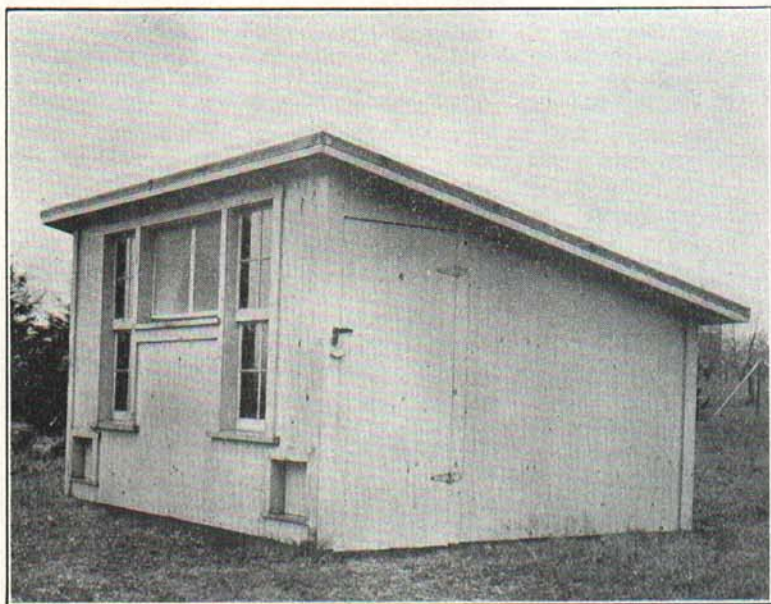


# Michigan 10 by 12 Foot Brooder House

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E. R. HANCOCK AND C. H. JEFFERSON

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EXTENSION DIVISION

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**MICHIGAN STATE COLLEGE**  
**Of Agriculture and Applied Science**

R. J. BALDWIN, Director

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## THE MICHIGAN 10 X 12 FOOT BROODER HOUSE

E. R. HANCOCK AND C. H. JEFFERSON

The rearing of baby chicks is an important factor in the successful operation of any poultry enterprise. The growing chicks can not develop into vigorous heavy producing birds unless they are reared under sanitary conditions. Heavy losses each year occur from overcrowding, from using improperly constructed brooders, and from using the same ground year after year.

Some system of brooding should be adopted to control and prevent the spread of disease and to rear chicks which will be healthy and fully matured pullets when they enter the laying house. A portable brooder house is one solution to this problem.

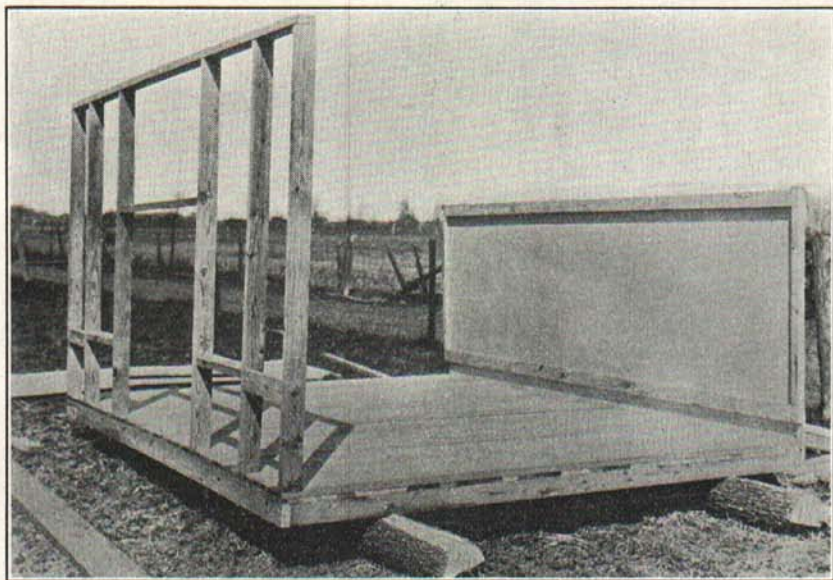
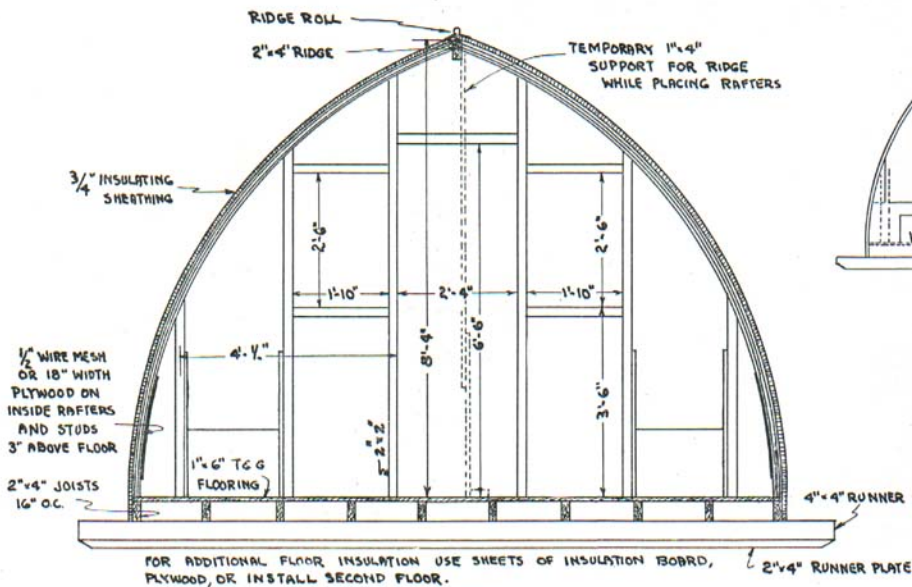


Fig. 1.—Showing floor construction with front and rear wall in place.

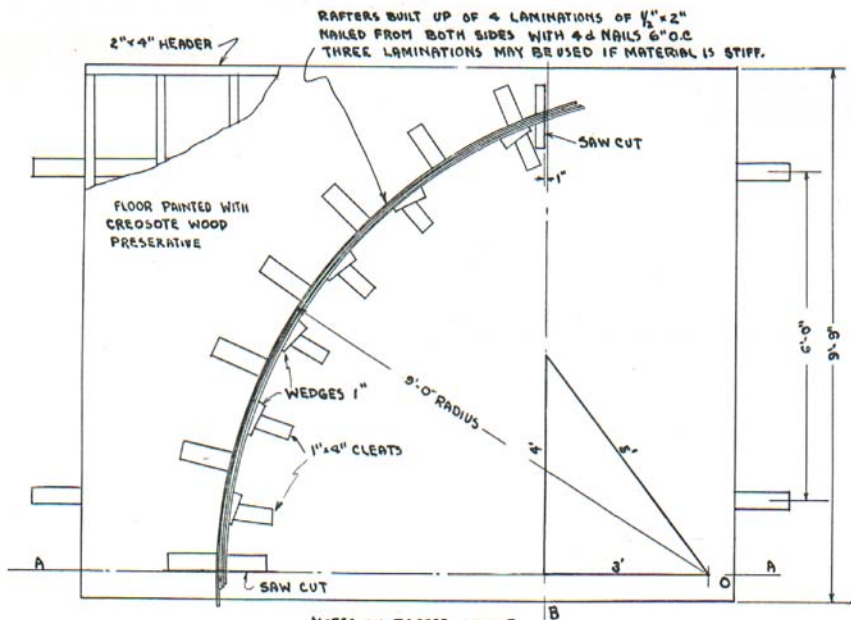
This 10 by 12 foot house has all the requirements for satisfactorily brooding chicks. It is economical to construct, movable, durable, easily heated, easily cleaned, well lighted, and well ventilated. The capacity of this house is approximately 300 baby chicks. Overcrowding should be avoided as it impedes the proper growth of chicks, weakens their vitality, and aids in spreading disease.

### Construction of Brooder House

**Skids**—The house is mounted on two 4 by 6 inch skids or on six-inch hardwood poles which extend one foot beyond each end of the building. These skids are beveled at each end to permit easy moving over rough ground. As the house



**FRAMING**  
SCALE  $3/4" = 1'-0"$

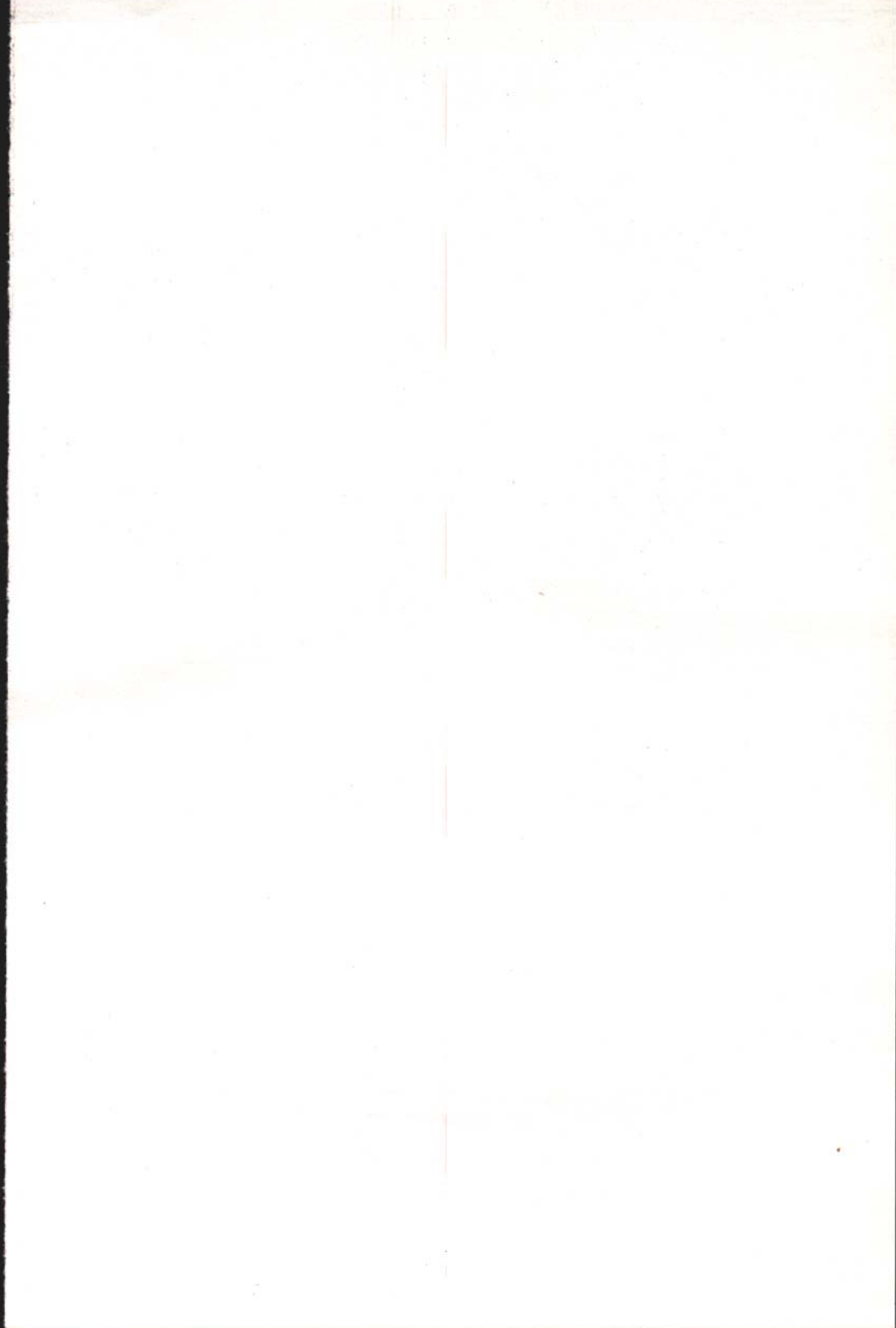


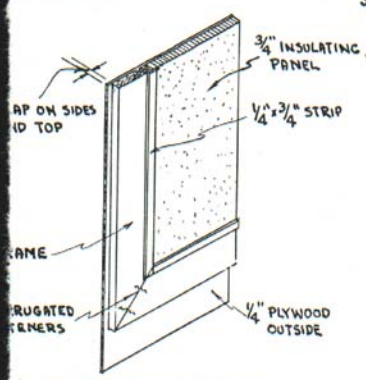
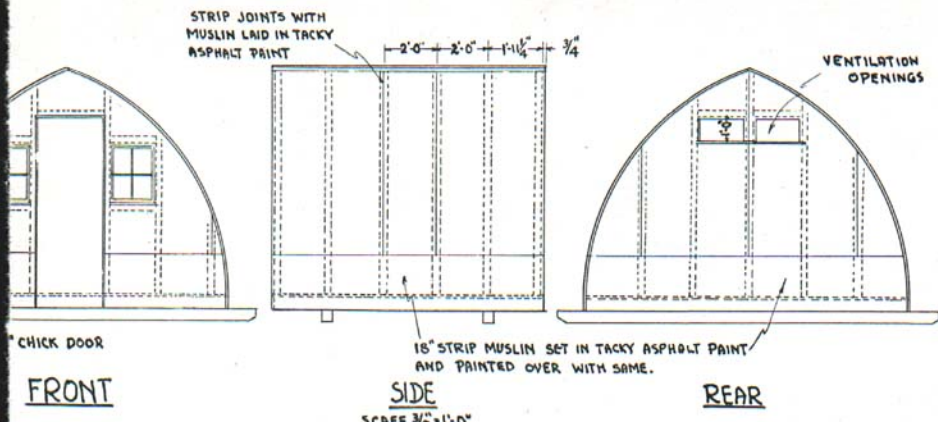
**NOTES ON RAFTER LAYOUT**

1. MARK OFF LINE A 6" FROM EDGE OF FLOOR
2. WITH O AS A CENTER AND A 9' FOOT CORD OR TAPE MARK RAFTER CURVE
3. MARK LINE B AT RIGHT ANGLES TO A AND 3 FEET FROM O
4. MARK SAW CUT LINES ON A AND B AND SET OUTSIDE CLEATS ON RAFTER CURVE.

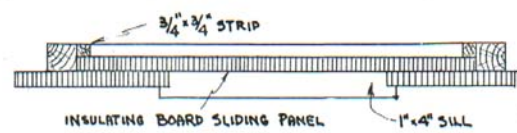
**RAFTER FORM LAYOUT ON FLOOR**

SCALE  $3/4" = 1'-0"$



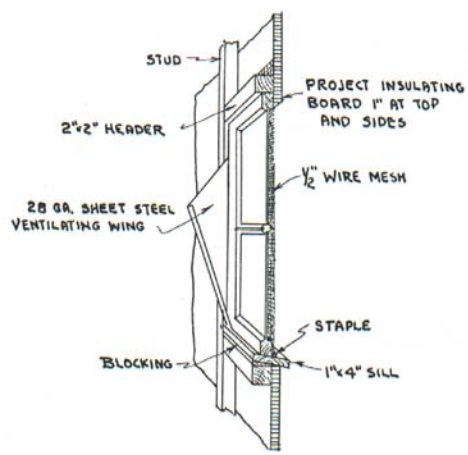


BOTTOM CORNER OF DOOR



TOP VIEW OF CHICK DOOR  
SCALE 3"=1'-0"

NOTE (1) PAINT EXTERIOR WITH ONE COAT ASPHALT OR ASPHALT EMULSION PAINT AND ONE COAT ALUMINUM POWDER WITH TORPENTINE AS A VEHICLE  
(2) HOUSE MAY BE BUILT USING 8 FOOT RADIUS FOR RAFTERS.



WINDOW

BILL OF MATERIAL

USE	No PCS	SIZE	MATERIAL
RAFTERS	48	1/2" x 2" x 12'	
STUDDING	10	2" x 2" x 12'	
JOISTS & RIDGE	11	2" x 4" x 10'	
HEADER	2	2" x 4" x 12'	
RUNNERS	2	4" x 4" x 14'	
RUNNERS	2	2" x 4" x 14'	
DOOR & SILLS	3	1" x 4" x 10'	
DOOR STRIP	2	1/4" x 3/4" x 12'	
FLOOR	23	1" x 6" x 12'	T&G FLOORING
RIDGE ROLL	10 FT.		GALV STEEL
ROOF	5	3/4" x 4" x 12'	INS SHEATHING
ENDS	4	3/4" x 4" x 9'	" "
END & DOOR	2	3/4" x 4" x 9'	" "
DOOR	1	1/2" x 2'-6" x 7'-0"	PLYWOOD
SASH	2	1'-10" x 2'-5"	4 LIGHT
CORR FASTENERS	8		
DOOR HASP			
DOOR HINGES			
SCREEN	25 FT.	36" WIDE	1/2" WIRE MESH
WINDOW VENT WINGS	4	28 GAGE	GALV STEEL
EXTERIOR PAINT	1 GAL		ASPH. EMULS.
"	1 LB.		ALUM POWDER
NAILS	1 LB.	16 d	
"	2 LBS	8 d	
"	2 LBS	4 d	
PROTECT INS. BD	6 YDS		MUSLIN

MICHIGAN STATE COLLEGE  
AGRICULTURAL ENGR. AND POULTRY DEPTS.  
EAST LANSING, MICH.

ARCH ROOF BROODER HOUSE

PLANNED BY H.H.M. APPROVED *N.A.M.*, 2-20-39  
DRAWN BY H.J.O. SCALE NOTED SHEET 1 OF 1  
TRACED BY H.J.F. DATE: 2-18-39 No. 72732-14.  
CHECKED BY H.H.M.

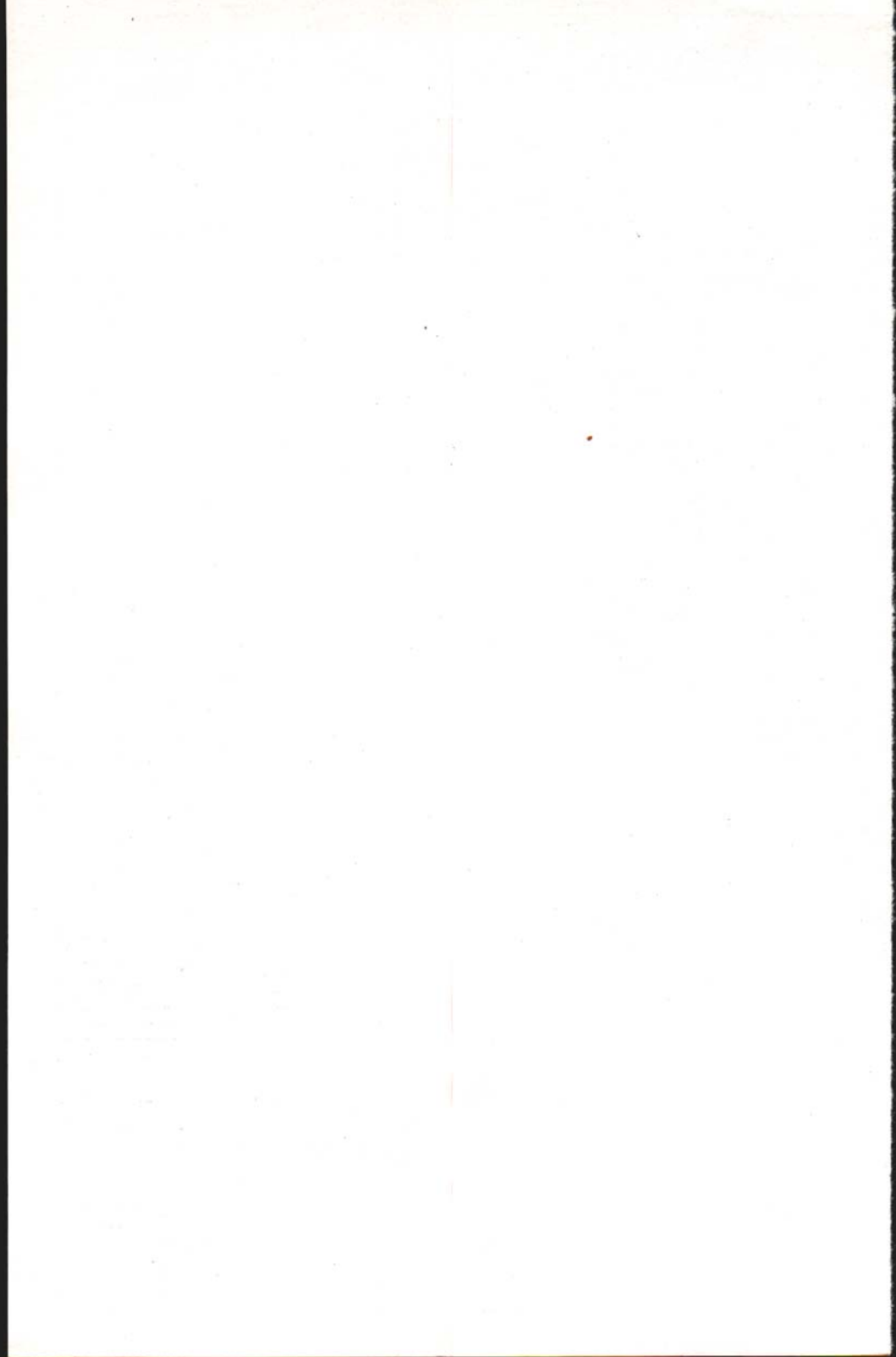




Fig. 2.—Shows method of applying insulation board with siding nailed in vertical position.

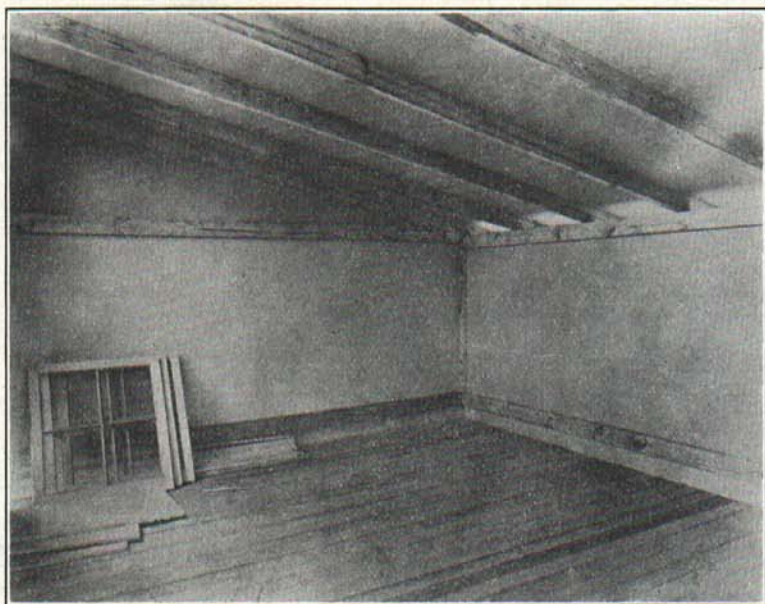
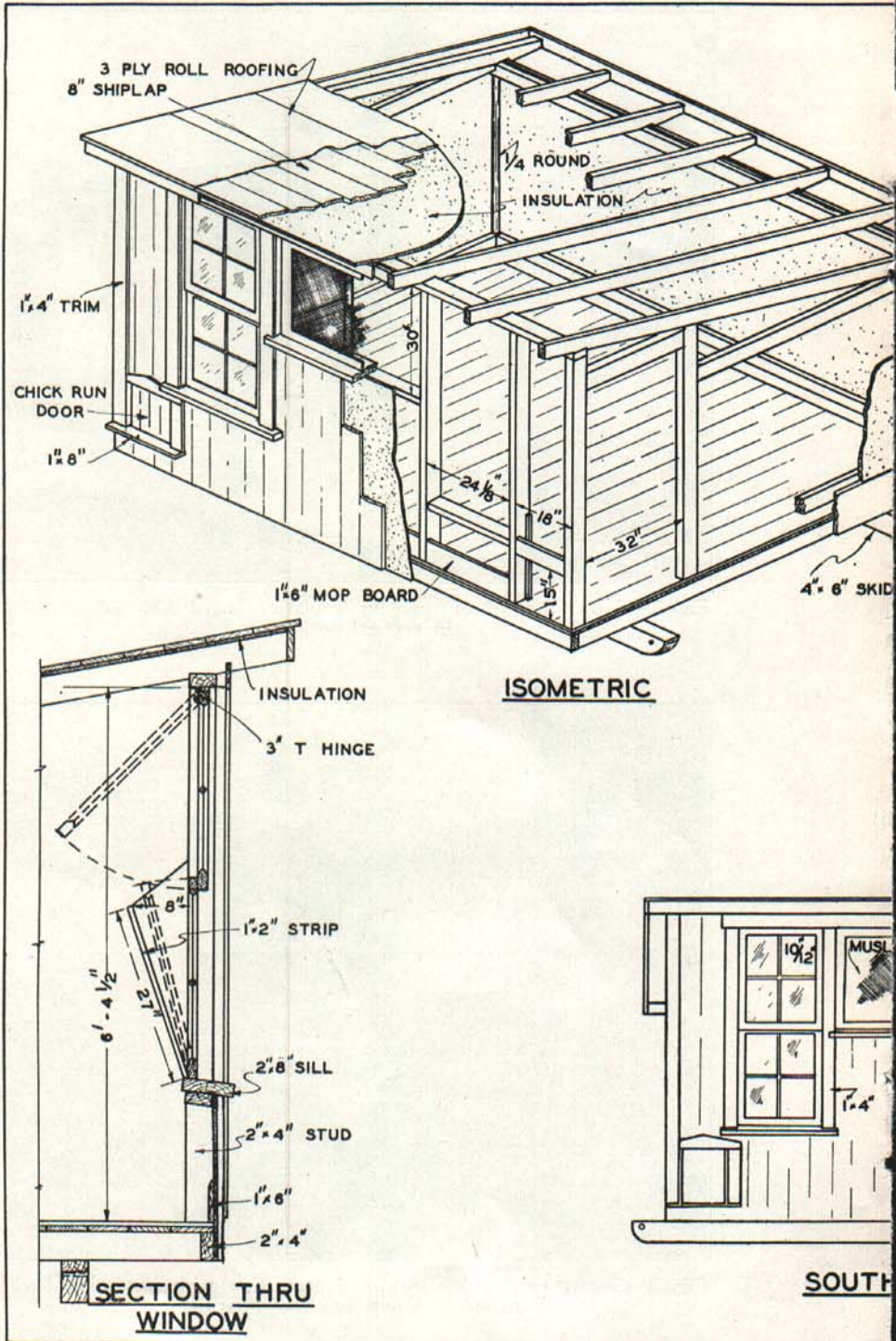
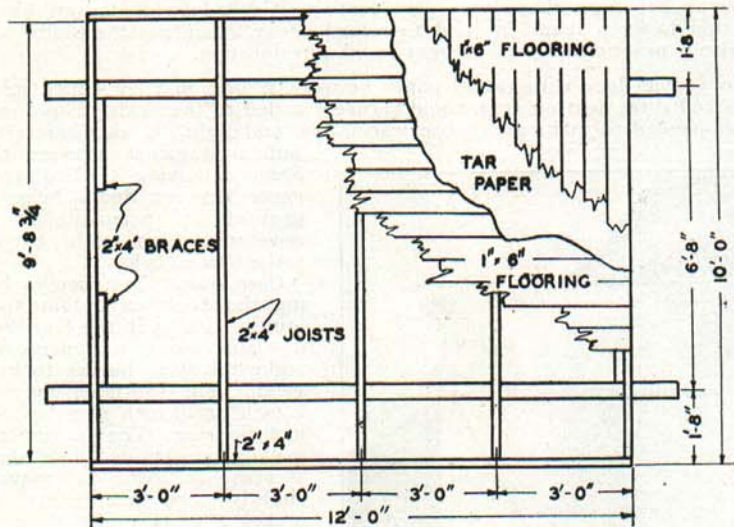


Fig. 3.—Shows rear and side wall construction with insulation back-nailed to siding and roof boards.

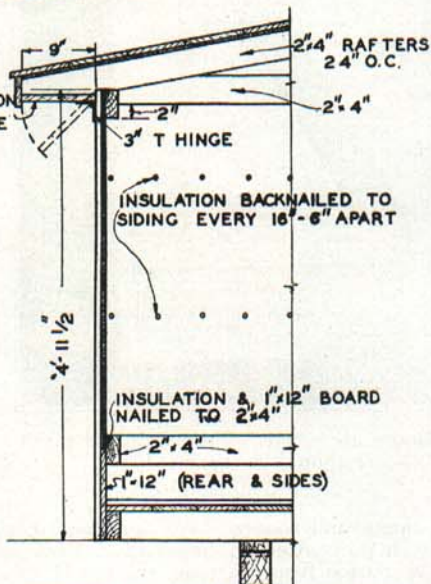




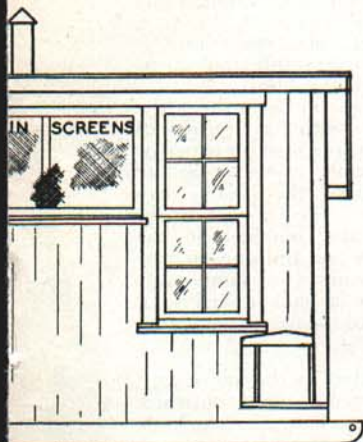


FLOOR PLAN

TWO 4 FT. VENTILATION  
DOORS. ONE EACH SIDE  
OF CENTER



SECTION THRU REAR WALL



ELEVATION

PORTABLE BROODER HOUSE

AGRI. ENG. DEPT.	PLANNING	DR. J. B.
POULTRY DEPT.	CH.	IN.
M. S. C.	..	..
E. LANSING, MICH.	SCALE 1/2" = 1'-0"	
DATE 1-9-23	No 727	C-14

is being moved, there is a tendency for the skids to pull together. To keep them parallel and to strengthen the floor, braces should be butted against the inside of each skid and securely nailed to each outside joist. See floor plan in Fig. 1. After the house has been moved to new location, it is advisable to put blocks under each skid to keep them dry and to retard decay. Painting the skids with creosote is also a practical way to prevent rapid deterioration.

**Floor**—The double floor with tarred paper between is laid on 2 by 4 inch joists, which are spaced three feet on center and securely nailed to the skids. The double floor is recommended to make the house warm, dry, and tight. It also braces the

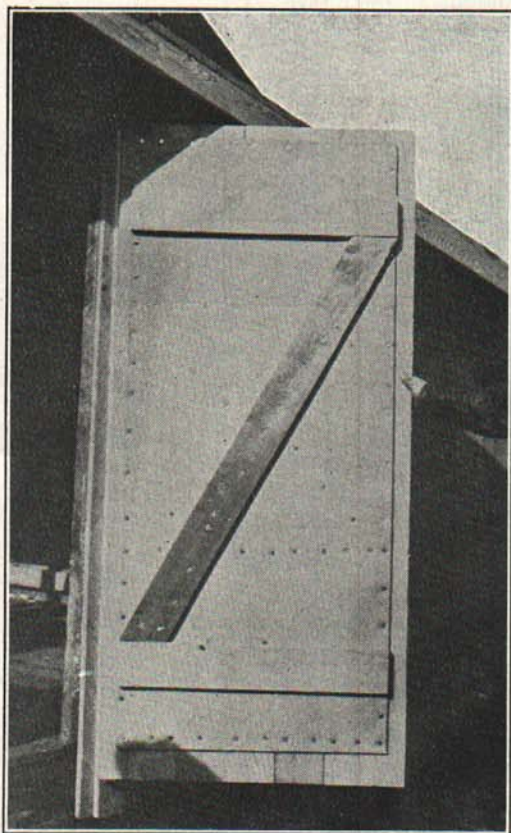


Fig. 4.—Doors are a part of the wall and therefore should be insulated.

building against stresses that occur in moving it. The tarred paper between floors helps to prevent an accumulation of moisture which might be absorbed from below.

Care should be taken in laying the floor to obtain tight joints. Cracks in the floor hold dirt and disease organisms and make the floor harder to keep clean. The sub-floor may be 8 inch or 10 inch ship lap or 6 inch flooring. The flooring can usually be obtained at a slight increase in cost. It requires slightly more time to lay, but makes a more uniformly tight floor.

**Insulation**—The use of one-half inch insulating board for sheathing has made it possible to reduce materially the amount of framing. No studs are used in the back, side, and end walls. Except for the studs in the front wall, the insulation and vertical siding support the weight of the roof, see Fig. 2. The insulation also gives rigidity to the building, reduces the number of cracks in the wall, saves fuel, and maintains a more uniform, comfortable temperature in the house.

It is advisable to protect the insulation with a strip of smooth surface roofing paper or other suitable material at all places where the chicks can pick at it. The insulation is nailed to the outside of the frame with one and one-quarter inch galvanized roofing nails.

After the siding and roofing have been added, the insulation is back nailed to it with one inch galvanized roofing nails. Back nailing to roof boards and siding keeps the insulation from warping, see Fig. 3.

**Doors**—The doors are part of the wall and should be insulated in the same way, see Fig. 4. The main door at one end is 32 by 66 inches hinged to open outward. Two small doors 12 by 16 inches are constructed in the front wall for the chicks.

**Windows**—The windows are made of two 10 by 12 inch four-light barn sash. The top sash are hinged to the plate with three-inch T hinges and can be raised and hooked to the ceiling. The bottom sash are removable and tilt inward, being supported by a baffle board. This construction deflects the incoming cold air

toward the ceiling and prevents harmful drafts upon the baby chicks. The lower sash overlap the upper sash about one and one-fourth inch and are held in place with sash stops.

**Roof**—The roof is made up of one-half inch insulation, ship lap, and roll roofing. When possible, fourteen-foot roof boards should be used to eliminate unnecessary joints and waste. Ship lap makes a tighter roof than plain lumber and is preferred so that the wind blowing through from below will not tear the prepared roofing. Instructions for laying roll roofing will be found in each roll, and if followed will usually increase the life of the roofing. The durability of roll roofing can be materially increased by painting it with a good grade of asphalt paint as soon as it becomes dry and begins to crack.

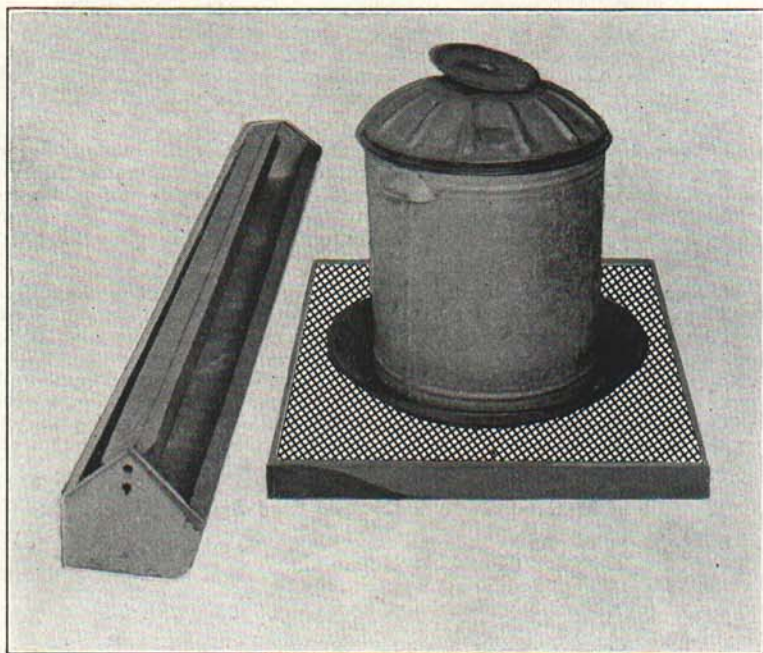


Fig. 5.—Acceptable types of feeding equipment for baby chicks.

#### Ventilation

The ventilating system for this brooder house consists of a 30 by 54 inch muslin screen in the front wall and two 9 inch by 4 foot ventilating doors between the rafters at the back and windows that open inward. The muslin screen permits some air to filter through, but is quite effective in preventing drafts. During cold and windy weather, this may be all the ventilation needed. If more air circulation is required, the ventilating doors in the back may be opened. On warm days, the open windows should give all the additional ventilation that will be required. With these three possible means of ventilation, it is possible to regulate air movement to changing outside temperatures.

#### Equipment

**Brooder Stoves**—Portable brooder houses must necessarily be small, and they are usually one-room buildings. Stoves to be used in one-room houses should be equipped with hovers or canopies. Stoves without hovers work very well in two-room brooder houses, but do not prove satisfactory in one-room buildings, except during the season when the chicks can be turned outside at a very early age.

It is never desirable to place more than 300 chicks about one stove. The average portable colony house, 10 by 12 feet or 12 by 14 feet, requires a brooder stove with a hover or a canopy 50 to 56 inches in diameter.

**Coal Stoves**—Coal stoves are usually recommended because there is less fire hazard associated with them than with oil burners. Select a coal stove that is substantially built, that has a good sized chimney or smoke outlet, and that will hold considerable coal. Many makes of coal burning stoves give satisfactory results.

**Operation of the Brooder**—Place the brooder stove near the center of the room. Do not place the brooder house close to trees, buildings, or other obstructions to air currents or considerable trouble may be experienced from lack of proper draft for stove. Start the brooder stove a few days before the chicks are to arrive. A temperature of 90 degrees under the edge of the hover and a room temperature not to exceed 70 degrees is ideal when chicks are placed under the hover. These temperatures can gradually be reduced as the chicks get older.

A wire screen placed around the hover for the first few days will keep chicks close to source of heat and prevent crowding. The ring can be enlarged from time to time until chicks have learned where to go for warmth and then it can be removed.

**Feeding Equipment**—There are various types of feeding equipment on the market that give satisfactory results. In buying equipment, select items that are well made and of reasonably heavy material. Feed hoppers that do not waste feed are easy to clean and allow chicks free access to feed are preferable. Water fountains of three to five gallon capacity are much better than smaller types. Fig. 5 shows acceptable feeding equipment for baby chicks.

**Care of Equipment**—Care of the brooding equipment is often forgotten after the brooding season is over. Equipment will deteriorate and become broken if abused. Proper care of equipment will prevent annual investments in equipment. When heat is no longer necessary, take down the stove and pipes and clean them thoroughly. Paint the brooder stove and pipes with a rust proof paint and store them away in a dry place. Make all necessary repairs to prevent delay the next season. Thoroughly clean and disinfect all feeding equipment and place it away where it will not be broken. When the pullets are placed in the summer shelters, the brooder house should be thoroughly cleaned and dried.

#### Bill of Material for 10' x 12' Shed Roof Brooder House

2 pcs.	4" x 6" x 14'	skids
22 pcs.	1" x 6" x 12'	No. 2 flooring—sub-floor
22 pcs.	1" x 8" x 14'	No. 2 shiplap—roof boards
28 pcs.	1" x 6" x 10'	No. 2 flooring—top floor
65 pcs.	1" x 6" x 12'	No. 116 siding
13 pcs.	2" x 4" x 12'	rafters and framing
17 pcs.	2" x 4" x 10'	framing
16 pcs.	1" x 4" x 12'	trim
6 pcs.	1" x 4" x 14'	trim
1 pcs.	1" x 6" x 12'	mop board
1 pcs.	1" x 8" x 10'	window baffle board
1 pcs.	1" x 12" x 12'	rear wall construction
2 pcs.	1" x 12" x 10'	side walls construction
1 pcs.	2" x 8" x 12'	window sills
1 pcs.	1" x 10" x 12'	rear ventilator
4	barn sash 10" x 12"	4 lt. glazed
5 pcs.	½" x 4' x 12'	insulation board—rear wall, front wall and roof
4 pcs.	½" x 4' x 10'	side wall
1	roll tarred felt—insulation between floors and insulation protection	
2	squares 3-ply smooth surface roofing	
1	pr. 5" heavy T hinges—door	
2	pr. 3" strap hinges—rear ventilator	
2	pr. 3" T hinges—windows	
5	lbs. 6d common nails	
15	lbs. 8d common nails	
15	lbs. 16d common nails	
10	lbs. 8d box nails	
5	lbs. 1" galvanized roofing nails	
5	lbs. 1½" galvanized roofing nails	