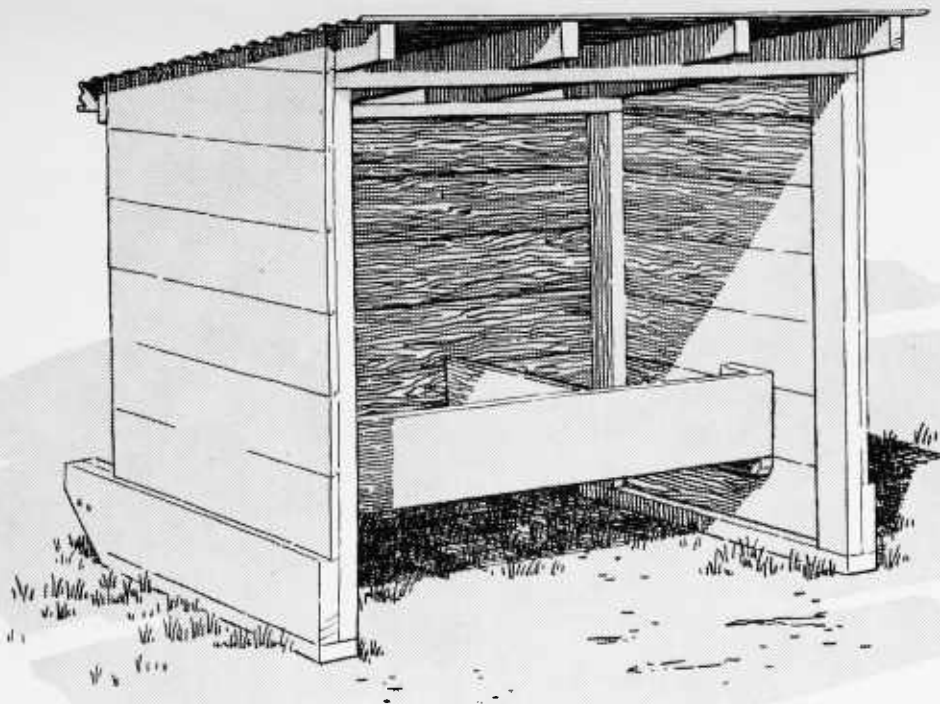


PLAN NO. 5794 (2 SHEETS)



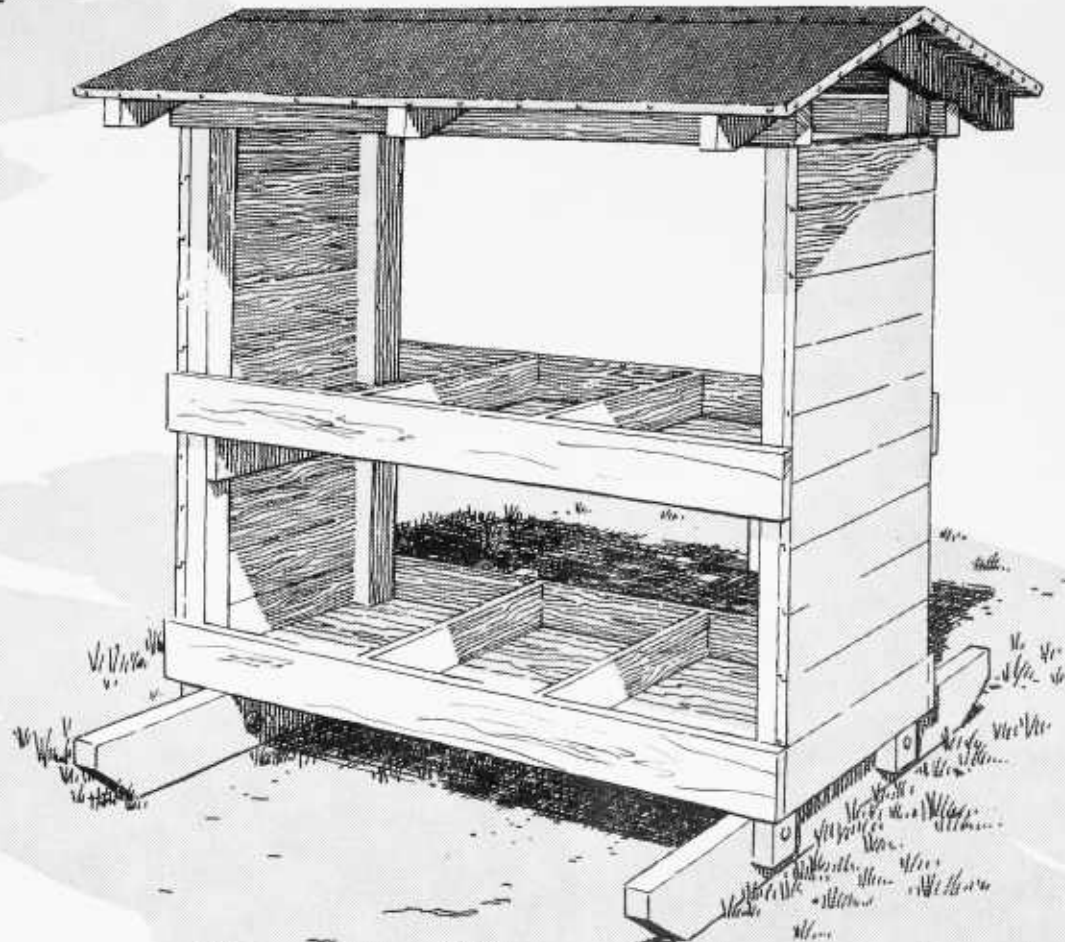
SALT AND MINERAL BOXES

These easily moved boxes are designed to keep an adequate supply of essential minerals available to the herd at all times, and reduce waste due to rain or trampling. The box shown in Plan 5769 has two tiers. The upper tier is for cattle and the lower for sheep and small calves. Minerals are usually placed in the center and salt in the two outside compartments.



PLAN NO. 5759

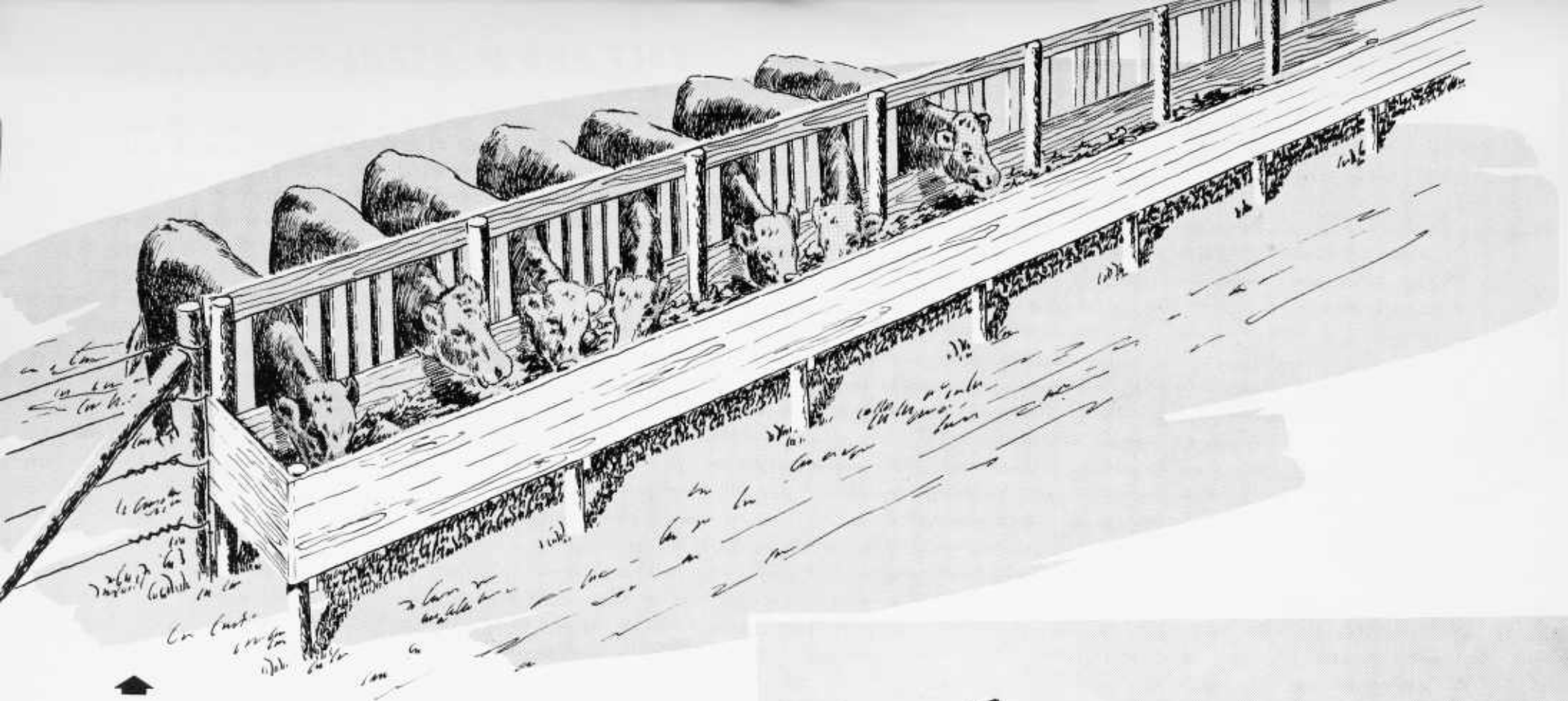
(1 SHEET)



PLAN NO. 5769



(1 SHEET)



CATTLE FEEDING RACK

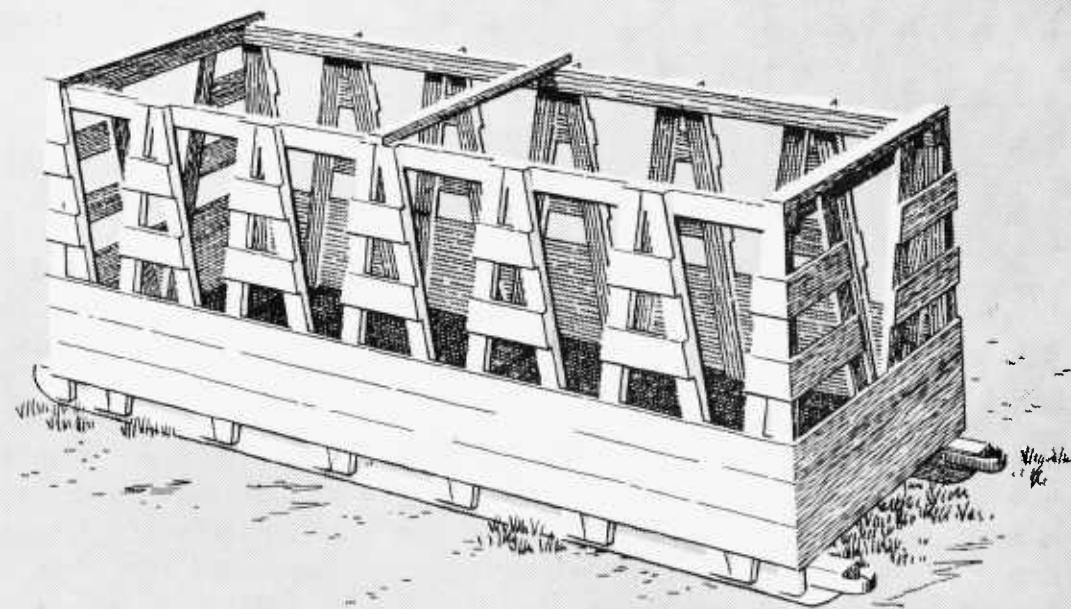
This fixed rack may be built into a fence line, and filled by truck outside the feed lot. It may also be used for feeding hay, grain, or silage in a shed. If used for cattle with horns, openings should be 18 to 20 inches wide.

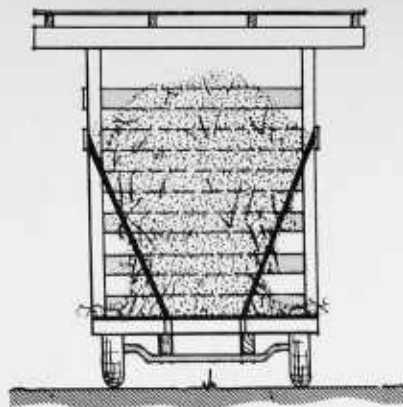
PLAN NO. 5767 (1 SHEET)

CATTLE HAY RACK

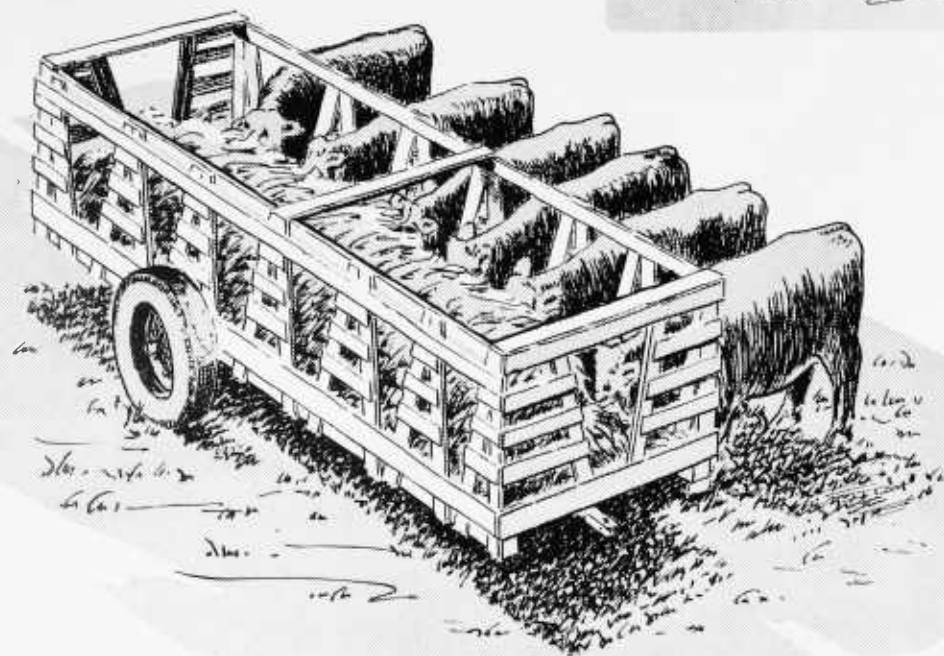
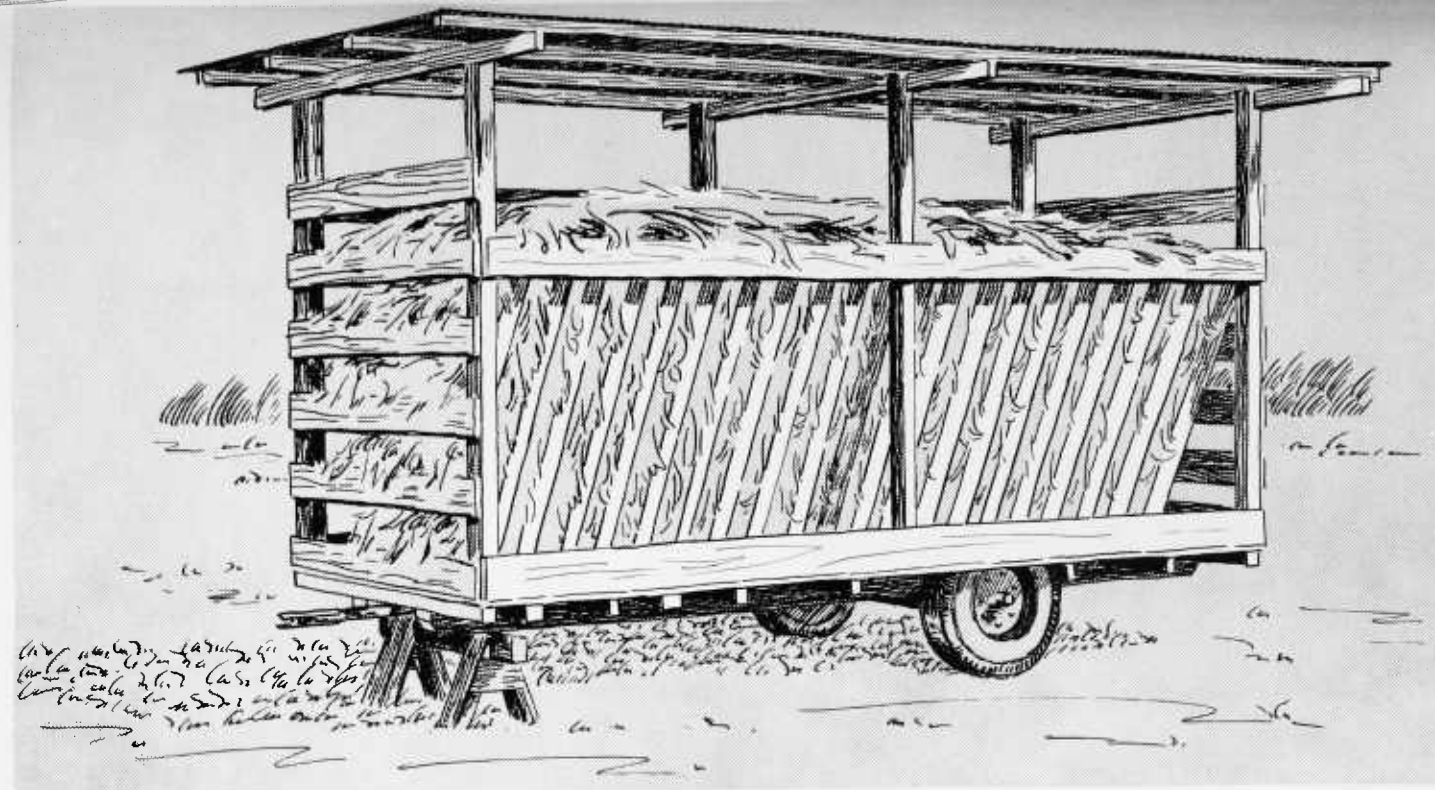
This movable rack, designed for feeding hay, may be filled from a truck. Hay capacity is about $\frac{1}{3}$ to $\frac{1}{2}$ ton. Fourteen head may feed at the same time. If used for cattle with horns, openings should be wider than shown on the drawing. The rack is 4 feet wide and 13 feet 6 inches long.

PLAN NO. 5772 (1 SHEET)





CROSS SECTION



MOVABLE HAY RACKS for Cattle

This plan illustrates two wheel-mounted hayracks which may easily be moved with the farm tractor.

The slatted rack above may be used for cattle with horns. Hay capacity is about $\frac{1}{2}$ ton. The light metal roof to protect the hay is optional.

The rack at the left is similar to Plan 5772, shown on the opposite page, and will hold about $\frac{1}{2}$ ton of hay. It is not suitable for cattle with horns unless openings are made wider than those shown on the drawings.

Both types are fitted with sliding tow bars which may be pushed back to avoid injuring the cattle.

PLAN NO. 5777

(1 SHEET)

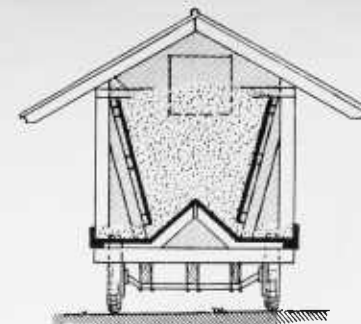
MOVABLE SELF-FEEDER for Cattle

This hopper type feeder holds about 65 bushels of ground feed which is well protected from the elements by the wide eaves. The wheels make it easy to move, but it should not be towed when heavily loaded. The tongue swings up out of the way when not in use.

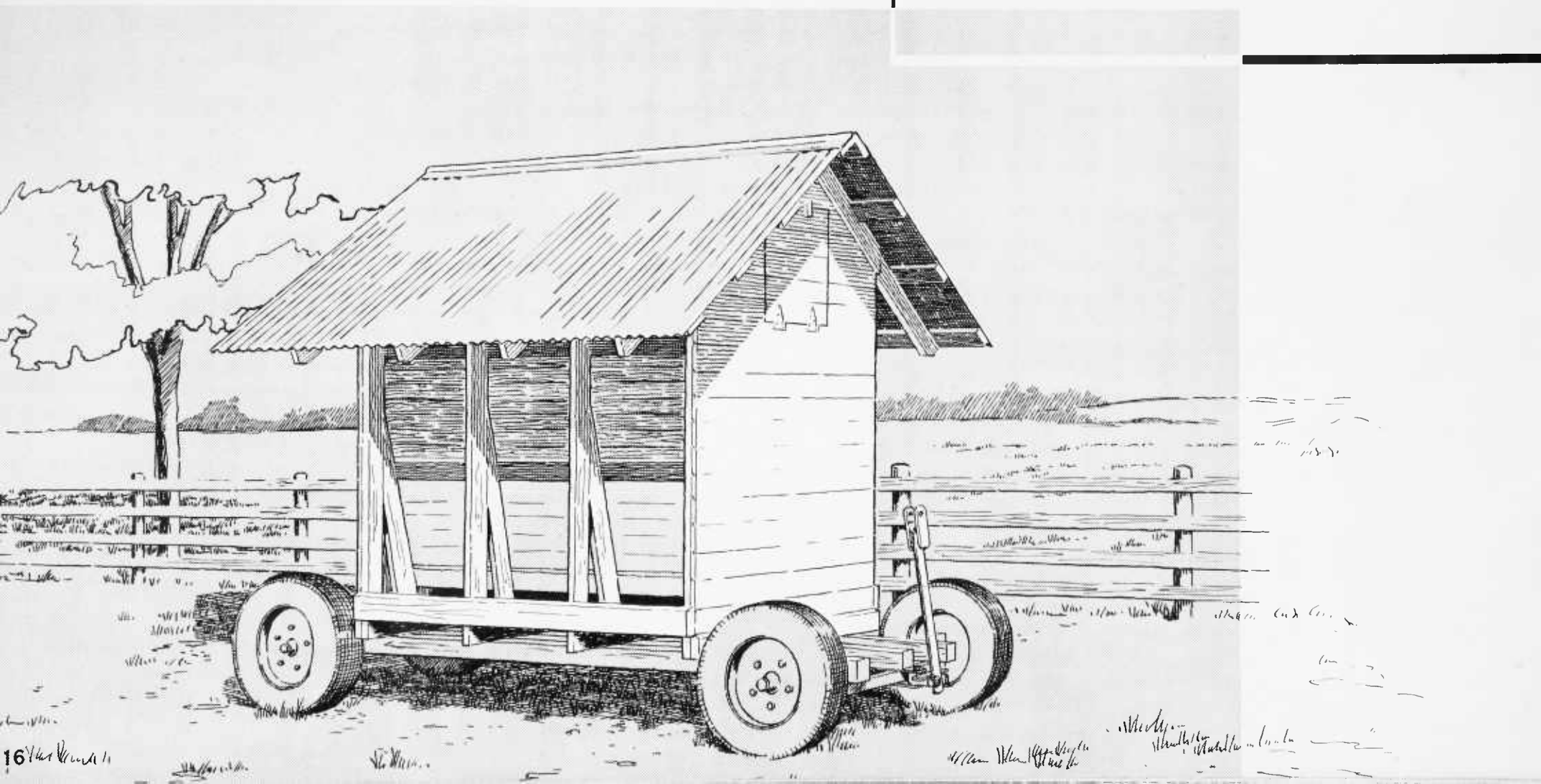
A list of materials is provided on the working drawings.

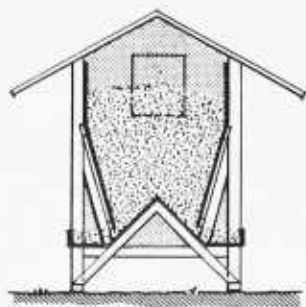
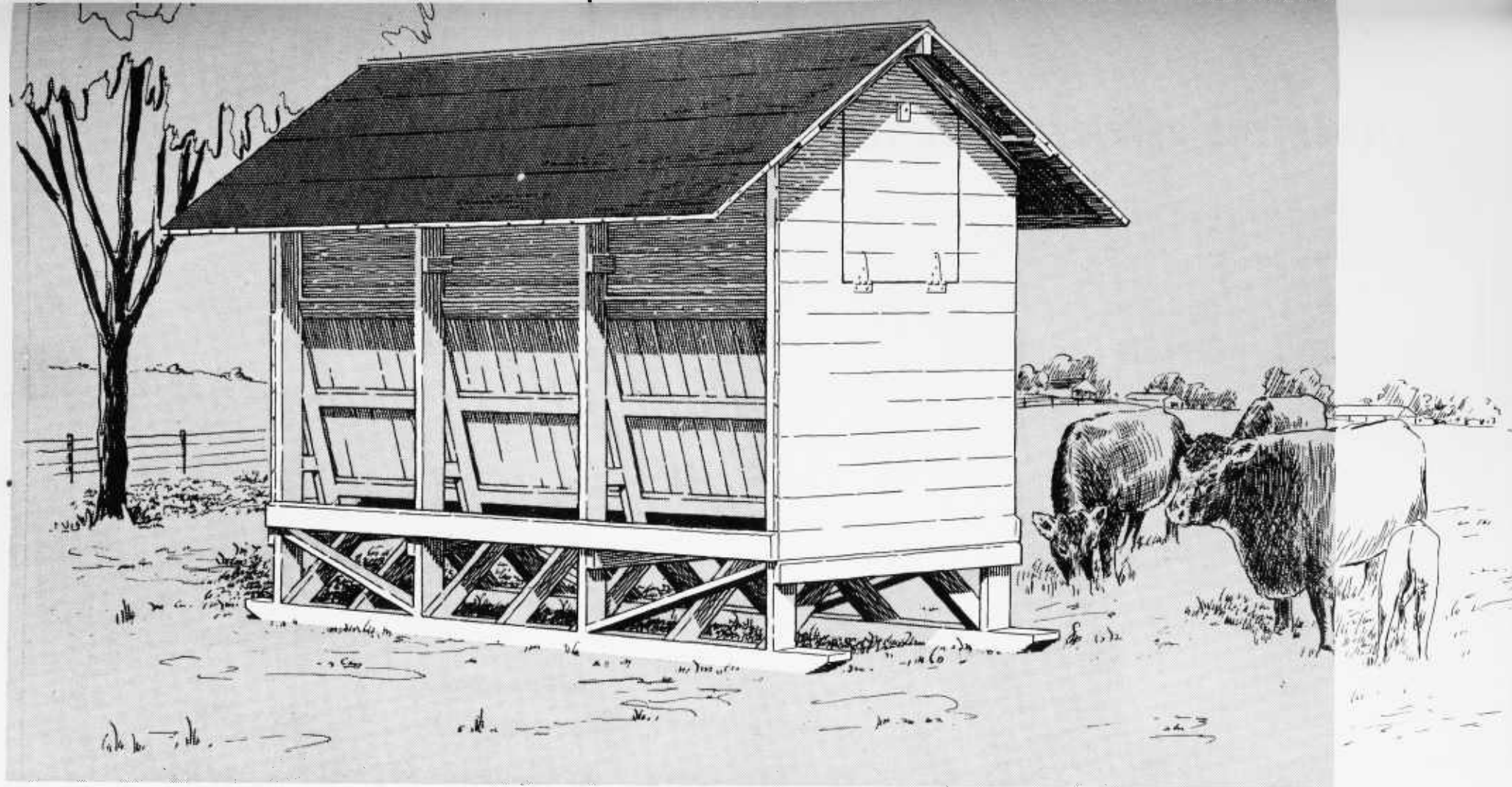
PLAN NO. 5776

(1 SHEET)



CROSS SECTION





CROSS SECTION

CATTLE FEEDER

This hopper type feeder is mounted on skids. Feeding troughs are protected by wide eaves. Filling doors are provided in both ends. Capacity is about 200 bushels of ground feed.

A list of materials is provided in the drawings.

PLAN NO.5083

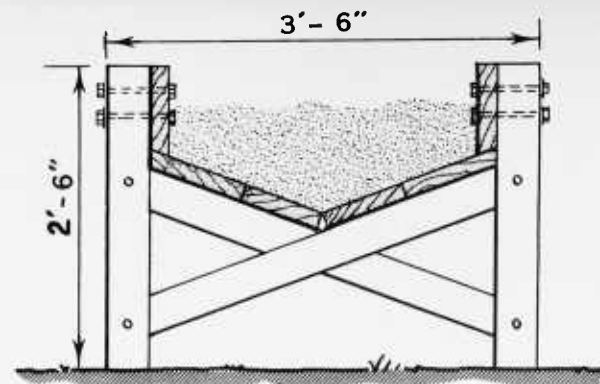
(1 SHEET)

SILAGE AND GRAIN FEEDING TROUGH

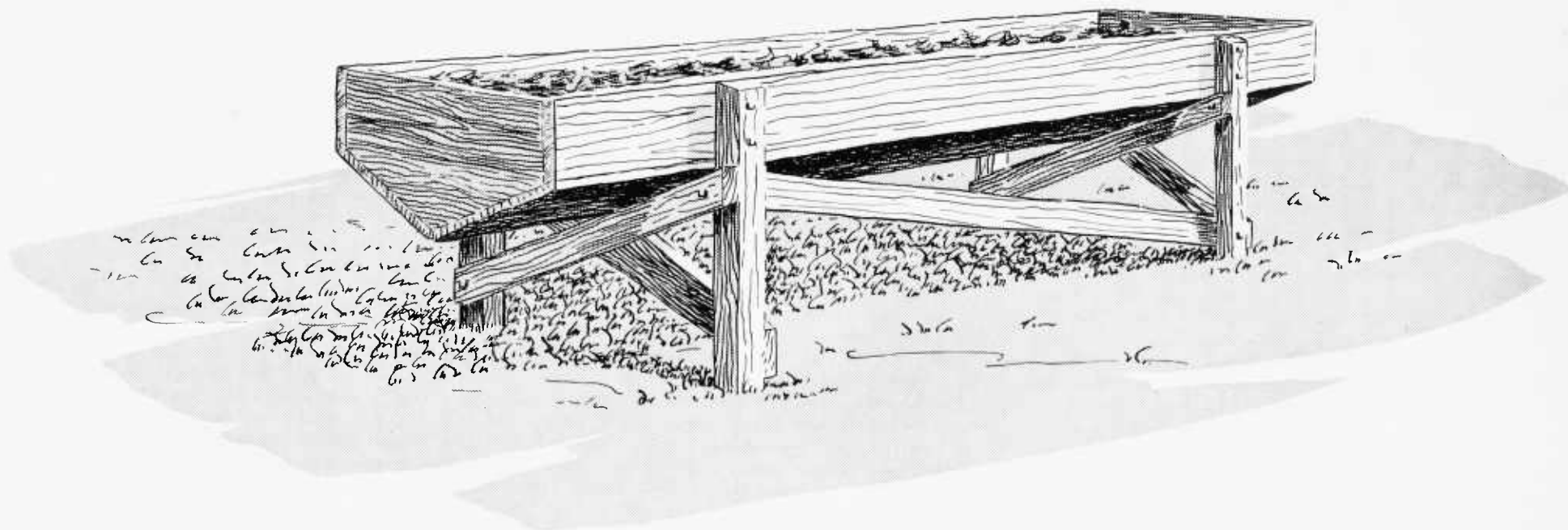
This trough, 10 feet long and 30 inches wide, will feed 10 to 14 head. Construction is simple and sturdy. If permanent installation is desired the posts may be extended into the ground or anchored to concrete pavement. The trough may also be built on skids for easy moving with a tractor.

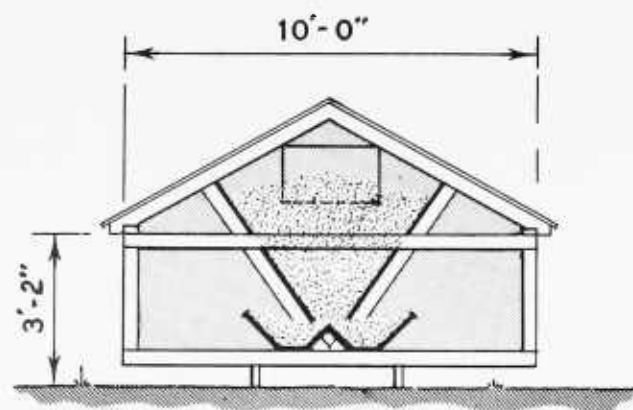
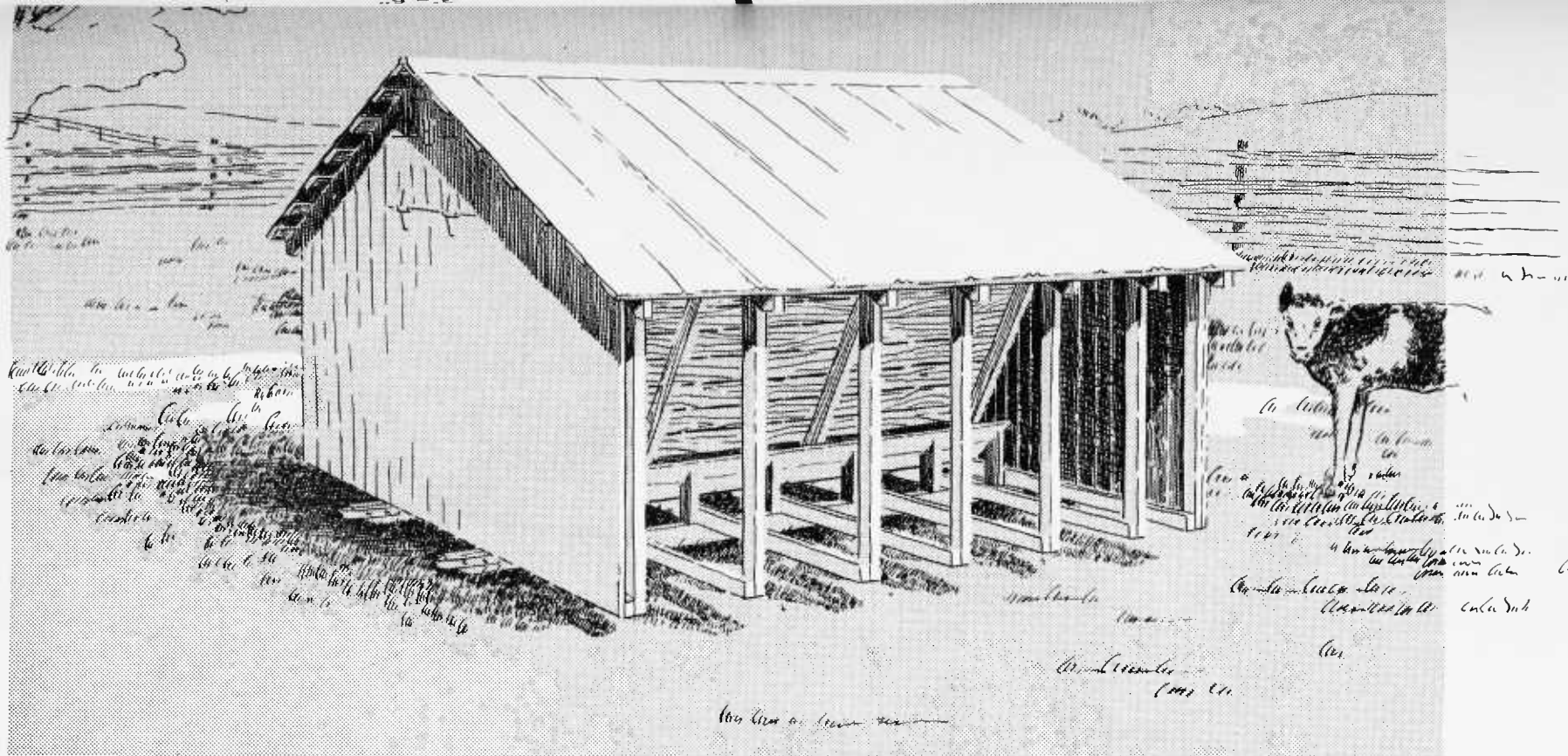
PLAN NO. 5766

(1 SHEET)



CROSS SECTION





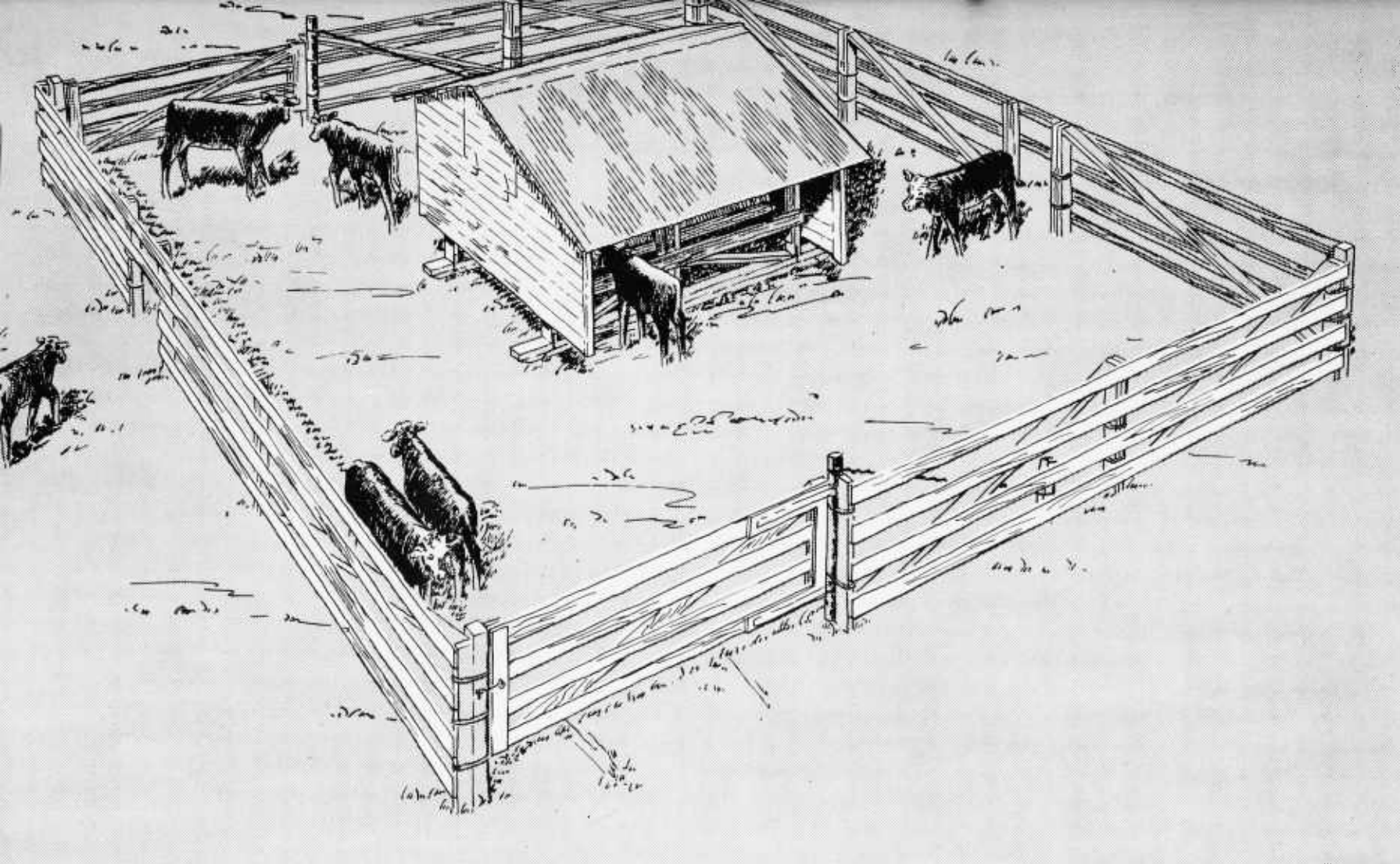
CROSS SECTION

CALF CREEP FEEDER

This movable calf-feeder is suitable for 40 to 50 calves. The 15-inch wide spaces will allow only the calves to enter, consequently no fencing is needed around the feeder.

Capacity of the feeder is about 50 bushels.
A material list is included on the drawings.

PLAN NO. 5768
(1 SHEET)

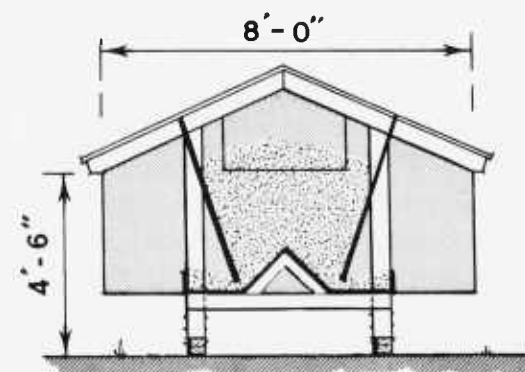


MOVABLE CALF CREEP FEEDER

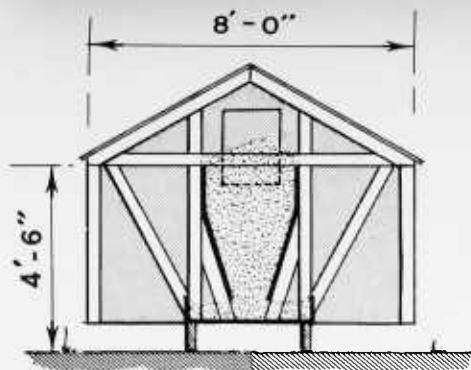
This calf-feeder is intended for use within a fenced enclosure. It will handle 30 to 50 calves. The feed capacity is about 65 bushels.

The movable fence is in 8-foot sections wired to corner posts and stakes set in the ground. Gates are provided for a feed truck to enter the enclosure.

PLAN NO. 5764 (1 SHEET)



CROSS SECTION



CROSS SECTION

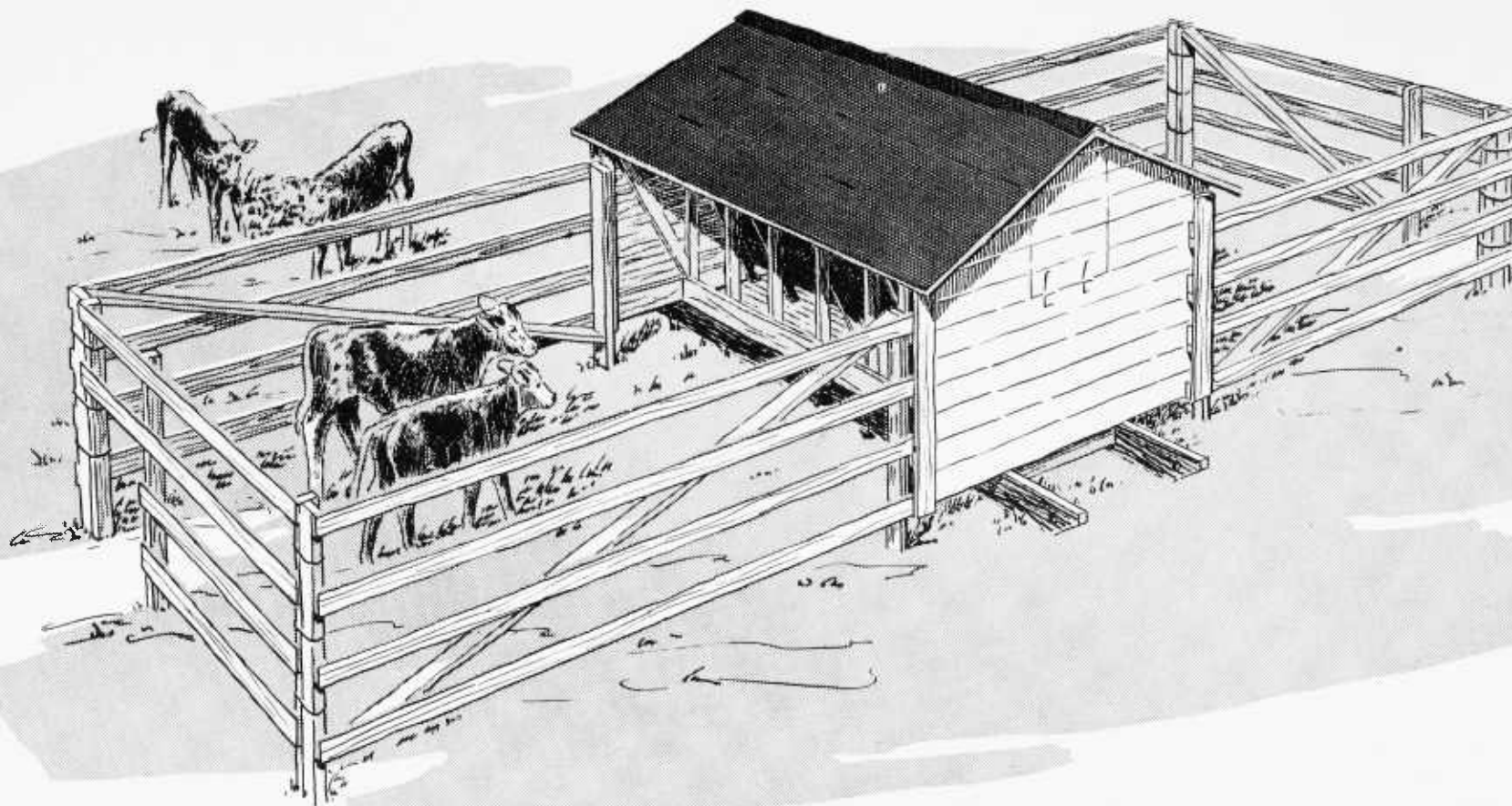
MOVABLE CALF CREEP FEEDER

This calf-feeder may be filled at the ends without entering the enclosure. The creep fence is made in sections that are supported by the feeder and wired to corner stakes. This arrangement permits the fence to be moved along with the feeder.

The feed capacity is about 35 bushels and the feeder is suitable for about 30 calves.

PLAN NO. 5763

(1 SHEET)



CORRAL LAYOUT AND TYPICAL DETAILS

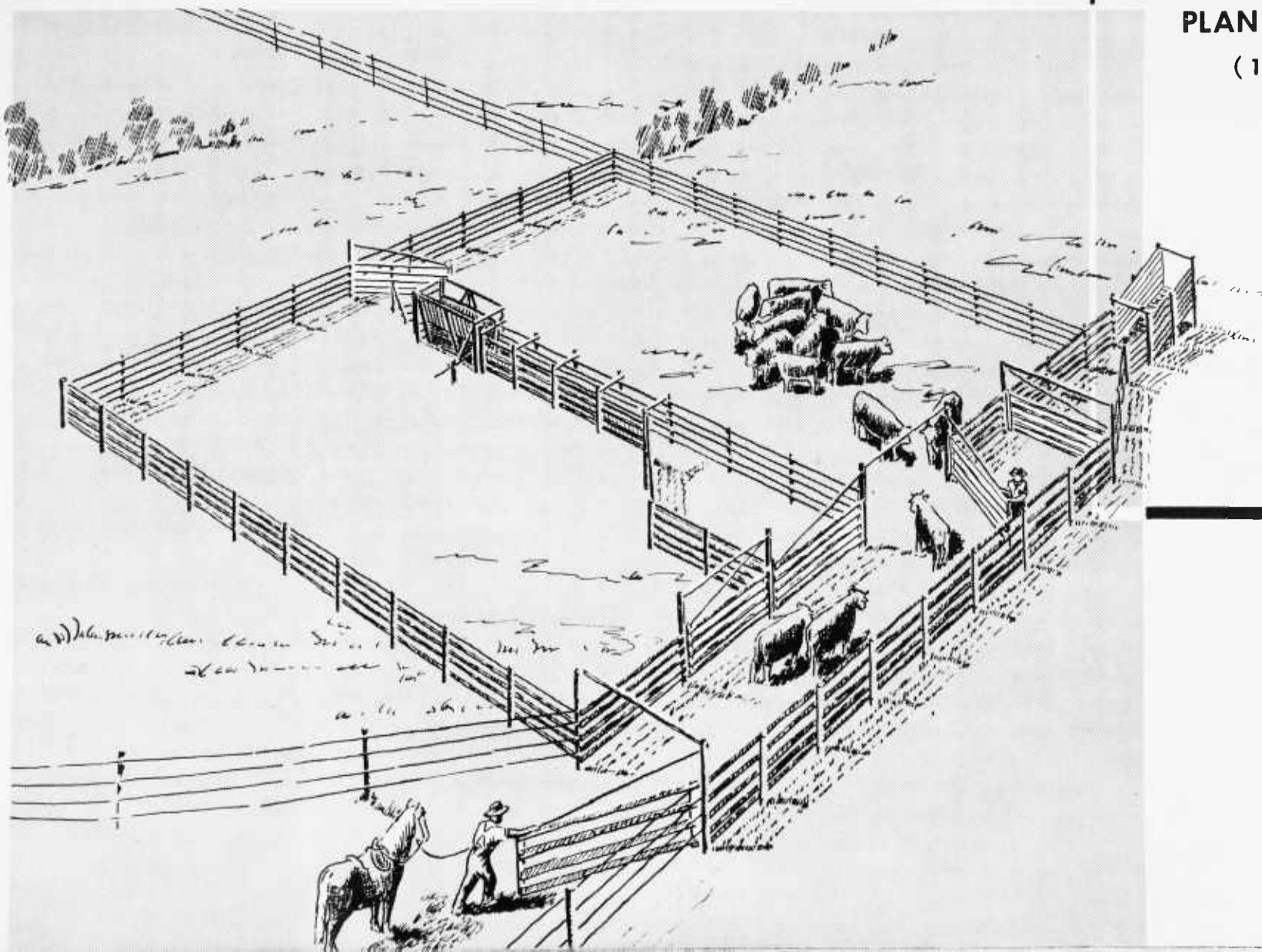
This illustration shows a corral with an interior working chute. The overall dimensions are 60 feet by 70 feet exclusive of the loading chute. The capacity is about 130 to 170 head.

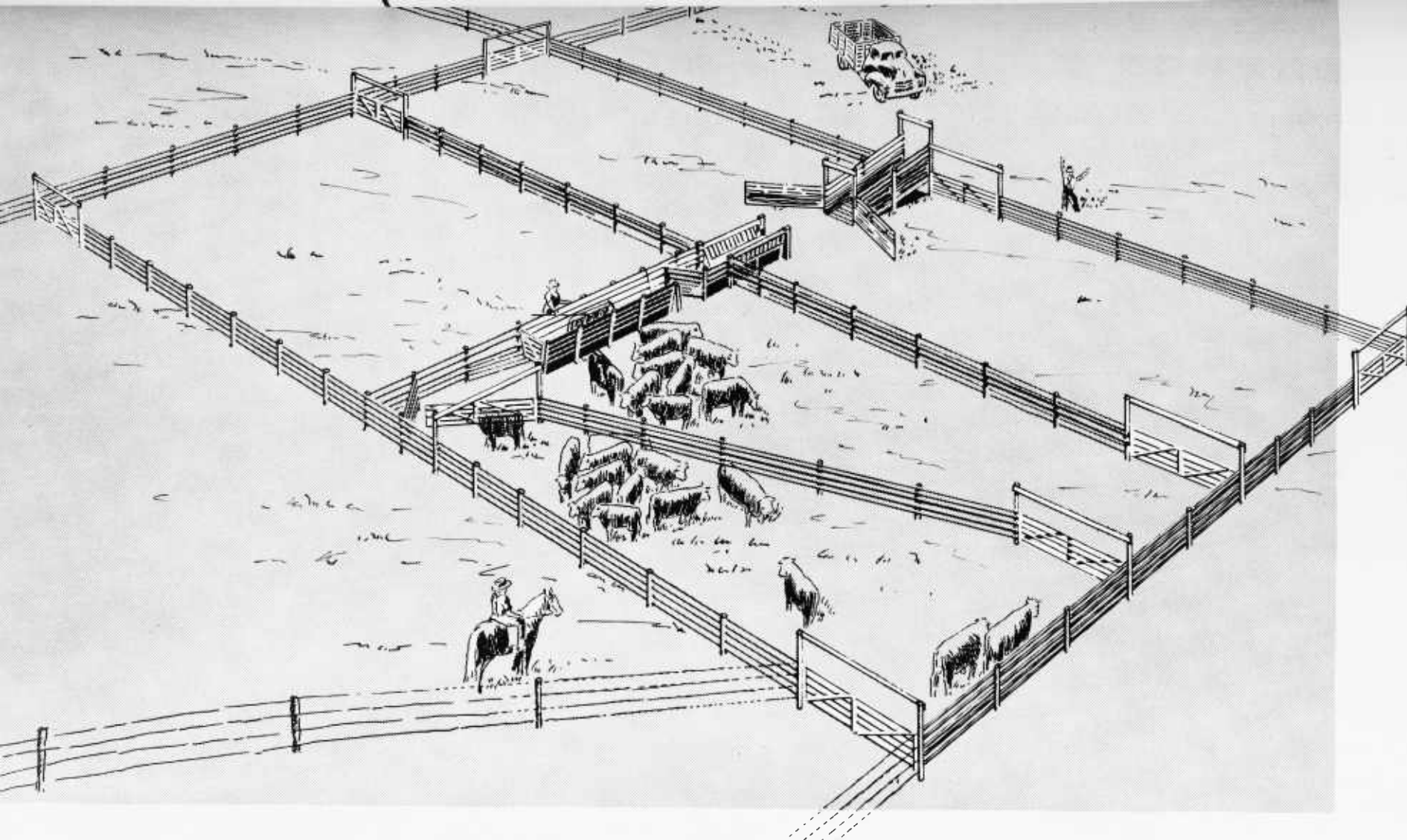
The drawings also include plans for a 60- by 72-foot corral with a working chute along one end and a plan for a working chute with crowding pen which may be located in the corner of a pasture. Details of chutes, fences, and gates are included.

Plans for headgates and squeezes are shown on pages 26, 27, and 28.

PLAN NO. 5790

(1 SHEET)

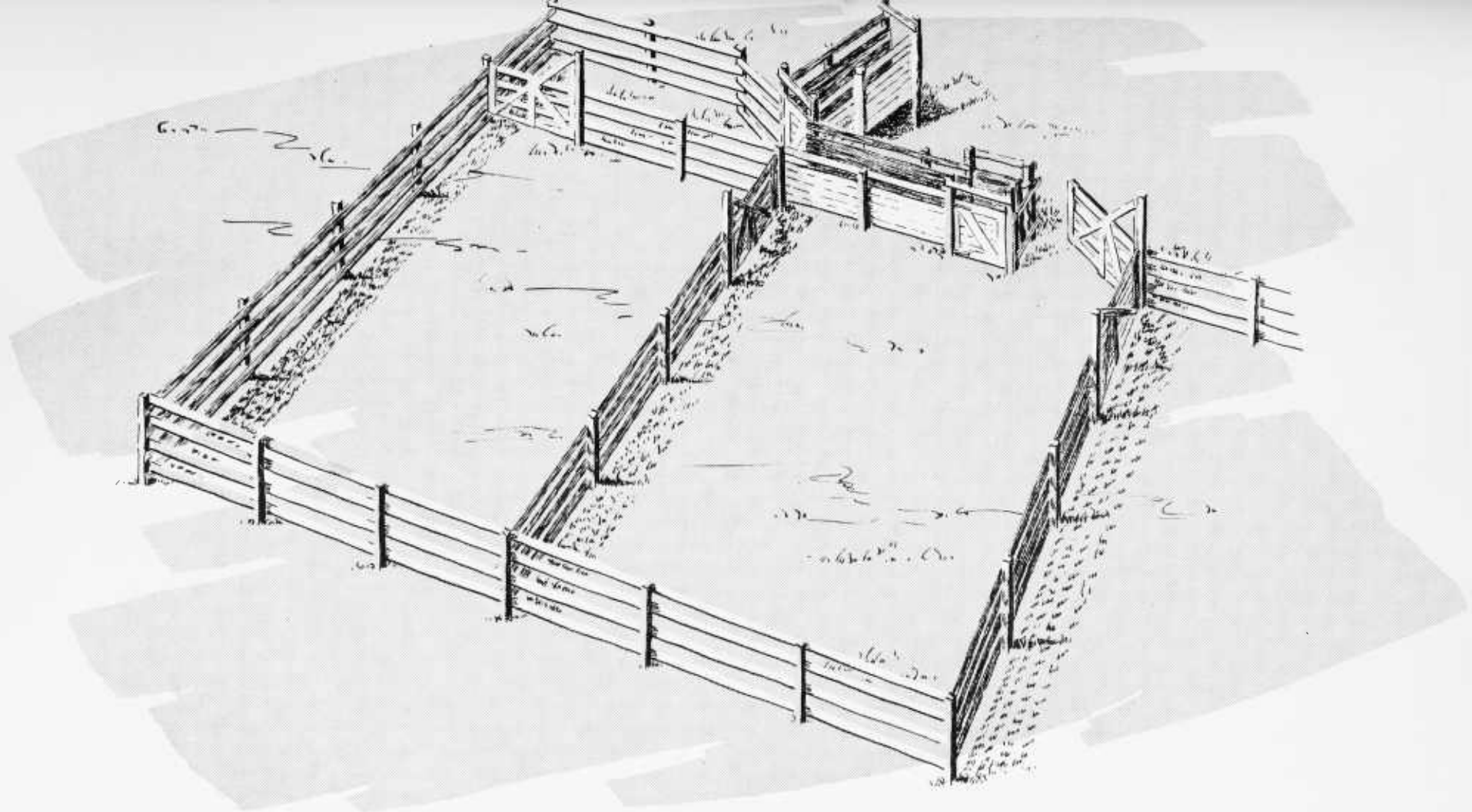




EXPANSIBLE CORRAL FOR THE GROWING HERD

The working drawings show how this corral may be built in five steps. Step 1 is a single pen 70 by 64 feet with working chute and other necessary equipment along one side and a capacity of about 170 to 220 head. Steps 2 and 3 provide added convenience with the same capacity. Steps 4 and 5 show how to complete the corral as shown in the illustration. The finished corral has a capacity of 240 to 440 head. Details of the squeeze and headgate are not shown on the drawing but the plans on pages 26, 27, and 28 may be used.

PLAN NO. 5779 (2 SHEETS)



TWO-PEN CORRAL

This simple 2-pen corral is suitable for a herd of 20 to 50 cows with calves. The size of the pens may be changed by increasing or decreasing the length. The width should remain the same to allow for the holding pen and chute.

One pen may be subdivided to provide a third pen which is sometimes desirable in separating cows and calves. The dimensions are 32 by 48 feet exclusive of the offset pen and chute.

PLAN NO. 5796

(4 SHEETS)

SIX-PEN CORRAL

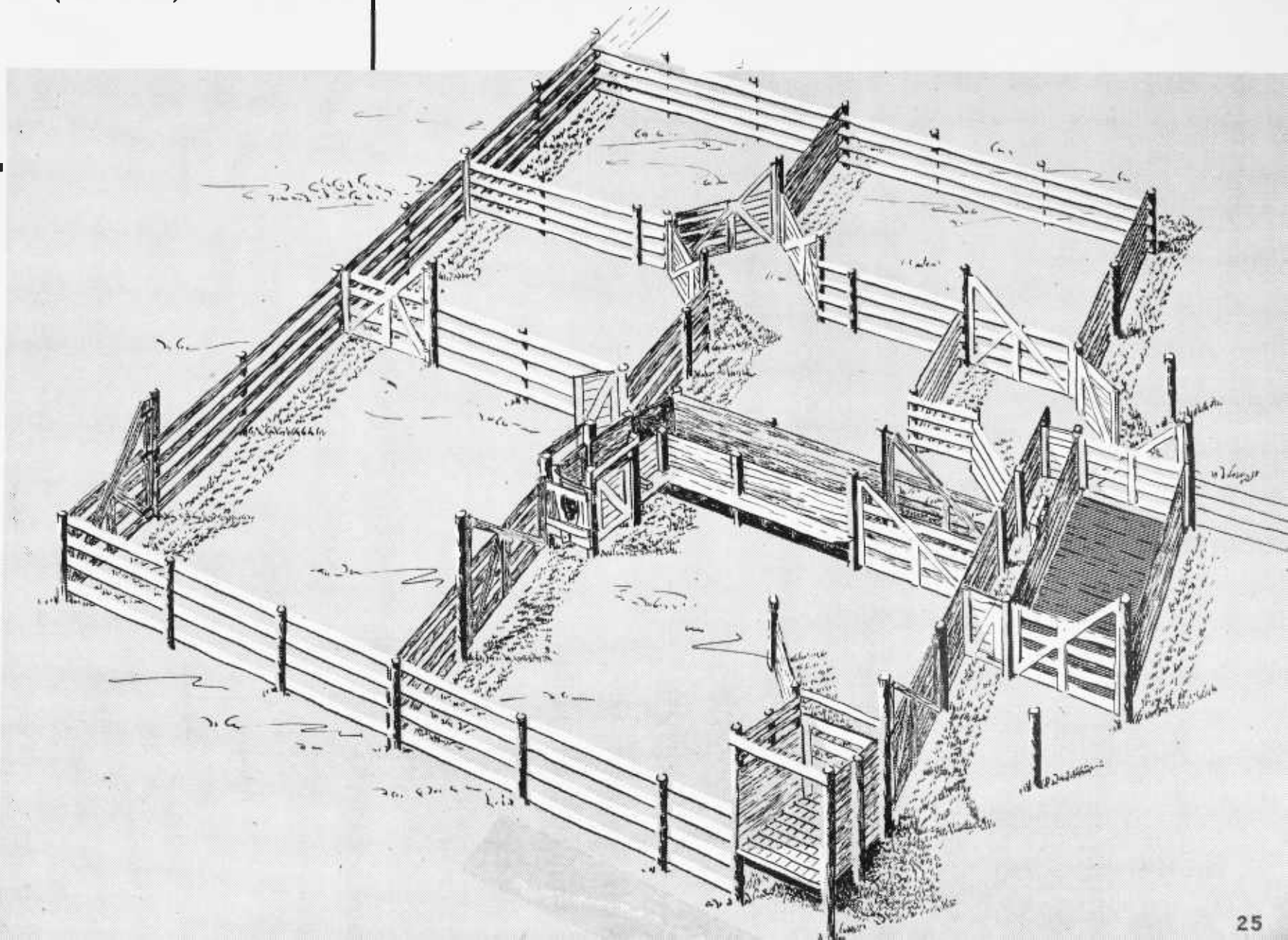
PLAN NO. 5797

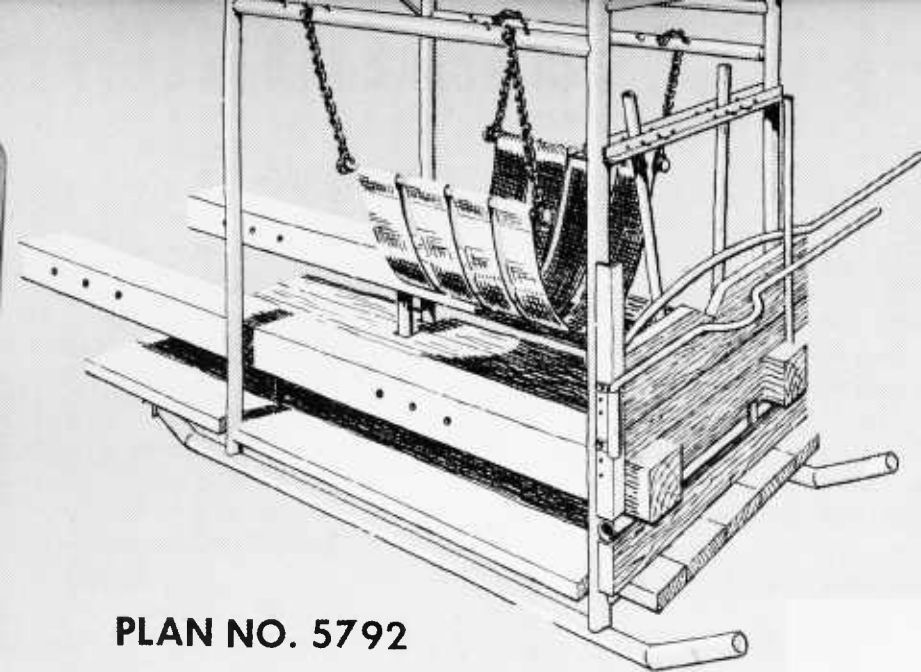
(4 SHEETS)

This well-arranged corral will handle a herd of 50 to 100 cows with calves. The arrangement of the gates makes it easy to move animals from one pen to another, to scale pen, and to loading ramp.

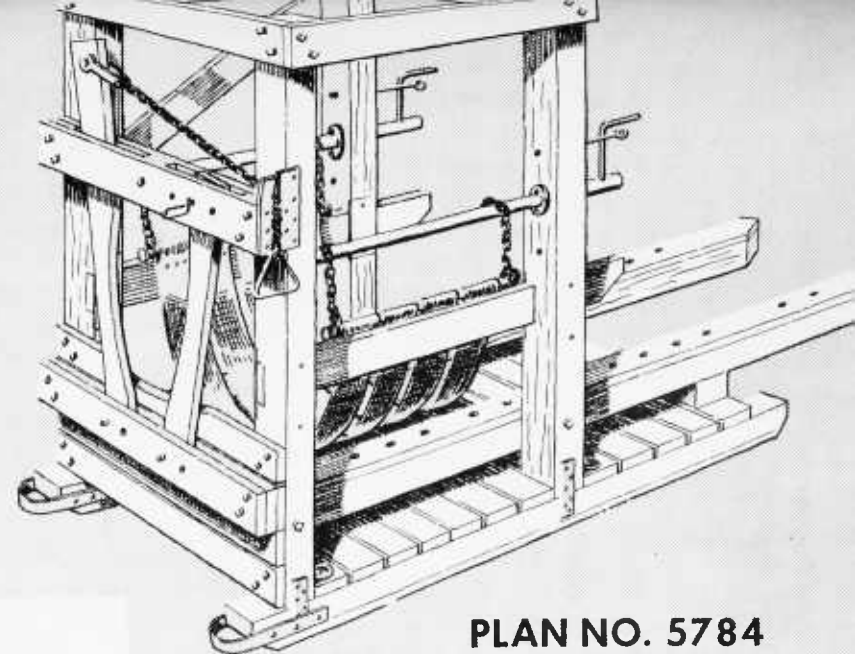
The capacity of the corral can be increased by enlarging the 2 end pens or the 3 side pens.

The overall size is 48 by 56 feet exclusive of the scale pen.





PLAN NO. 5792



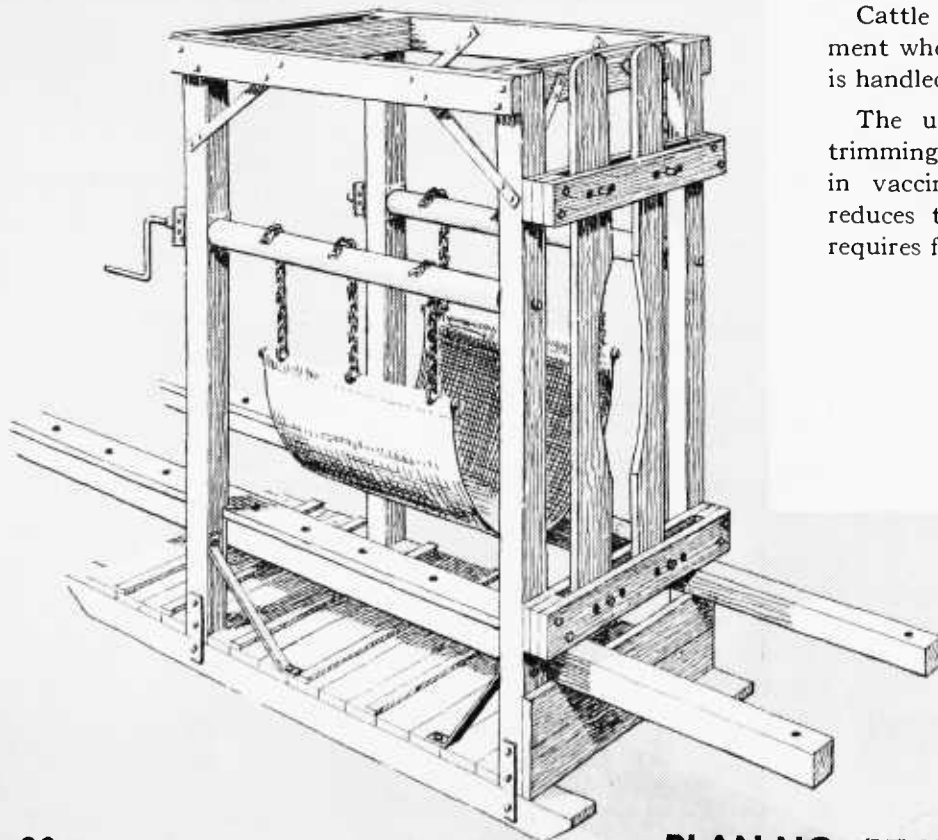
PLAN NO. 5784

CATTLE STOCKS

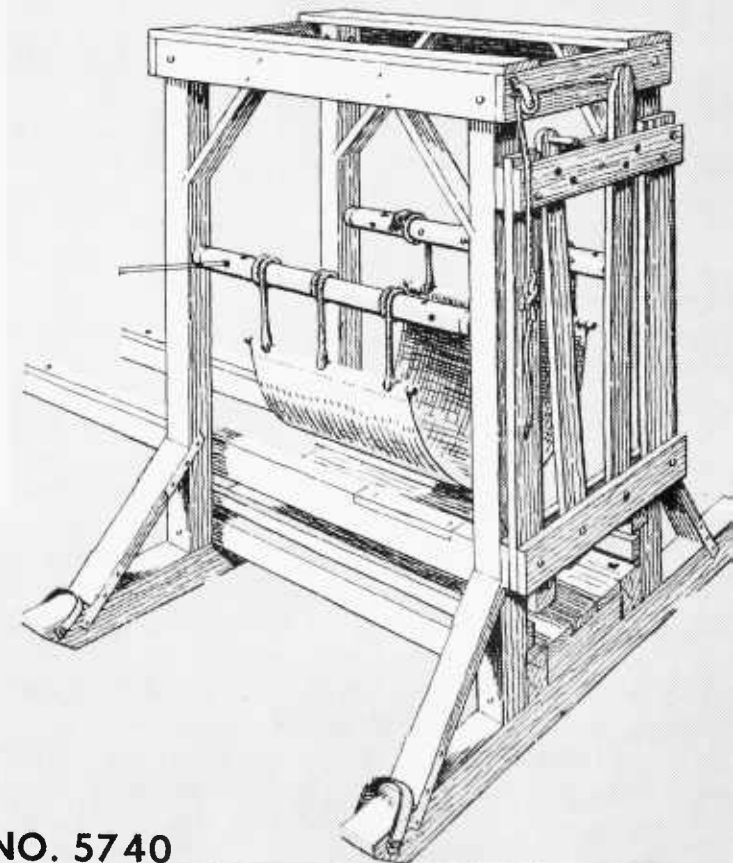
Cattle stocks are important equipment where valuable breeding stock is handled.

The use of such equipment in trimming hoofs and horns, and in vaccinating or treating cattle, reduces the chances of injury and requires fewer men.

(1 SHEET EACH)



PLAN NO. 5761



PLAN NO. 5740

CATTLE SQUEEZE

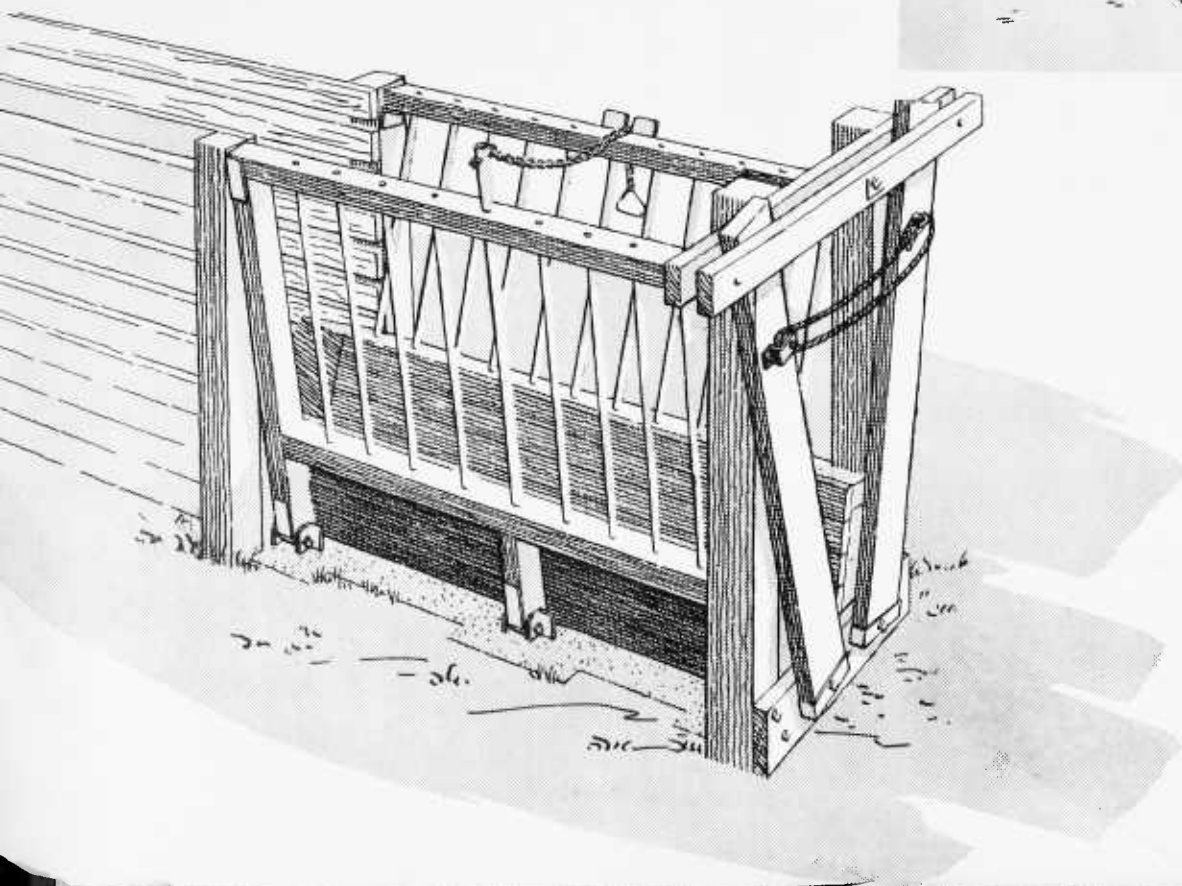
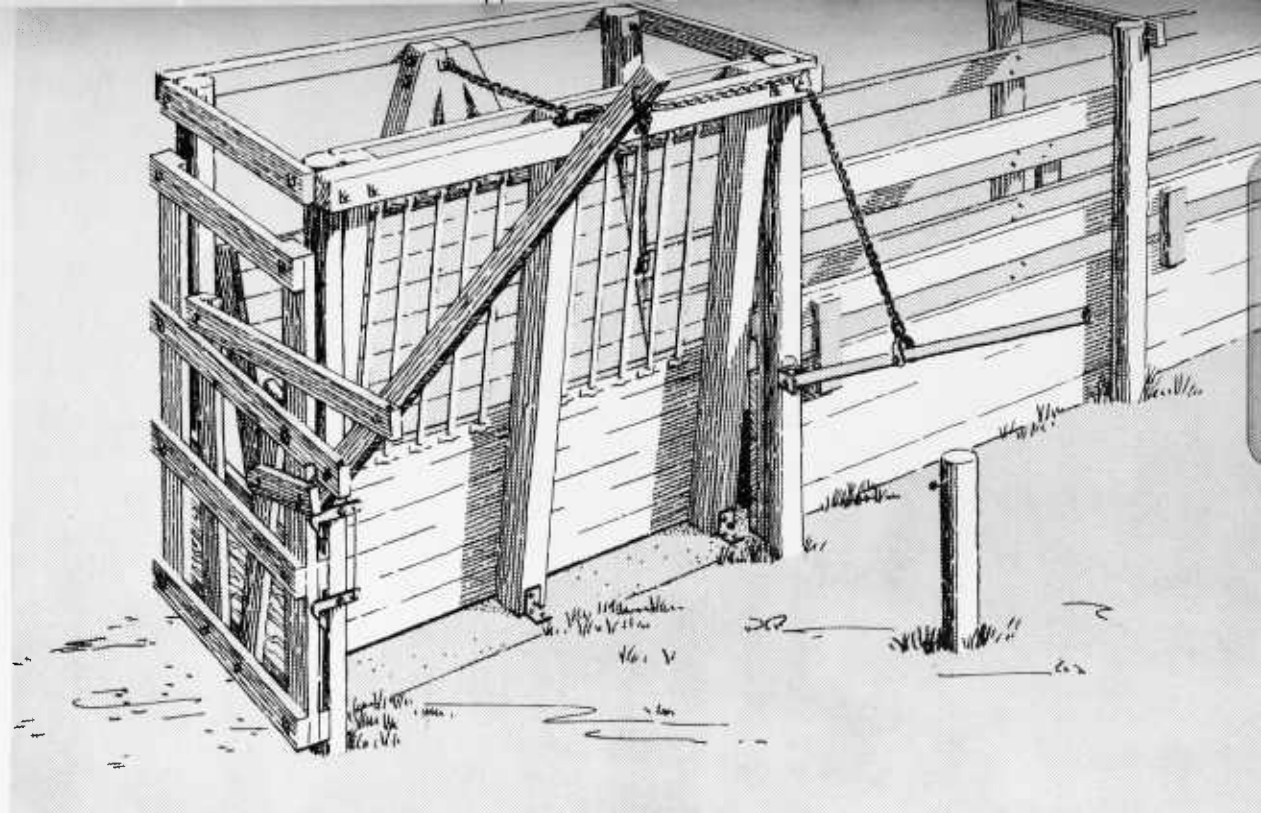
The squeeze shown at the right has one lever-operated hinged side to hold the animal snugly against the bars of the open side.

One or more bars may be removed for convenience in treating the animal. The distance between sides may be adjusted as much as 12 inches at the bottom.

The side-hinged headgate is also lever operated.

PLAN NO. 5791

(1 SHEET)



CATTLE SQUEEZE AND HEADGATE

The hinged side of the squeeze shown at the left is pulled against the animal and held tight by a chain.

Both sides have barred openings.

Three types of headgates are shown on the plan. The gate illustrated is fixed and the other two are side-hinged.

PLAN NO. 5789

(1 SHEET)



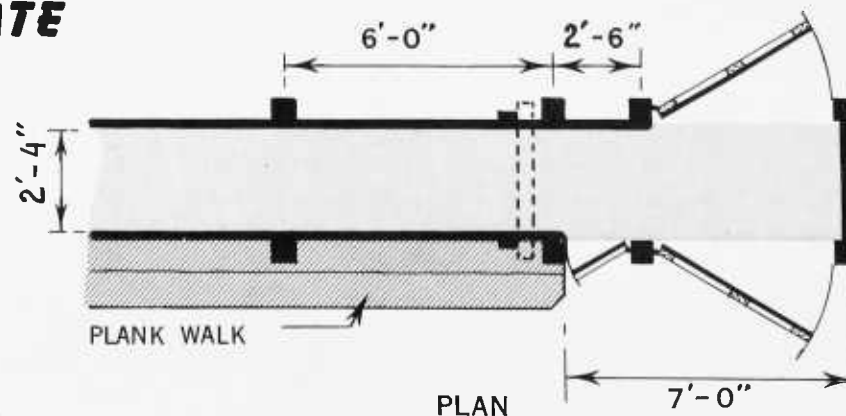
CATTLE HOLDING CHUTE AND HEADGATE

This chute has a catwalk and a small service gate on one side, and exit gates on both sides.

Three different types of headgates are shown on the working drawings. The two not illustrated are lever operated and one has a roof over the headgate and working chute.

PLAN NO. 5778

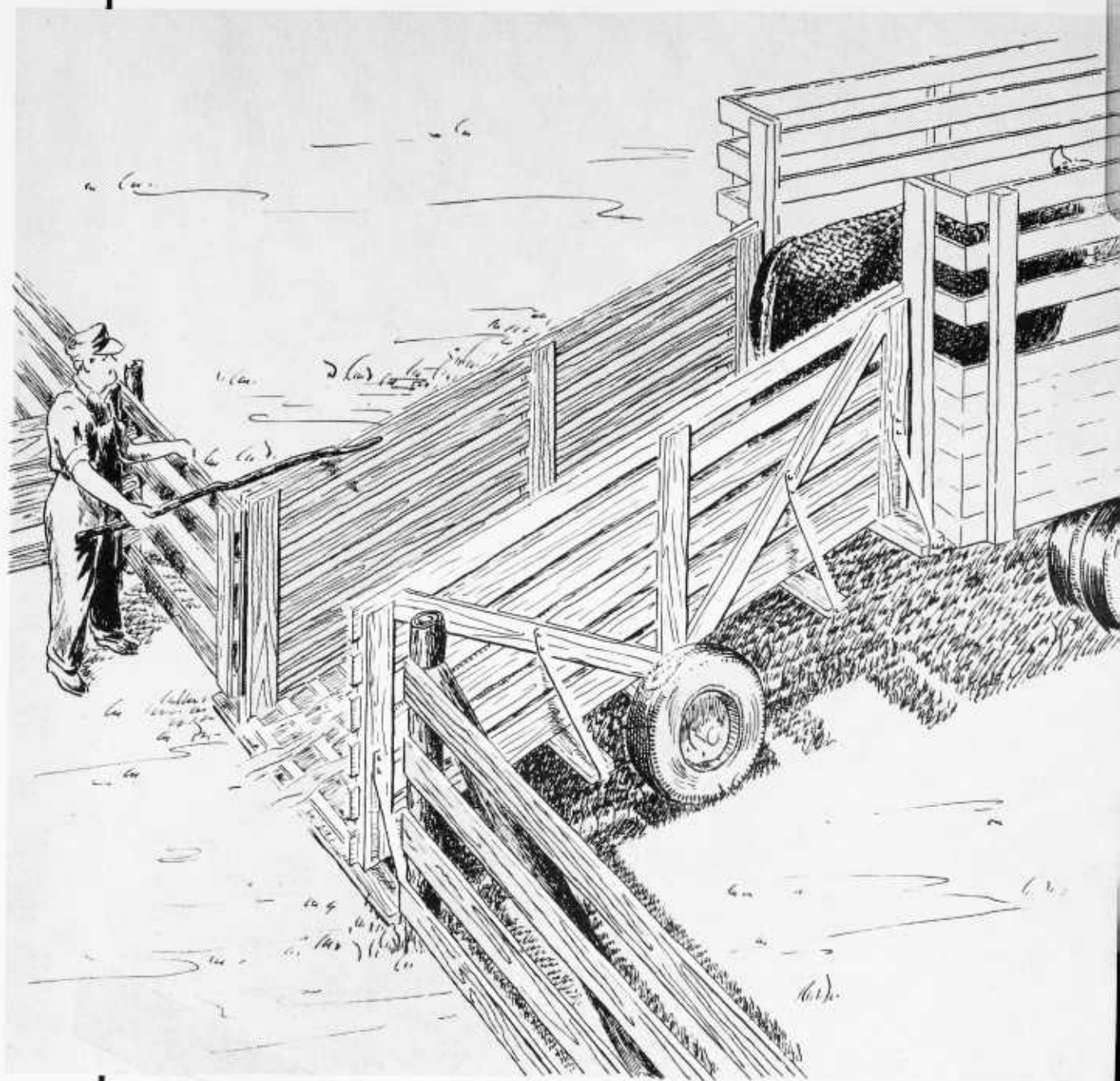
(1 SHEET)

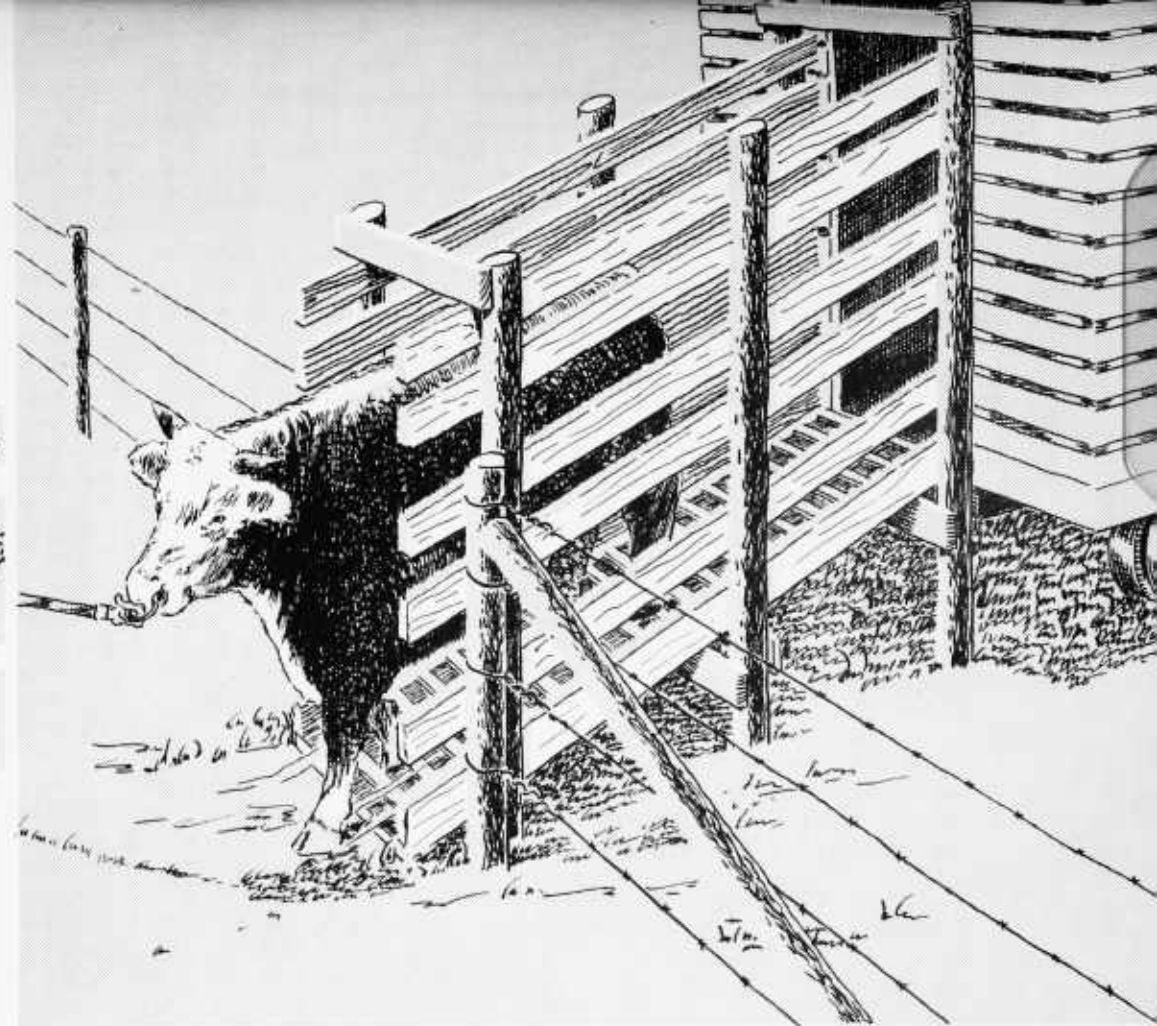
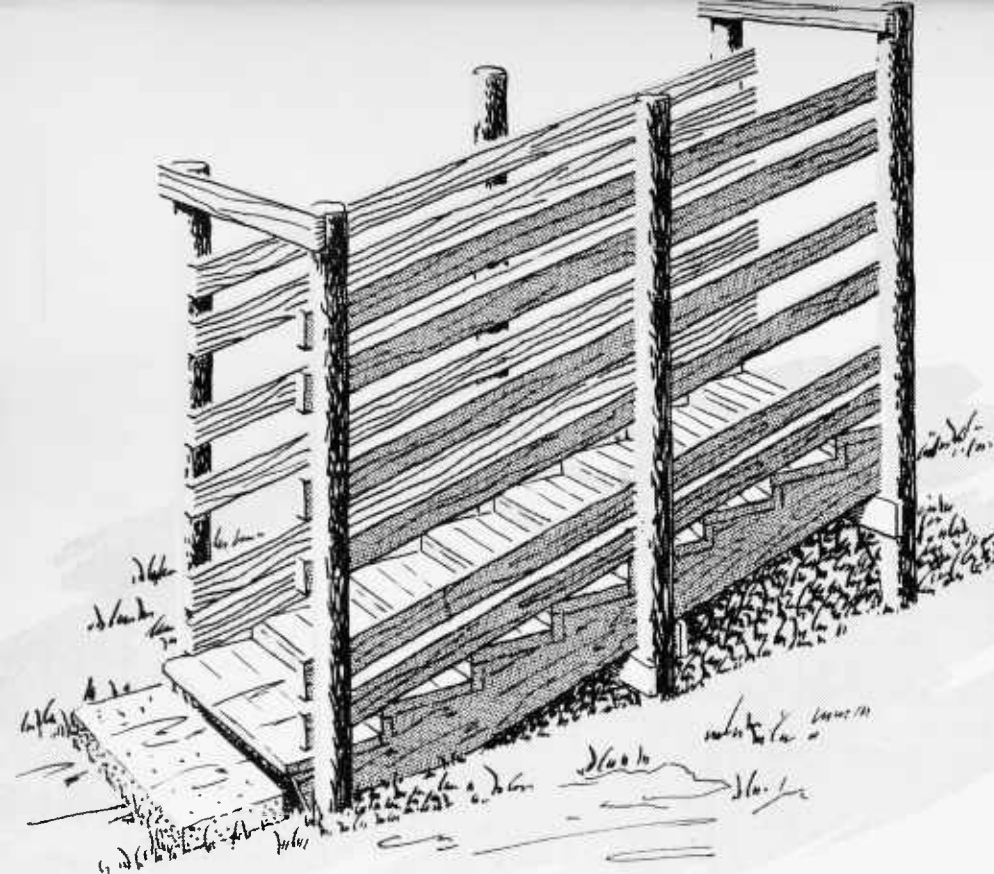


MOVABLE CHUTE FOR LOADING CATTLE

The wheels and towing hitch make it easy to move this chute around the farm. Although designed for cattle, it could be used for other types of farm animals with modification in width. A discarded auto wheel and axle assembly may be used for mounting the chute.

PLAN NO. 5681
(1 SHEET)





LOADING CHUTES

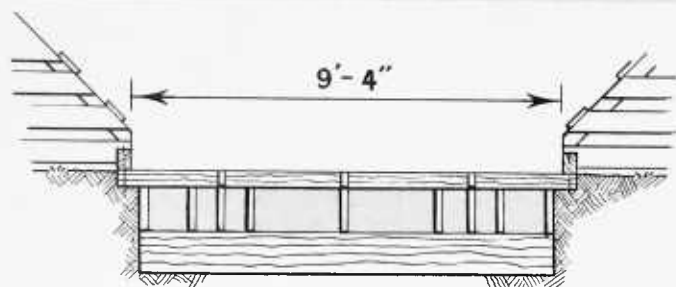
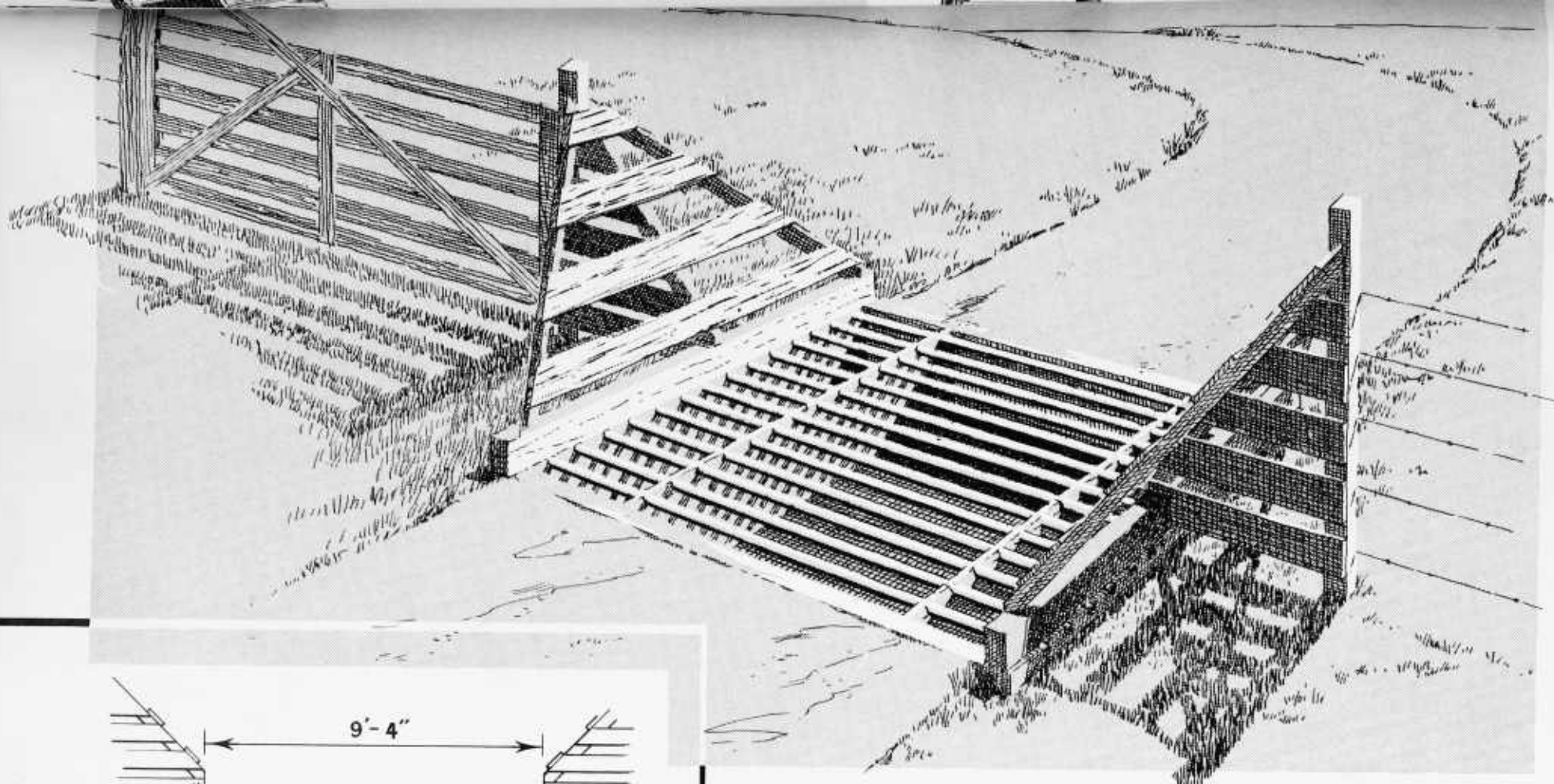
Four different types of chutes are shown on the working drawings to meet various needs.

Above are two stationary chutes, one with a cleated ramp and one with steps.

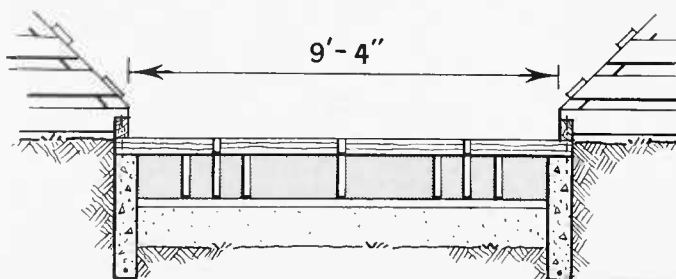
Not illustrated are a skid-mounted portable chute with cleated ramp, and a stationary chute with a tamped earth ramp.

PLAN NO. 5793

(1 SHEET)



CROSS SECTION, PLAN NO. 5741



CROSS SECTION, PLAN NO. 5742

CATTLE GUARD

(Concrete and Steel)

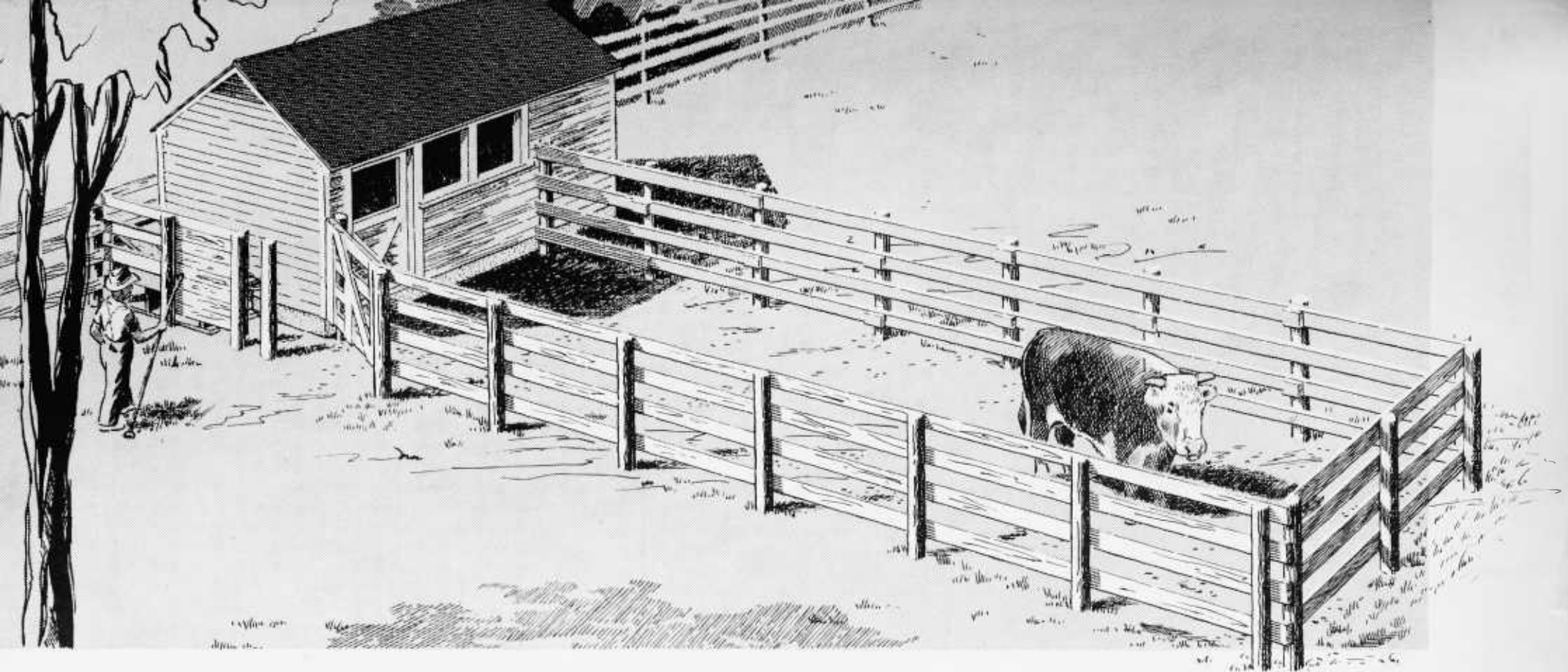
This guard is a barrier to cattle, hogs, sheep, and horses, but permits the passage of automobiles, tractors, and dual-wheeled trucks up to 5 tons.

A wide gate adjacent to the guard is recommended for passage of cattle or wide machines.

The small sketches at the left show construction of two similar guards for which plans are available. Plan 5741, at the top is all wood construction, and Plan 5742 below, is concrete and wood.

PLAN NO. 5752

(1 SHEET)

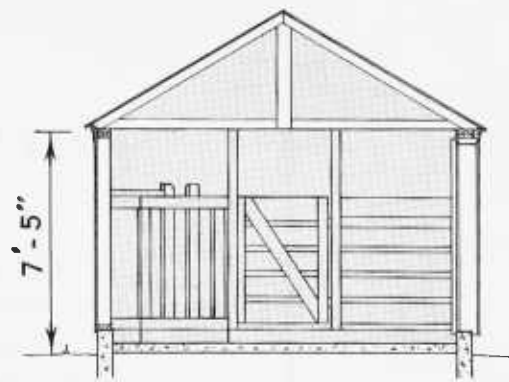


SAFETY BULL PEN, PADDOCK, AND BREEDING STALL

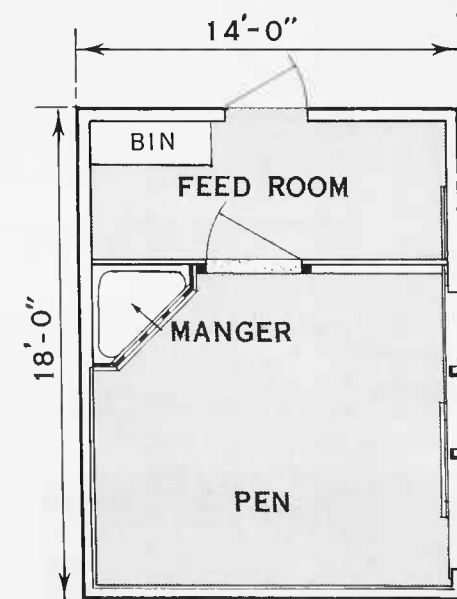
(Frame Construction)

With this arrangement, the bull may be safely fed, watered, exercised, and the pen cleaned and cows bred. The sliding door to the yard is controlled from the feed alley. The gate to the breeding stall is operated from outside the paddock.

Plan 5760 (1 sheet) is similar in arrangement but the building is of concrete block.



**CROSS SECTION
SHOWING PARTITION**



PLAN NO. 5143

(1 SHEET)