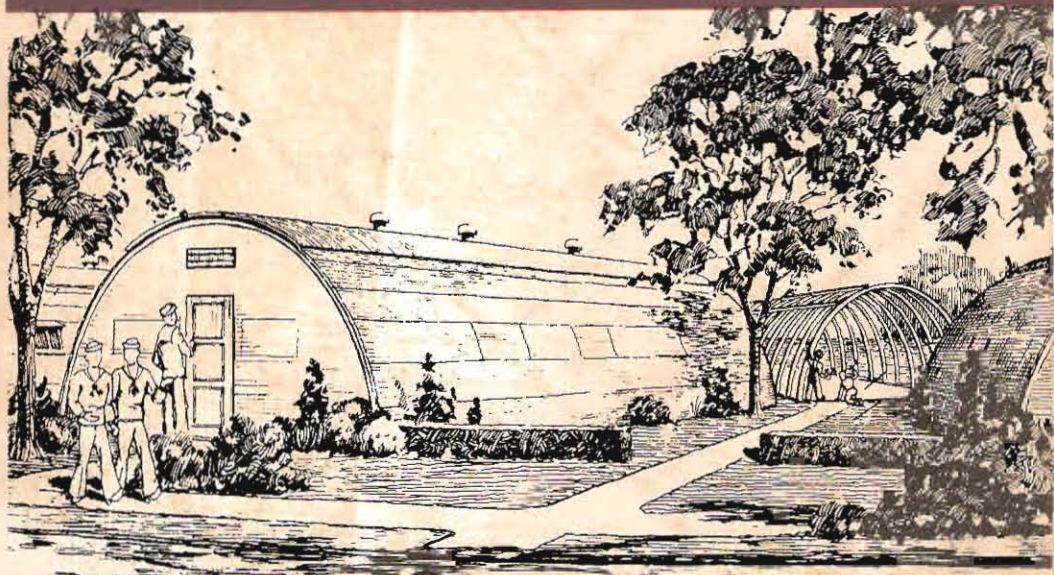




ERECTION INSTRUCTIONS



FOR THE
20' x 48'
U. S. NAVY
QUONSET BUILDING

MANUFACTURED FOR
NAVY DEPARTMENT
BUREAU YARDS AND DOCKS
BY

GREAT LAKES STEEL CORPORATION
Steel-Steel Division • Ecorse, Detroit 29, Michigan

**NORTHERN
DESIGN
JANUARY, 1951**

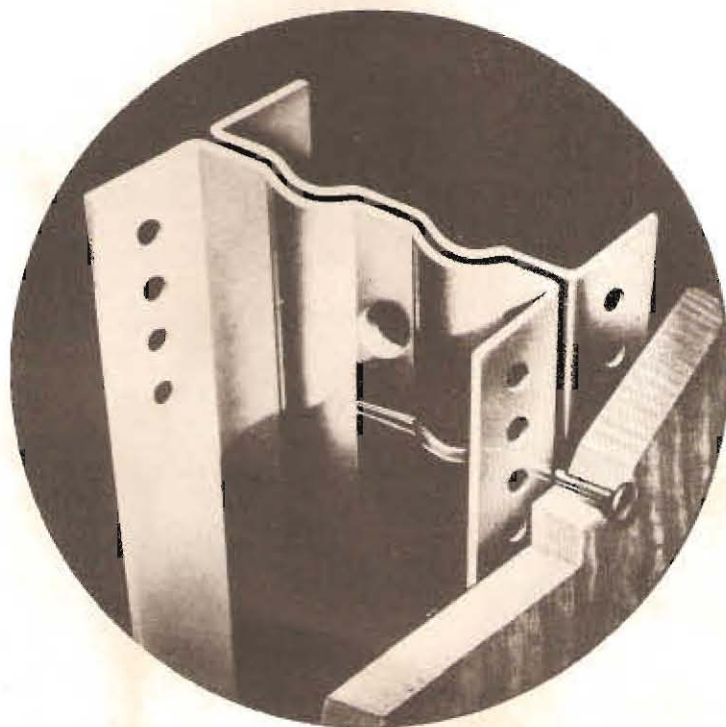
NATIONAL STEEL



CORPORATION

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THE STRAN-STEEL NAILING GROOVE

The distinctive feature of Stran-Steel is the nailing groove. This groove is in all Stran-Steel joists, arch ribs and studs, which are made by welding two pieces of steel together. The small space remaining between these pieces is just large enough to admit an ordinary nail. When a nail is driven into the groove, it is deformed and clinched in a grip of steel with a holding power much greater than that of wood. In this manner collateral materials are secured to the steel framework with the ordinary hammer-and-nails method. Construction in which Stran-Steel framing is used proceeds in the same way as with ordinary framing. Dimensions of Stran-Steel members conform exactly to the requirements of the collateral materials used with it.

SUGGESTIONS TO ERECTOR

Crews. The erection of the Quonset building is simple and fast. One operation quickly follows another — if the first one is done properly. It is most important to get off to the right start by having the floor joist assembly level and square and having the rib assembly plumb. This insures that subsequent operations will proceed without difficulty. Therefore, the best mechanics should be assigned to setting the frame even though the actual assembly of this portion of the work is the easiest of all. Likewise the roofing operation requires the care of a mechanic or mechanically-minded person. A sensible division of personnel is into separate crews for (1) site leveling and floor framing, (2) erection of ribs, purlins and endwall framing, (3) application of inside covering and insulation, (4) application of outside covering and plastic windows.

Hints. If any of the steel members have become damaged in shipment, the easiest way to straighten them is by placing the bent part over a crate or saw horse and having a man bear down on each end. The hardest way to straighten is by using a hammer. There is a trick to opening the banded crates. When this is known and used, much time and effort can be saved. Take a large screwdriver, as used for assembling the frame, insert flat side under steel band about an inch or inch-and-half. Turn the screwdriver about the handle roughly an eighth turn. This brings the sharp edge of the screwdriver in contact with the band. Pull up quickly. This motion cuts the band rather than breaking it. When the knack of using a screwdriver is learned, opening the crates is an easy job.

**Care should be exercised in opening of Crates CC-6, CC-7 and CC-9.
This crating lumber will be used for window headers and sills and
for framing around louver.**

The importance of using the right nails, screws and attachments cannot be too strongly stressed. Follow the instructions closely in this regard because if the wrong ones are used, it will mean borrowing from another Quonset building all down the line with consequent loss of time.

Take good care of the tools.

ERECTION SEQUENCE

(See page 22 for alternate sequence)



FLOOR FRAME



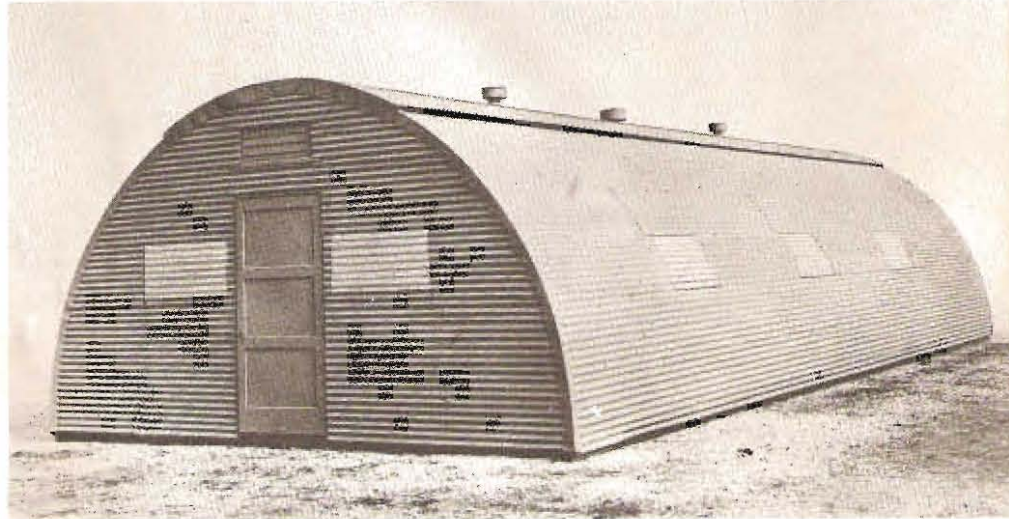
RIBS AND PURLINS



INTERIOR COVERING



INSULATION



1. Floor Framing. Lay the sills first; then the joists, then the sidewall channels. Level and square the whole assembly. (See pages 4 and 5.)

2. Floor Panels. Lay out plywood floor panels on the joists. Install metal splines at longitudinal joints, and nail the panels to the joists. (See pages 6 and 7.)

3. Ribs and Purlins. Fasten the half-ribs together with splice plates, raise into position and screw to channel plates. Erect purlins and plumb entire assembly. (See pages 8 and 9.)

4. Inside Covering. Nail Masonite sheets to ribs. Install metal splines at horizontal joints and nail Masonite battens over joints at ribs. (See pages 10 and 11.)

5. Insulation. Install insulation between ribs over Masonite lining and fasten ends. (See pages 12 and 13.)

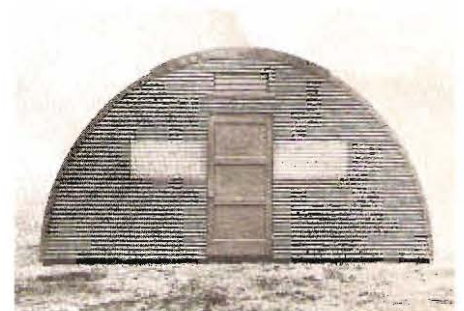
6. Outside Covering and Windows. Nail straight corrugated sheets (including plastic window sheets) on sides to ribs and nail curved corrugated sheets on top to purlins. (See pages 14 and 15.)

7. Ventilator and Smokestacks. Assemble ventilator and smokestacks and install at center line of roof. (See pages 16 and 17.)

8. Endwalls. Fasten down endwall channels and erect studs. Install door and louver. Cut insulation to special size pieces by using Masonite endwall panels as templates. Nail special precut Masonite endwall panels into place. Attach insulation between studs and end rib. Nail corrugated sheets (including plastic window sheets) to studs and wood blocks on end rib. Attach flashing around arch. (See pages 18, 19, 20 and 21.)

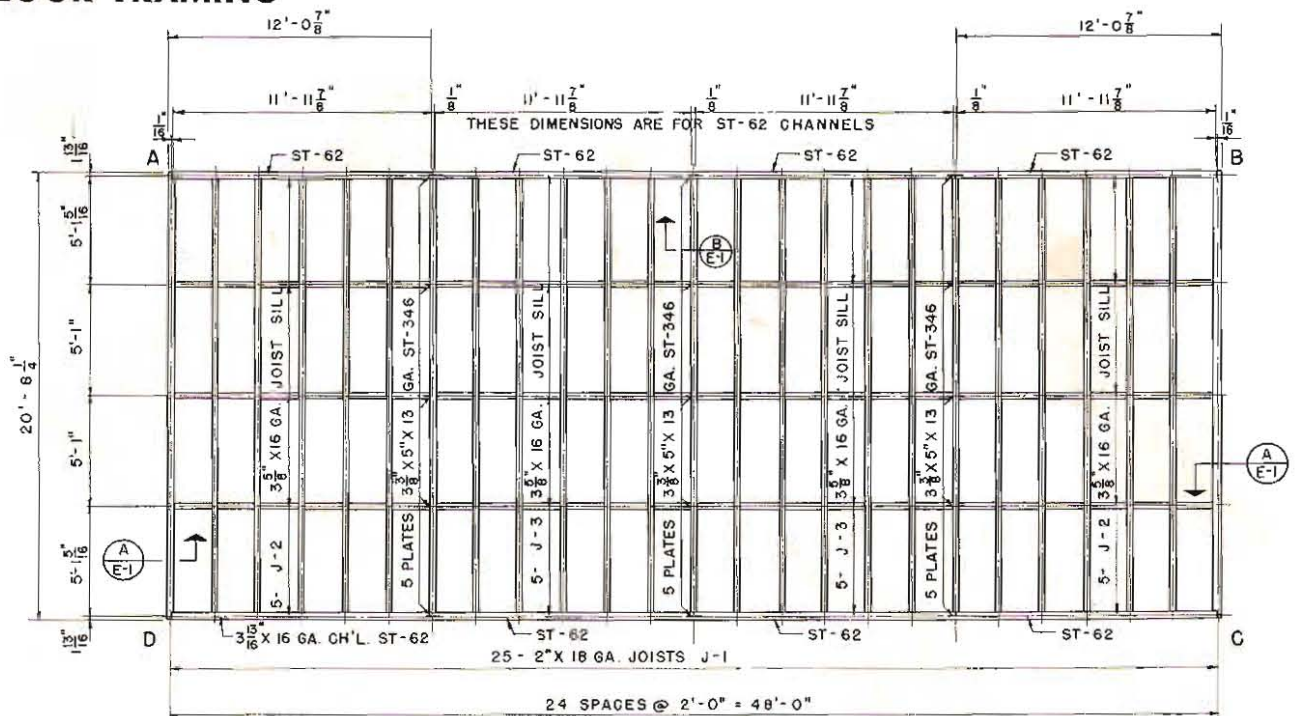


EXTERIOR COVERING

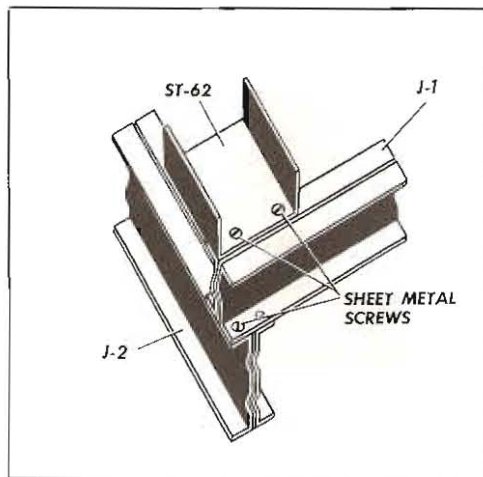


ENDWALLS

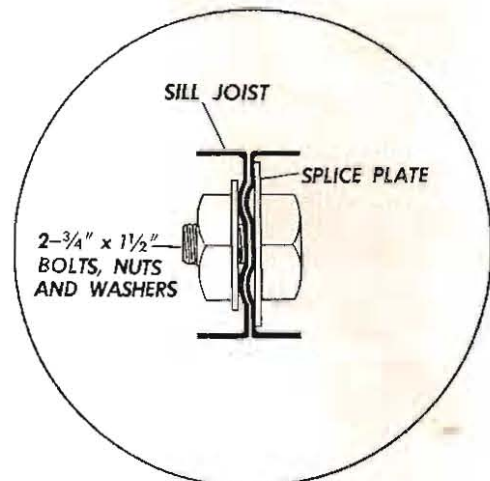
FLOOR FRAMING



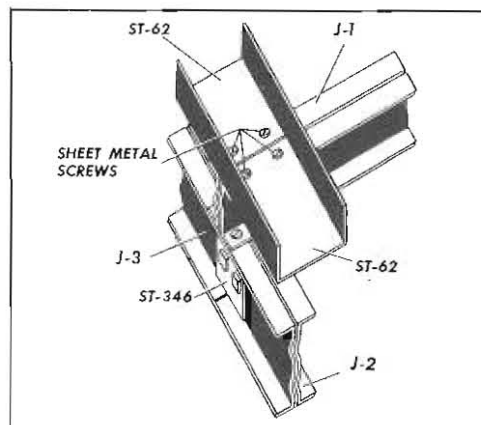
FLOOR FRAMING PLAN



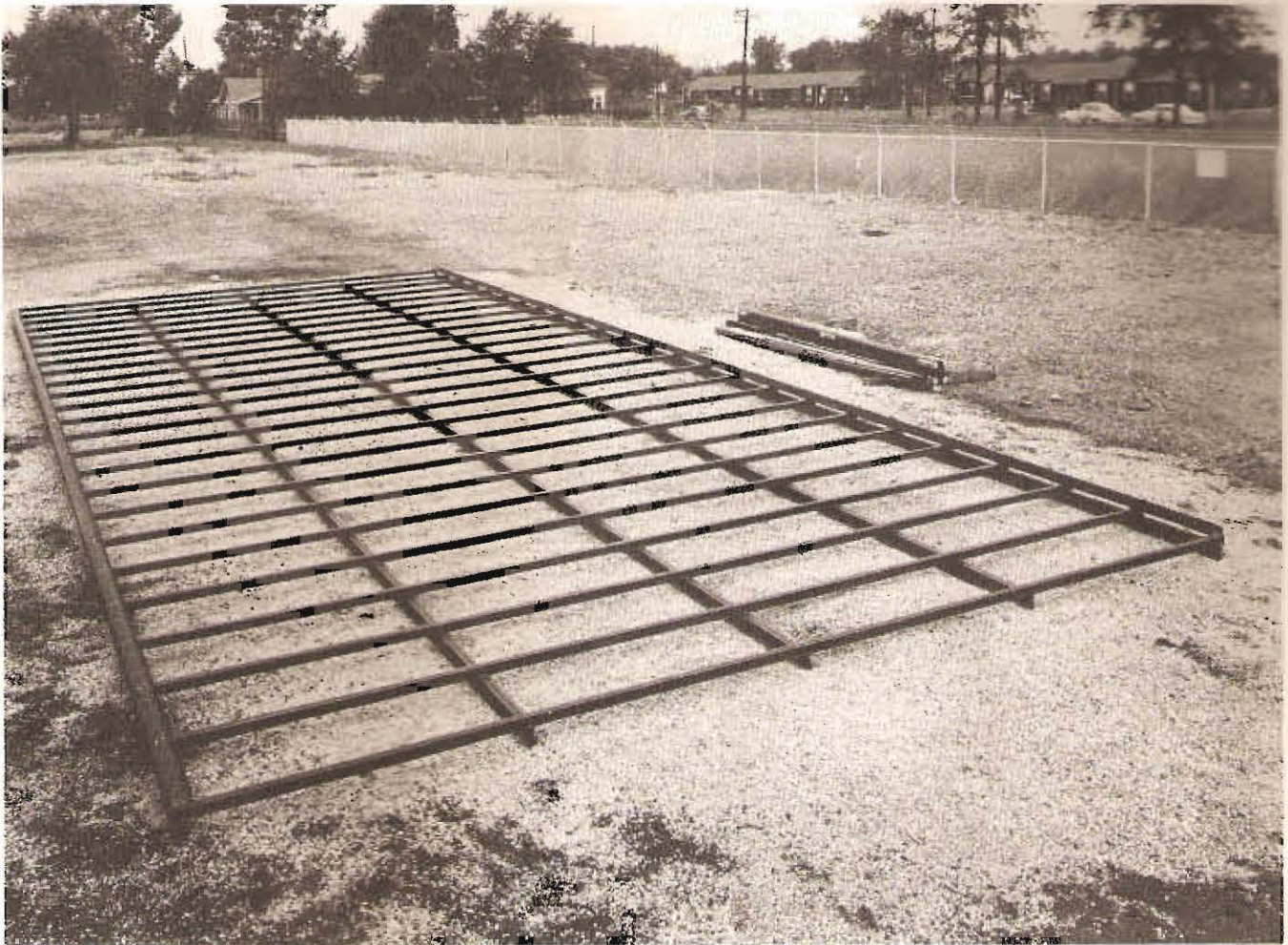
DETAIL AT CORNER



TYPICAL SILL SPLICE



DETAIL AT CHANNEL SPLICE



COMPLETE FLOOR FRAME

STEP 1 The floor joist assembly consists of steel sills, joists and channels. The sills run lengthwise of the building on the ground and support the joists, which are fastened to the sills at right angles to them. At the extreme ends of the joists channel plates are fastened for receiving the ribs.

Procedure:

(a) Level and tamp an area of ground approximately 30' x 60' for the building site. If site is too uneven to level easily, see Wood Foundation Adaptation, page 23.

(b) Lay the sills on the tamped ground in five parallel lines about 5' apart with the holes (for connecting the joists) facing upward. In order not to force the sills out of line when the splice plates are tightened, line up the sills with the nailing grooves matching (see drawing), starting at one end. However, when it comes to the last splice on each sill, the nailing grooves cannot be lined up, and therefore the splice bolts at these points should not be drawn up tight until after joist at this splice is screwed down to sills.

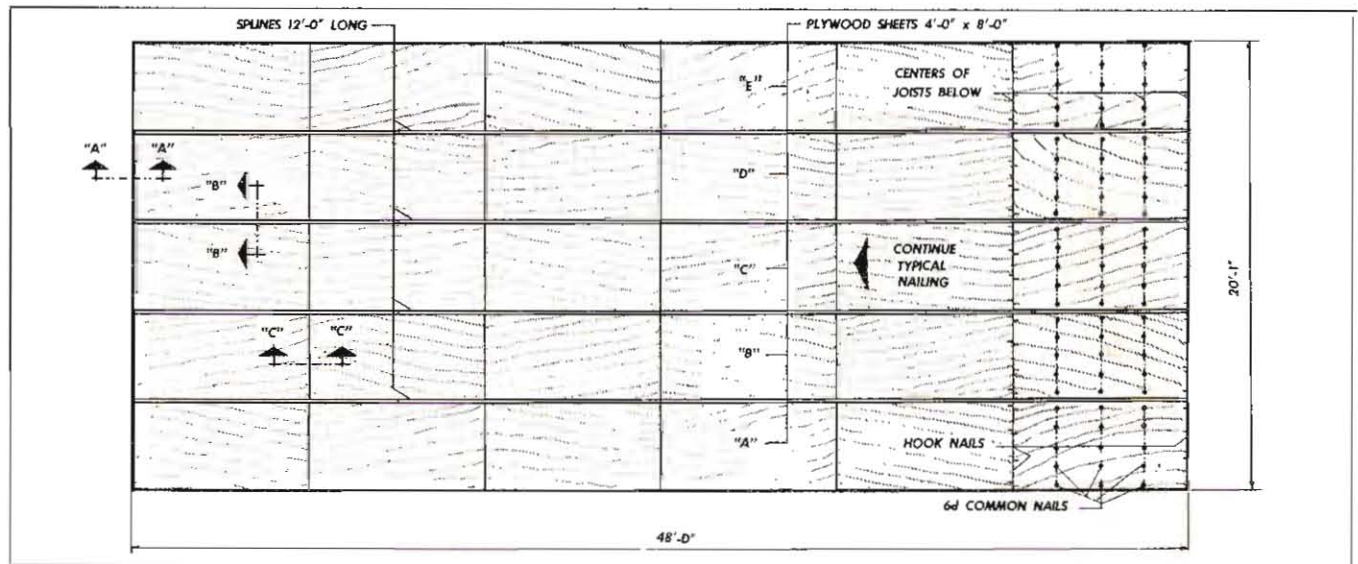
(c) Lay the joists (connecting holes down) at right angles to the sills on 2' centers as shown. Insert 2 screws diagonally opposite to each other at each connection.

(d) Place channels (ST-62) over ends of joists and parallel to outside sill joists. Screw these to the joists. Use 2 screws diagonally at each joist but use 4 screws where there is a joint in the channel.

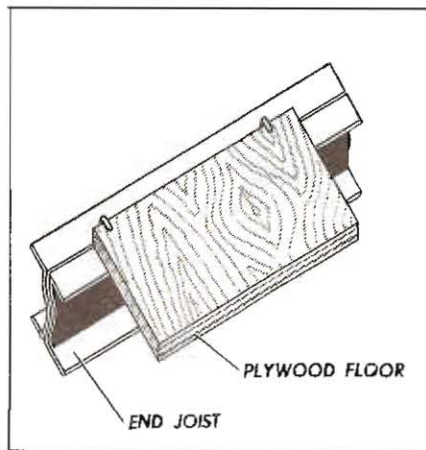
(e) Square up the above floor assembly. Distance A-C should be the same as B-D. Use a length of wire for measuring these distances. Hold one end of the wire on the inside lip of the channel at point "A". Stretch to the same point at "C". Do the same from B to D. Shift the corners until distances A-C and B-D are equal. Check the ends and sides for straightness, using a line or wire and recheck for square. Then check the assembly for level starting at joist B-C. With this joist level, proceed to level the channel plate, working from C to D. Level the channel by placing the level on the lip of the channel in about four locations.

When the channel is levelled, level the other end joist, working from D to A. Then proceed with levelling the channel from A to B. Bring the other joists to level, using level at four points as for opposite side. Use small wedges or blocking made from crating lumber to raise the sills, and scoop dirt from under the sills to lower. *Be sure the floor assembly is level before proceeding.*

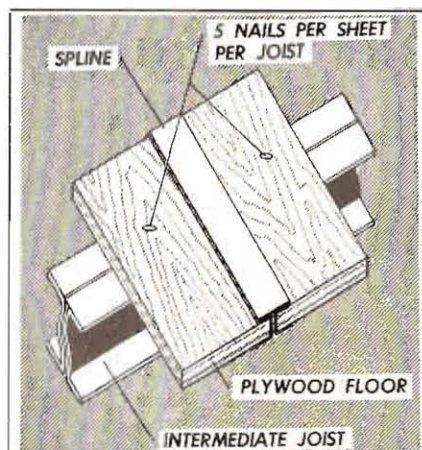
FLOOR PANELS



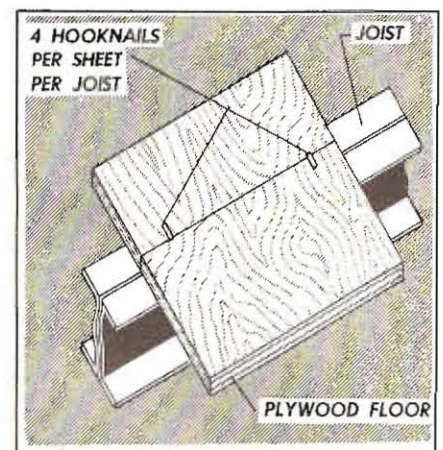
LAYOUT OF PLYWOOD PANELS



SECTION "A-A"



SECTION "B-B"



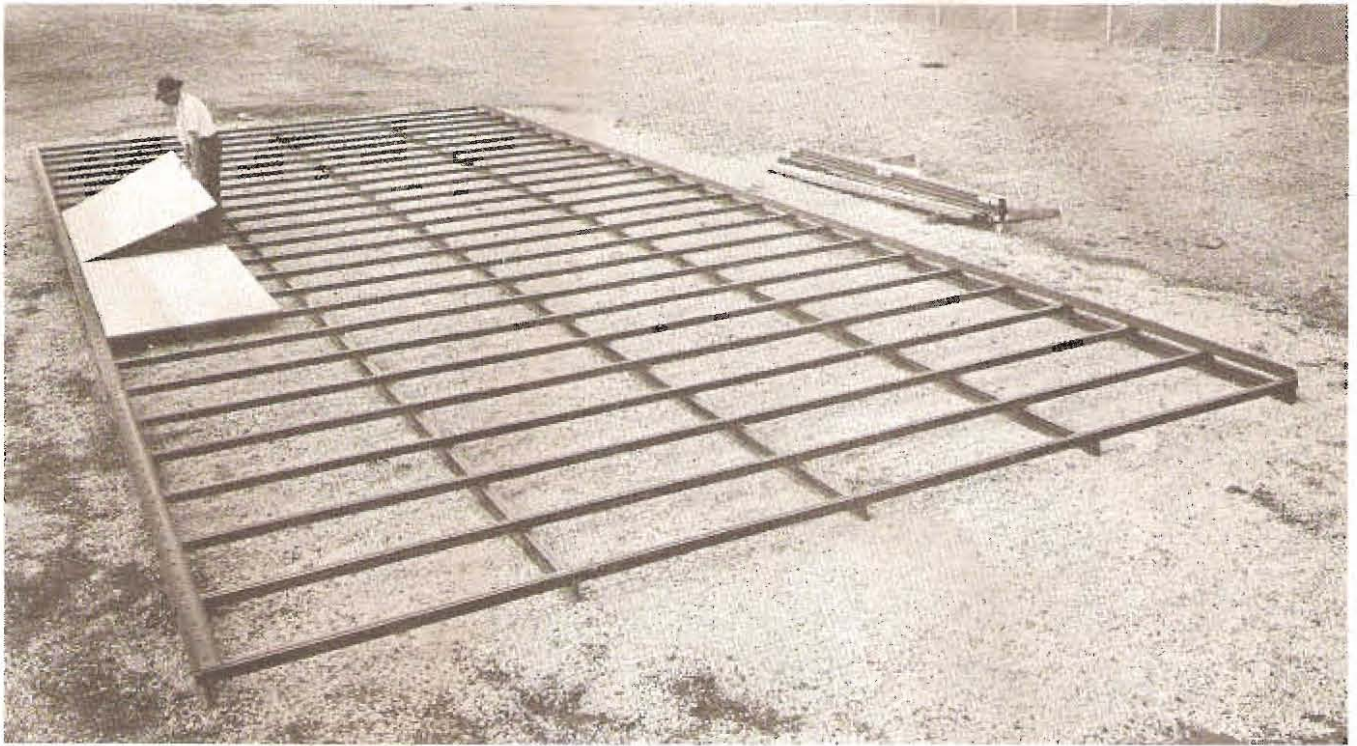
SECTION "C-C"



PANEL FITTED INTO SPLINE



PLYWOOD FLOOR COMPLETED



INSTALL PANELS



HOOK NAILS



NAIL ON CHALK LINE

**STEP
2**

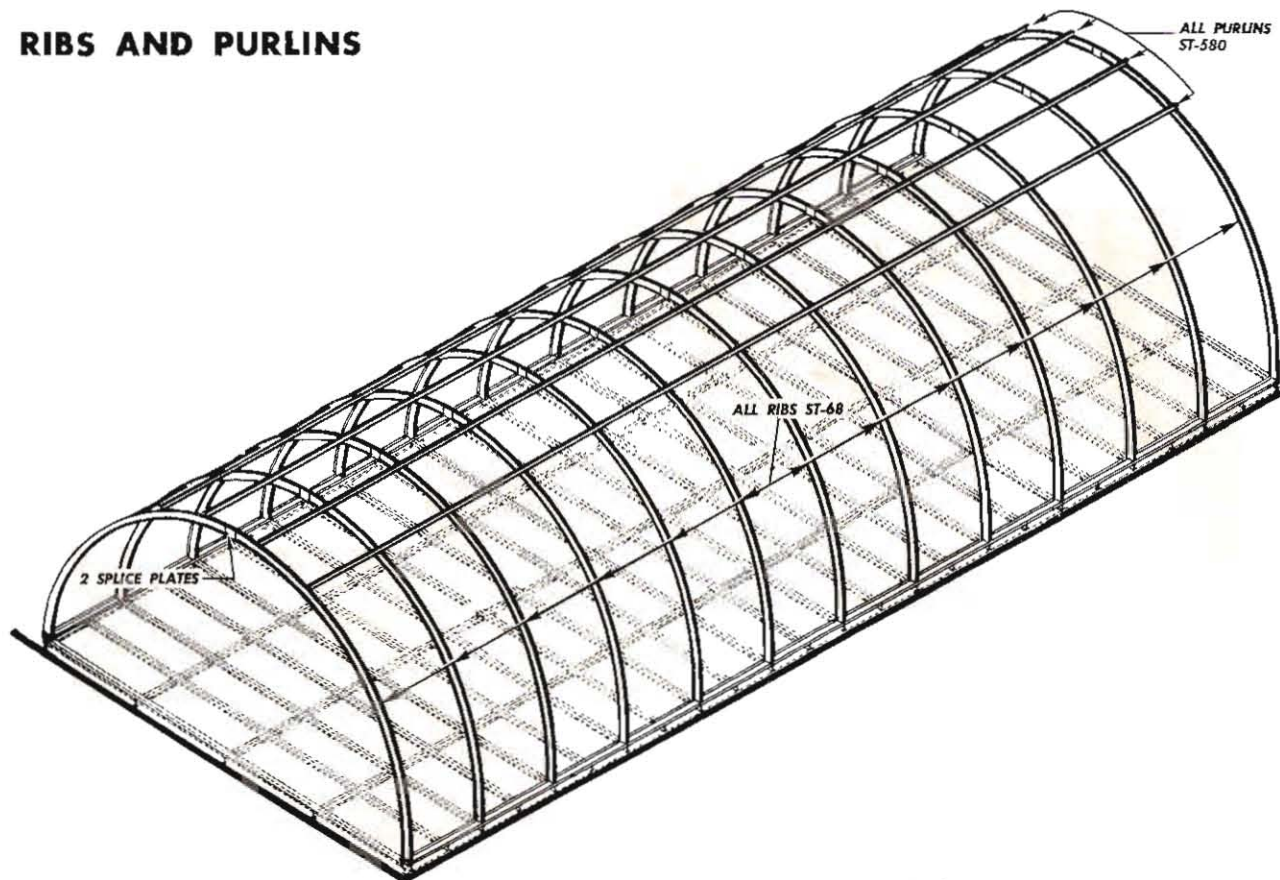
The floor is covered with 4' 0" x 8' 0" plywood panels nailed to the floor joists. Metal splines fit between the lengthwise joints.

Procedure:

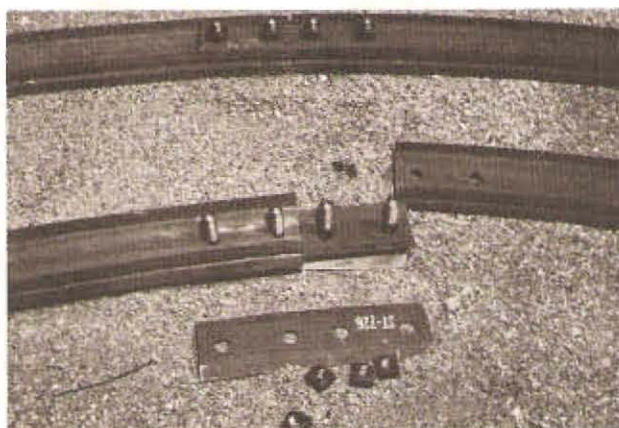
(a) Lay out all the plywood panels (clear side up) starting with row "A" and proceeding to rows "B," "C," "D" and "E" fitting the metal splines between the rows as each is laid. (See Sect. B-B.) The ends of the panels should butt over the center of joists.

(b) Nail the panels in place, starting with middle two panels in row "A". First drive 6d common nails at intermediate joists (see Sect. B-B), and then hook nails at the ends of the panels (see Sect. C-C and A-A). To establish a nailing line for the intermediate rows of nails, take a chalk line, hold each end over the center of the joist, pull the line taut and snap. This will leave a guide line on the panel. Do not use more nails than the sketches call for. (See Sect. B-B and C-C.)

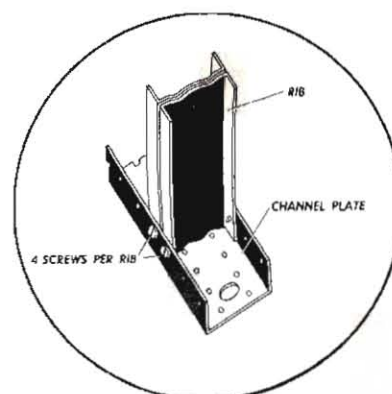
RIBS AND PURLINS



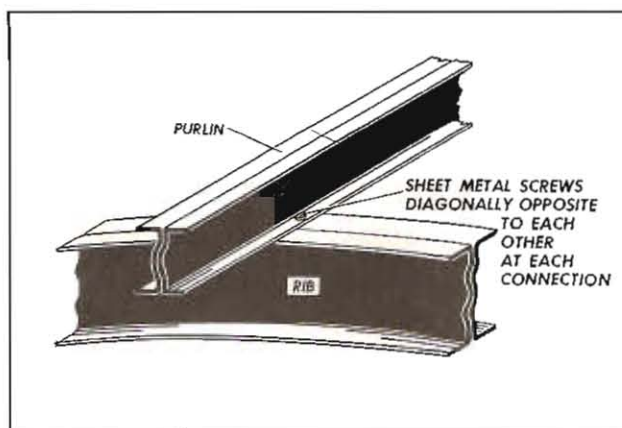
COMPLETE SIDEWALL AND ROOF FRAMING



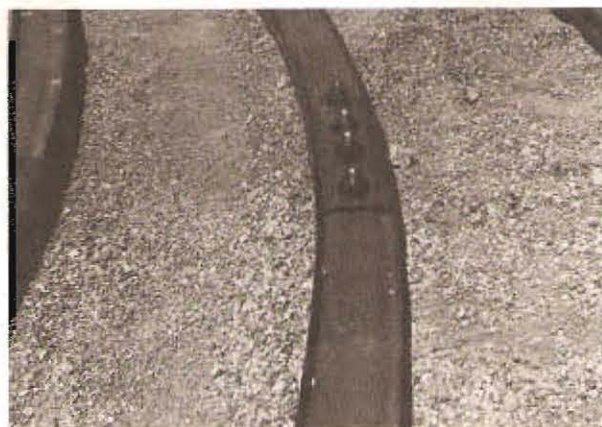
SPLICING RIB



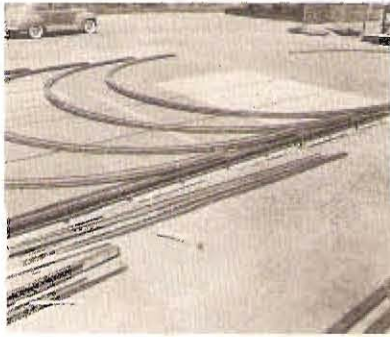
DETAIL AT CHANNEL



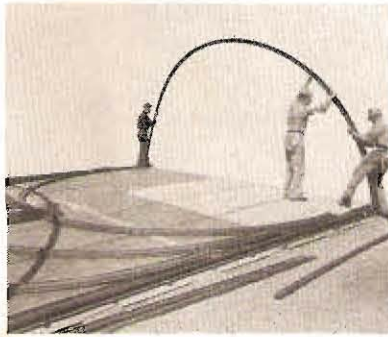
RIB AND PURLIN



COMPLETED SPLICE



ASSEMBLE RIBS ON FLOOR



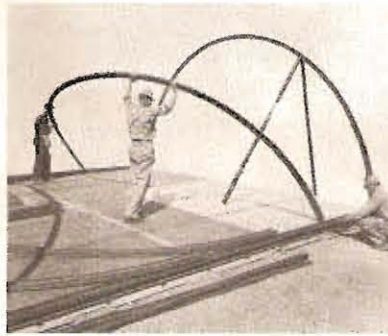
RAISE FIRST RIB



SCREW RIB TO CHANNEL



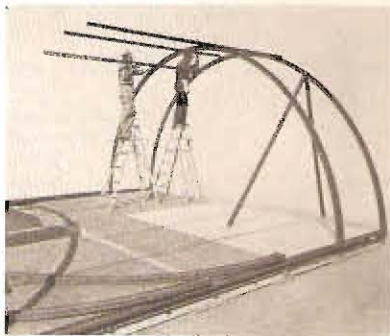
BRACE FIRST RIB



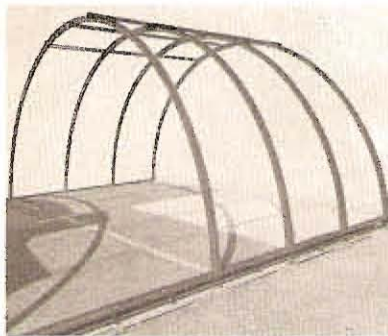
SECOND RIB GOES UP



ATTACHING FIRST PURLIN



FOURTH PURLIN FASTENED



FIRST 12' OF FRAME IS UP



PANEL USED TO PLUMB RIBS

STEP 3

Each rib assembly consists of two curved Stran-Steel sections, or "half ribs," which are joined together at the top and whose ends fasten to the channels above every other joist beginning with the end joist. On top of the ribs are four rows of purlins for attachment of exterior covering sheets. Construct a scaffold out of crate lumber other than from Crates CC-6, CC-7 and CC-9, to use for attaching purlins to ribs.

Procedure:

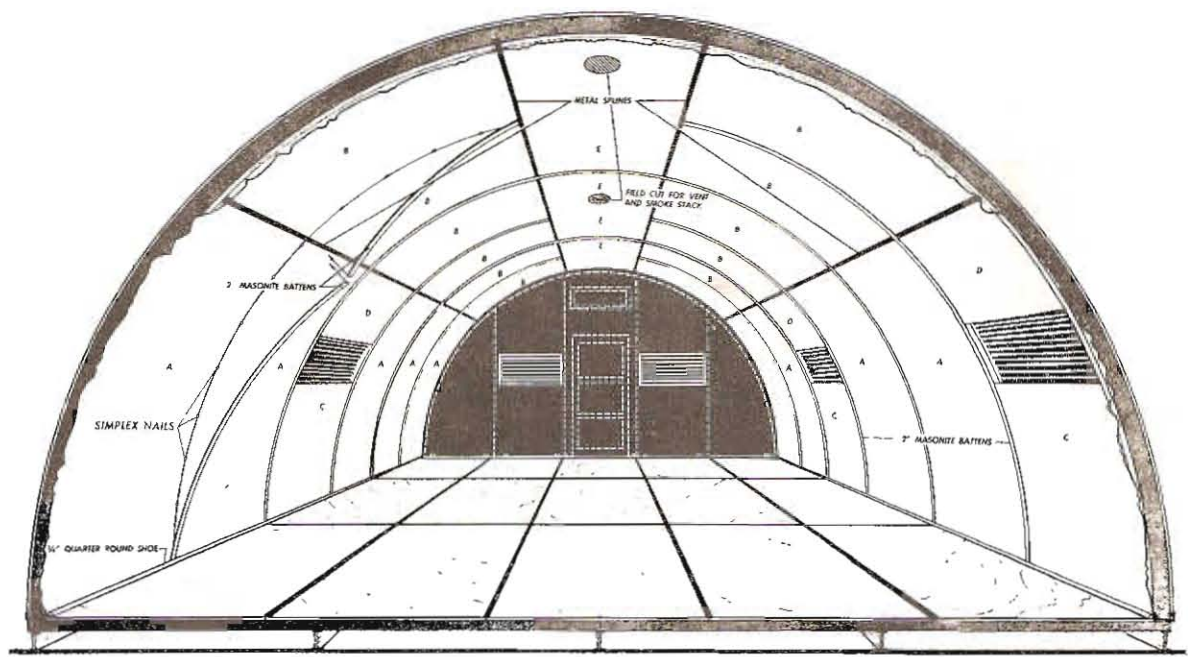
(a) Assemble all ribs on the ground (see photograph) before raising any. The ribs are joined at the top with two splice plates (ST-726) and four $\frac{3}{4}$ " x $2\frac{1}{2}$ " bolts. (See photo.) In assembling the end ribs take care to have the bolts point toward interior of building so that later work will clear. Raise end rib first and secure it into the channel, using 2 screws. Nailing groove of first rib must line up with nailing groove of first joist underneath. Brace this rib temporarily with purlins. (See photo.)

(b) When second rib is raised, attach purlins placing end of first purlin at nailing groove of first rib. This automatically spaces the ribs 4' 0" on center. Raise next rib and repeat this operation for each successive rib. Use 4 screws at base of all interior ribs.

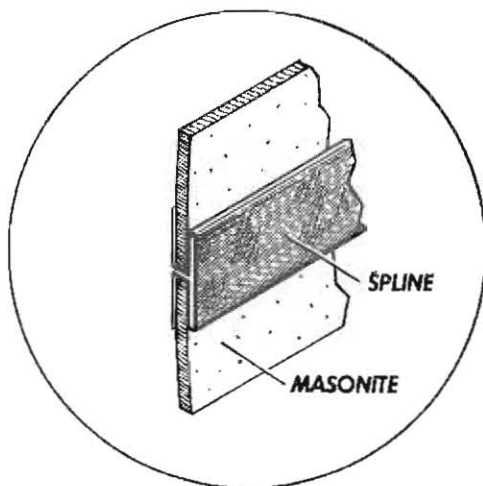
(c) Fasten each purlin in place to each rib with 2 screws, diagonally opposite each other except at each end of purlin where 2 screws are directly opposite each other.

(d) **Make certain ribs are plumb.** This is done by using a Masonite "A" sheet ($3' 11\frac{7}{8}"$ x $8' 0"$), for squaring up center nailing groove of ribs with floor level. Place end of panel level on floor and against channel. Line up centers of first and second ribs with vertical edges of panel and fasten to the ribs with Simplex nails. (See photo.) (Crating lumber may be used to fasten outer side of rib for bracing until the bottom row of Masonite sheets has been installed.)

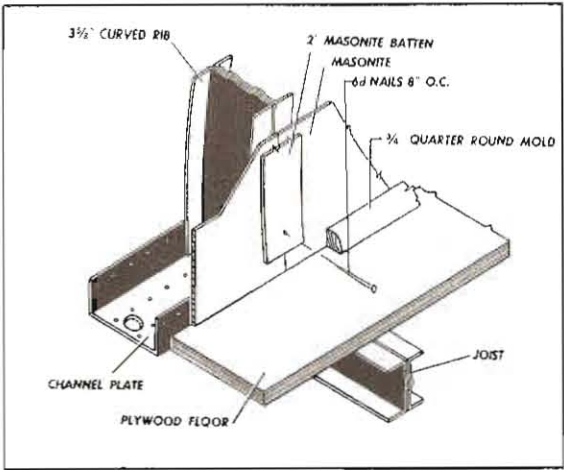
INSIDE COVERING



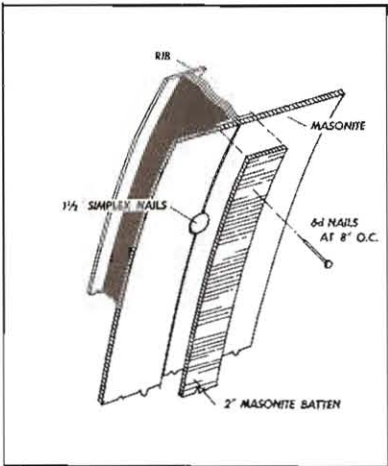
CUTAWAY VIEW



METAL SPLINE



DETAIL AT FLOOR



MASONITE BATTEN



INSTALL WOOD WINDOW SILLS AND HEADERS





"E" SHEET



SECOND "B" SHEETS



SECOND "A" SHEET

STEP 4

The inside of the Quonset building is lined with $\frac{1}{8}$ " thick Masonite sheets, nailed to ribs, smooth side facing inside the building. The application of sheets is started with a bottom row on one side and then continuously applying sheets up around the arch to the other side of building.

Procedure:

(a) Start on one side of building with "A" sheets ($3' 11\frac{7}{8}" \times 8' 0"$) continuing from panel used to plumb ribs in Step 3. Omit "A" sheets where windows on sidewalls are desired. The suggested arrangement for windows is shown in sketch on opposite page and on Erection Drawing Sheet No. E-5.

(b) Fasten sheets in place with Simplex nails, approximately 24" apart. Place row of splines at upper edge of "A" sheets.

(c) Insert twelve (12) "B" sheets ($3' 11\frac{7}{8}" \times 6' 0"$) into splines and nail to ribs.

(d) Place splines at upper edge of "B" sheets.

(e) Insert six (6) "E" sheets ($3' 4" \times 7' 11\frac{7}{8}"$) into splines above "B" sheets and nail to ribs with Simplex nails on ends.

(f) Place splines over outer edge "E" sheets.

(g) Insert twelve (12) "B" sheets into splines and nail to ribs with Simplex nails.

(h) Place splines on bottom edge of "B" sheets.

(i) Balance of "A" sheets are applied by snapping into place between splines and floor at channel plate (see photo). Fasten with Simplex nails. Apply "A" sheets only where windows are not intended.

(j) The window headers and sills are now installed. Sidewall window headers and sills are $1\frac{1}{4}" \times 3\frac{5}{8}"$ lumber from the battens of Crate CC-6 or $1\frac{5}{8}" \times 3\frac{5}{8}"$ lumber from sides of Crate CC-9. The headers and sills must be cut to $3' 11\frac{3}{4}"$ lengths.

The top edge of the sill is located even with the top edge of Masonite "C" sheets ($3' 11\frac{7}{8}" \times 3' 10\frac{5}{8}"$) placed against ribs. The bottom side of the header is located $1' 9\frac{1}{2}"$ from top of sill. (See enlarged section on Drawing Sheet E-6.)

Both sill and header are fastened between ribs by first piercing rib flanges with punch and then nailing through flange into wood, on inside and outside at both ends.

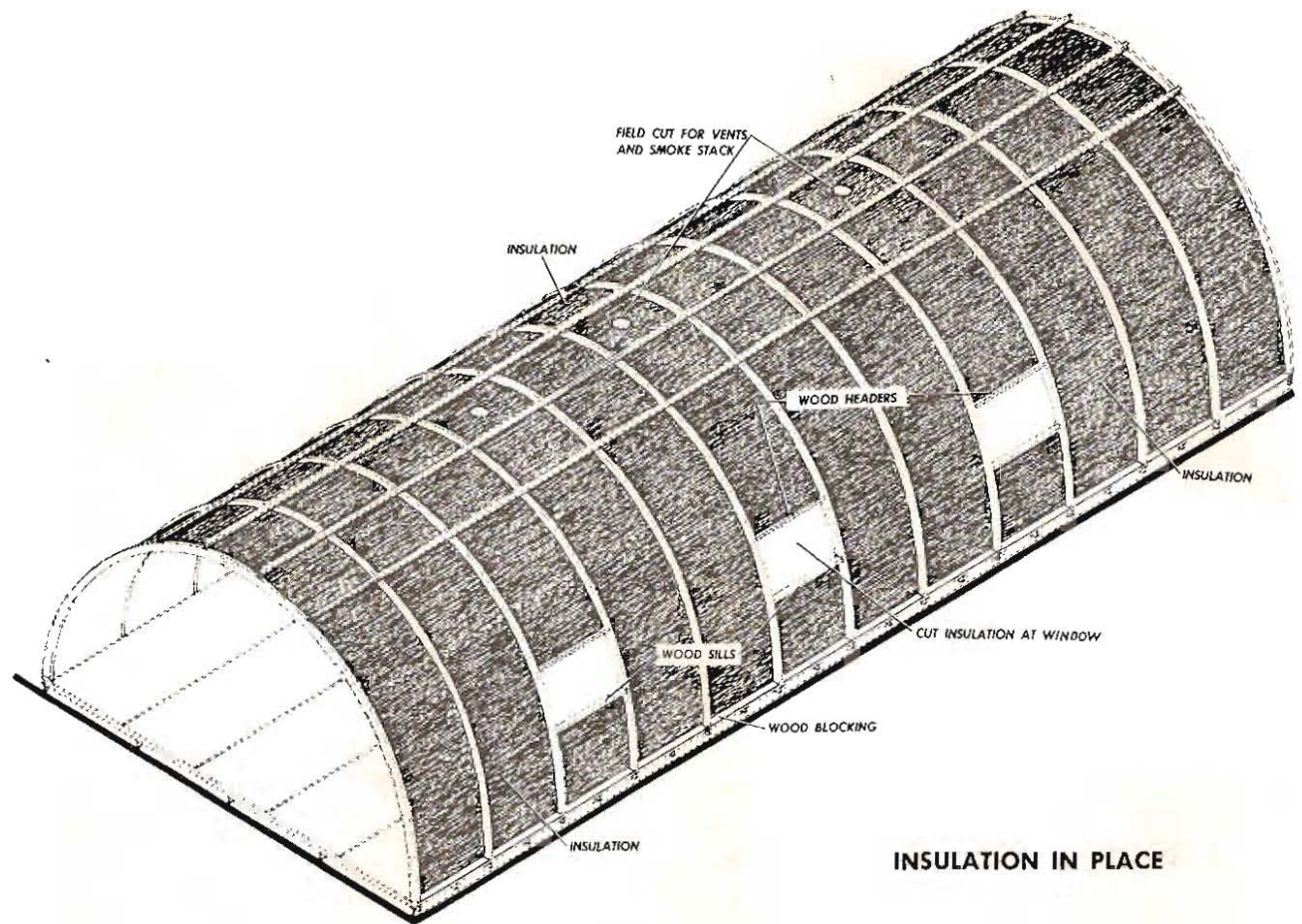
(k) Attach six (6) "C" sheets under windows by fastening to ribs with Simplex nails and to sills with 6d nails.

(l) Attach six (6) "D" sheets ($3' 11\frac{7}{8}" \times 2' 3\frac{7}{8}"$) over windows by inserting into splines above and fastening to ribs with Simplex nails and to headers with 6d nails.

(m) After all lining sheets are installed, nail sheets "E" to intermediate ribs with 6d common nails, spaced 8" apart.

(n) Fasten 2" Masonite battens over joints between sheets directly over nailing groove of ribs. Nail to ribs with 6d nails spaced 8" apart.

INSULATION



INSULATION IN PLACE OVER INSIDE COVERING



INSULATION APPLIED OVER MASONITE



FASTENING INTO CHANNEL



NAILING TO WINDOW SILL

STEP 5 Insulation is furnished for each building in strips to fit exactly between ribs (4' apart) and in lengths to reach around the entire arch frame.

Procedure:

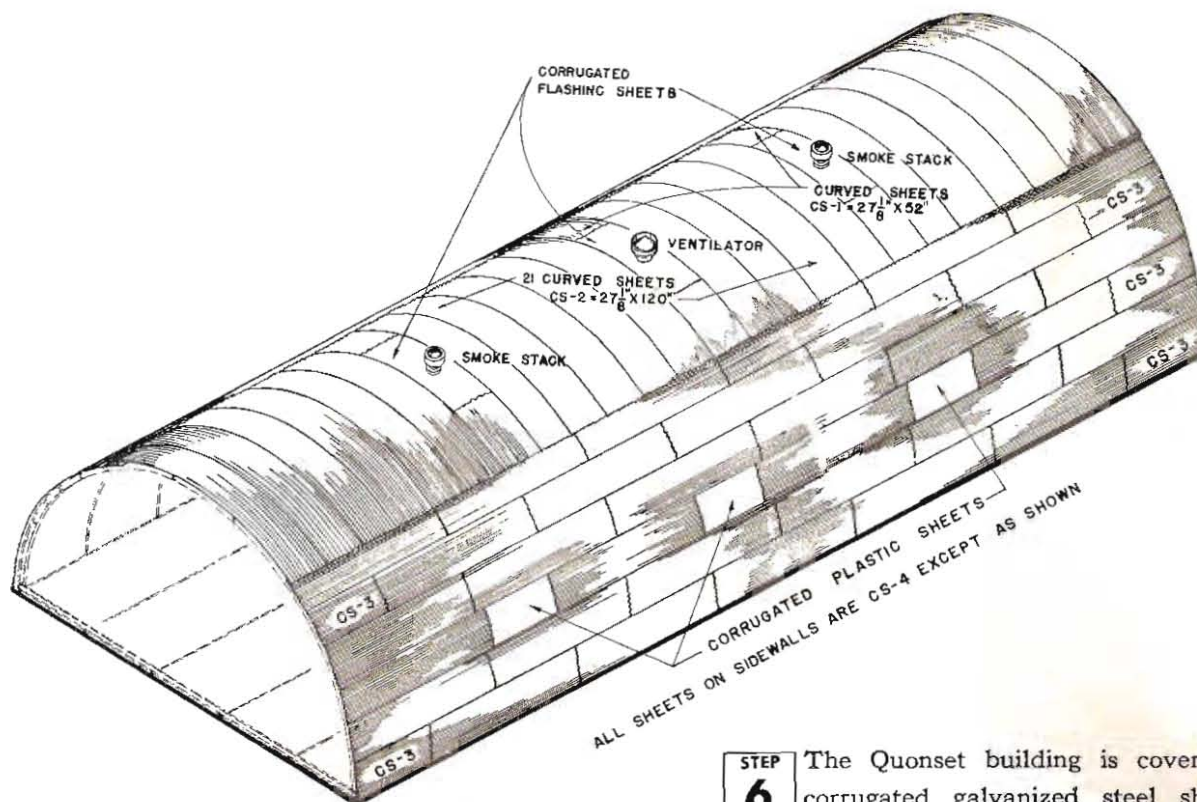
- (a) Roll up each strip of insulation and place a roll on ground between each two ribs.
- (b) Draw end of rolls up and over the Masonite lining

so as to fit snugly between ribs and under four purlins at top.

(c) Fasten insulation on each end at base channel by wrapping around a crating lumber stick cut to fit snugly between ribs. (See photo.)

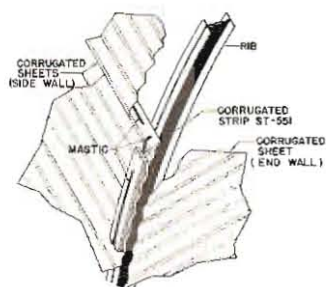
(d) Cut insulation at windows. Fold cut edge to double thickness and nail to wooden headers and sills with Simplex nails.

OUTSIDE COVERING AND WINDOWS

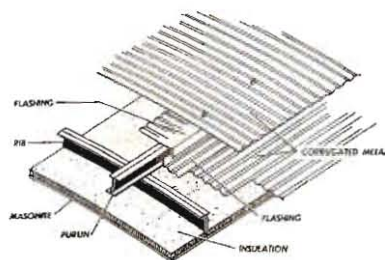


LAYOUT OF CORRUGATED SHEETS

STEP 6 The Quonset building is covered with corrugated galvanized steel sheets or corrugated plastic sheets (at windows). Straight sheets are nailed to the ribs, and curved sheets are nailed to the purlins.



DETAIL AT END RIB



DETAIL AT RAISED ROOF

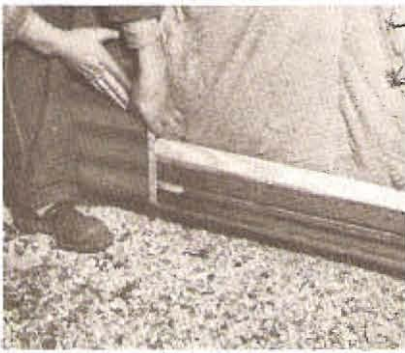


FLASHING BETWEEN HORIZONTAL AND CURVED SHEETS

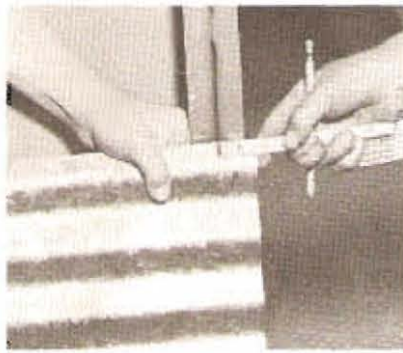
IMPORTANT

- (a) Seal all vertical and horizontal laps of sheets with a bead of mastic 1/4" to 5/16" in diameter. Good insurance against leaks is to apply the bead of mastic **WITHOUT** breaks. Corrugated and flat rubber or asphalt strips, used around windows and door frames, flashing, etc., must have a continuous bead of mastic on both sides. Mastic must be applied on clean surfaces.
- (b) Side laps of corrugated sheets between purlins and between ribs are stitched with sheet metal screws and lead washers (with 1/4" hole) spaced 12" apart.
- (c) Secure sheets to purlins and ribs with double headed galvanized nails and lead washers (with .16" hole) spaced 8" apart.
- (d) Make all end laps of corrugated sheets 4" in length. Make side laps of straight sheets 2", and side laps of curved crown sheets 3 1/8".

OUTSIDE COVERING AND WINDOWS



**FIRST SHEET APPLIED
1½" BELOW TOP OF JOIST**



**END SHEET LOCATED
1½" FROM CENTER OF RIB**



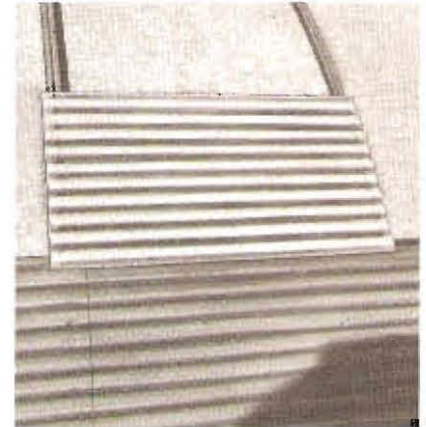
**APPLYING MASTIC TO
VERTICAL LAP**



END LAPS ARE 4"



**APPLY RUBBER OR ASPHALT
STRIPS AROUND WINDOW FRAME**



ATTACH PLASTIC WINDOW

Procedure:

(a) Start straight corrugated sheets 1½" below top of joist, using 52" sheet (CS-3) at end rib. Locate end of sheet 1½" beyond nailing groove of end rib. Continue horizontal row with 100" sheets (CS-4). Finish row with 52" sheet (CS-3). Attach sheet to ribs with double-headed nails and lead washers (with .16" hole) spaced 8" apart.

(b) Before proceeding with second row of sheets, nail flat rubber or asphalt strips to wooden window sills with 6d nails. Then attach second row of sheets, which are all 100" sheets (CS-4).

(c) Nail flat rubber or asphalt strips to window headers and apply corrugated rubber or asphalt strips at sides of windows. All strips must have a continuous bead of mastic both sides. Do not nail corrugated strips to ribs until sheets are attached so that strips may be shifted to match the corrugations of the sheets. (The mastic will hold the strips temporarily.) Start third row of sheets by first applying three 52" corrugated plastic window sheets. Fill in with 100" (CS-4) steel sheets, except at one end where a 52" (CS-3) sheet is nailed on.

(d) Continue applying straight steel sheets as shown

in sketches, photographs and drawings until six rows are completed.

(e) At this point, flashing (F-7) is attached to ribs.

(f) Fasten flashing F-7 by nailing to ribs and by stitching with sheet metal screws and lead washers, spaced 12" apart to straight corrugated sheet below.

(g) Apply sheets on other sidewall according to above procedure.

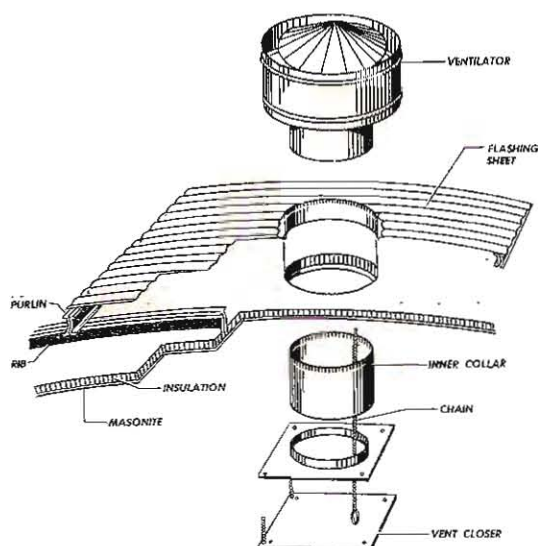
(h) Start curved roof sheets with a 120" sheet (CS-2). The side of sheet with corrugated edge pointing downward should project 2-3/16" beyond nailing groove of end rib. Install flashing (F-6) to purlin as you proceed with installation of curved roof sheets. Stitch flashing F-6 to F-7 with sheet metal screws.

(i) When six (6) 120" curved sheets have been applied, two 52" curved sheets (CS-1) and flashing sheet with smokestack collar attached are nailed to purlins.

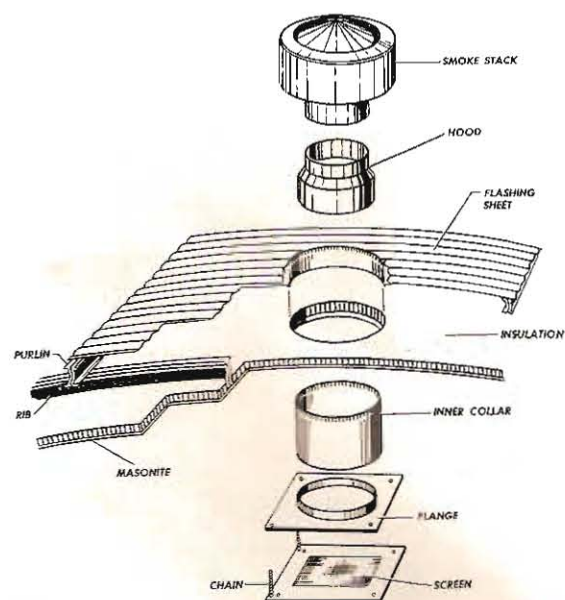
(j) Continue applying curved sheets (CS-2) and (CS-1) and flashing sheets where indicated on sketch and drawing.

(k) Fasten together side laps of corrugated sheets between ribs and between purlins with sheet metal screws and lead washers spaced 12" apart.

VENTILATOR AND SMOKE STACKS



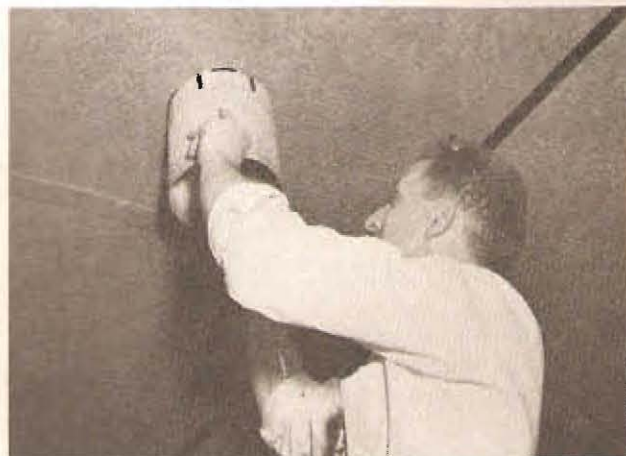
EXPLODED VENTILATOR



EXPLODED SMOKE STACK



CUT MASONITE

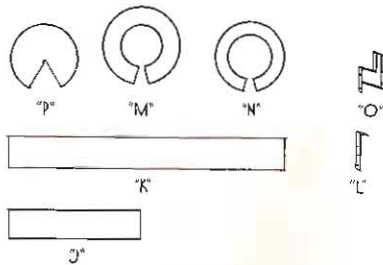
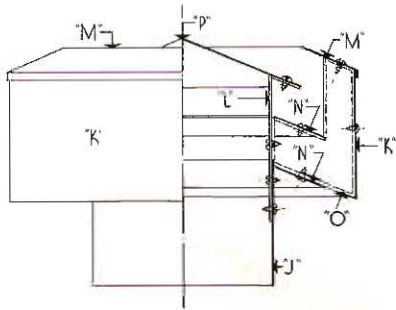


FIT INNER COLLAR

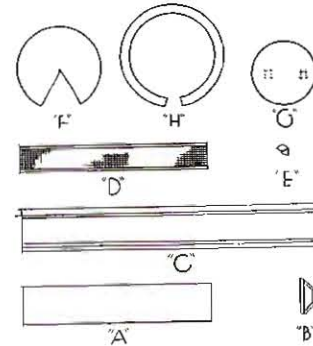
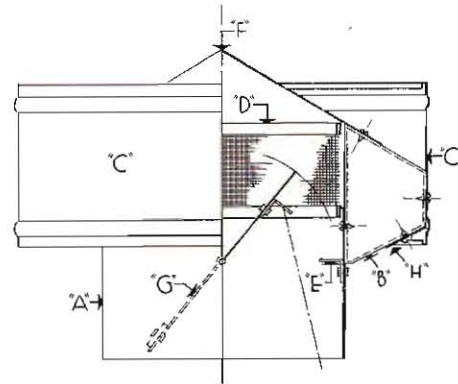


FLASHING SHEET

VENTILATOR AND SMOKE STACKS



KNOCKED DOWN SMOKE STACK



KNOCKED DOWN VENTILATOR



INSTALL VENTILATOR

**STEP
7**

Two smoke stacks and one ventilator are furnished for each building. These are shipped knocked down with special curved flashing sheets for installing them. (Curved flashing sheets installed in Step 6 with curved roof sheets.)

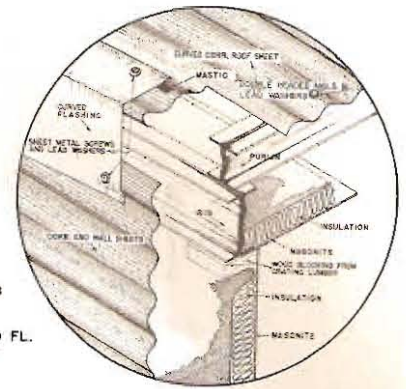
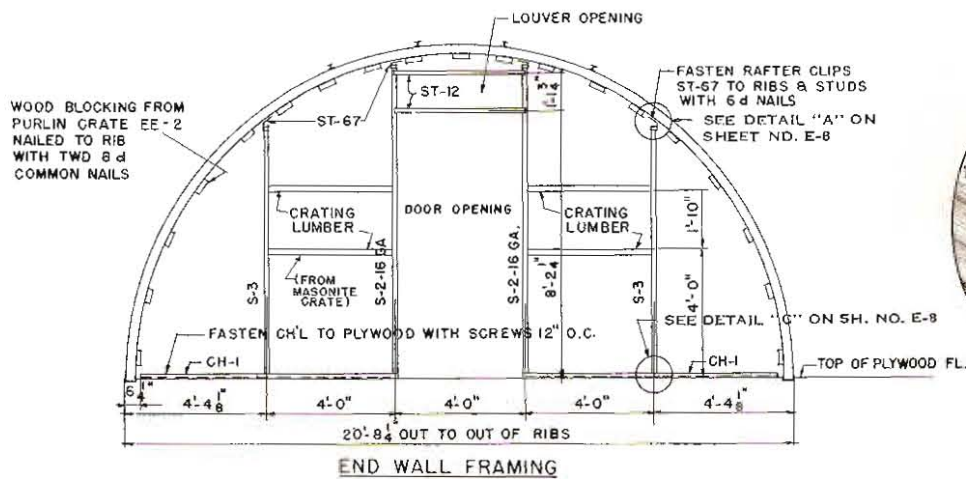
Procedure:

(a) Assemble the smoke stacks and ventilator. (See drawings.)

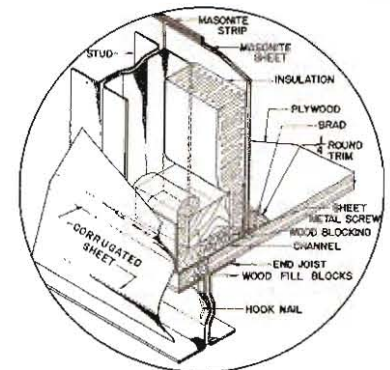
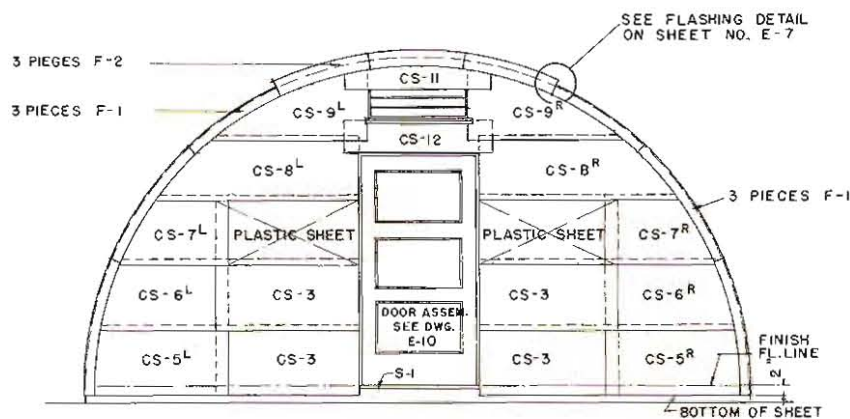
(b) Cut round holes through Masonite and insulation to line up with those in special sheets.

(c) Fit inner sleeve through this hole and screw the flange to the Masonite. Slip ventilator over the collar on flashing sheet and secure it by screws. On the smoke stack the adapter ring or hood must first be placed over the collar on the flashing sheet and screwed to it. Then slip the smoke stack over the hood and fasten it with screws.

ENDWALLS

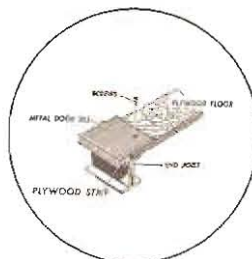
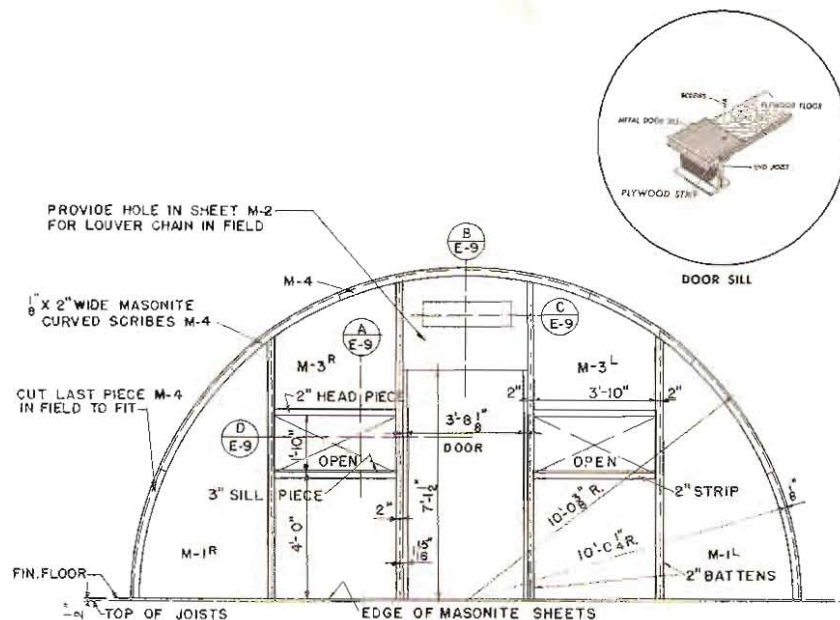


CUT-AWAY VIEW OF
ENDWALL AT ROOF SHEETS



CUT-AWAY VIEW OF
ENDWALL AT FLOOR JOIST

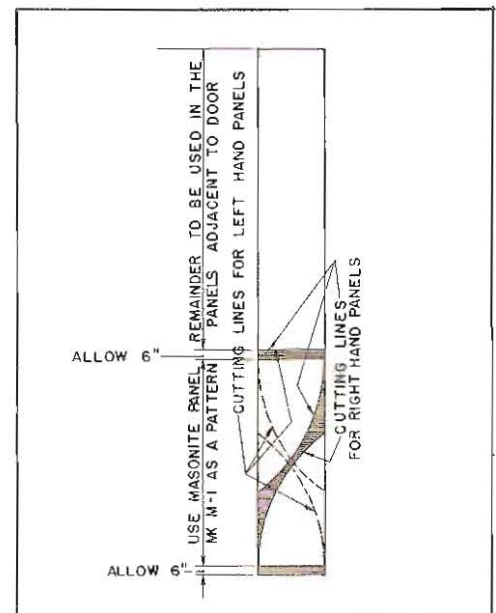
EXTERIOR END ELEVATION



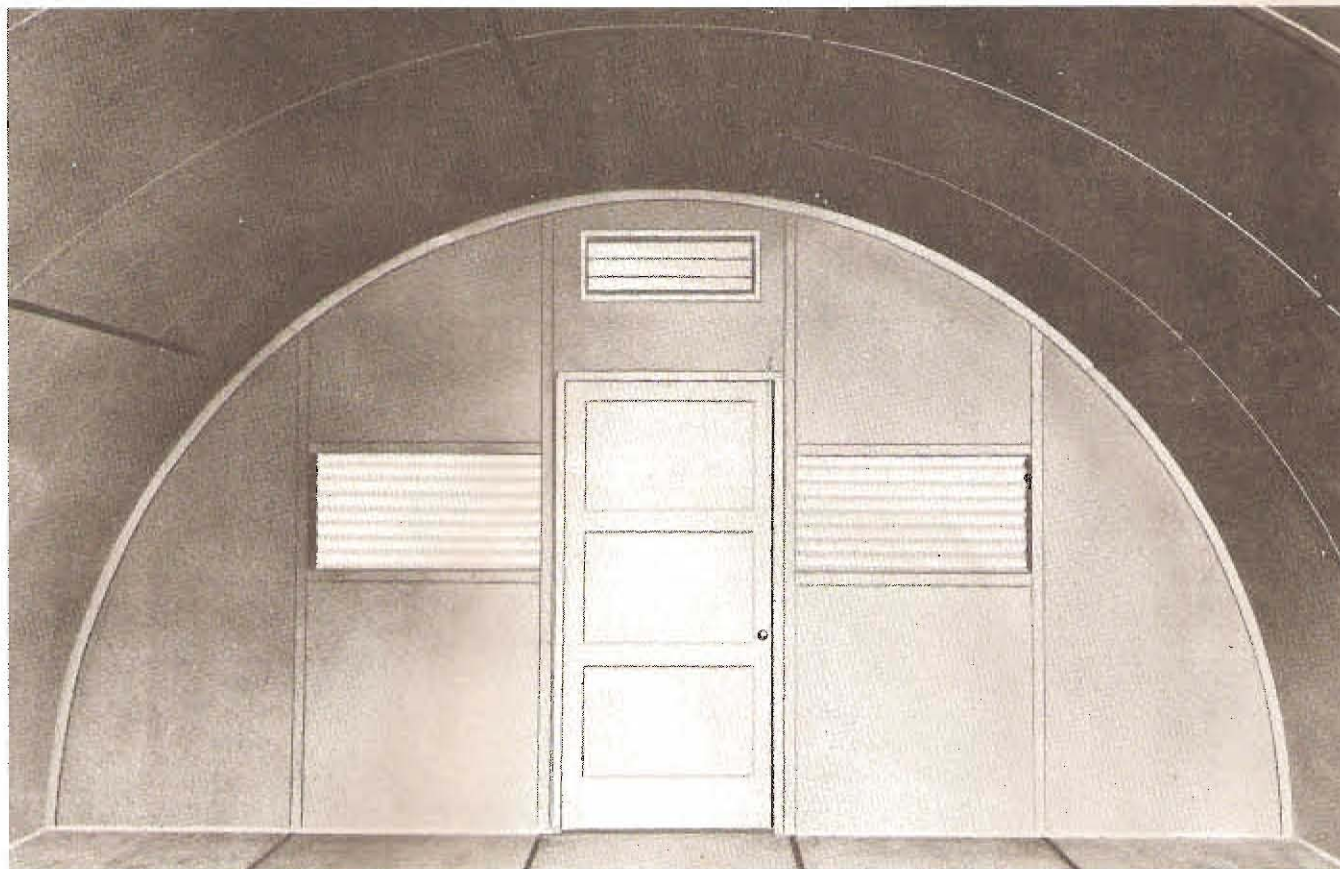
DOOR SILL

INTERIOR END ELEVATION (MASONITE)

(FOR SECTIONS INDICATED SEE ERECTION
DRAWINGS, SHEET NO. E-9.)



CUTTING DIAGRAM FOR ENDWALL INSULATION



ASSEMBLED ENDWALL

STEP 8

Endwall erection consists of putting up frame, applying Masonite interior lining, insulation, and exterior corrugated sheets, and installing screened louver and door.

Procedure:

(a) Lay channel (CH-1) on each side of door opening in middle of endwall with channel ends 1' 11" from middle point. Centerline of channel should be directly over nailing groove of first joist. Fasten channel to edge of plywood flooring with sheet metal screws spaced 12" apart. Insert $\frac{3}{8}$ " x $\frac{7}{8}$ " plywood filler blocks under edge of channel. Channel and filler blocks are fastened together with screws.

(b) Erect four endwall studs. S-2 studs are placed in the channel with nailing groove 2' 0" from middle point. S-3 studs are placed 6' 0" from the middle point or 4' 0" from the S-2 studs. Connect each stud to channel with four (4) sheet metal screws. Plumb each stud and fasten to rib by means of a rafter clip (ST-67). See photos for detail on this operation. **Be sure ears of clip are bent properly around flanges of rib.**

(c) Attach $\frac{7}{8}$ " x $1\frac{3}{4}$ " wooden blocks from Crate CC-2 with 8d nails to end rib over edge of Masonite side-wall and roof sheets. Side of blocks facing into building should be $1\frac{1}{8}$ " in from nailing groove of end rib. (See photos and sketch.)

(d) Erect half studs (ST-12) with nailing groove to

outside of building between center studs by attaching with screws in holes provided. Wedge wood blocking ($\frac{7}{8}$ " x $2\frac{1}{4}$ " x $3' 11\frac{3}{4}$ "), cut from crating lumber (Crate CC-7), between studs under top half-stud and above lower half-stud.

(e) Install louver with flashing (F-3) by nailing to lower half-stud through holes provided using 6d nails and by tacking at corners to top half-stud if necessary to hold in place.

(f) Attach metal sill (S-1) over edge of plywood floor and plywood strip ($\frac{3}{8}$ " x $\frac{7}{8}$ " x 4') at door by sheet metal screws (see sketch).

(g) Assemble door frames and install in endwalls. Each door frame consists of two jamb bucks, head buck, two jamb sections and head piece. Insert jamb bucks inside of studs (S-2) and place head buck on top. Fasten bucks to studs by nailing through stud flanges with 6d nails 18" apart. Nail door frame pieces together and attach frame to door bucks with 8d finishing nails, wedging to plumb.

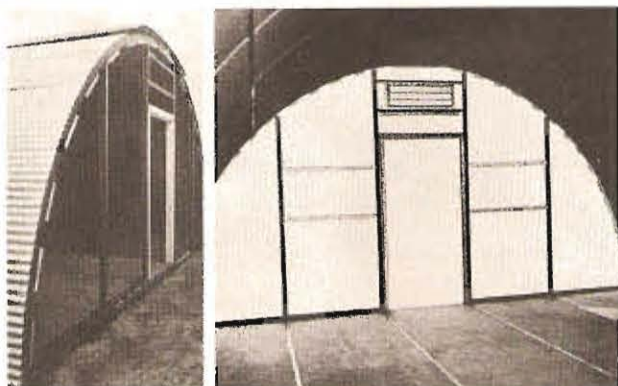
(h) Install wooden headers and sills for windows. These are $1\frac{1}{4}$ " x $2\frac{5}{16}$ " lumber from battens of Crate CC-6 and must be cut to lengths of $3' 11\frac{3}{4}$ ". The sill pieces are placed with upper edge 4' 0" above the finished floor. The head piece is located above to provide an opening of 1' 10". Headers and sills are attached to studs with 6d nails after piercing stud flanges with punch.

(Continued on Page 21)

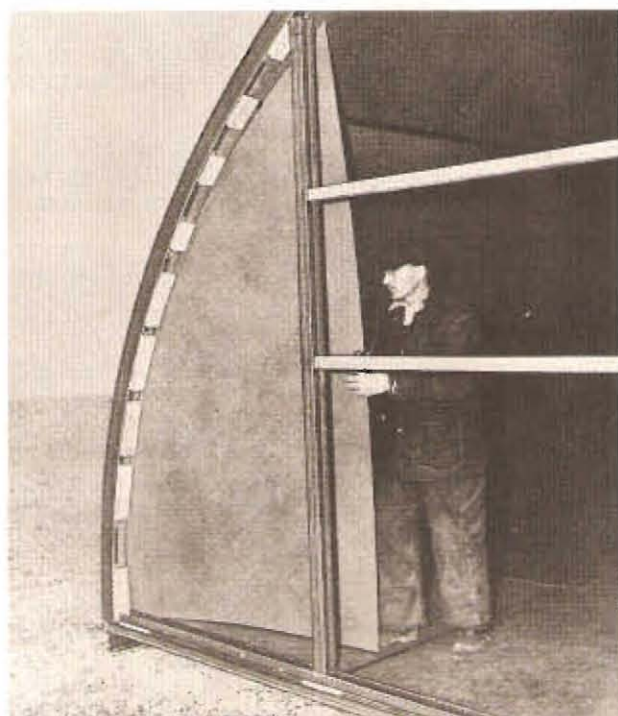
ENDWALLS



STUD SCREWED TO CHANNEL



ENDWALL FRAME ERECTED. DOOR AND WINDOW FRAMES INSTALLED. BLOCKS NAILED TO RIB. LOUVER IN PLACE.

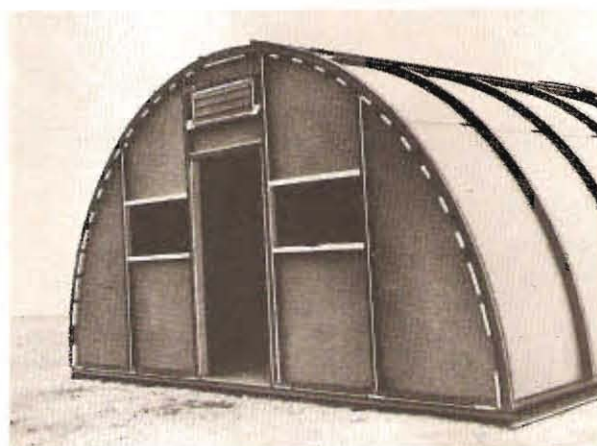


FIRST SPECIAL PRECUT MASONITE PANEL NAILED TO STUD AND WOOD BLOCKS.

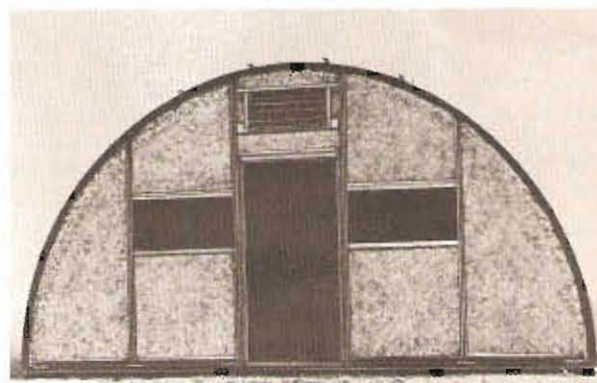
IMPORTANT — BEFORE THIS OPERATION, PANELS ARE USED AS TEMPLATES FOR CUTTING INSULATION TO SIZE



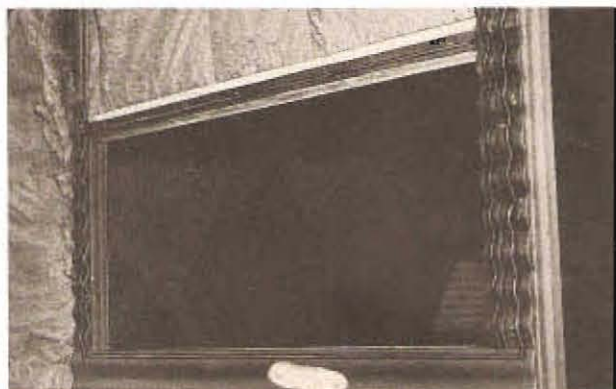
(Upper Left) Marking cutout on Masonite for rafter clip. (Upper Right) Ears bent for easy installation. (Lower Left) Clip inserted between rib flange and panel. Ear on left is bent over rib flange. (Lower Right) Rafter clip ear bent over rib flange.



MASONITE ENDWALL PANELS INSTALLED



INSULATION NAILED IN PLACE



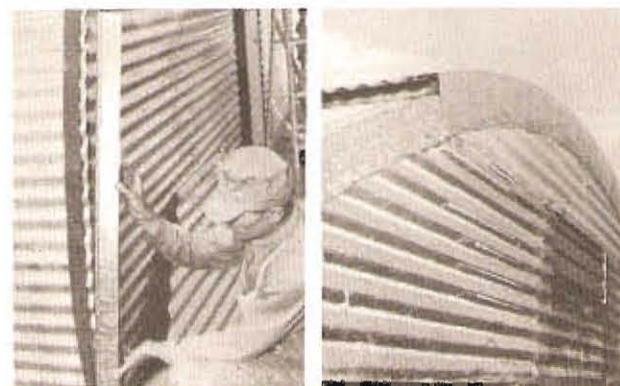
MASTIC APPLIED TO WINDOW STRIPS



PLASTIC WINDOW SHEET NAILED INTO PLACE



CORRUGATED SHEET OVER DOOR FITTED UNDERNEATH LOUVER FLASHING



FLASHING FASTENED OVER EDGE OF ENDWALL AND SIDEWALL. (Right) FLASHING ON CROWN IS ATTACHED

(Continued from Page 19)

At this time, the pieces of insulation for endwall are cut to special size and shape by using precut Masonite endwall panels as templates (see sketch page 18.)

(i) Apply special precut Masonite panels (smooth side facing interior) to endwall studs and to wooden blocking. Fasten to studs with Simplex nails 24" apart and to wooden blocking with 6d common nails.

(j) Apply 2" batten strips over joints of Masonite panels on both endwalls. Fasten with 6d nails about 8" apart by driving into nailing grooves of studs. Apply 2" curved Masonite scribes (M-4) around arch at endwalls by nailing to wood blocking. Apply Masonite trim around windows and Masonite sill as shown in sketch.

(k) Install plywood drop panel according to drawing E-10 and then hang door.

(l) Nail wood screen frame over louver opening.

(m) Apply one-quarter round shoe mold around entire building interior by nailing to plywood floor with brads 12" apart.

(n) Fasten with Simplex nails the insulation pieces that were cut for the endwall to wood blocking on end rib, wooden door head, wooden head and sills

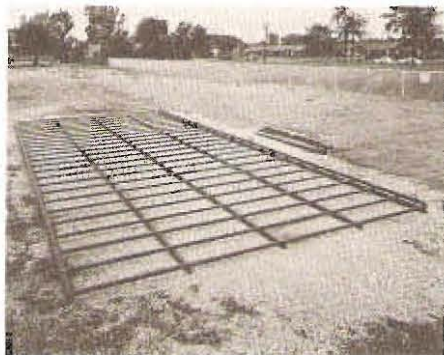
at windows and wooden blocks above and below louver. Fasten at base channel by wrapping insulation around a crating lumber stick cut to fit snugly between studs and between stud and rib.

(o) Apply corrugated rubber or asphalt strips to door jambs and studs at sides of window openings and louver. Do not nail corrugated strips until sheets are attached so that strips may be shifted to match the corrugations of the sheets. (The mastic will hold the strips temporarily.) Nail flat rubber or asphalt strips to head piece of door frame, to head and sill pieces of window frames, and to top of louver. All these strips must have a continuous bead of mastic on both sides.

(p) Start corrugated galvanized steel sheets 1½" below top of joists and apply in this order on each side of door: CS-3, CS-5, CS-6, CS-3, plastic window sheet, CS-7 and CS-8. Along sides of arch, CS-5, 6, 7, 8 and 9 sheets are cut special for left and right sides. Apply CS-12 over door, CS-9L and CS-9R at sides of louver and CS-11 over louver. Attach sheets to studs with double-headed nails and lead washers (with .16" hole) 8" apart and to wood blocking around arch with 6d nails. Fasten together side laps of corrugated sheets with sheet metal screws and lead washers (with ¼" hole) 12" apart.

(q) Attach six pieces of flashing (F-1) and three pieces of flashing (F-2) as shown in sketches on page 18 and photos above.

ALTERNATE ERECTION SEQUENCE



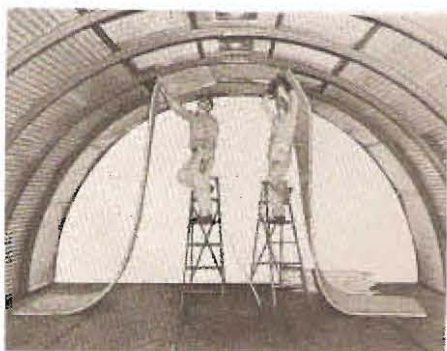
FLOOR FRAME



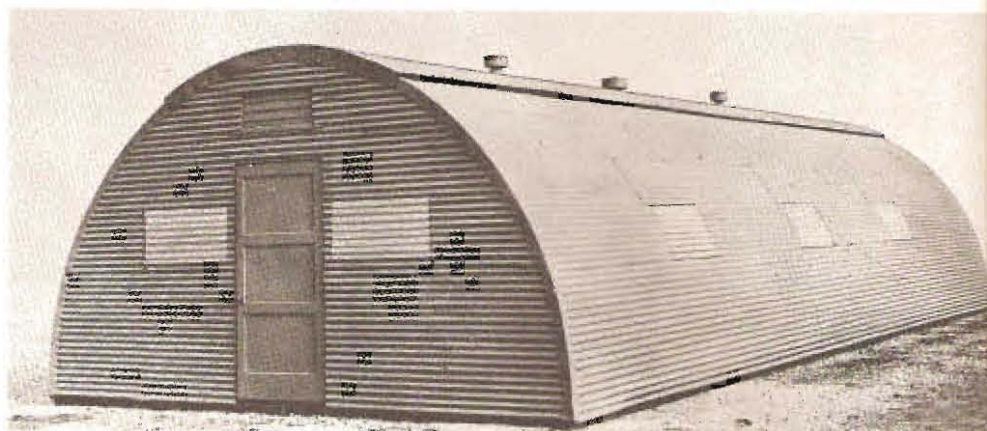
RIBS AND PURLINS



EXTERIOR COVERING



INSULATION

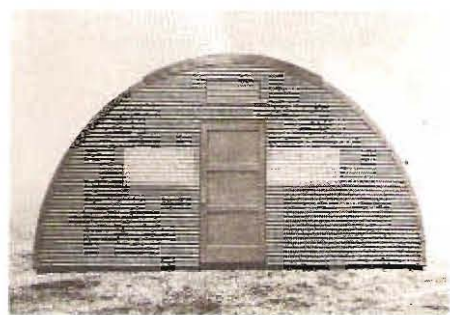


Extended periods of bad weather may make it desirable to put on the outside covering as soon as possible to avoid possible damage to Masonite interior lining and insulation by rain, snow and ice or by wind. In this alternate erection sequence, therefore, the outside covering and windows are nailed to ribs and purlins as Step 4 instead of Step 6. All other operations are very much the same.

1. **Floor Framing.** Lay the sills first; then the joists, then the sidewall channels. Level and square the whole assembly. (See pages 4 and 5.)
2. **Floor Panels.** Lay out plywood floor panels on the joists. Install metal splines at longitudinal joints, and nail the panels to the joists. (See pages 6 and 7.)
3. **Ribs and Purlins.** Fasten the half-ribs together with splice plates, raise into position and screw to channel plates. Erect purlins and plumb entire assembly. (See pages 8 and 9.)
4. **Outside Covering and Windows.** Nail straight corrugated sheets including plastic window sheets on sides to ribs and nail curved corrugated sheets on top to purlins. (See pages 14 and 15.)
5. **Ventilator and Smokestacks.** Assemble ventilator and smokestacks and install at center line of roof. (See pages 16 and 17.)
6. **Insulation.** Install insulation between ribs. Hold insulation in place with sticks of crating lumber wedged in place between ribs. (See photo below.)
7. **Inside Covering.** Nail Masonite sheets to ribs. Install metal splines at horizontal joints and nail Masonite battens over joints at ribs. (See pages 10 and 11.)
8. **Endwalls.** Fasten down endwall channels and erect studs. Install door and louver. Nail corrugated sheets including plastic window sheets to studs and wood blocks on end rib. Attach flashing around arch. Cut insulation to special size pieces using Masonite panels as templates. Attach insulation between studs and end rib. Nail Masonite endwall panels into place. (See pages 18 to 21 incl.)

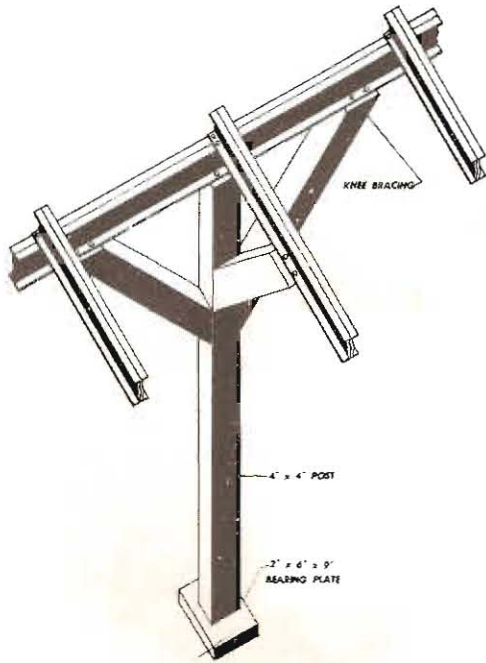


INTERIOR COVERING

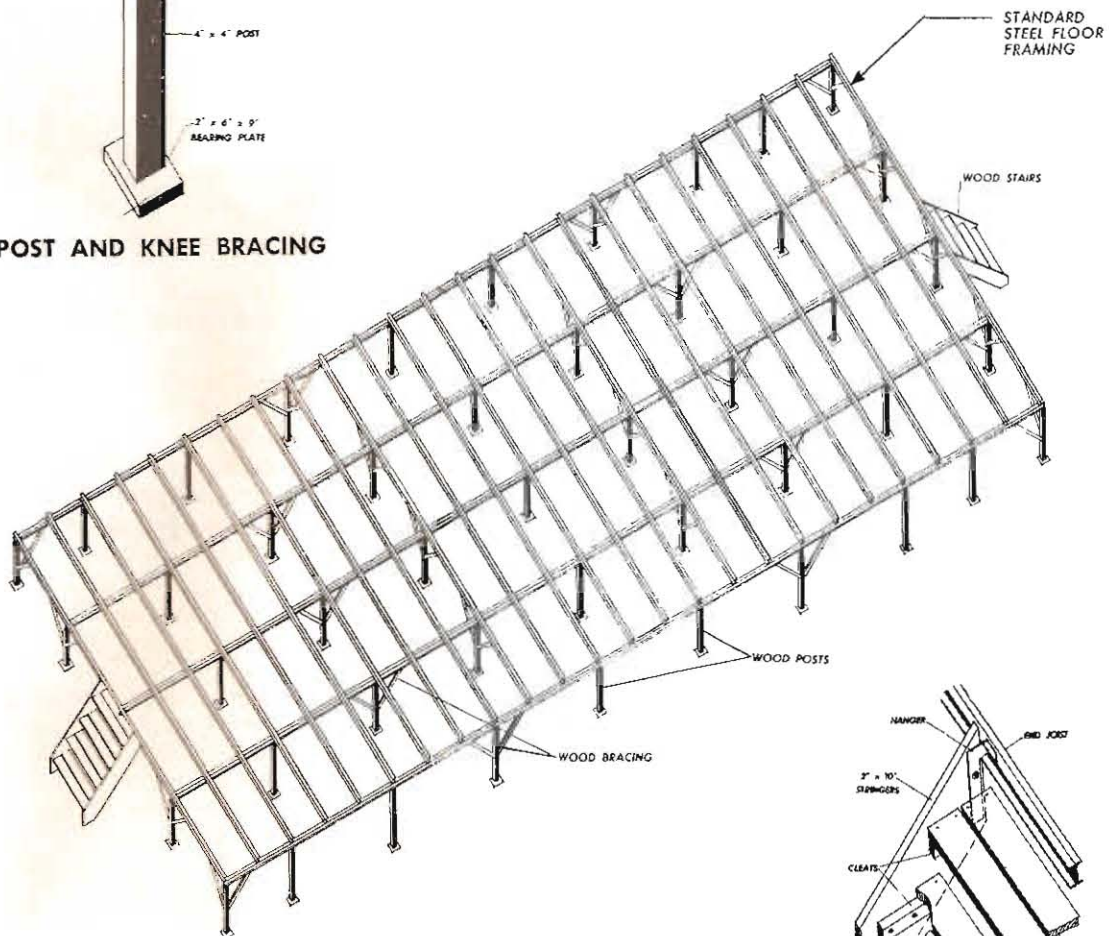


ENDWALLS

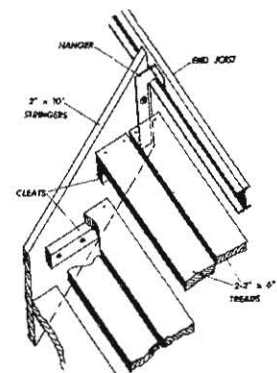
ADAPTATION WOOD POST FOUNDATION



POST AND KNEE BRACING



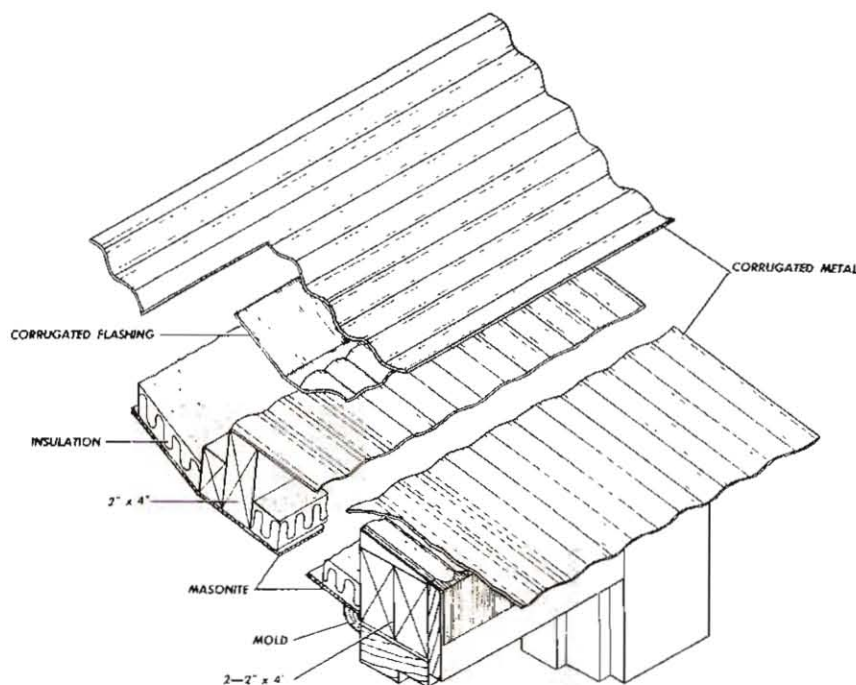
SUPPORTED FLOOR FRAMING



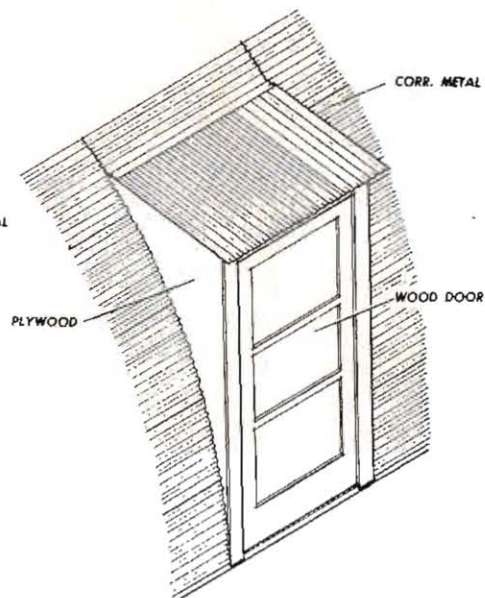
DETAIL OF STAIR

Although materials for this work are not furnished it is suggested that for conditions under which the ground cannot be conveniently levelled, wood posts may be used to level the building. See sketches on this sheet for suggestions.

ADAPTATION — SIDE DOOR



DOOR HEAD



COMPLETE DOOR

Determine location of side door.

Remove (or omit) channel, corrugated sheets, insulation, inside covering, shoe mold and window, if door replaces a window.

Carefully cut the corrugated sheets along the inside edge of each rib to provide for nailing the sheets to the ribs. Before nailing the corrugated siding, install the flashing sheets between the corrugated building siding and the plywood siding of the doorway.

Erect the 2 x 4 framing for the door opening and roof. Bend two (2) 2 x 4's along the ribs each side of opening. This can be accomplished by making saw cuts across the 2 x 4, 2" apart and $\frac{3}{4}$ " deep, then bend to radius.

Nail Masonite to frame, using salvaged Masonite—cut to fit.

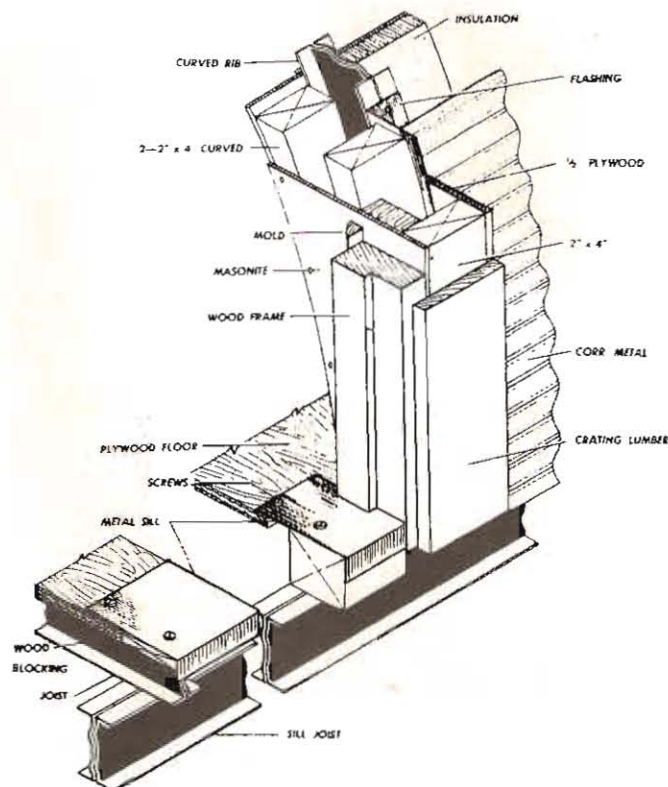
Install sill (see detail) using crating lumber blocks nailed to the floor joists. Screw sill to blocks and floor.

Place insulation over ceiling and sidewalls, using salvaged insulation.

Nail plywood sides, door trim and trim along edge of roof at each side, using crate lumber.

Install the corrugated flashing pieces over the door and along the joint between the building siding and the doorway roofing. Cut and bend the building siding, corrugated sheet in order to give the proper slope to the doorway roof. (See drawing.)

Install the corrugated roof sheets, using salvaged sheets.



DOOR SILL