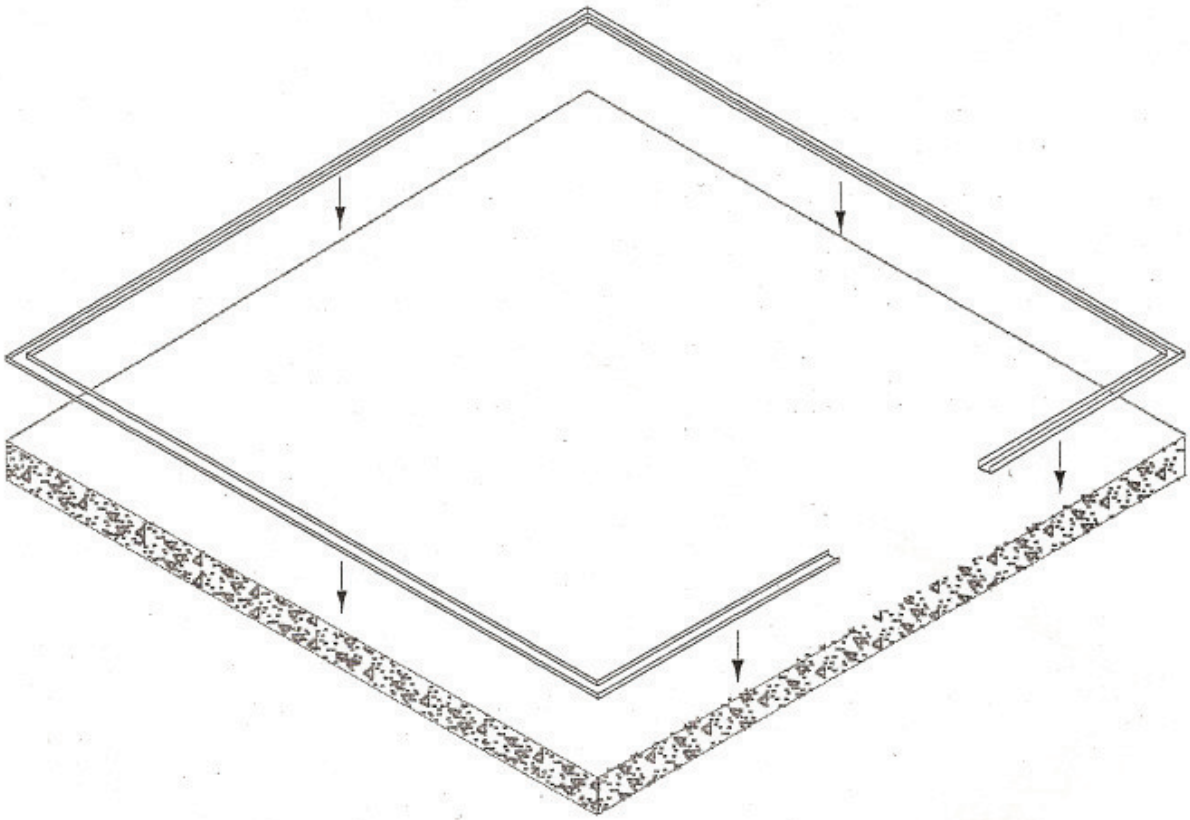
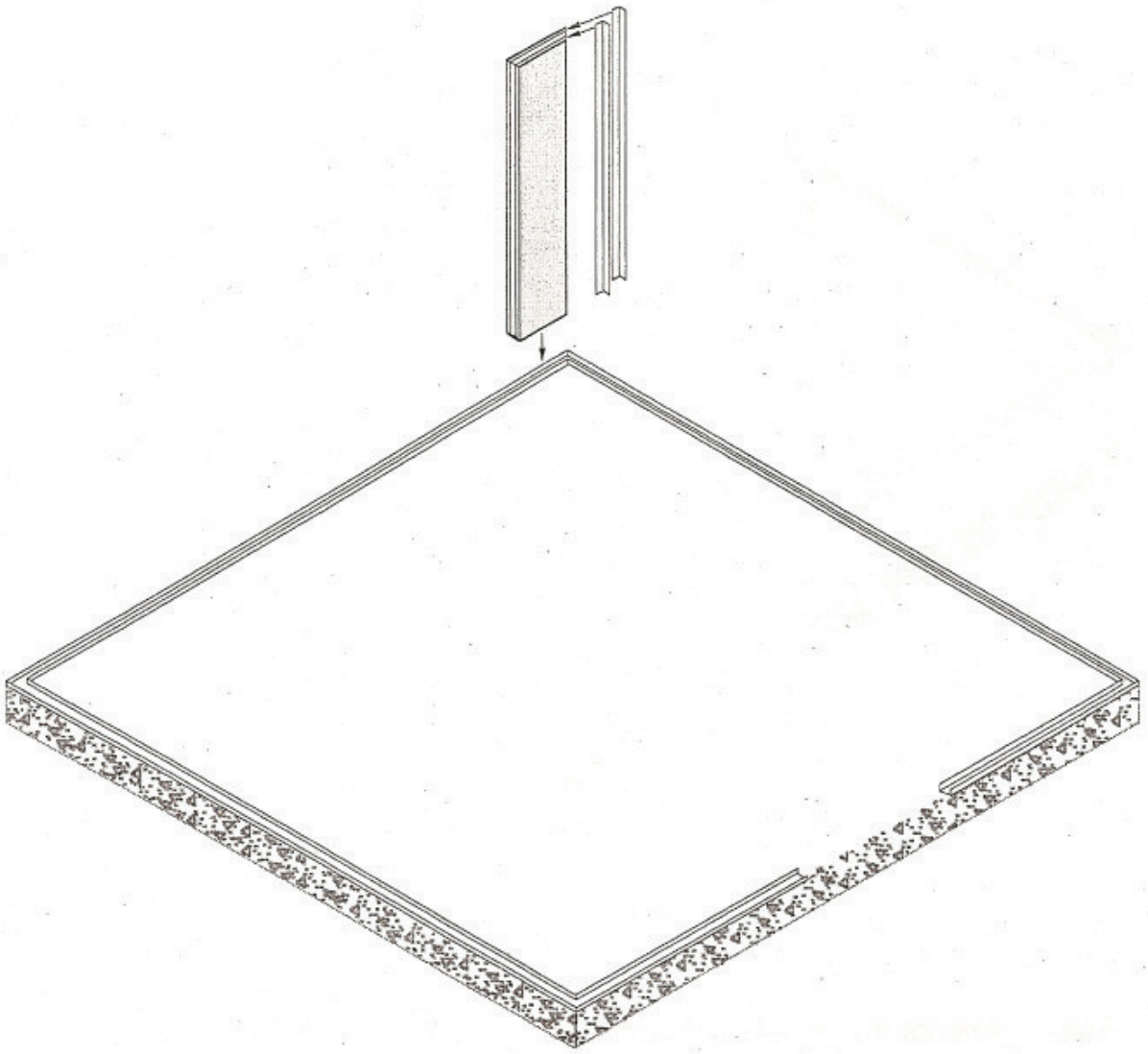
ProTEC

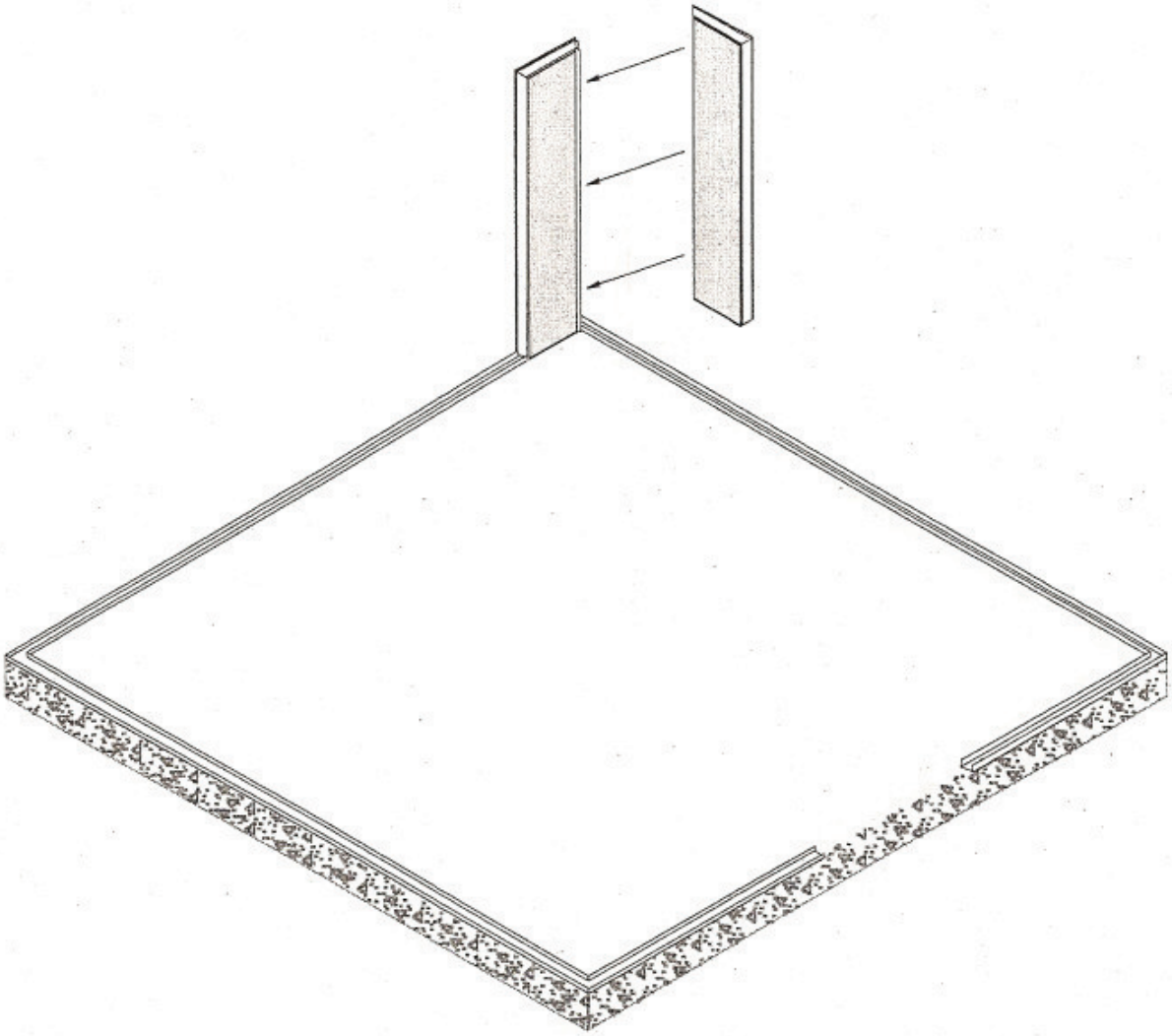
Concrete Structural Insulated Panel System



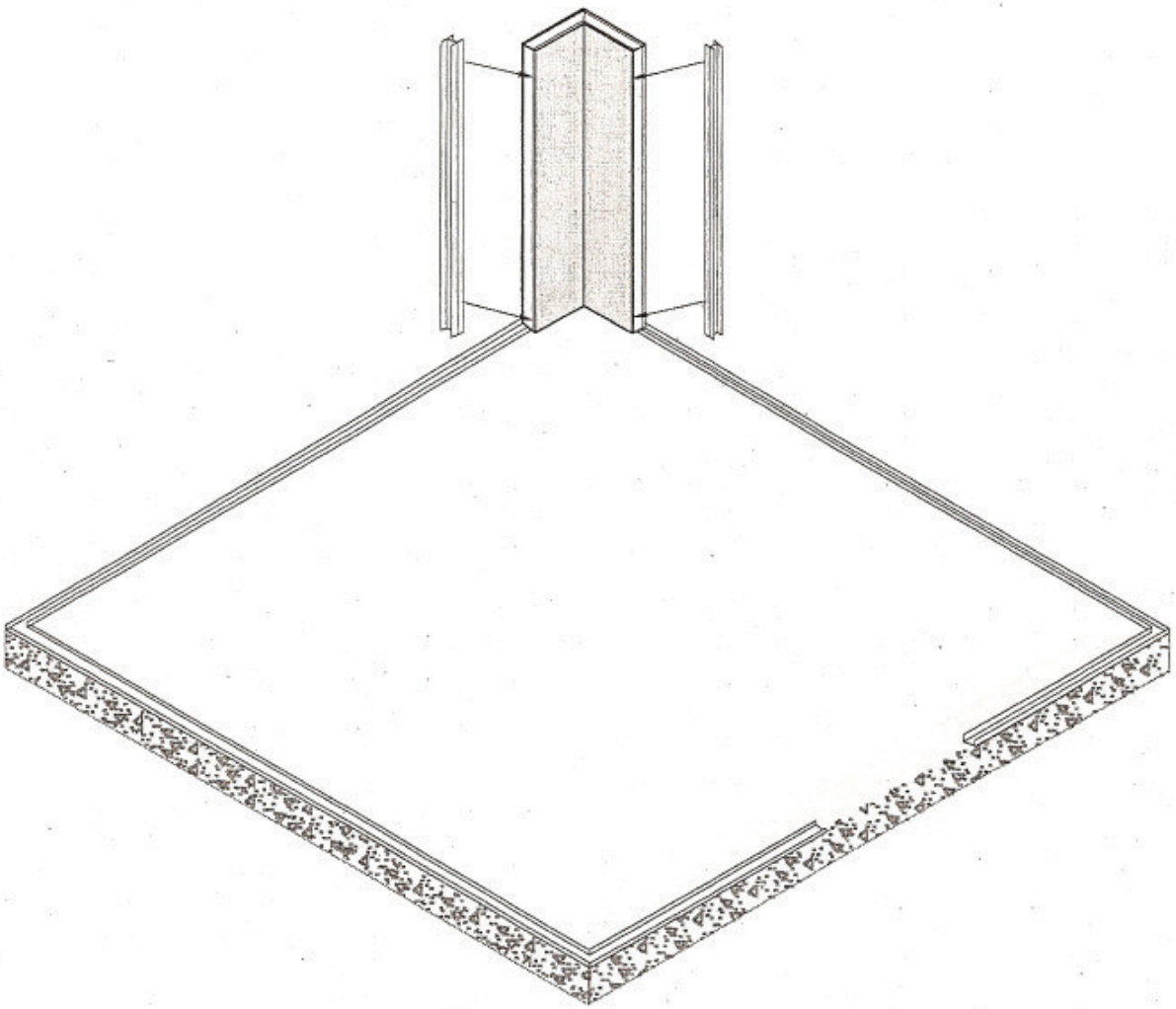
Step 1. Anchor the steel sill channel to the slab or foundation wall, per local code requirements. In the absence of a local code requirement, the steel sill channel shall be anchored to the slab or foundation with 1/2 inch diameter wedge bolts placed 3 feet on center and not more than 12 inches from corners.



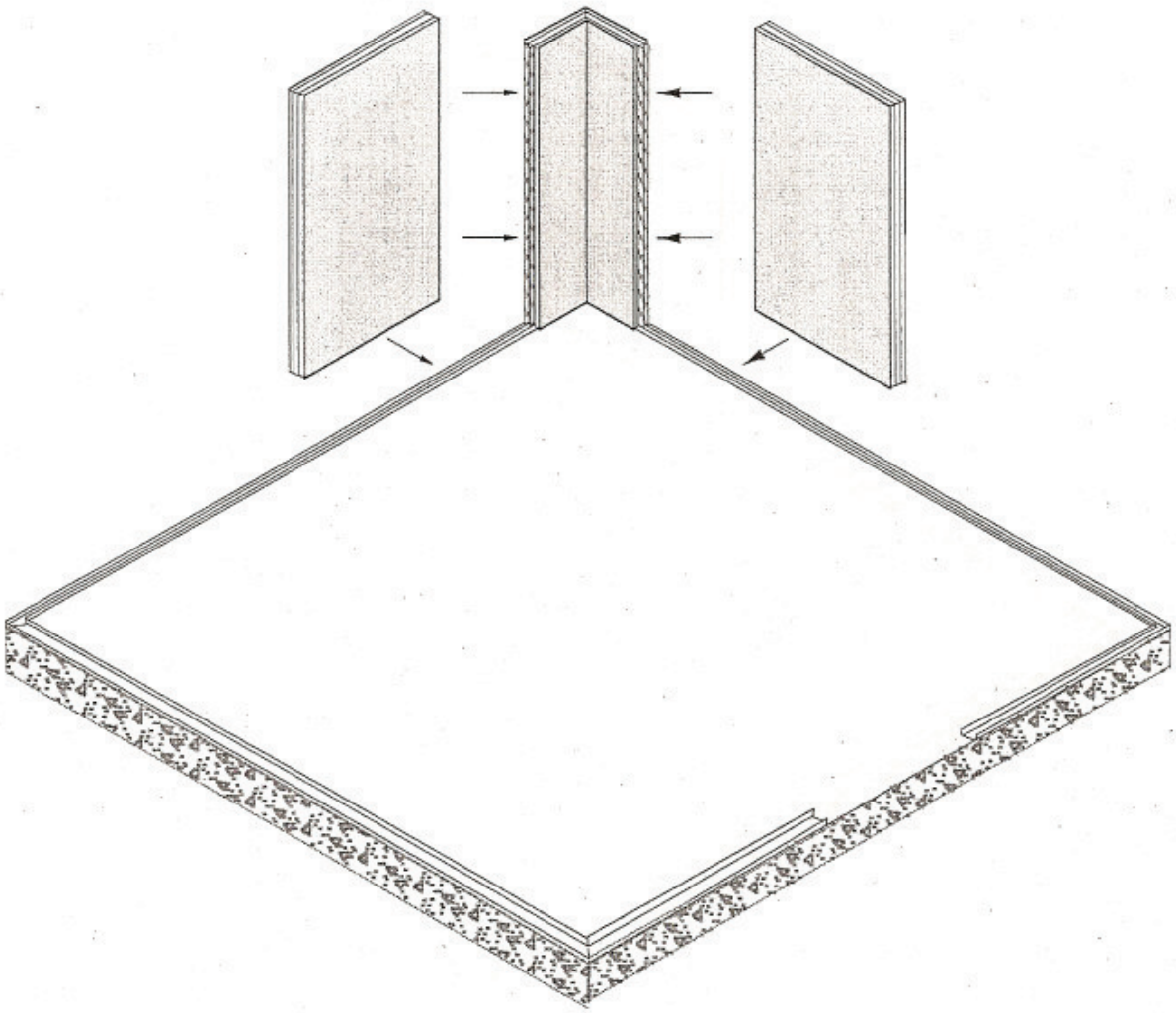
Step 2. Set one section of the panel corner unit on the base channel and install the steel angles.



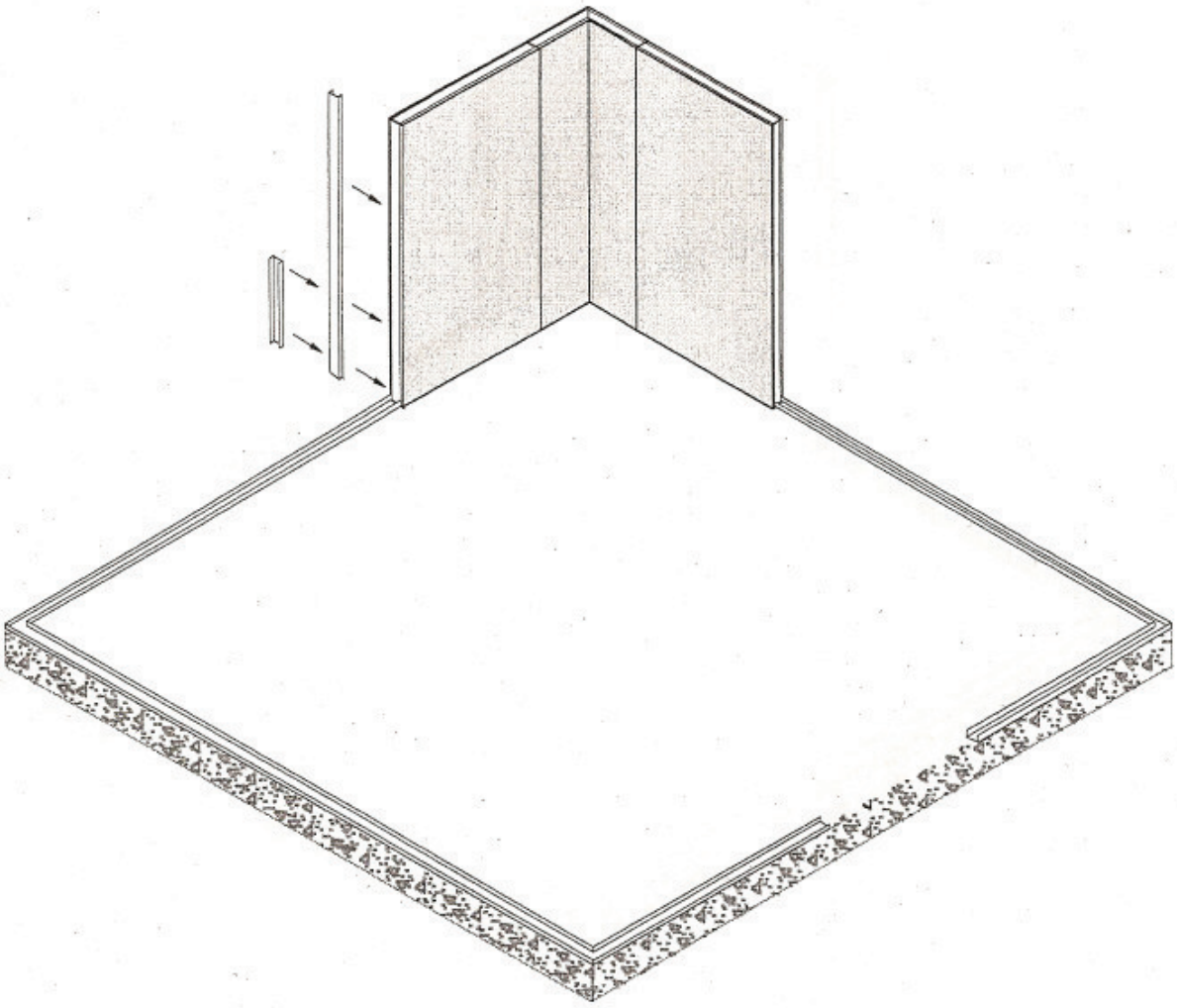
Step 3. Fit the second section of the panel corner unit to the steel angles and on to the sill channel, making sure that it is snug to the first section of the corner unit. Be certain the panel corner units are snug, square and plumb. Using the proprietary screws, attach the panel corner units to the sill channel in the bottom corners. Using pneumatic nails attach both panel corner sections to the steel angles. Do not install the top-most fasteners at this time. The top-most fasteners are intended to connect the corner unit and subsequent panelsto the steel top plate, and will be installed at a later time.



Step 4. Insert an H-stud into each side of the corner unit.

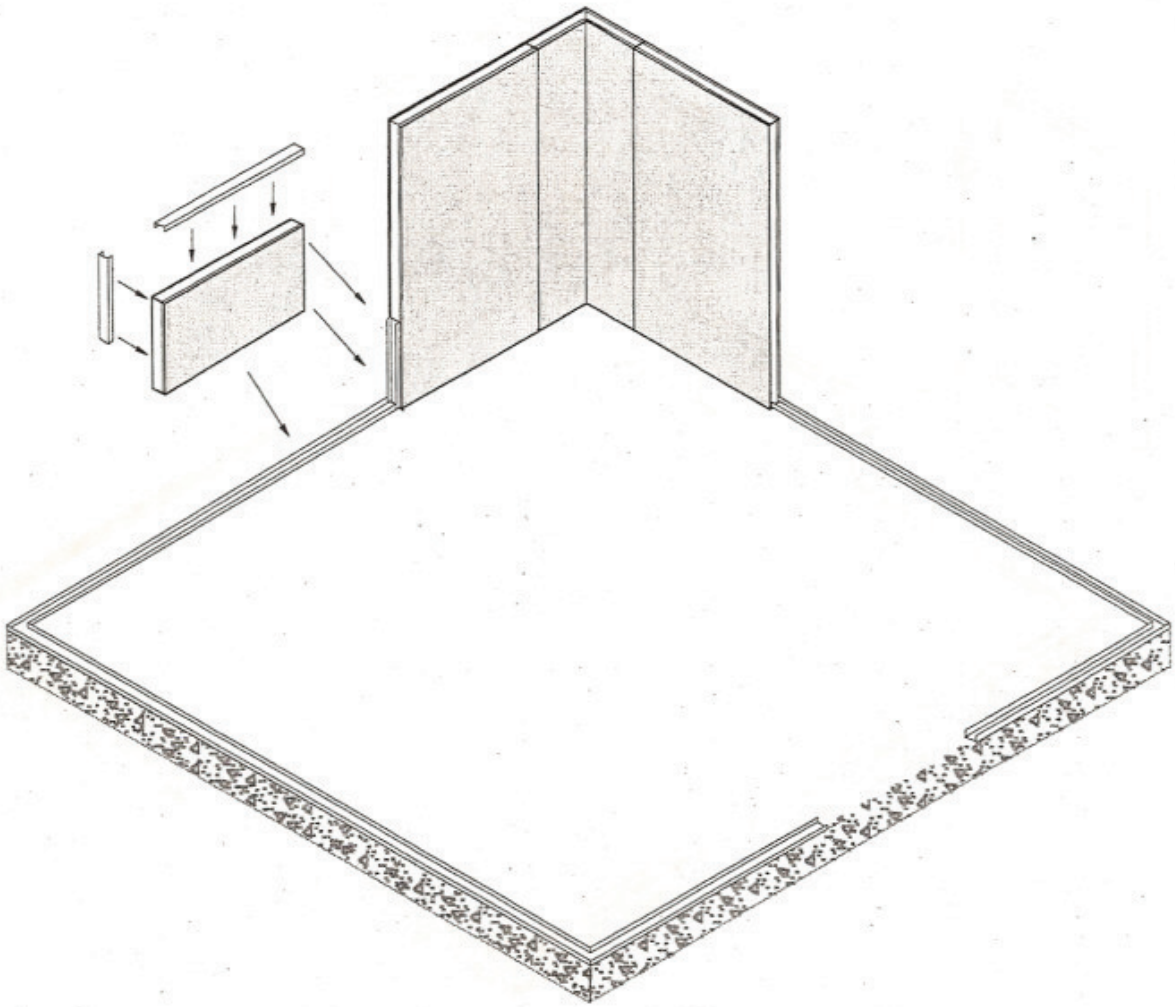


Step 5. Set panel onto the sill channel and against the corner unit. Repeat this process on the other side of the corner unit. Plumb the corner unit and panels. Using the screw fasteners, connect the corner unit and panels to the H-studs and sill channel. Check the panel to verify that it is plumb, level and in the correct position. Then screw off the bottom corners and the center of the panel edge to the H-stud, half "H", corner angle and sill channel. Next, nail the rest of the panel off, both inside and out, every 8 inches on center.

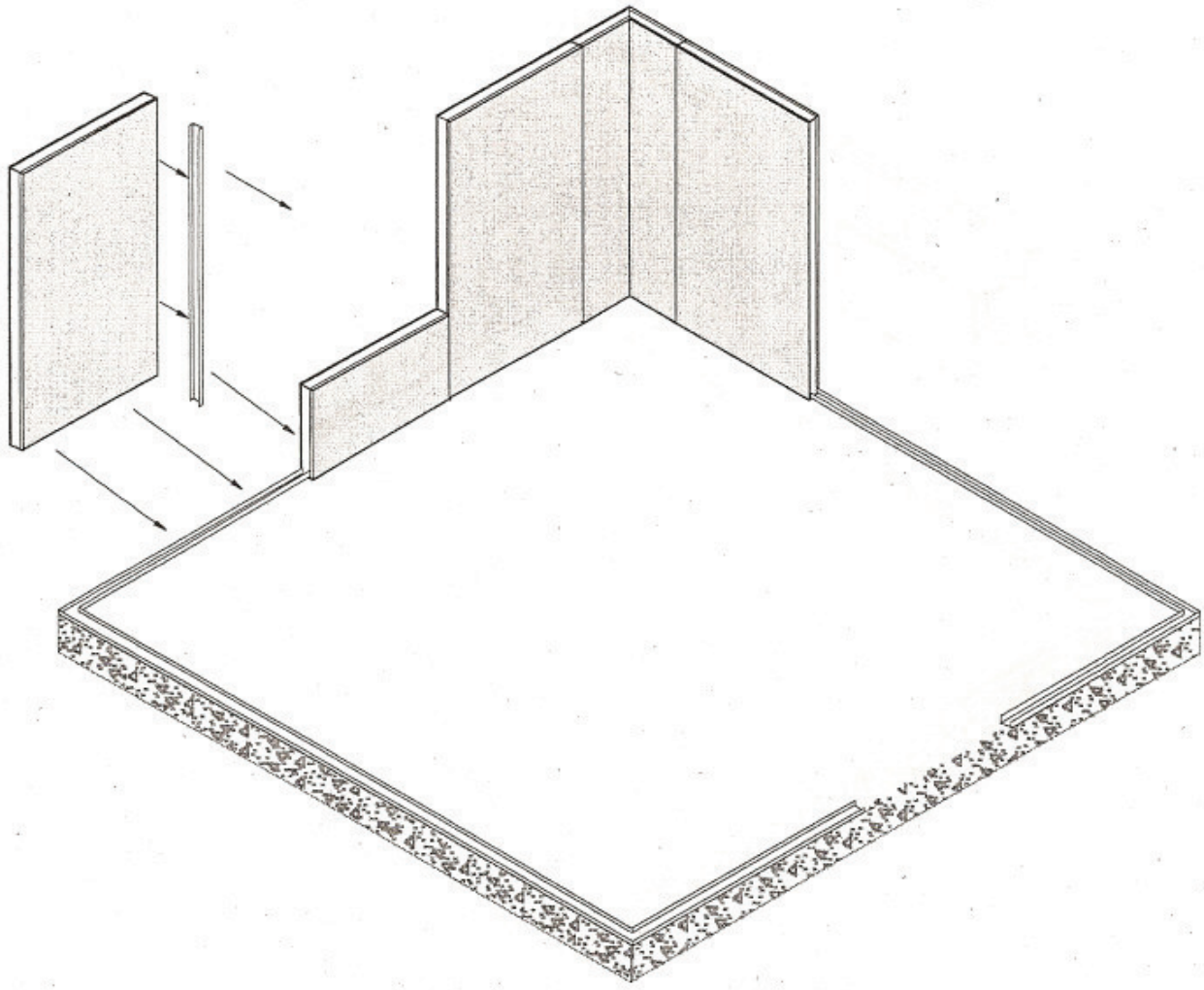


Step 6. Install the half "H" from sill to top of panel. Connect the window base half "H" with pan head screws.

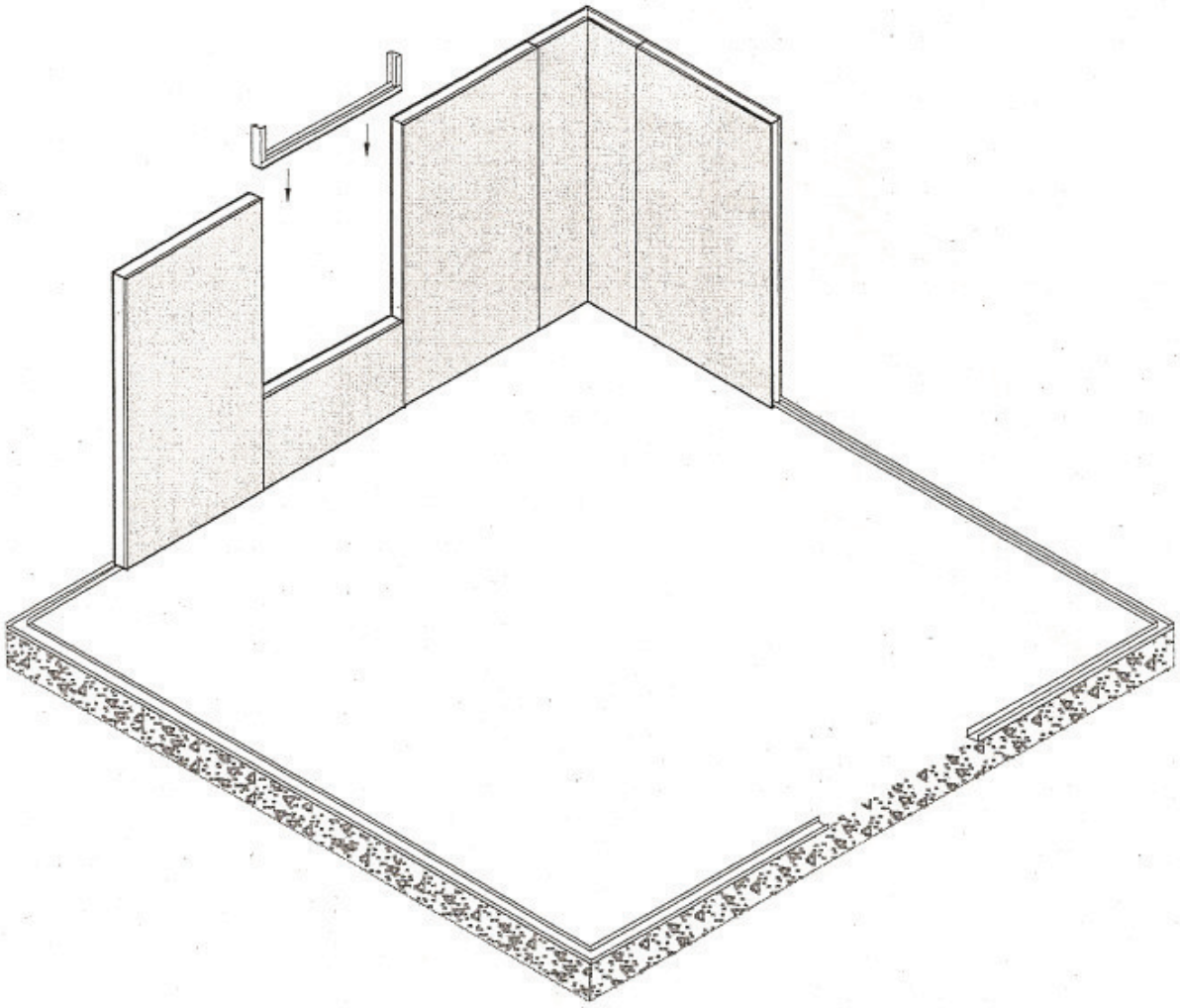
Using fasteners, connect the channel to the panel. Do not install the fasteners where the header will be installed.



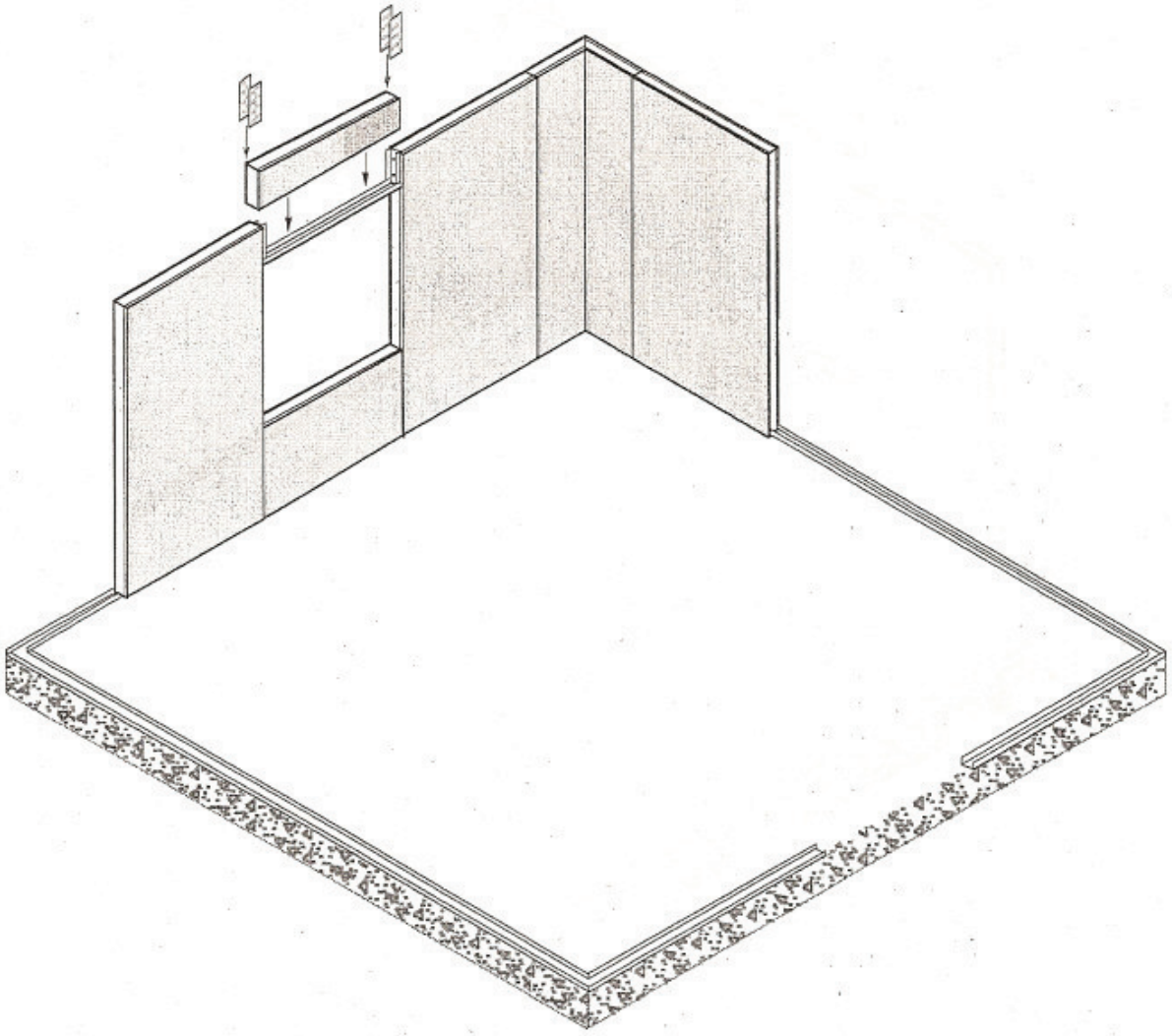
Step 7. Set the window base panel onto the sill channel and against the previously installed panel. Insert the steel window sill channel into the top of the window base panel and the window base half "H" into the open end of the window base panel. Using the fasteners, connect the window base panel to the window sill, half "H" and sill channels



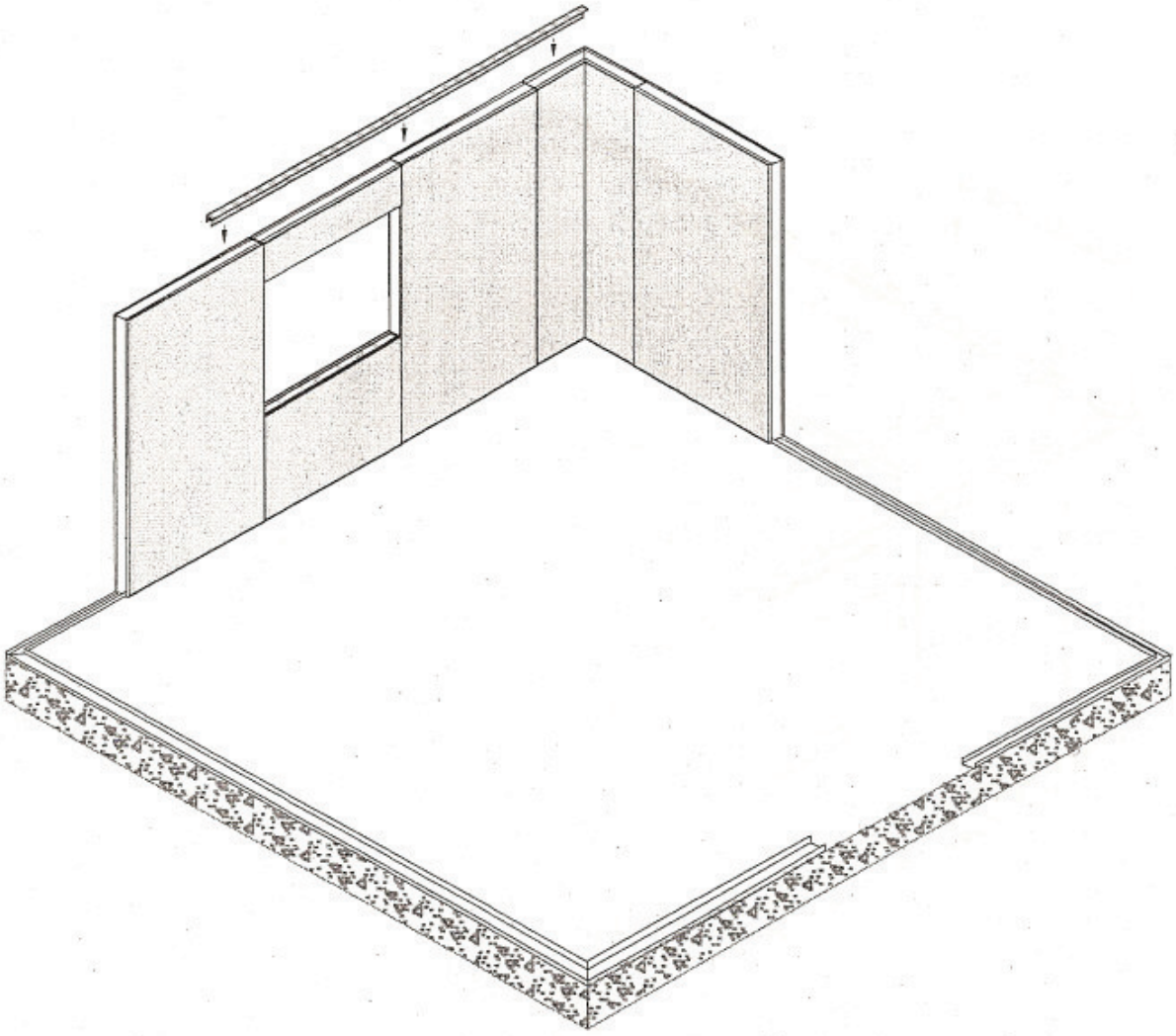
Step 8. Connect the full steel half "H" to the window base channel with pan head screws. Set the panel onto the sill and into the half "H". Screw off amd nail the full panel to the half "H".



Step 9. Install the window header channel into the opening and connect it to the half "H"s with pan head screws.



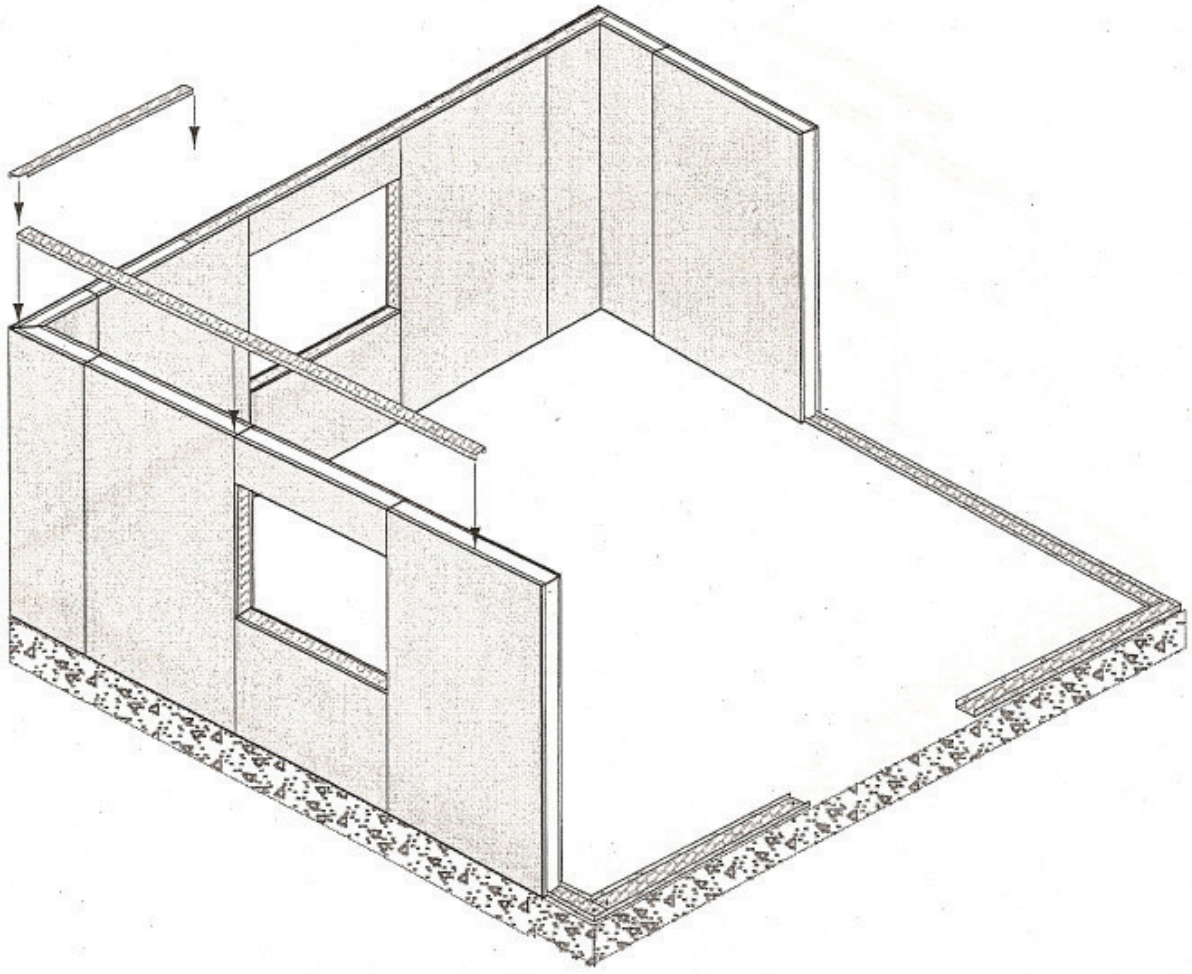
Step 10. Install the window header panel into the opening and install splines. Using fasteners, connect the panels to the steel splines, jamb, header, and sill channels. Do not install the top row of fasteners across the panel at this time.



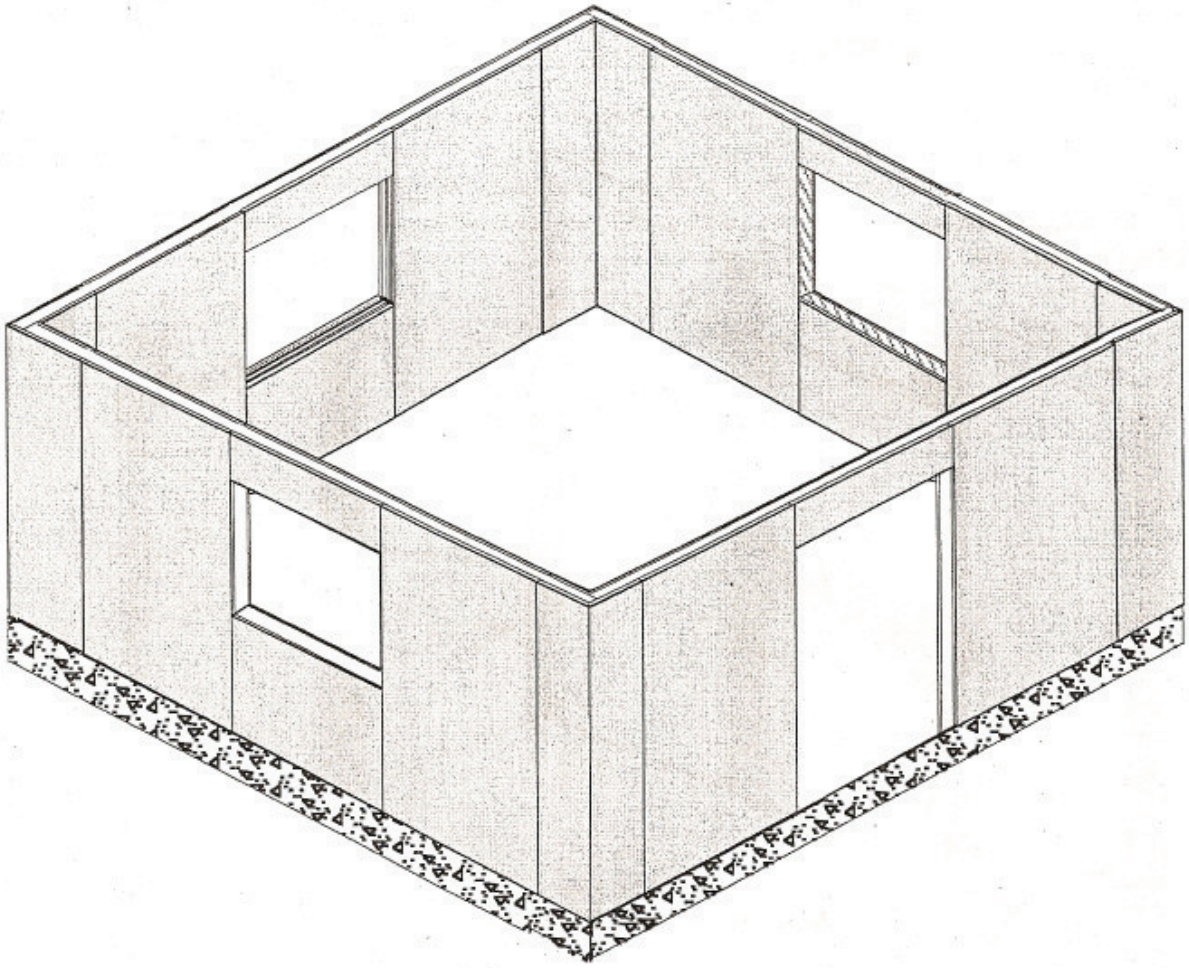
Step 11. Install the steel top channel into all panels, header panels, and corner units as the erection of the wall proceeds.

If uplift is not a consideration, the top track should be fastened to all panels, header panels and corners as the top channels are installed. If clip angles are used to connect to the roof framing, they can be installed now.

If hurricane or uplift ties are required, they should be installed with the top track and fastened to the panels, header panels, and corners, at the same time. Make certain that the locations of the hurricane/uplift ties coincide with the locations of the structural roof members being tie down.



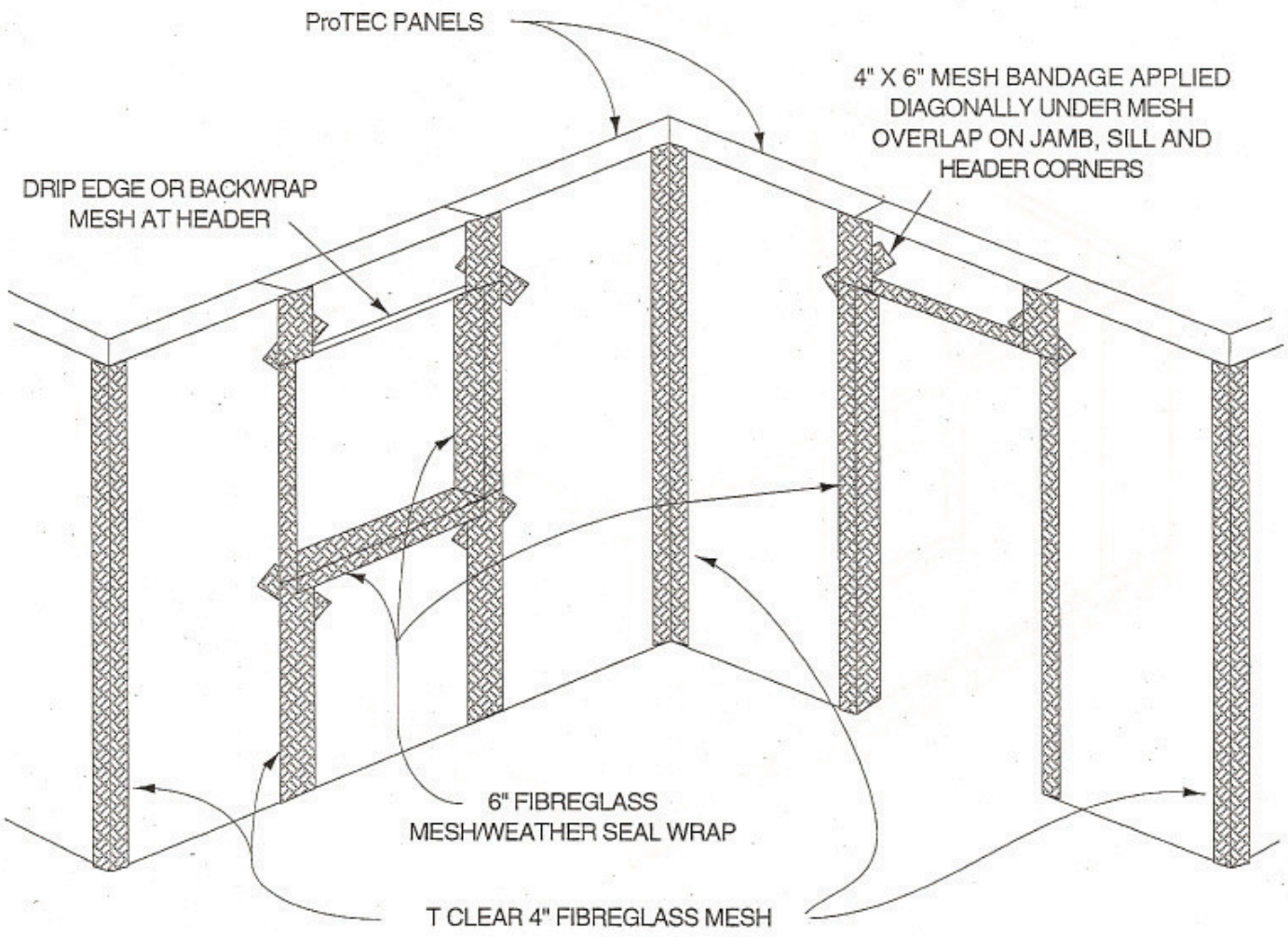
Step 12. Repeat Steps 2 & 3 for the installation of an additional corner unit, Steps 4 & 5 for wall panels,Steps 6 through 10 to create a window opening, and Step 11 for the installation of the top track.



Step 13 To complete the exterior wall enclosure, repeat Steps 2 & 3 for the installation of additional corner units, Steps 4 & 5 for wall panels, Steps 6 thru 10 to create windows, applicable portions of Steps 6, 9, and 10 to create door openings, and Step 11 for the installation of the top tracks. It is recommended that the last panel to be installed be a window or door header panel.

The exterior wall construction is now complete and ready for the installation of the roof structure. If clip angles are being used and have not already been installed, they should be installed at this time.

Note: If wood top plates are desired or required by a local code body, they can be connected to the steel top channels at this time. However, wood top plates should be installed prior to the installation of any clip angles or uplift ties.



NOTES:
1. FOR WINDOW AND DOOR OPENINGS THE T CLEAR 6" FIBREGLASS MESH AND MESH BANDAGES SHALL BE EMBEDDED IN A SealGUARD LIQUID WATER PROOFING MEDIUM OR EQUAL, AS APPROVED BY EXTERIOR FINISH MANUFACTURER.
2. FOR PANEL JOINTS THE T CLEAR 6" FIBREGLASS MESH SHALL BE EMBEDDED IN SealGUARD OR EQUAL, AS APPROVED BY THE EXTERIOR FINISH MANUFACTURER.

Step 14. Take time here to tape and water proof the joints and corners of the exterior of the house.

Step 15. CONNECTING ROOF STRUCTURE TO THE COMPLETED EXTERIOR WALL

Depending on the design of the roof structure (i.e. joist, rafter, truss, etc.), it is installed in the same manner as it would be on a conventionally built wood frame, metal frame or wood panel wall.

In the case of:

A. CONVENTIONAL NON-UPLIFT SITUATIONS

- NO WOOD TOP PLATE

-For a light steel frame roof structure, clip angles and screws are used to connect roof structure to the steel top channel.

-For a wood roof structure, screws are used to connect the clip angle to the steel top channel and either nails or screws are used to connect the wood to the clip angle.

- WOOD TOP PLATE

-For a light steel frame roof structure, nails or screws can be used to connect the clip angle to the wood top plate and screws are used to connect the roof structure to the clip angles.

-For a wood roof structure, clip angles are not necessary, the wood roof structure can be connected to the wood top plate using nails.

B. HURRICANE / UPLIFT SITUATIONS

-Hurricane or uplift ties have been connected to the steel top channels with screws.

-A wood roof structure is connected to the hurricane ties with nails or screws.

-A light steel roof structure is connected to the hurricane ties with screws.

The following three drawings illustrate the installation of a wood truss roof system to an exterior wall.