

DAIRY BARN PLANS



Extension Service
Agricultural and Mechanical College of Texas
and
United States Department of Agriculture
College Station, Texas

DAIRY BARN PLANS

By J. L. Thomas

Extension Dairyman

The dairy barn is a part of the dairy farm working equipment and as such is used twice each day in the year. It should therefore be made to save time and labor by being fitted to the needs of the particular farm. A sufficient variety of barn plans are presented in this bulletin to furnish Texas farmers ample choice in the matter.

LOCATION

Whether the barn be of the cheap shed type or a more elaborate structure, its location should be picked with care. The barn ought to be placed on a slight elevation of ground, if possible, to insure proper drainage of the yards and to give the best circulation of air in and around the barn. If the barn is located in a low place or on a slope of a hill, the yards are apt to catch drainage water and become muddy and filthy. A dry yard is necessary for the production of clean milk. If good normal drainage is impossible to secure it will be necessary to grade the yard and to provide drainage ditches to keep it dry.

BARN SURROUNDINGS

The dairy barn should be located in the open and should not be closely surrounded by trees. Trees are desired on the farm for shade for live-stock but if too close to the dairy barn sunshine will be kept out, making it most difficult to keep the barn dry and sanitary. Strange as it may seem, the dairy barn should not be surrounded by cowlots as is so often the case. The lot should be at one end of the barn and the other three sides surrounded by good grass lawn. In this way dust and dirt that enters the barn through the air can be kept to a minimum.

LIGHT AND VENTILATION

In Texas where cows are kept in the barn only long enough to be milked, there is no need for any special ventilating system, other than plenty of window space. Where an open shed type of barn is used, no other ventilation is needed. Where a closed barn is used, there ought to be window space of at least 36 to 48 inches for each two cows. To make a barn cool in summer end it north and south, and provide several doors to admit all of the south breeze possible. Barns closed on the south can hardly be ventilated well enough for summer purposes. For the best circulation of air, the base of the window should not be more than three feet above the floor.

FLOORS

Two types of floors are more commonly used in Texas barns. The first is one that has a slope of about two inches from the stanchion line to the passageway behind the cows. (see figure No. 5.) The second is the common gutter type of floor. The first type is more easily cleaned than is the gutter floor, but its use is limited to dairies where the cows are turned out for the night. Cows will become badly soiled if housed over night on the first type of floor.

Floors should be given a slight slope from manger to gutter to insure good drainage. Slope should also be given from the wall to gutter, or from the center of the passageway in double-row barns to gutter, as the case may be.

A slope of about one inch to each ten feet of the whole barn floor-length is desirable if there is no gutter in the barn. If gutter is used it is satisfactory to make the floor level from end to end and to provide drainage by sloping the floor of the gutter.

Concrete floors should not be made very smooth because cows often slip and fall on smooth floors especially if they are wet. A surface layer should be made of good rich concrete which will not soon wear into holes, and the surface should be floated rather than troweled down smooth.

MANGERS

Mangers may be made of either concrete or wood but the former are preferable since dirty corners and crevices can be eliminated. Mangers may be made with divisions between cows but a single long manger is recommended because of ease in cleaning. In such a manger there is very little trouble of one cow getting another's feed if at least three and one-half feet of space is allowed each cow. Manger floors ought to be built about six inches above the cow's front feet, and not 18 or 20 inches as is so often the case where wooden mangers are used.

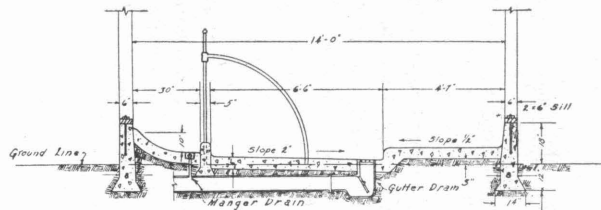
SHED BARNs

The most simple and easily constructed type of barn and one that will serve with great satisfaction on most dairy farms in South and East Texas is the shed type. By making the shed 14 feet wide there is ample room for a manger, platform for cows, gutter and passageway. Such a barn can be left open from the south but if this is done the open side should be screened with poultry netting to keep out birds and poultry.

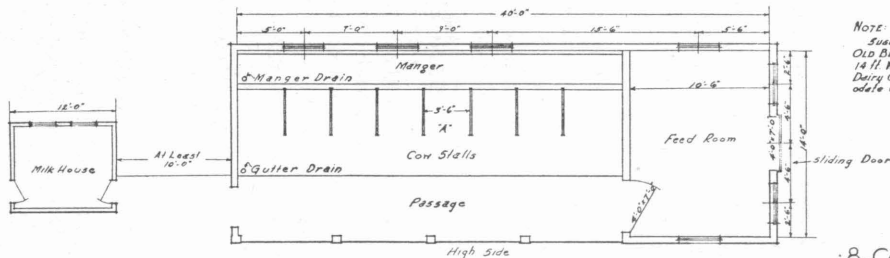
Cut No. 1 shows floor plan and cross section of barn of the shed type, previously mentioned.

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STALL DIMENSIONS	
BREEDS	WIDTH 'A'
HOLSTEIN	4'-0"
GUERNSEY	3'-6"
JERSEY	3'-6"



SECTION



NOTE
 All Windows Are 3'x3' Openings
 All Window Sills 4" From Ground

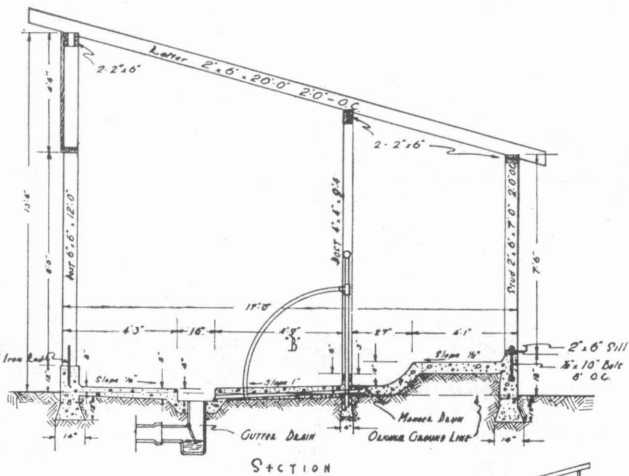
FLOOR PLAN

NOTE:
 SUGGESTIVE PLAN FOR REMODELING
 OLD BUILDING.
 14' H. Wide (inside) to House One Row of
 Dairy Cows. Building 14'x40' to Accom-
 modate 8 Cows and Feed Room.

8-COW DAIRY-BARN
 FOR
 OLD BUILDING 14'x40'

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 SHEET No. 1 of 1 SHEET SERIAL No. 140

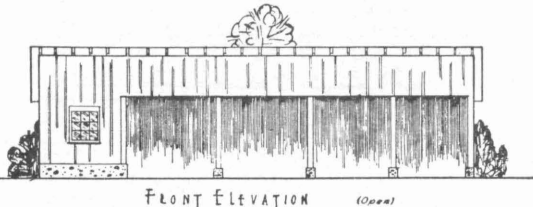
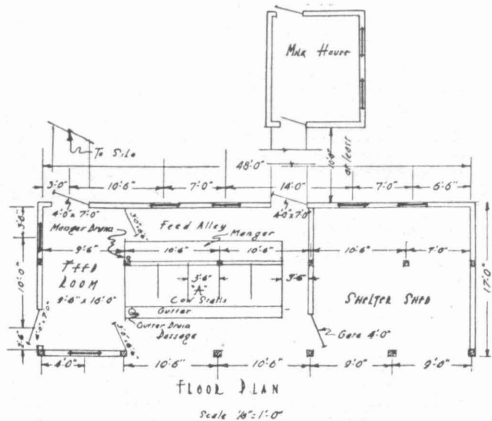
Cut No. 2 shows the first step in an add-to or "progressive" type of barn. This plan shows shed space for ten cows, the stalls for only five being completed, the remaining space left for storage.



STALL DIMENSIONS		
Breed	Width "x"	Length Stall "y"
Holstein	40"	5'-0"
Galloway	38"	4'-0"
Jersey	36"	4'-6"



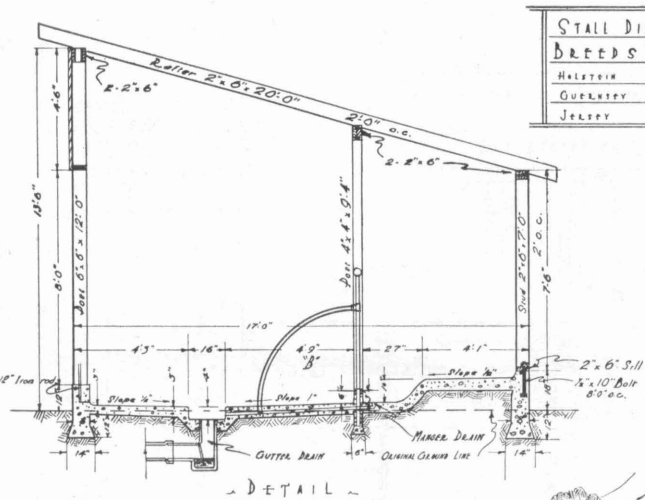
NOTE: Use 1" Douglas fir flooring on the open end to keep out dirt & cold.



5-COW-DAIRY-BARN.
 For ANNOTATED PLAN See DIST. SHEET NOS. 133, 134.
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 SHEET No. 1 of 1 SHEET SERIAL No. 132

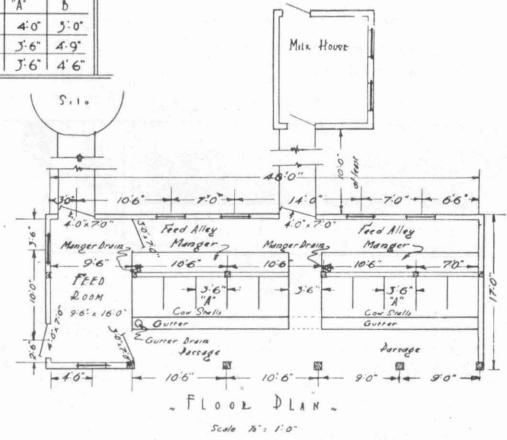
Cut No. 3 shows the same plan as the previous one, with stalls completed for ten cows to be handled at one time.

6

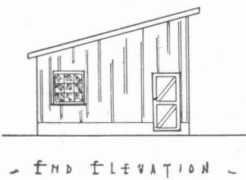


DETAIL
Scale 3/8" = 1'-0"

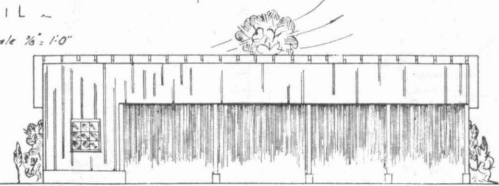
STALL DIMENSIONS		
BREEDS	Width A'	Depth B'
HALESTON	4'-0"	5'-0"
QUENTRY	3'-6"	4'-9"
JERSEY	3'-6"	4'-6"



FLOOR PLAN
Scale 3/8" = 1'-0"



END ELEVATION



FRONT ELEVATION - (10 cows)

NOT: Use 1" poultry wire fencing the open side to keep out hogs and chickens.

10-COW DAIRY BARN

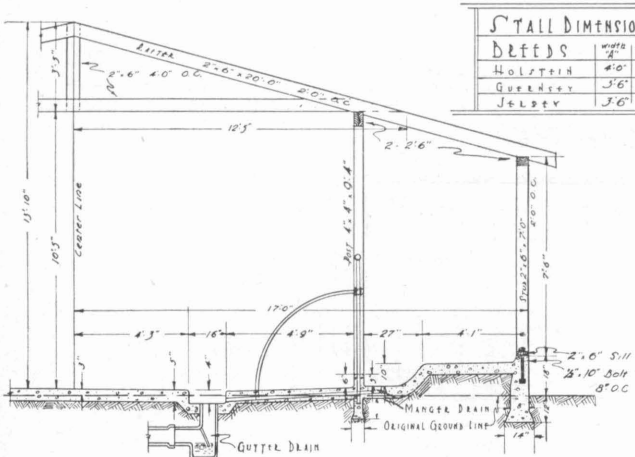
FOR ADDITION TO THIS BARN SEE PLAN SERIAL NO. 154

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SHEET NO. 1 OF 15 SHEET SERIAL NO. 153

Cut No. 4 shows the same plan as Nos. 2 and 3, which is again doubled in size by adding another side to the barn, making a closed barn instead of a shed. With this plan the barn is built as the herd grows, as more barn space is needed, and as means become available for making more extensive improvements.

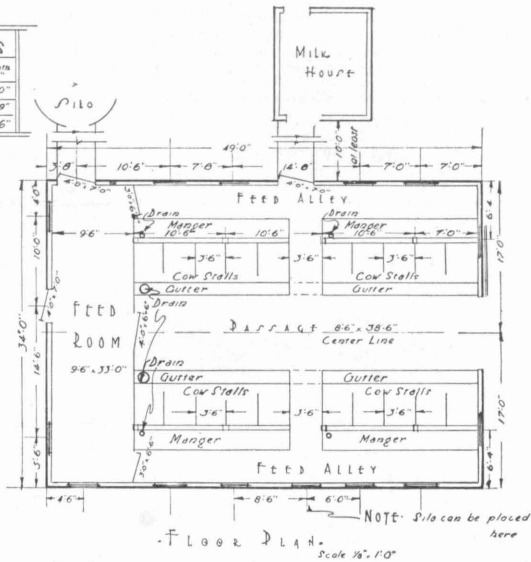
7



- D + TAIL -

Scale 1/8" = 1'0"

STALL DIMENSIONS		
Breeds	width	length
Holstein	4'0"	5'0"
Guernsey	3'6"	4'9"
Jersey	3'6"	4'6"



- FLOOR PLAN -

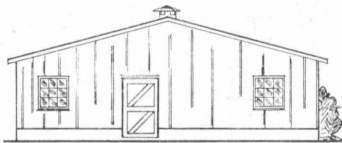
Scale 1/8" = 1'0"

20-COW DAIRY BARN.

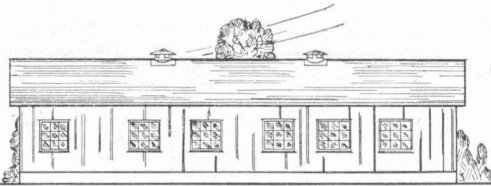
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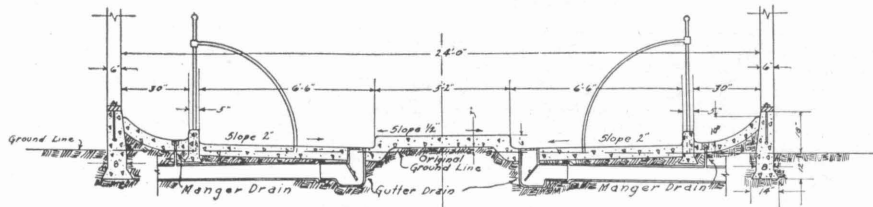
O. B. MARTIN, DIRECTOR College Station, Tex.
 SHEET No. 1141 SHEET SERIAL No. 154



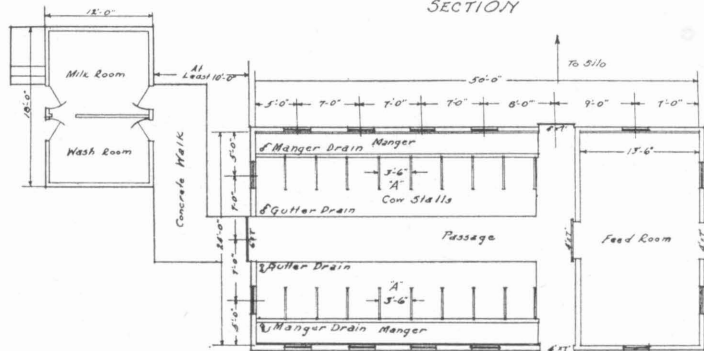
- FRONT ELEVATION -



- SIDE ELEVATION -



SECTION



FLOOR PLAN

Note
SUGGESTIVE PLAN FOR REMODELING
Old Building
24 feet Wide (inside) to House Two Rows
of Dairy Cows, Building 24 x 30' to
Accomodate 18 Cows and Feed Room

18-COW DAIRY BARN
FOR
OLD BUILDING 24 x 30'

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SHEET No. 1 of 1 SHEET SERIAL No. 143

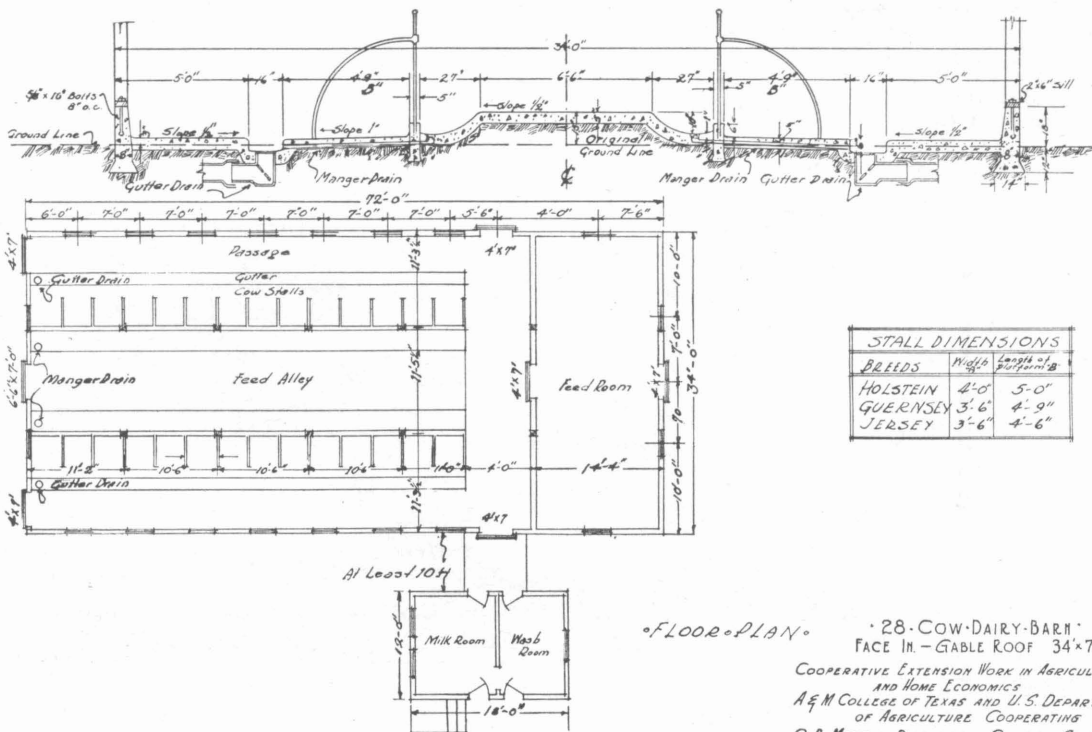
STALL DIMENSIONS	
BREED	WIDTH
HOLSTEIN	4'-0"
GUERNSEY	3'-6"
JERSEY	3'-6"

Note.
All Windows Are 3' x 3' Openings
All Window Sills 4' From Ground

Cut No. 5 shows plan for double row of cows facing out. There is no feed alley and the mangers are against the wall. The floor in this barn has no gutters. If a gutter is desired, it can be used in the same space. This type of barn is very desirable for a herd of 15 to 30 cows.

Out No. 6. There may be some who will prefer to have the cows facing the center, therefore this type of construction is shown in this figure. As has been said before in most cases it is desirable to face the cows out rather than to the center.

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STALL DIMENSIONS		
BREEDS	Width	Length of platform
HOLSTEIN	4'-0"	5'-0"
GUERNSEY	3'-6"	4'-9"
JERSEY	3'-6"	4'-6"

FLOOR PLAN

28-COW DAIRY BARN
FACE IN - GABLE ROOF 34' x 72'

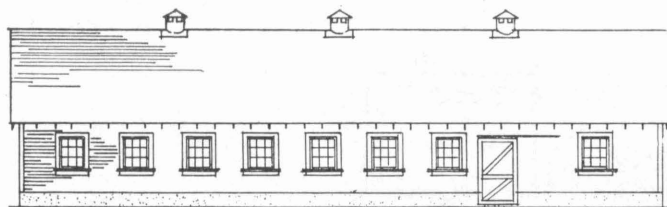
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SHEET No 1 of 2 SHEET SERIAL No 147

Cut No. 7 shows cross section and framing of the barn for the floor plans shown in cut No. 6.

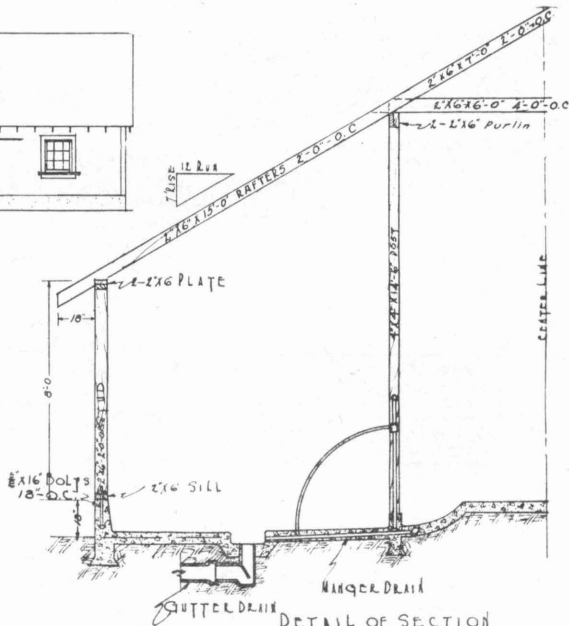
10



FRONT ELEVATION
SCALE $\frac{1}{2}'' = 1'-0''$



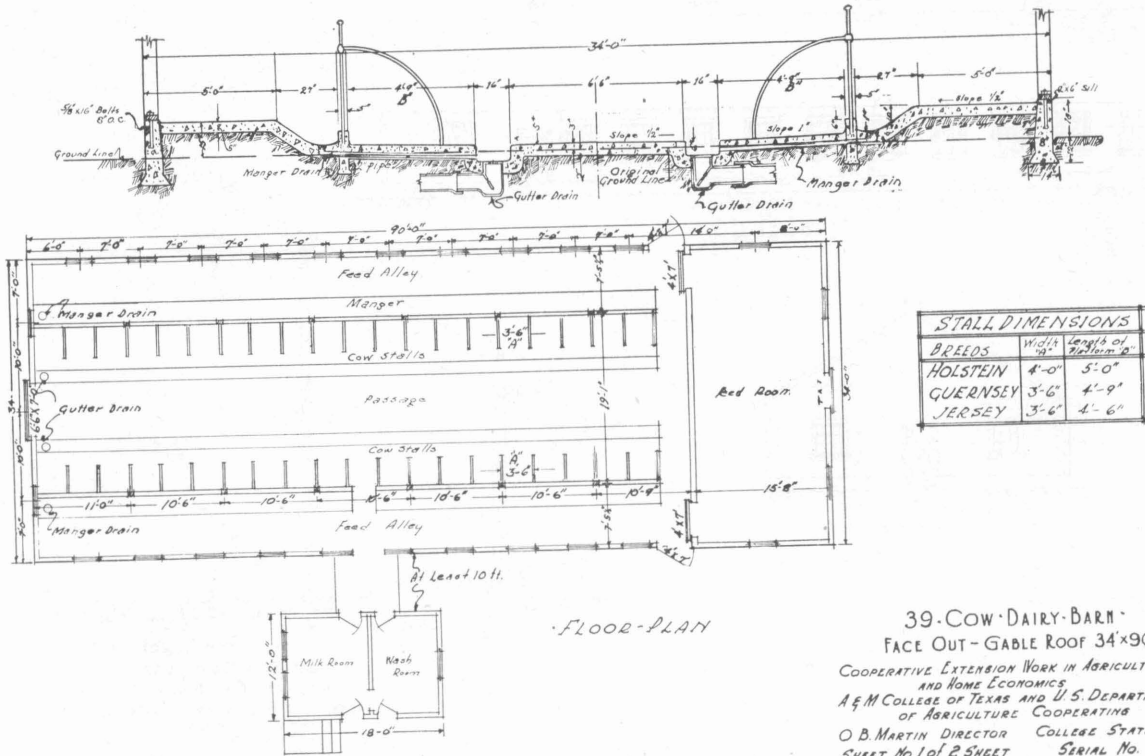
END ELEVATION



DETAIL OF SECTION
SCALE $\frac{1}{2}'' = 1'-0''$

28-COW-DAIRY-BARN
FACE IN - GABLE ROOF 34x72

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SHEET NO. 201 2 SHEETS SERIAL NO. 147



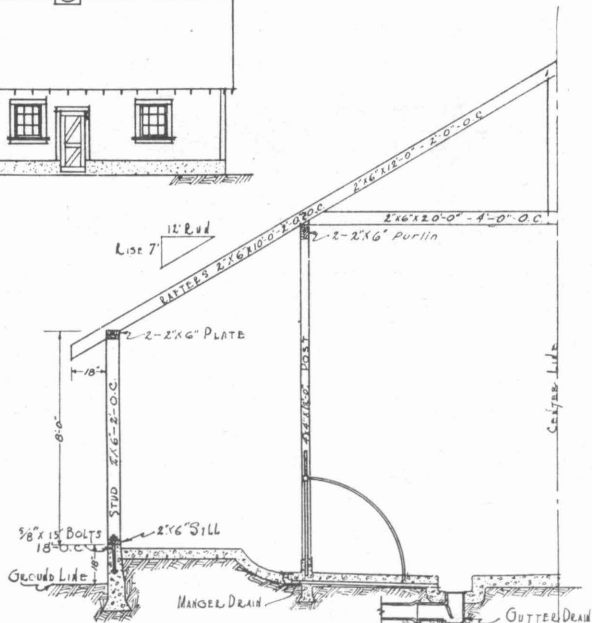
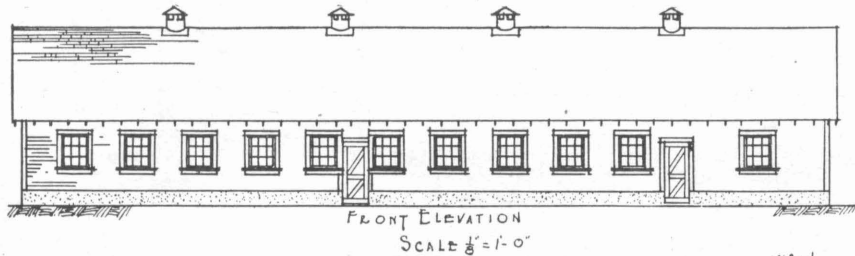
STALL DIMENSIONS		
BREEDS	Width of stall	Length of platform
HOLSTEIN	4'-0"	5'-0"
GUERNSEY	3'-6"	4'-9"
JERSEY	3'-6"	4'-6"

FLOOR-PLAN

39-COW DAIRY BARN
 FACE OUT - GABLE ROOF 34'x90'
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Cut No. 8 shows a large barn with cows facing out. The feed alley in front of the manger, and milk house located midway down the side of the barn makes gutter, gutter type of barn desirable for the larger herds.

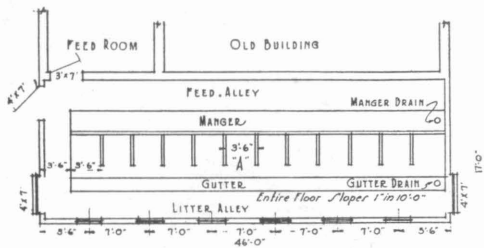
Cut No. 9.—This cut shows a cross section of a floor plan and the frame work for floor



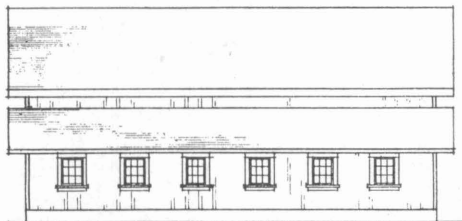
39-COW-DAIRY-BARN -
 FACE OUT - GABLE ROOF 34' x 90'
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 SHEET No 2 of 2 SHEET SERIAL No 145

Sometimes it becomes desirable to build a shed at the side of some old structure.
 Cut No. 10 shows floor plans and dimensions for a shed of this character.

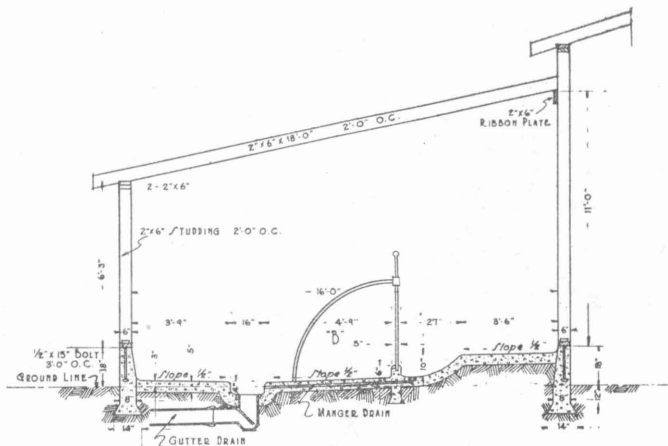
13



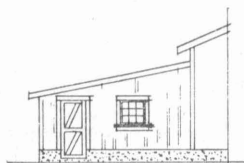
FLOOR PLAN



SIDE ELEVATION



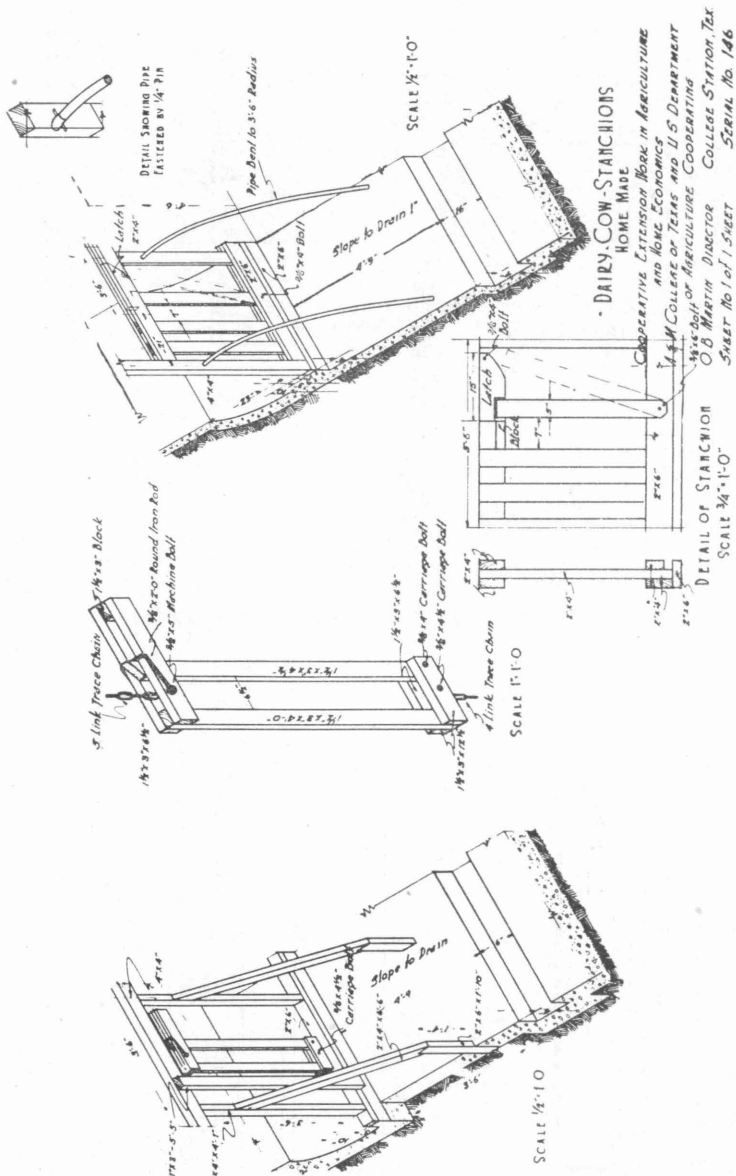
SECTION
 SCALE 3/8"=1'-0"



END ELEVATION

STALL DIMENSIONS	
BREEDS	WIDTH PLATFORM B
HOLSTEIN	4'-0" 3'-0"
GUERNSEY	3'-6" 4'-8"
JERSEY	3'-6" 4'-6"

12 COW DAIRY BARN
 ADDITION TO OLD BARN
 COOPERATIVE EXTENSION WORK IN AGRICULTURE
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 SHEET No 1 of 1 SHEETS SERIAL No 148

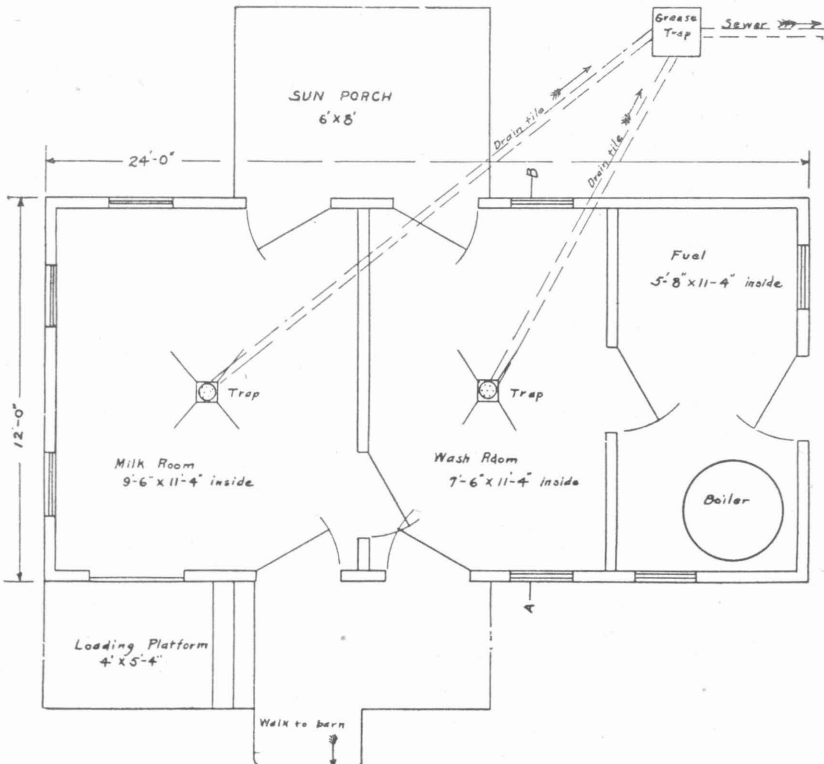


Cut No. 11.—This cut shows different types of home made stanchions, both the swinging and the stationary type. Where cows are kept in the barn over night, the swinging type of stanchion is the most desirable, but where they are only kept during milking hours the stationary type is very satisfactory.

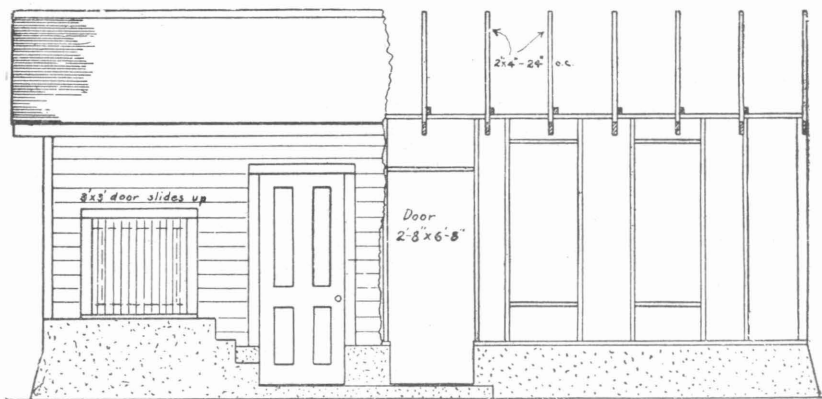
MILK HOUSE

The milk house should be located where it will be most convenient and where it will get the fewest barn odors. The south and east sides of the barn are most desirable locations. The floors of the milk house receive special attention, since they are exposed to water at all times. They should be so laid that there will be no low places to catch the water and the surface should be troweled smooth rather than left rough. The floor should slope from the wall to the center, at which place the bell trap and drain should be located. All drain pipes should run from a straight line from the trap in the center of the floor, to a grease trap located outside of the building. If these lines are straight, they are not apt to become clogged up and if this does happen, they can be easily cleaned. In building a milk house, the drain pipes should be laid before the floor is put in, and the floor built to them.

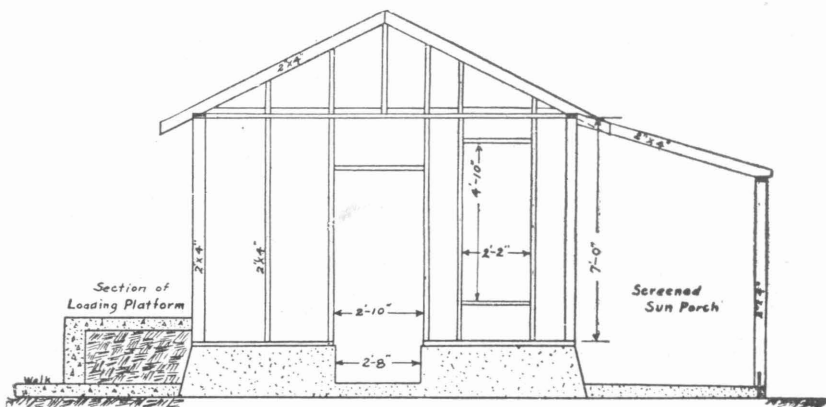
A concrete wall should extend from the floor at least as high as the window sills, as the lower part of the walls are often wet, and the wood will soon rot out. The wood part of the wall and ceiling should be made of smooth lumber as it can be more easily cleaned than beaded lumber.



Cut No. 12.—This cut shows milk house floor plans for three rooms: milk room, wash room and boiler room. If no boiler is used, only two rooms are necessary, viz, a milk room and a wash room. The wash room and milk room should always be separate. .



Cut No. 13.—This cut shows the end elevation of the milk house, showing the sun room on the side. All utensils can be kept in this screened room for sunning.



Cut No. 14 shows side elevation of building and framing work.

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