

# Building Plans and Bill of Materials for O.S.C. Portable Brooder House

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## O.S.C. Portable Brooder House

**T**HIS circular has been prepared in answer to many requests for plans and recommendations for a portable brooder house. The rearing of the chick is one of the most important problems in successful poultry keeping. In order to maintain high egg production pullets must be strong and vigorous. They should be not only well bred but well brooded and reared. Brooding has a decided effect on the future growth and development of the chick. Any system tending toward crowding, either under the brooder or in the brooder house, should be avoided.

The portable brooder house described in this circular has been used successfully on the O.S.C. poultry farm. It is built on runners so that it may be moved at least once for each lot of chicks brooded. Moving the brooder house on to clean ground and brooding chicks but once in three years on the same location will be of material help in solving problems of ground contamination.

**Moving.** In designing the portable brooder house, strength, weight, and durability, as well as ventilation and light, have been considered. A good team will move the house readily when the ground is moist. After moving, the house should be set on blocks, one at each corner; this will keep runners from rotting. When moving the house pass a logging chain through cleaves attached to runner ends and fasten on opposite end of house to a piece of 3" x 4" laid crosswise on runners. This will prevent unnecessary strain and racking, which may occur if chains are attached to runner ends only.

**The brooder.** The type of brooder to be used is left to the judgment of the poultryman. There are several makes of different types on the market which have proved successful. Where hard coal or briquets are available the coal-burning brooder stove is popular. Experiments at the Oregon Experiment Station have demonstrated that brooding with the coal burner can be more cheaply done with briquets than with hard coal. There are several makes of oil-burning brooders on the market. They are not all reliable, a common trouble being that they are likely to go out. Electric brooding is being used successfully. It is important to determine the possibility of a constant supply of electricity before adopting this system. Maximum ventilation is also necessary with the electric system, and it is generally recommended that a false floor be provided made of half-inch mesh hardware cloth or lath set an inch or two above the floor and during the first week covered with one thickness of burlap. This will prevent sweating. The electric brooding system is best from the labor-saving standpoint.

**Flock.** The number of chicks to be brooded in one flock and the size of the brooder used are important points to consider. Chicks grow rapidly and the danger of crowding is greater at from four to eight weeks of age. Better chicks will be raised if one half the number advertised as the brooder's capacity is put under it. The O. S. C. portable brooder house is recommended for a flock of 400 chicks. To provide ample sleeping quarters a 52-inch hover should be used.

**Ventilation.** The natural brooding season extends from February to June. During these months the nights are cool and it is a simple problem to provide ample ventilation. No general rules for the ventilation of a brooder house can be laid down. It is important in raising strong, vigorous chicks that the maximum ventilation consistent with comfort to the chicks be provided. If the temperature under the brooder is right the brooder

room may be kept rather cool. Avoid closing up the house to the point of keeping it warm. A temperature of 60° F. is recommended for the room. This does not mean under the brooder. Follow the manufacturer's directions in operating the brooder. The O. S. C. portable brooder house is provided with two windows. These are covered by muslin frames divided and hinged in the middle. The upper half of each frame opens in, that ventilation may be provided without causing a draught on the chicks. As a further protection wind stops are provided for the sides of the upper half of the frame. The frames are adjusted to regulate ventilation. As the chicks grow, more ventilation is needed. The air in the brooder house should always be sweet, clean, and without odors. If chicks are brooded late in the spring, two or three two-inch holes may be bored in the ends near the roof peak and a slide fitted over them for regulation. Such an arrangement will provide additional ventilation. For average spring brooding the windows will provide ample ventilation. After the chicks have been taught to roost and are fully feathered, the use of the muslin-covered frames should be gradually discontinued.

**Roosting.** Young chicks should be taught to roost as soon as they are well feathered. This will usually be at from five to six weeks of age but will depend also on season of year and general weather conditions. Roosts are provided in the plan. They are bolted to hangers on the rear wall in such a way as to be hooked up to the ceiling out of the way during the first four weeks. When the chicks are old enough to begin roosting the frame is to let down on to the floor. The chicks become used to it by roosting during the day, and usually in a week to ten days they will all be staying on the roosts at night. The brooder stove should be run to furnish some heat for the house even after all chicks are roosting, but may be gradually discontinued as the chicks develop. Weather conditions should also be considered. Pullets should be well hardened off at from eight to ten weeks, when they are moved from the brooder house to the range houses.

**Materials used.** In making out the list of materials used each section of the house is listed separately and a summary made for ordering the lumber and hardware. Before starting construction sort and divide the material in piles for the various parts for which it is to be used. Select the best 1" x 6" tongue and groove boards for siding, the second choice for flooring, and the rest for the roof boards.

**Foundation and floor.** The runners are set in two feet from the sides and are made of 3" x 8" material. The runner ends extend one foot beyond the house and are beveled so as to make moving easier. Lighter runners are more apt to turn under or pull loose when moving the house and do not make as substantial construction. The end sills are 4" x 4" material and are set down one inch into the runners and bolted. By setting the sills into the runners the foundation is strengthened and racking prevented. The joists are of 2" x 4" material and are also set down into the runners for strength. In laying off the runners for sill and joist cuts, mark on both sides so that the cut may be made from both sides toward the middle, insuring proper bearing on both sides of runner. For flooring tongue and groove material is recommended for the top boards to insure that the floor will be tight. The floor boards are double nailed for strength and to prevent buckling. After laying the floor give it a good coating of oil; crank case or flushing oil may be used. A well oiled floor is more easily kept clean.

**Front.** Two windows or openings rather than one are provided in the front, permitting strong construction while at the same time allowing for ample light and ventilation. The windows are provided with muslin frames, the top half opening in to provide ventilation as already discussed. Only light-weight muslin should be used; duck and heavy muslin do not allow sufficient ventilation.

**Chick door.** The chick door is placed in the corner of the house at the front, a convenience in managing chicks since it is easier to drive them in or out of the brooder house when the door is located in the corner. It is placed on the floor level. The door hangs on a top slide. There is therefore no clogging as in many sliding door arrangements.

**Chick runway.** The runway slopes away from the chick door in front and on one side. This is done that there may be no corners to trap the chicks while they are learning to go in and out of the house. The fence is placed close to the runway at the end of the house so that it is not necessary to slope that side. Lath should be tacked on the runway to give the chicks footing.

**Back and ends.** Construction of that part of the house above the floor should be started on the back wall. The corner boards are first nailed to the plate then to the sill. The corner board at one end only is nailed permanently. The plates and cross braces are then nailed in place. The braces serve for nailing girts and also as braces to prevent racking.

**Roof.** The roof is covered with two-ply roofing paper as this is more quickly and easily laid than shingles. A better and more attractive looking building will result if shingles are used in place of roofing paper.

### BILL OF MATERIALS

#### Foundation and floor:

- |  |                                     |
|--|-------------------------------------|
| 2 — 3" x 8" x 14' runners, S2S             | 5 — 2" x 4" x 10' floor joists, S2S |
| 2 — 4" x 4" x 10' end sills, S2S           | 150 — Board feet 1" x 8" shiplap    |
| 150 — Board feet 1" x 6" tongue and groove | 20 lath                             |

#### Back wall:

- |                                   |  |
|-----------------------------------|--|
| 1 — 2" x 3" x 12' plate           | 36 linear feet 36" building paper          |
| 2 — 2" x 3" x 14' diagonal braces | 1 — 1" x 4" x 14' frieze                   |
|                                   | 100 — Board feet 1" x 6" tongue and groove |

#### Front wall:

- |   |
|---|
| 1 — 2" x 3" x 16' plate and chick door frame                          |
| 1 — 2" x 3" x 12' nailing girt  |
| 65 — Board feet 1" x 6" tongue and groove                             |
| 1 — 1" x 12" x 4' curtain wind stops                                  |
| 1 — 14' blind stop muslin frame ends                                  |
| 2 — 14' blind stop two sides for muslin frames and two window casings |
| 2 — 12' blind stop two sides for muslin frames and one window casing  |
| 1 — 1" x 4" x 10' chick door frame                                    |
| 2 — 1" x 4" x 12' window frames                                       |
| 1 — 9' 48" x 1' mesh poultry netting                                  |
| 2 — Pr. 2" butt hinges  |
| 1 — Pc. 2 $\frac{3}{8}$ yds. light muslin                             |

#### Ends:

- |                                |   |
|--------------------------------|---|
| 2 — 2" x 3" x 10' plates       | 200 — Board feet 1" x 6" tongue and groove siding |
| 2 — 2" x 3" x 12' braces       | 1 — Pr. 4" strap hinges for door                  |
| 1 — 2" x 3" x 14' door jamb    | 1 — 4" hasp for door                              |
| 1 — 2" x 3" x 10' nailing girt |   |
| 1 — 1" x 4" x 10' door cleats  |   |

#### Roof:

- |                                      |  |
|--------------------------------------|--|
| 7 — 2" x 3" x 14' rafters            | 250 — Board feet 1" x 6" tongue and groove roofing |
| 2 — 1" x 4" x 14' finish for cornice | 2 — Rolls roofing paper                            |
| 2 — 14' blind stop cornice           | 1 — 5" galvanized iron saddle, $\frac{1}{4}$ pitch |
| 2 — 2" x 3" x 10' rafter ties        | 1 — Length 5" galvanized iron stove pipe           |
| 4 — 14' blind stop                   |  |

### SUMMARY

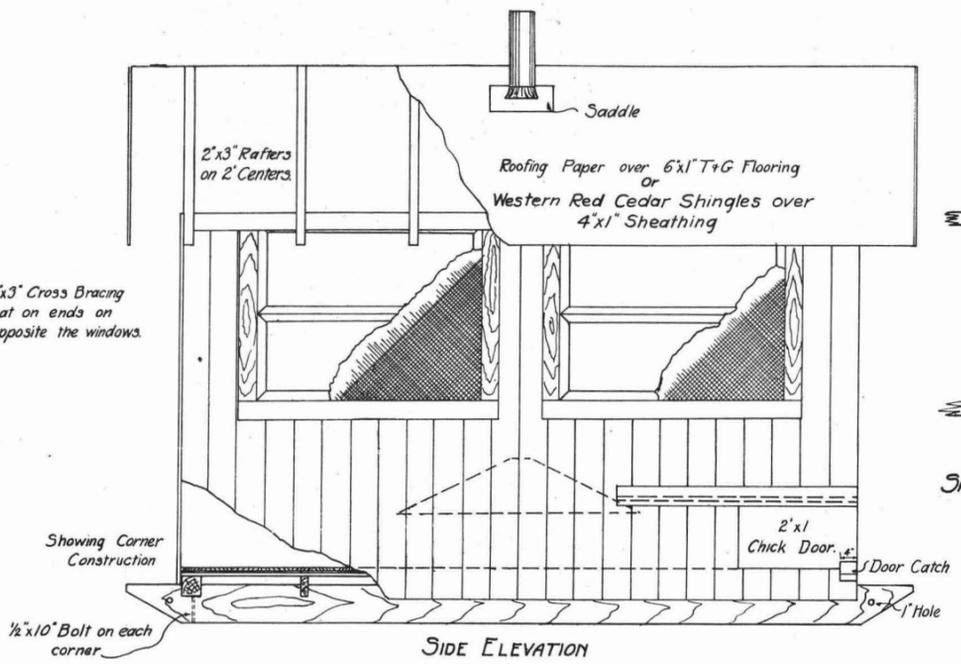
#### Lumber:

- |                                     |  |
|-------------------------------------|--|
| 2 — 3" x 8" x 14' S2S No. 1 Common  | 1 — 1" x 4" x 12' S4S No. 1 Common         |
| 2 — 4" x 4" x 10' S2S No. 1 Common  | 3 — 1" x 4" x 14' S4S No. 1 Common         |
| 5 — 2" x 4" x 10' S2S No. 1 Common  | 150 — Board feet 8" shiplap                |
| 5 — 2" x 3" x 10' S4S No. 1 Common  | 775 — Board feet 1" x 6" tongue and groove |
| 4 — 2" x 3" x 12' S4S No. 1 Common  | 9 — Pcs. 14' blind stop                    |
| 10 — 2" x 3" x 14' S4S No. 1 Common | 2 — Pcs. 12' blind stop                    |
| 1 — 2" x 3" x 16' S4S No. 1 Common  | 30 — linear feet 36" building paper        |
| 1 — 1" x 12" x 4' S4S No. 1 Common  | 20 — lath                                  |
| 2 — 1" x 4" x 10' S4S No. 1 Common  |  |

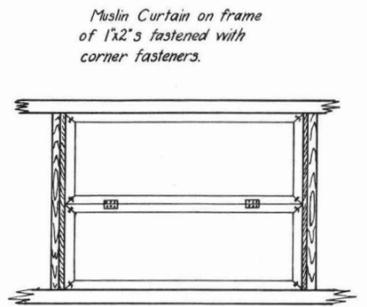
#### Hardware:

- |   |   |
|---|---|
| 4 — $\frac{3}{4}$ " x 10" carriage bolts and washers    | 1 — Length 5" galvanized stove pipe       |
| 1 — 48" x 1" mesh poultry netting                       | 30 — Lbs. 8d box nails                    |
| 2 — Pr. 2" butts  | 8 — Lbs. 16d common nails                 |
| 1 — 4" hasp   | 2 — Lbs. 6d finishing nails               |
| 2 — Rolls roofing paper                                 | 1 — Pc. 2 $\frac{3}{8}$ yds. light muslin |
| 1 — 5" galvanized iron saddle, $\frac{1}{4}$ pitch roof | 1 — Pr. 4" strap hinges                   |

Note: Use 2x3 Cross Bracing similar to that on ends on the wall opposite the windows.

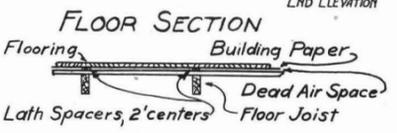
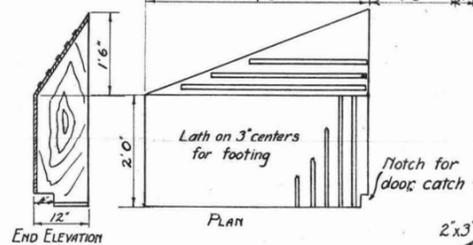


SIDE ELEVATION

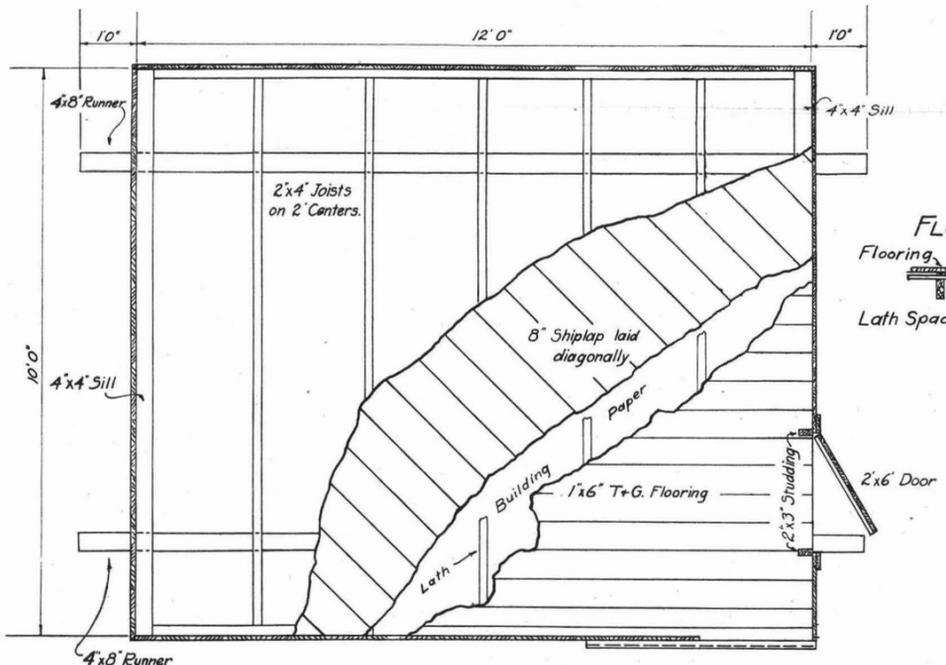


SHOWING WINDOW CURTAIN FROM INSIDE

DETAILS OF RUNWAY

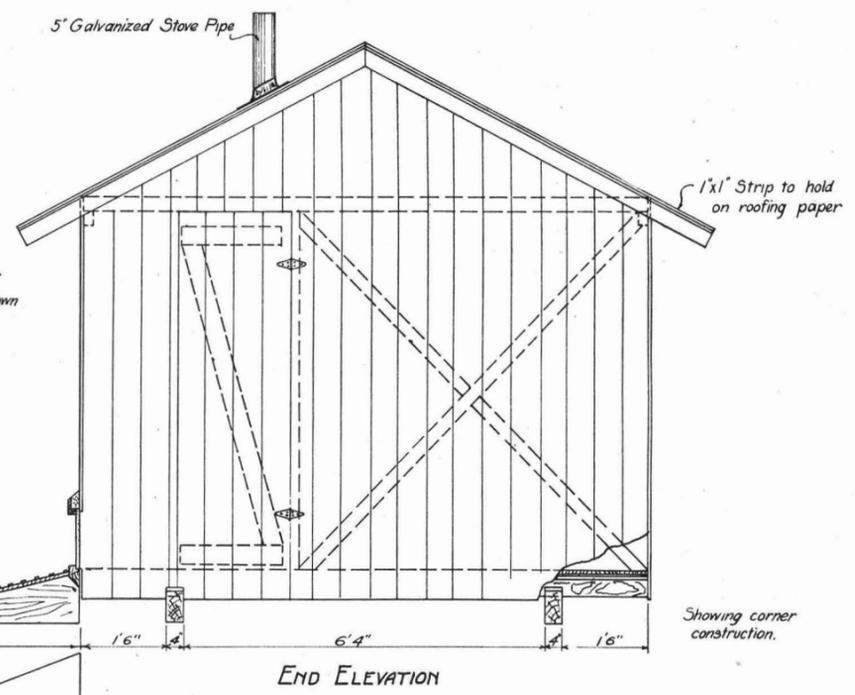


FLOOR SECTION

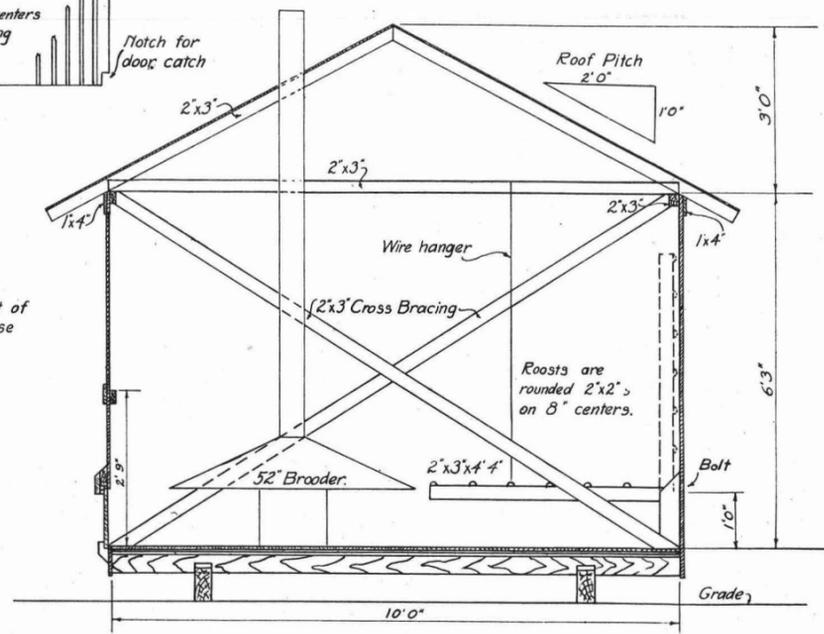


FLOOR PLAN

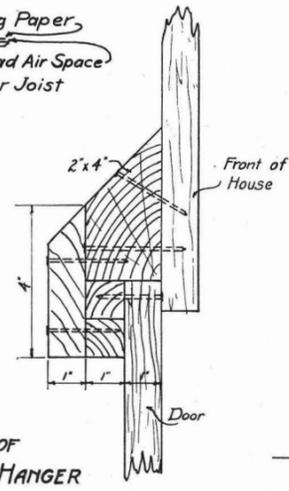
Note: All siding, flooring + roof material shall be 1x6 tongue + groove.



END ELEVATION



END ELEVATION - SECTION



DETAIL OF CHICK DOOR HANGER

O.R.C.		
EXPERIMENT STATION		
PORTABLE		
BROODER HOUSE		
Drawn By R.T. Stanley	12-12-25	Approved By