UNIVERSITY OF KENTUCKY

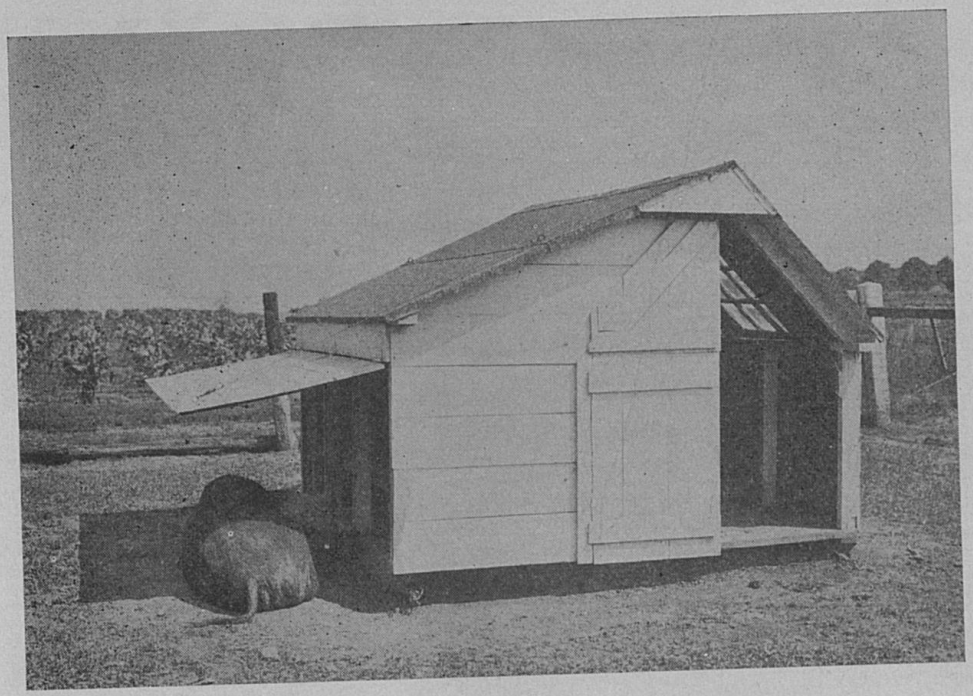
COLLEGE OF AGRICULTURE

Extension Division

THOMAS P. COOPER, Dean and Director.

CIRCULAR NO. 198

Sunlight Movable Hog Houses for Kentucky



Lexington, Ky.
July, 1926

Published in connection with the agricultural extension work carried on by cooperation of the College of Agriculture, University of Kentucky, with the U. S. Department of Agriculture and distributed in furtherance of the work provided for in the Act of Congress of May 8, 1914.

CIRCULAR NO. 198

Sunlight Movable Hog Houses for Kentucky

By E. J. WILFORD and J. B. KELLEY

IMPORTANCE OF PROPER HOUSING

One of the most important requirements for profitable pork production is proper housing. Dry, sanitary, comfortable houses must be provided if one wishes to obtain the greatest returns in the pork producing business. The hog is not as well protected with an outer coat as most domestic animals, but depends upon the layers of fat which provide considerable protection. Many pigs are lost during the farrowing season because of poor and inadequate housing.

A survey made in 1922 by the U. S. Department of Agriculture in the states of Indiana, Iowa and Illinois, on 3,075 litters, shows that 35.8 per cent of the pigs farrowed in the spring, and 24.2 per cent of the pigs farrowed in the fall, were lost before weaning. Of the pigs lost in the spring, 41.8 per cent were crushed by the sows and 6.17 per cent were killed by chilling. In the fall 46.6 per cent of the total pigs lost were crushed and 9 per cent were killed by chilling. This shows that the loss of over one-half of the pigs lost before weaning is attributed to these two factors. A good house, properly constructed, aids materially in reducing the losses from these two causes.

Since Kentucky raises approximately 900,000 hogs each year, but saves only 5.5 pigs per litter, proper housing is of economic importance, for it will aid the hog producers to save more pigs.

ESSENTIALS OF A MOVABLE HOG HOUSE

1. *Ample Space.* The space required depends upon the size and number of animals to be housed. There should be enough overhead space to provide comfort and ventilation and enough floor space to prevent crowding and give enough room to permit the attendant to take the proper care of the sow and litter during the farrowing period. A house eight feet square has proved to be a very satisfactory size for one sow. A house 8x12 feet, when partitioned off with a movable panel, will make two pens, 6 feet x 8 feet, thus providing quarters for more animals at a slight additional cost as compared with the one-pen house.

2. *Dry Quarters.* Health and thrift cannot be maintained in damp quarters. A well drained site should be selected. The house should be provided with proper means of ventilation and the roof should be made of such materials as to prevent condensation of moisture on the inside. Metallic constructions not properly insulated are open to criticism in this respect. The floor should be kept dry by regular cleaning and by keeping the walls and roof water-tight.

3. *Sunlight and Warmth.* Sunlight furnishes the warmth desirable for the comfort of the little pigs. In addition, it promotes dryness, furnishes light, encourages ventilation, and aids in sanitation. Sunlight destroys many disease-producing organisms by drying and by the action of the ultra violet rays. It also has a stimulating and invigorating effect upon the suckling pigs. All houses should be provided with windows so placed as to permit the entrance of a maximum amount of sunlight. The size and location of the windows vary with the latitude and with the farrowing season. The houses shown in this circular are designed especially for Kentucky conditions and will prove satisfactory for any part of the State.

4. *Shade.* The hog must also be protected from the hot rays of the sun in summer, as it suffers more from the heat than from the cold. Many hogs die from exposure to the hot rays of the sun where inadequate shade and water are furnished.

5. *Ventilation.* A hog-house is not complete without a properly constructed ventilating system which will provide the animals with plenty of fresh air without subjecting them to injurious drafts. Good ventilation aids in keeping the house dry and in regulating the temperature. Foul air and dampness lower the vitality of the pigs.

6. *Comfort and Protection.* The floors should be substantial and smooth but not slippery. The doorways should be large enough to permit easy entrance and so placed as to prevent drafts as much as possible. High door sills are objectionable as they are apt to cause injury. Guard rails should be provided for the protection of the little pigs.

7. *Convenience.* All doors and other openings should be so placed and of sufficient size that the attendant will be able to clean the house easily and to give proper and efficient care to the pigs.

8. *Cheap and Durable.* A movable hog house should be constructed of durable material and designed so that any farmer can build one. It is, however, false economy to leave out some one of the above essentials in order to keep down the cost. The saving of a few pigs will pay the difference between a house properly constructed and one incorrectly built.

9. *Appearance.* Neat, attractive and sensible hog houses are an asset to any farm. They are not only pleasing to the eye but also help to attract attention to the herd and thereby aid in making sales.

LOCATION OF HOG HOUSES

In locating hog houses, one should take the following factors into consideration:

1. Economy of labor and time in caring for the hogs.
2. Drainage of houses and yards.
3. Sunny exposure.
4. Protection from bad storms.
5. Location relative to pasture, summer shade and water.
6. Risk from disease infection from soils or germ-laden dust from public highways, or from polluted streams.
7. Prevention of odors reaching the farm home.

MERITS OF MOVABLE HOUSE OVER CENTRALIZED HOUSE

This system of housing hogs in individual movable houses is proving to be a very satisfactory and popular system. Briefly its advantages and disadvantages are as follows:

Advantages. 1. Pastures may be changed, providing more sanitary conditions and thus avoiding the use of diseased yards.

2. Provides shelter for hogs when hogging down corn.

3. Diseased animals may be isolated.

4. Affords renters and owners of small herds good shelter for a small outlay of money.

5. Renter may take houses when he moves.

6. Fire risk is lessened.

Disadvantages. 1. Time and labor required for caring for hogs is greater than in a centralized hog house.

2. Feed storage and fresh water supply impracticable.

3. Less durable structures.

4. Advertising value less.

SPECIFICATIONS OF CONSTRUCTION

Runners. The runners should be made of material which will not decay rapidly as they serve as a foundation for the house. In Kentucky 4″x4″ or 4″x6″ rough oak lumber is probably the best material to use, for it is easily obtained, cheap, resists decay, is strong, and wears well when the house is moved over hard surfaces. The softer woods, such as yellow pine and poplar, may be used, but they should be thoroly treated with creosote to prevent decay. It also pays to creosote oak runners. The ends of each runner should be beveled as shown in the drawings, pages 11 and 13, and a 9/16 inch hole should be bored at each end thru which a clevice or wire may be passed for moving the house with a team or a tractor.

Floors. Movable houses may be provided with wood or dirt floors. A floor made of 2 inch creosoted oak or yellow pine plank spiked to the runners will make a more durable and a stronger house and will furnish a dryer, a warmer and a more

sanitary floor, if the farmer cleans and rebeds with straw as often as he should. One-inch boards may be used if joists are used to stiffen the floor. The 2-inch planks are preferred. It is true, a dirt floor is cheaper as far as first cost goes, but it is not always the more satisfactory. Dirt may harbor disease. Dust encourages lung troubles which not only cause pneumonia, but also infect the lungs and alimentary tract of the hogs with worms. It is difficult to keep a dirt floor in a sanitary condition as it will become damp and foul from the excrement of the animals. The dirt will freeze in winter, making a cold, damp floor. In the summer the hogs will root up the dirt causing dust to form.

Framing. The houses illustrated in this circular may be framed of 2″x4″ oak, No. 1 or No. 2 yellow pine material. The corners should be well braced, using 1″x4″ boards. Frame the house according to the drawings, but before starting to build the house buy the windows so that, if the windows indicated cannot be purchased, the necessary changes can be made in the framing to fit other windows of approximately the same size.

Siding. The walls of the Kentucky gable roof house shown on page 12 should be sided with 8″ or 10″ No. 1 or No. 2 yellow pine, dressed shiplap or drop siding and should be painted immediately with a good paint to protect it from the weather. Vertical boxing, shiplap or drop siding may be used for siding up the shed roof houses shown on pages 14 and 15. If the boxing is used the cracks should be stripped to keep out the wind and the rain.

Roof. The rafters should be carefully framed according to the drawings, using 2″x4″ oak or yellow pine lumber and they should be sheated solid with one inch boards and covered with a good grade of 3-ply prepared roofing smoothly laid and well fastened in place. Great care must be taken to insure a watertight roof.

Windows. In order that the maximum amount of sunlight may enter the houses at farrowing time, the windows must be placed as shown on the plans, for the angle of the rays of the sun varies with the distance north or south of the equator and with

the time of the year. All the houses shown in this circular are designed especially for Kentucky conditions and should be placed to face the south.

In the gable roof sunlight house shown on page 12 the windows slide in place over 1″x2″ supports fastened to the rafters and are held up by means of hooks and eyes at the upper ends. The lower end of each sash extends over the plate about 1½ inches, forming eaves to drain off the water beyond the walls. Each crossbar and the lower part of the sash are notched at the center to permit the water to drain more readily. The roof sheathing extends over the edge of the windows 1½ inches at the top and sides to prevent water from entering the house. If the windows are constructed according to the plans they will not leak. One of these houses has been in service for a year at the Experiment Station farm and has never leaked. In the summer time these windows may be whitewashed or covered with burlap to keep out the sun when the house is being used for summer shade.

The windows in the shed-roof houses are hinged at the top so they may be opened and held up against the rafters with hooks.

Doors. The entrance doors are made in two parts so that the upper half may be opened for ventilation without permitting the hogs to come out. All the doors are made of the same kind of lumber as the side walls but they must be made carefully to fit the openings, must be well braced and securely hung on hinges of the sizes indicated on the plans. When open, the doors should be fastened to the side of the house to prevent the hogs from tearing them off.

The sunlight hog house, page 10, is provided with shade doors hung on 8″ T-hinges. When closed they are fastened securely by means of hooks and eyes and when used as a summer shade are supported from the roof by means of No. 9 wires fastend to heavy ¾″ eyes. At the lower end of each wire is a strong harness snap which snaps into the eye on the door. The picture on page 10 illustrates how the house is prepared for summer shade.

Guard Rails. Guard rails made of 2″x4″ or 2″x6″ lumber placed flatwise 8″ to 10″ above the floor, should be erected on all four sides of the house to provide protection for the pigs at farrowing time. Fasten all the guards securely in place by using angle irons or 2″x4″ supports in order to prevent the sow from nosing them loose. The rails on the sides where the shade doors are located should be so fastened to the framing that they may be removed easily in the summer time when the doors are used for shade.

Ventilators. All the houses must be provided with ventilators to furnish the hogs with a sufficient amount of fresh air and to carry off the moisture and odors when the pigs are shut up for the night during stormy weather. The sunlight house, page 12 has openings at each end of the roof at the peak and the upper half of the door may be left open when the weather will permit. The shed roof houses are provided with openings under the roof at the front and rear.

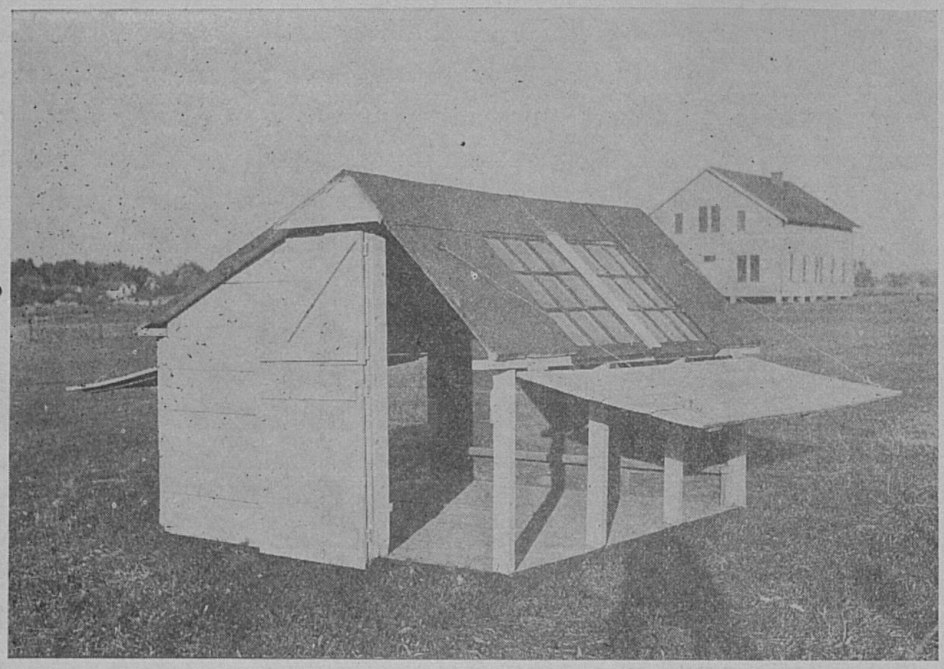


Fig. 1. Kentucky Sunlight Hog House C 6-94-1. Front and rear doors raised to provide summer shade.

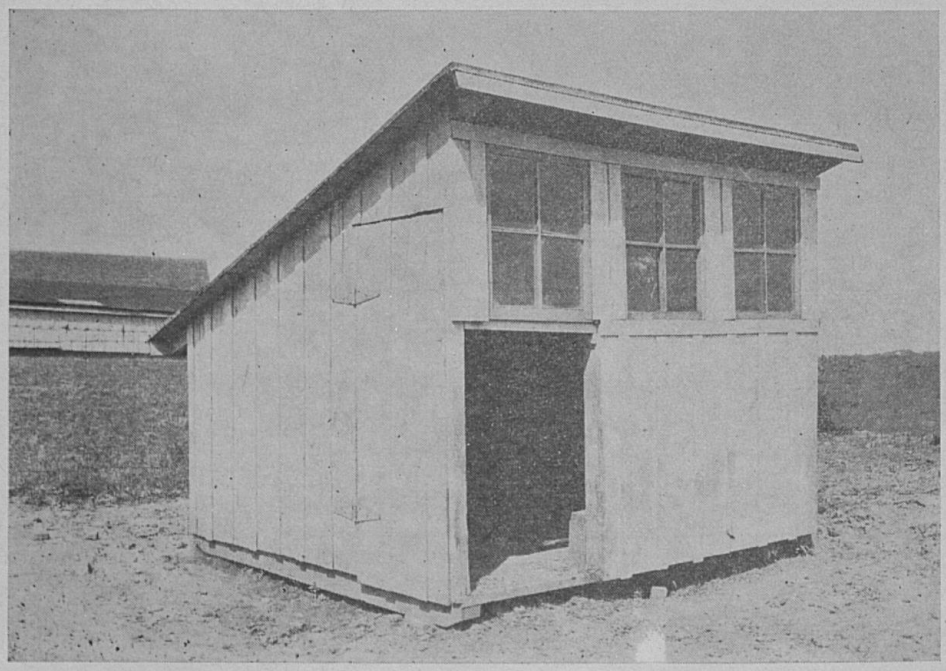


Fig. 2. Shed Roof Hog House C 6-39-1.

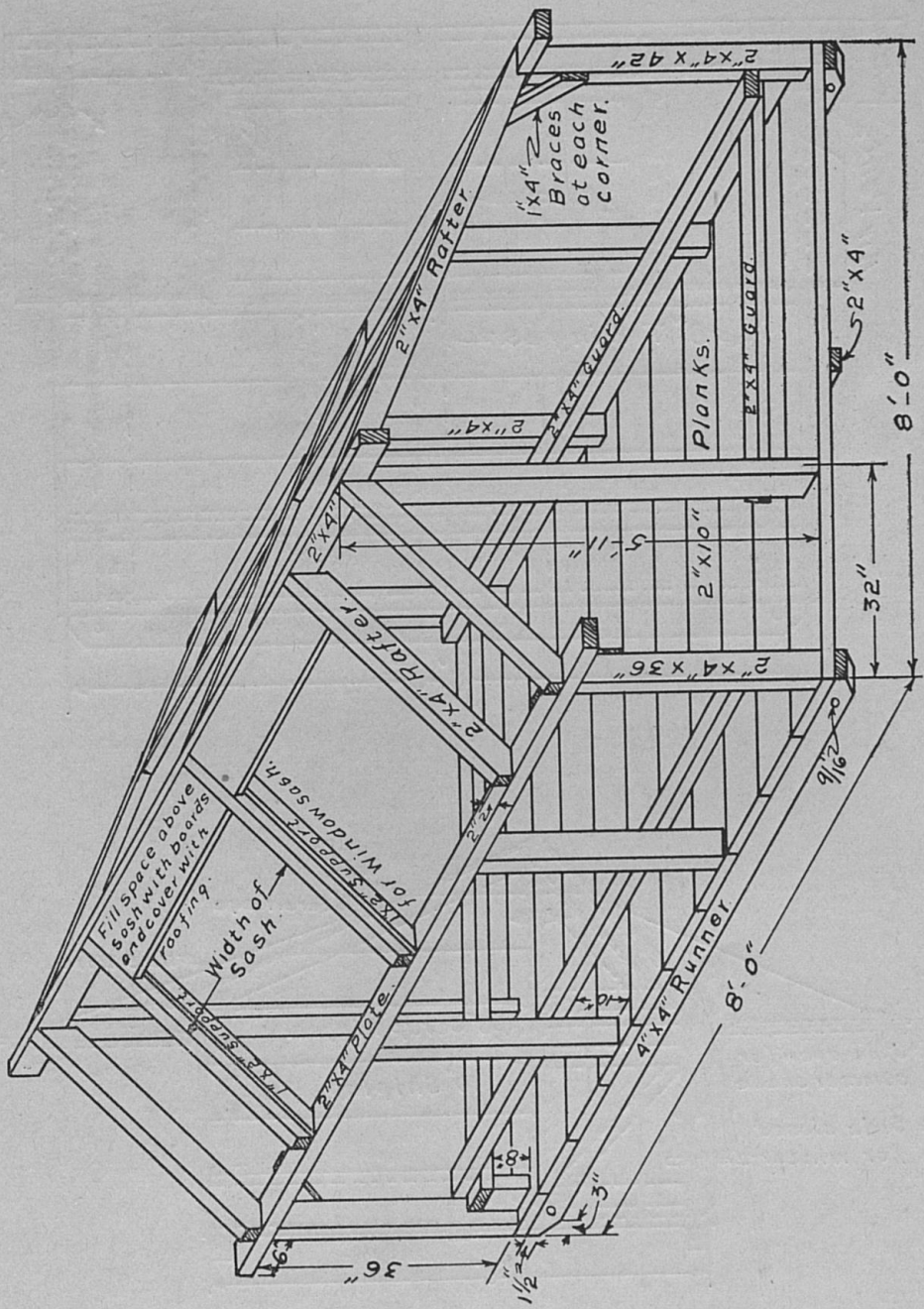


Fig. 3. Isometric drawing, showing framing details of "Kentucky Sunlight Hog House" plan C 6-94-1.

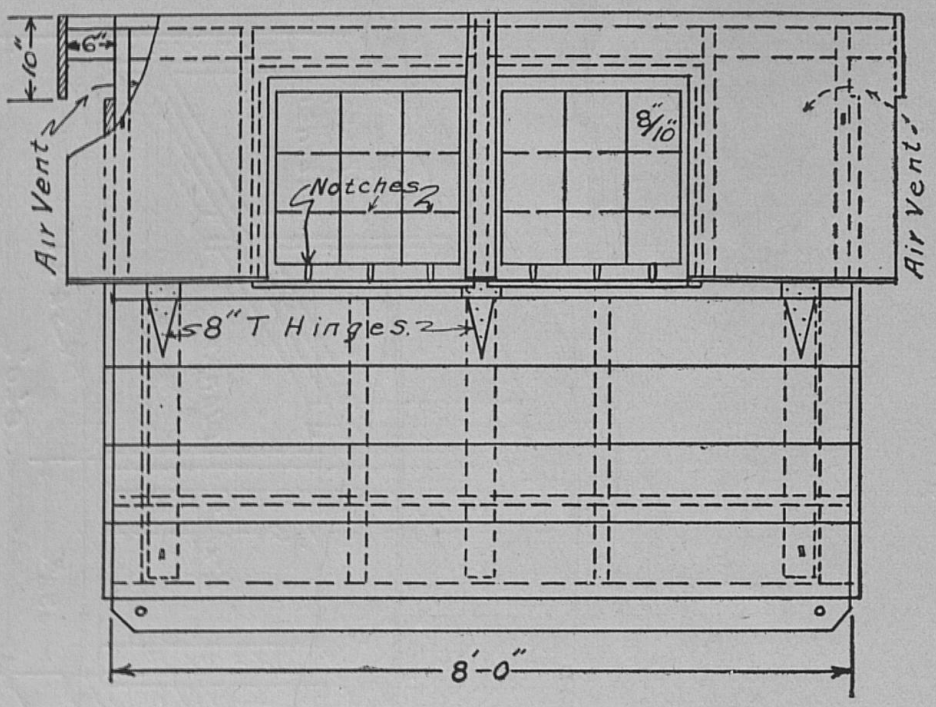


Fig. 4. Kentucky Sunlight Hog House C 6-94-1, front elevation.

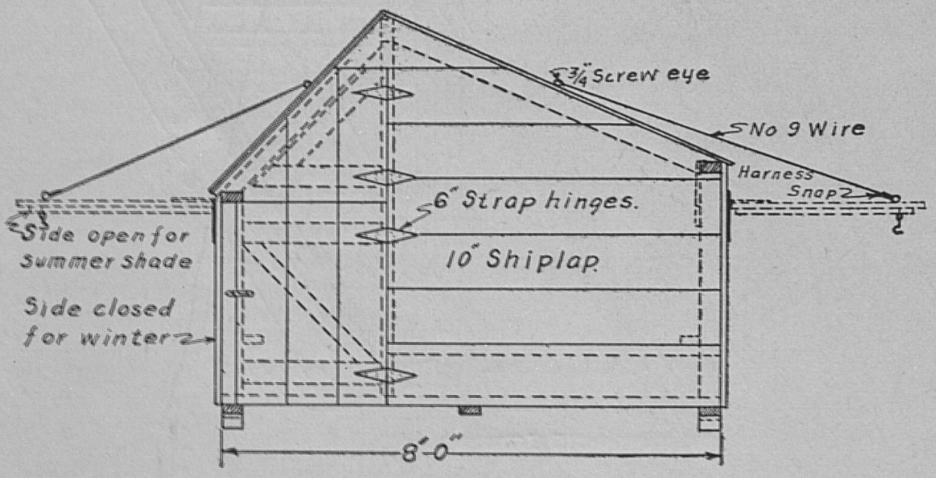


Fig. 5. Kentucky Sunlight Hog House C 6-94-1, end elevation.

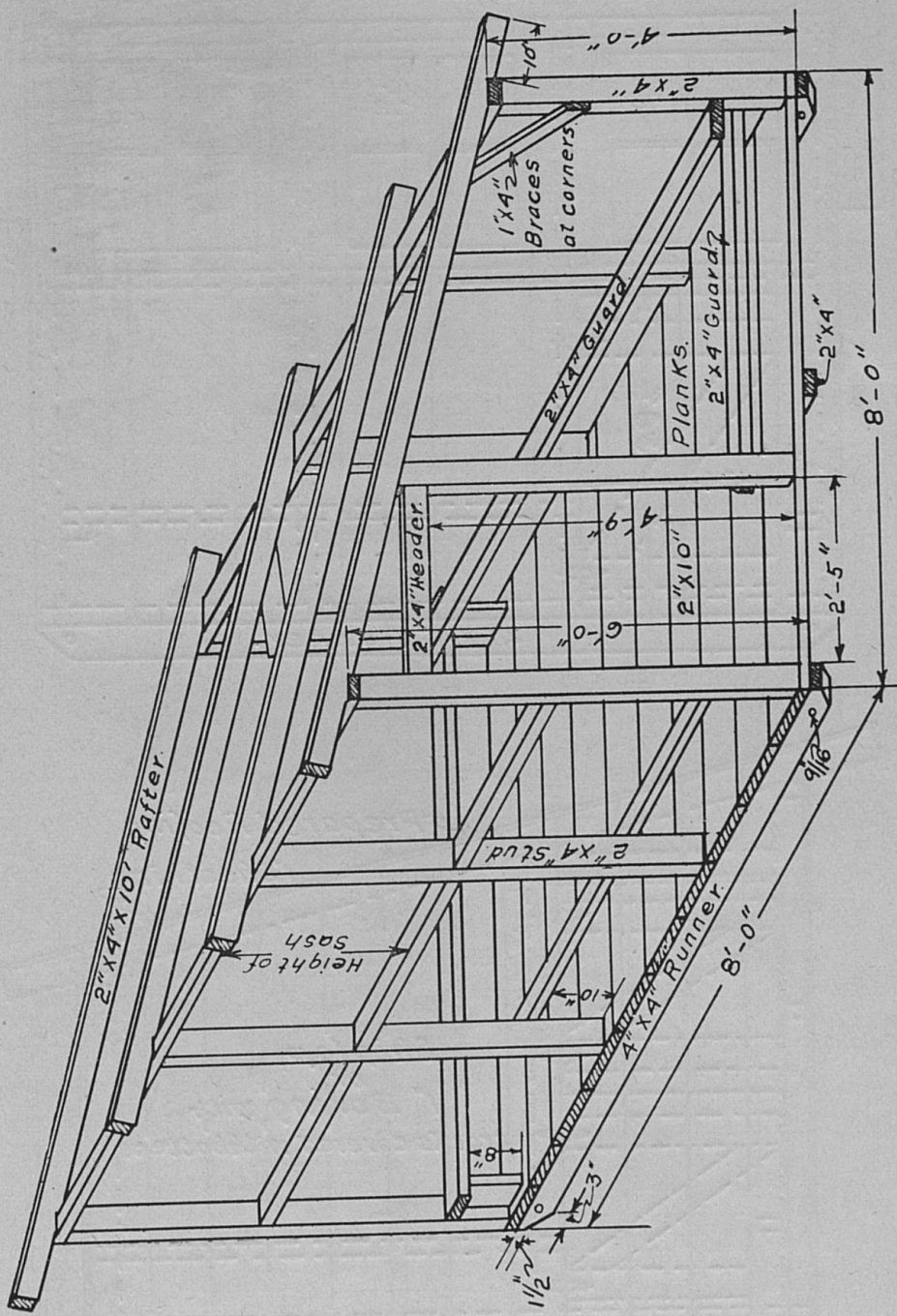


Fig. 6. Isometric drawing showing framing details of shed roof house C-6-39-1.

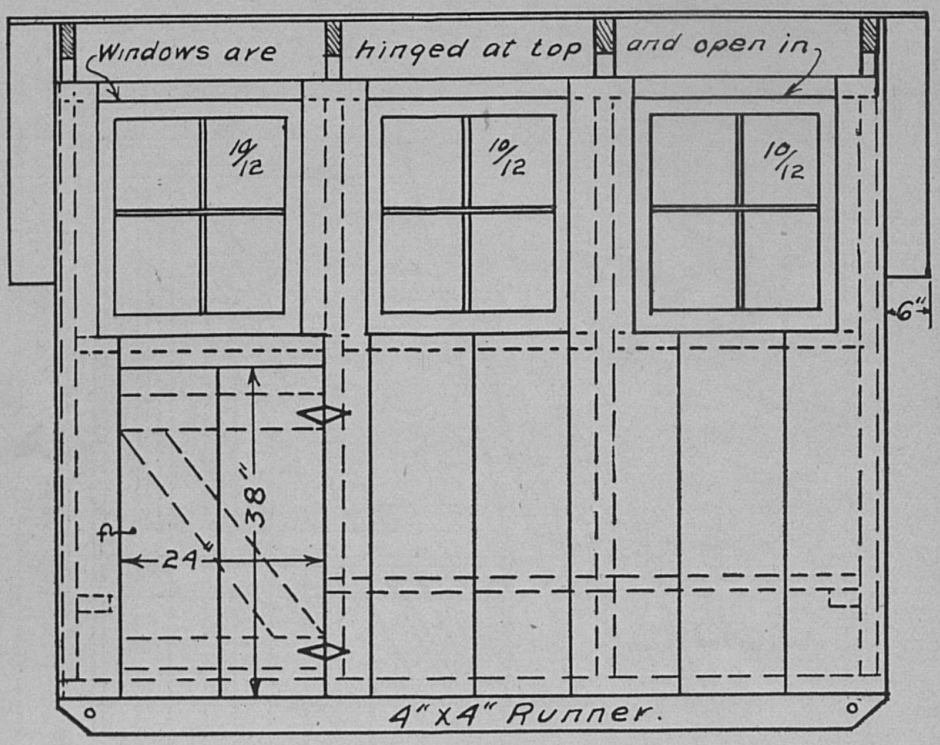


Fig. 7. Shed Roof House C 6-39-1, front elevation.

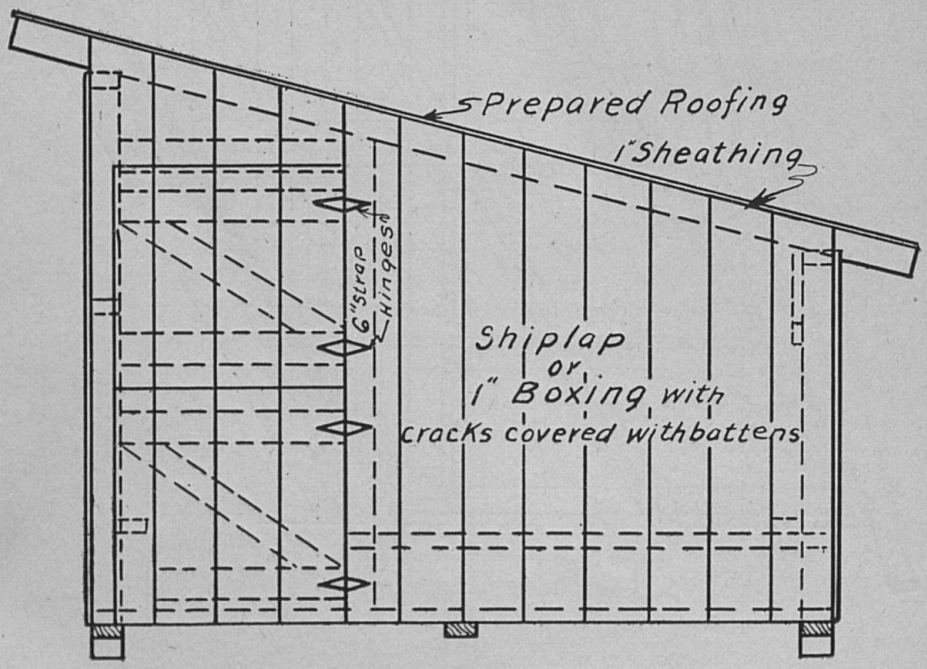


Fig. 8. Shed Roof House C 6-39-1, end elevation.

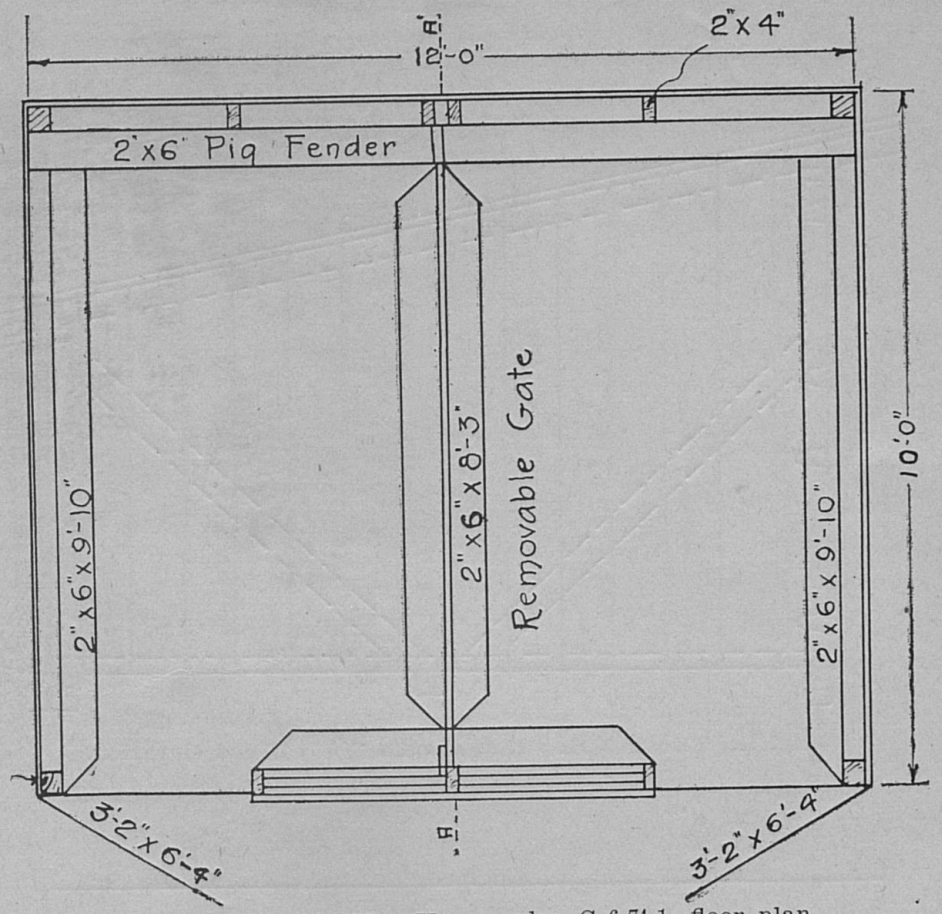


Fig. 9. Two Pen Hog House, plan C 6-74-1, floor plan.

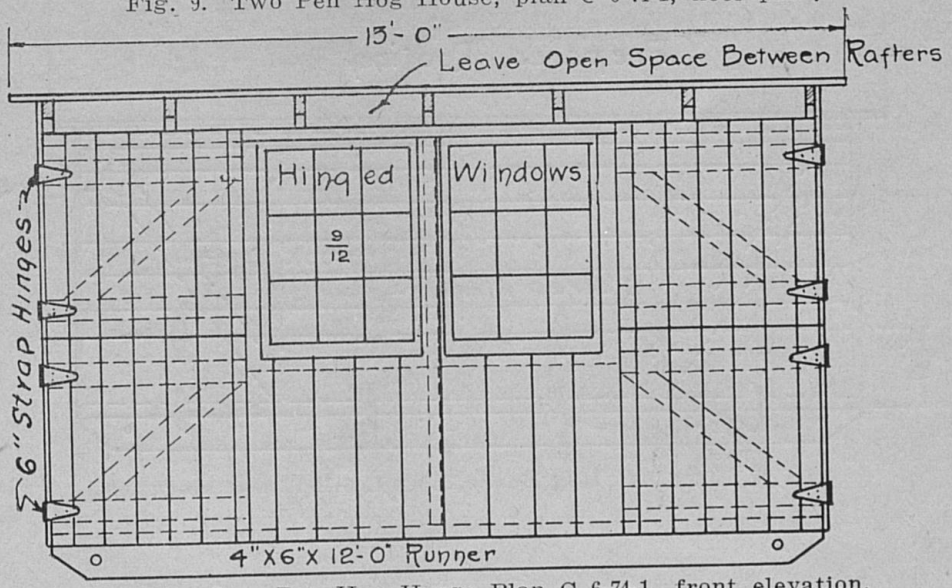


Fig. 10. Two Pen Hog House Plan C 6-74-1, front elevation.

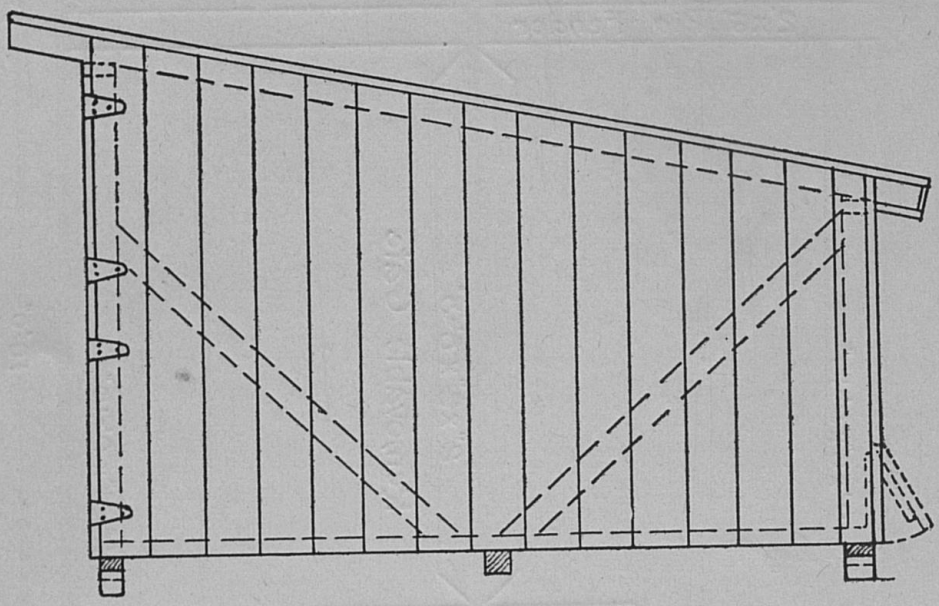


Fig. 11. Two Pen Hog House, plan C 6-74-1, end elevation.

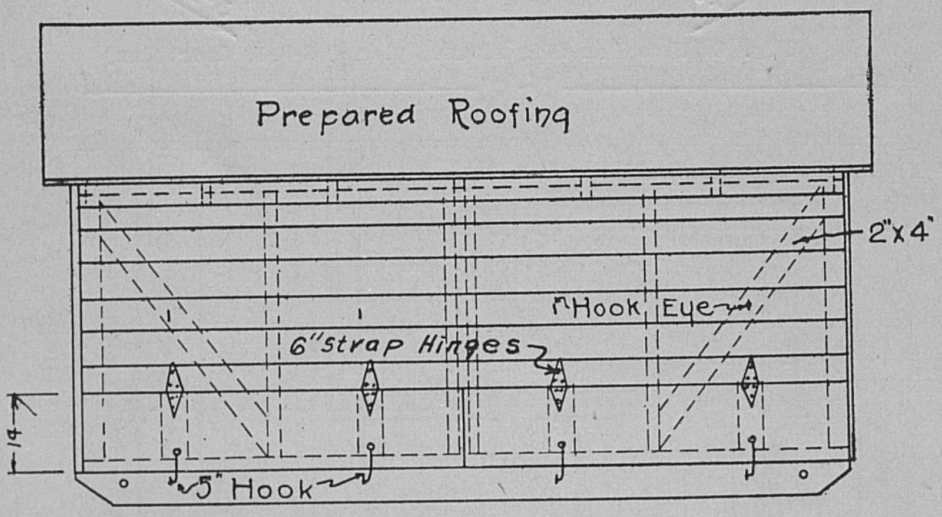


Fig. 12. Two Pen Hog House, plan C 6-74-1, rear elevation.

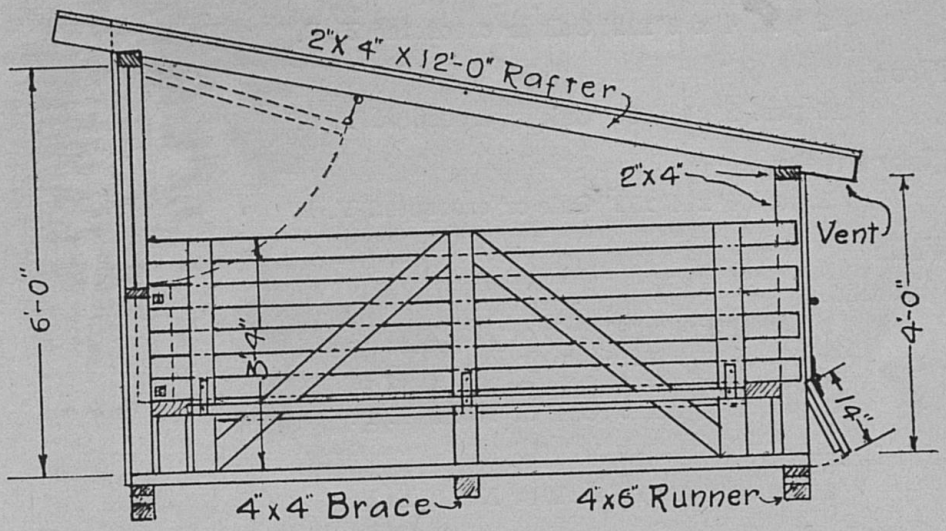


Fig. 13. Two Pen Hog House, plan C 6-74-1, cross-section of framing.

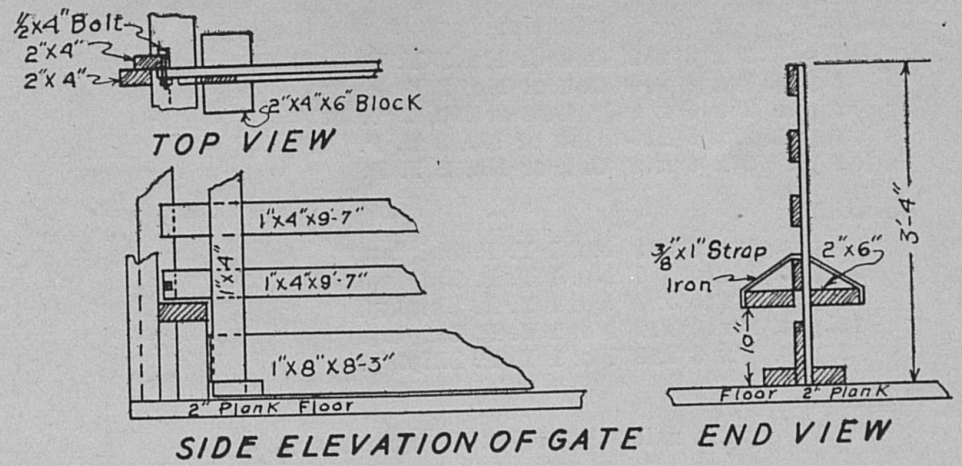


Fig. 14. Two Pen Hog House, plan C 6-74-1, details of removable partition.

LUMBER AND HARDWARE BILL FOR DOUBLE PEN SHED-ROOF HOG HOUSE (C-6-74-1)

Runners

2 pcs. 4″x 6″x12′ Oak or creosoted Y. P.

Floor

15 pcs. 2″x10″x10′ Oak or creosoted Y. P.

Floor Stiffener

1 pc. 4″x 4″x12′ Oak or creosoted Y. P.

Walls

Studding:

2 pcs. 4″x 4″x 6′ Oak or No. 2 Y. P.
2 pcs. 4″x 4″x4′ Oak or No. 2 Y. P.
4 pcs. 2″x 4″x 4′ Oak or No. 2 Y .P.
3 pcs. 2″x 4″x 6′ Oak or No. 2 Y. P.

Plates:

2 pcs. 2″x 4″x12′ Oak or No. 2 Y. P.

Sills:

2 pcs. 2″x 4″x 3′ Oak or No. 2 Y. P.

Braces:

4 pcs. 2″x 4″x 6′ Oak or No. 2 Y. P.
2 pcs. 2″x 4″x 5′ Oak or No. 2 Y. P.
12 pcs. 1″x 4″x 3′ Oak or No. 2 Y. P.
4 pcs. 1″x 4″x 1′ Oak or No. 2 Y. P.

Guards:

1 pc. 2″x 6″x12′ Oak or No. 2 Y. P.
2 pcs. 2″x 6″x10′ Oak or No. 2 Y. P.
2 pcs. 2″x 6″x 8′-3″ Oak or No. 2 Y. P.
7 pcs. 2″x 6″x10″ Oak or No. 2 Y. P.
1 pc. 2″x 6″x 6′ Oak or No. 2 Y. P.

Sheathing:

7 pcs. 1″x10″x12′ No. 1 Y. P. Shiplap.
10 pcs. 1″x10″x 7′ No. 1 Y. P. Shiplap.
8 pcs. 1″x10″x 3′ No. 1 Y. P. Shiplap.
15 pcs. 1″x10″x12′ No. 1 Y. P. Shiplap.
2 pcs. 1″x 8″x12′ No. 1 Y. P. Shiplap.

Windows:

2 1⅜″ plain rail 9 light 9″x12″ barn sash.

Gate:

4 pcs. 1″x 4″x10′ Y. P. Fencing.
3 pcs. 1″x 4″x 3′-4″ Y. P. Fencing.
2 pcs. 1″x 4″x 5′ Y. P. Fencing.
1 pc. 1″x 8″x 9′ Y. P. Fencing.

Roof

Rafters:
7 pcs. 2″x 4″x12′ No. 2 Y. P. or Oak.

Sheathing:
170 bd. ft. of roof sheathing.

Roofing:
2 rolls 3-ply Pro Slate roofing.

Hardware

2 pair 2½″ steel butts.
6 pair 6″ galv. strap hinges.
2 ½″x4″ machine bilts.
4 ½″ steel washers.
9 ft. ⅜″x1″ strap iron.
4 galv. door hasps complete.
6 5″ hooks and eyes.

Nails:
20 lbs. 16d common.
20 lbs. 8d common.
10 lbs. 6d common.
5 lbs. 4d common.

LUMBER AND HARDWARE BILL FOR SHED ROOF PORTABLE HOG HOUSE (C-6-39-1)

Runners

2 pcs. 4″x 4″x 8′ Oak or creosoted Y. P.

Floor

10 pcs. 2″x10″x 8′ Oak or creosoted Y. P.

Floor Stiffener

1 pc. 2″x 4″x 8′ Oak or creosoted Y. P.

Walls

Studding:
4 pcs. 2″x 4″x 6′ No. 2 Y. P. or oak.
1 pc. 2″x 4″x 8′ No. 2 Y. P. or oak.
4 pcs. 2″x 4″x 4′ No. 2 Y. P. or oak.

Plates:
2 pcs. 2″x 4″x 8′ No. 2 Y. P. or oak.

Sills:
3 pcs. 2″x 4″x 2′-6″ No. 2 Y. P. or oak.

Braces:
2 pcs. 1″x 4″x 4′ No. 2 Y. P. or oak.

Guards:
2 pcs. 2″x 4″x 8′ No. 2 Y. P. or oak.
2 pcs. 2″x 4″x 6′ No. 2 Y. P. or oak.

Sheathing:
12 pcs. 1″x10″x12′ D2s Y. P. boxing or oak.
16 pcs. 1″x10″x 4′ D2s Y. P. boxing or oak.
12 pcs. 1″x10″x14′ D2s Y. P. boxing or oak.
4 pcs. 1″x10″x 6′ D2s Y. P. boxing or oak.

Stripping:
198 lineal feet ⅜″x3″ Y. P. or oak.

Windows:
3 1⅜″ plain rail 4 light 10″x12″ barn sash.

Roof

Rafters:
4 pcs. 2″x 4″x10′ No. 2 Y. P. or oak.

Sheathing:
12 pcs. 1″x10″x 9′ No. 2 Y. P. or oak boxing.

Roofing:
1 roll 3-ply Pro Slate roofing.

Hardware

3 pairs 6″ galv. strap hinges.
3 pairs 2½″ butts.
3 galv. door hasps complete.
6 3-inch hooks and eyes.

Nails:
10 lbs. 16d common.
10 lbs. 8d common.
10 lbs. 4d common.

LUMBER AND HARDWARE BILL FOR SUNLIGHT HOG HOUSE

C-6-94-1

Runners

2 pcs. 4″x 4″x 8′ Oak or creosoted Y. P.

Floor

10 pcs. 2″x10″x 8′ Oak or creosoted Y. P.

Stiffener

1 pc. 2″x 4″x 8′ Oak or creosoted Y. P.

Walls

Studding:
4 pcs. 2″x 4″x 3′ No. 2 Y. P. or oak.
4 pcs. 2″x 4″x 3′-6″ No. 2 Y. P. or oak.
2 pcs. 2″x 4″x 5′-8″ No. 2 Y. P. or oak.

Plates:
2 pcs. 2″x 4″x 9′ No. 2 Y. P. or oak.

Siding:
23 pcs. 1″x10″x 8′ No. 1 Shiplap Y. P.

Braces:
2 pcs. 1″x 4″x12′ No. 2 Y. P. or oak.

Door Cleats:
6 pcs. 1″x 4″x 8′ No. 2 Y. P. or oak.

Roof

Ridge:
1 pc. 2″x 4″x 9′ No. 2 Y. P. or oak.

Rafters:
5 pcs. 2″x 4″x 4′ No. 2 Y. P. or oak.
3 pcs. 2″x 4″x 6′ No. 2 Y. P. or oak.

Rafter Ties:
1 pc. 2″x 4″x 8′ No. 2 Y. P. or oak.

Roof Sheathing:
11 pcs. 1″x10″x10′ No. 2 Y. P. boxing.

Windows:
2 1⅜″ rail 9 light 8″x10″ barn sash.

Roofing:
1 roll 3-ply Pro Slate roofing.

Guards:
4 pcs. 2″x 4″x 8′ No. 2 Y. P. or oak.

Hardware

2 pair of 6″ galv. strap hinges.
3 pair of 8″ galv. T hinges.
8 ¾″ galv. screw eyes.
10 4″ hooks and eyes.
2 6″ galv. door hasps.
4 galv. harness snaps.
10 lbs. 16d common nails.
10 lbs. 8d common nails.
10 lbs. 4d common nails.
24 ft. No. 9 galv. steel wire.

LIST OF HOG HOUSE PLANS AND EQUIPMENT

Following is a list of plans for which blueprints may be obtained at a nominal price of 10c per sheet to cover cost of making the prints. If a plan is needed for a type of building not listed, write for information. All correspondence pertaining to plans should be addressed to the Agricultural Extension Division, care of the Experiment Station, Lexington, Ky.

C-6-38-1. *One Sheet.* Size 8′x8′. Type A portable hog house. Price 10c.

C-6-39-1. *One Sheet.* Size 8′x8′. Shed-roof portable hog house. Price 10c.

C-6-41-4. *Four Sheets.* Size 25′x48′. Half-monitor type house which is designed to face south, has concrete foundation and floors, 10 pens, 8′ driveway and storage room. Price 40c.

C-6-43-4. *Four Sheets.* Size 25′x48.′ Iowa-Sunlight type hog house which is designed to have length of building to run north and south. This house has concrete foundation and floors, 10 pens, 8′ driveway and storage rooms. Price 40c.

C-6-56-4. *Four Sheets.* Size 25′x80′. Iowa-Sunlight type of hog house like C-6-43-4, but having space for 24 pens. Price 40c.

C-6-74-1. *One Sheet.* Size 10′x12′. Two-pen shed type of portable hog house. Price 10c.

C-6-57-3. *Three Sheets.* A 35′ octagonal hog judging or sales pavilion. Price 30c.

H-2-36-1. *One Sheet.* Hog self-feeder. Price 10c.

H-6-77-2. *Two Sheets.* Hog breeding crate. Price 20c.

H-6-78-1. *One Sheet.* Hog hurdle, concrete trough and feeding chute. Price 10c.

H-7-79-1. *One Sheet.* Concrete hog feeding floor and shipping crate for hogs and sheep. Price 10c.

H-7-82-1. *One Sheet.* Dipping vat for cattle, sheep and hogs. Concrete hog wallow. Price 10c.