



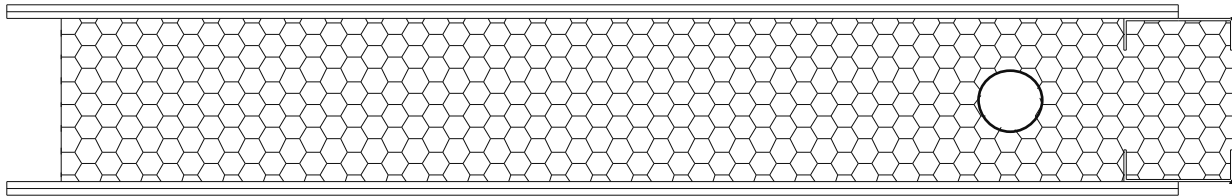
INTERMOUNTAIN BUILDING PANELS

CONSTRUCTION GUIDE

50 WEST 100 SOUTH JEROME, ID 83338 www.ibpanels.com
(888) 799-1398 FAX (208) 324-6740

GENERAL INFORMATION

INTERMOUNTAIN BUILDING PANELS



1-888-799-1398

TOOLS REQUIRED

- Level (longer the better)
- Tape Measure
- Hammer
- Sledge Hammer (4lb or bigger)
- Circular Saw
- Hand Saw
- Reciprocal Saw (Metal and Wood Blade)
- String Line

- Electric Drill
- Square
- 1"to 1-1/2" spade bit
- Caulking Gun
- Chalk line
- Foam Rasp
- Groove Jet
- Ladder

MATERIALS LIST

The following material are supplied in the standard Intermountain system.

- Floor Panels (6" to 12")
- Wall Panels (4" to 8")
- Roof Panels (6" to 12")
- Insulated structural headers
- Precut sill panels
- Gable panels
- Job site panel plan
- Metal panel to panel connections
- Metal/foam corner posts (45 and 90 degree)
- 2x material in headers
- 2x material in sill panels
- Electrical chases

The following materials are not supplied in the standard Intermountain system.

- 2x base plate material
- 2x double top plate material
- 2x uprights for window and door openings
- Fasteners
- 2x roof sub-fascia

FASTENERS REQUIRED

- 16 Penny Nail
- 8 Penny Nail
- 1-1/4" Drywall Screws
- Panel Screws (appropriate length)

SEALANT / CAULK

- Latex Caulk (1 10oz. tube per 3 4'x8' panels)
- Foam-in-place insulation
- PI-400
- Foam compatible construction adhesive

Notes:

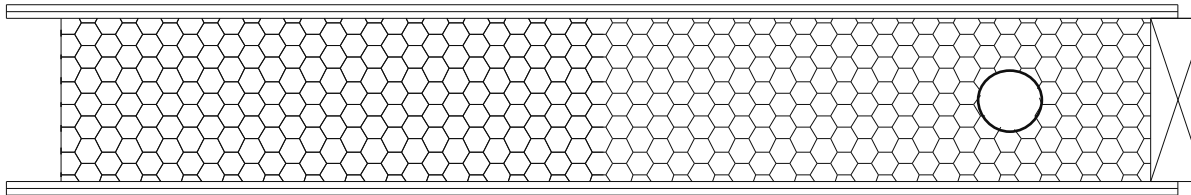
Foam rasps and groove jets will be supplied by Intermountain for one week. After one week, there will then be a \$30 per week rental fee until tools are returned.

GENERAL CONSTRUCTION INFORMATION

- During construction process, make sure all panel joints are screwed and nailed with appropriate spacing before moving to the next phase of construction.
- Unless otherwise noted on engineered plan, all top plates, bottom plates and panel joints are to have a 6" spacing. Roof panels are to have a 12" spacing of panel screws.
- Panels require a minimum of 1/2" sheet rock to meet fire code.
- Use 3" screws and adhesive to fasten partition walls to wall and roof panels.
- Electrical chases run at 16" and 46" in all wall panels and there is a vertical chase in every panel.
- Panel houses are extremely air tight, air to air exchangers are recommended in all Intermountain houses.
- Even though our panels will stand on their own, we recommend using conventional bracing on all wall and roof system.
- For long-term storage, store panels on a flat surface and keep as dry as possible.
- Siding is to be nailed with 12" spacing, using ring shank nails, grabber screws or staples.
- After windows and doors have been installed, foamed-in-place insulation is recommended to fill all rough openings.
- All flame sources, i.e. fire places, furnaces, water heater, etc., require external combustion air.

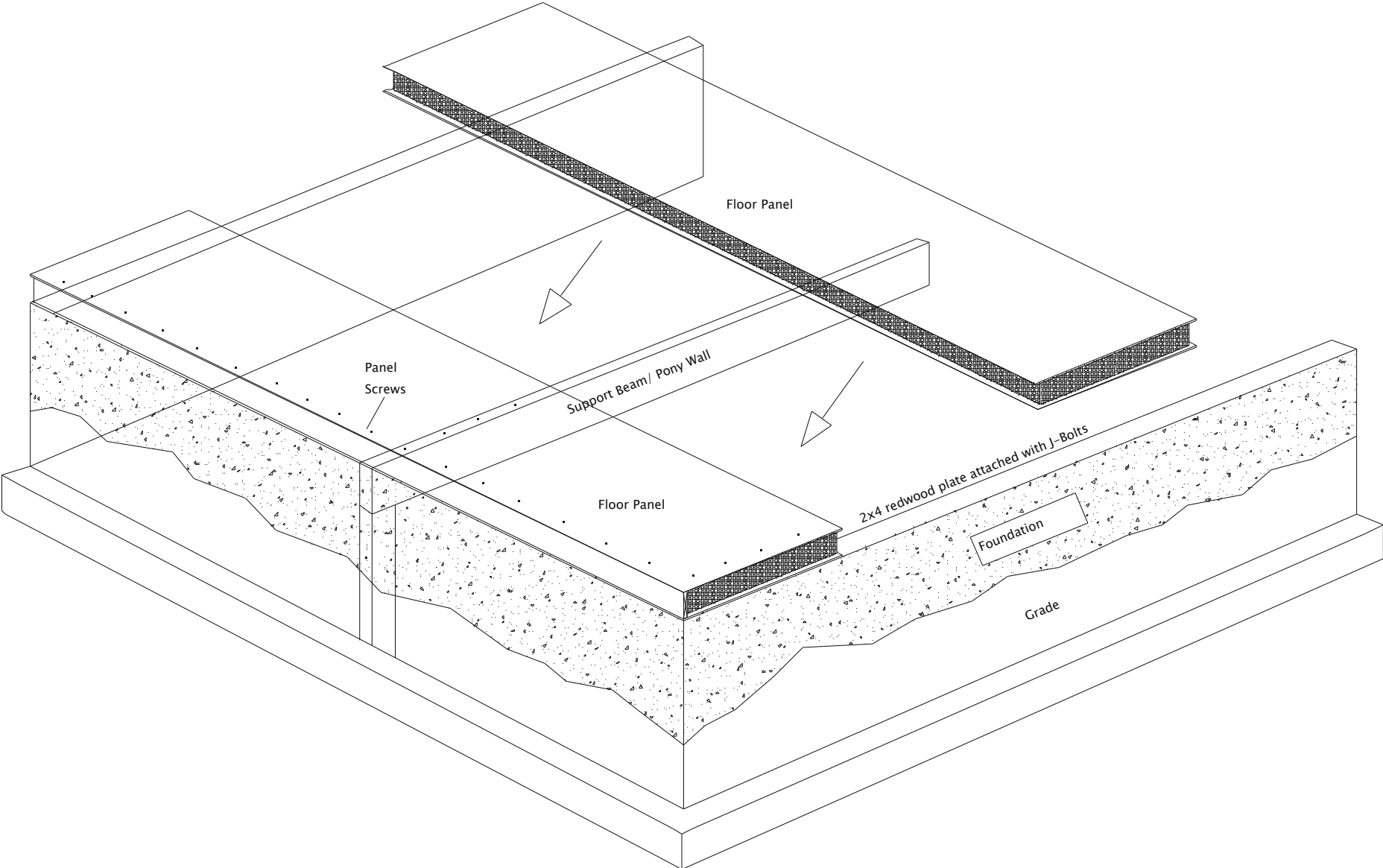
FLOOR PANELS

**INTERMOUNTAIN
BUILDING PANELS**



1-888-799-1398

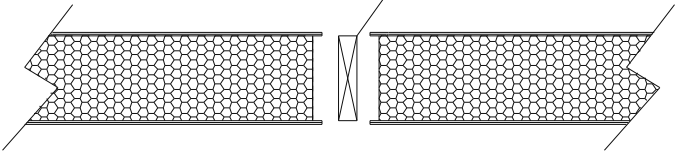
FLOOR PANEL SYSTEM



FLOOR PANEL CROSS SECTIONS

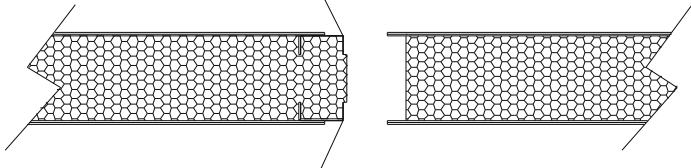
A

Floor panels can be joined using a double or single 2x stud depending on engineering

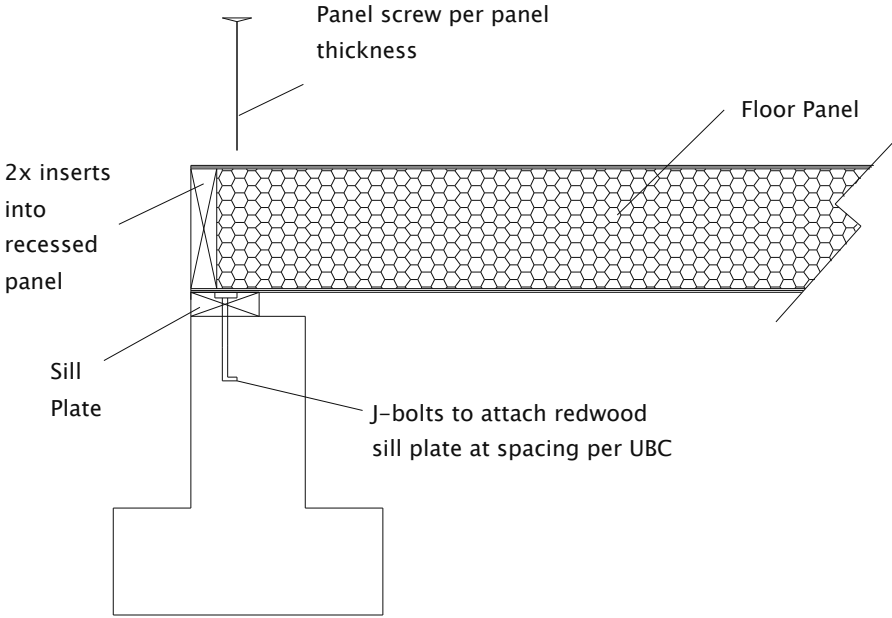


B

Metal stud for joining floor panel



Metal stud for joining floor panel

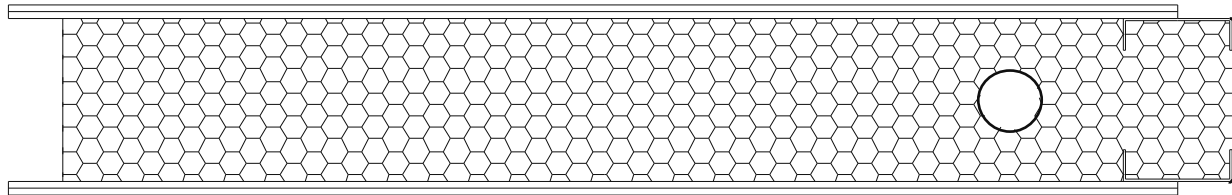


Floor panels can be joined together using connection A or connection B.

- Connection A uses a double or single 2x stud. The studs slide into the panels and are then nailed off at a 6" spacing.
- Connection B uses pre installed metal studs. The metal studs are laminated into the panel, fit together with a tongue and groove system, then screwed together using a 6" spacing.
- Floor panels are attached to sill plate using panel screws. The panel screws are longer than the panel width, going entirely through the panel and into the sill plate with 1' spacings.

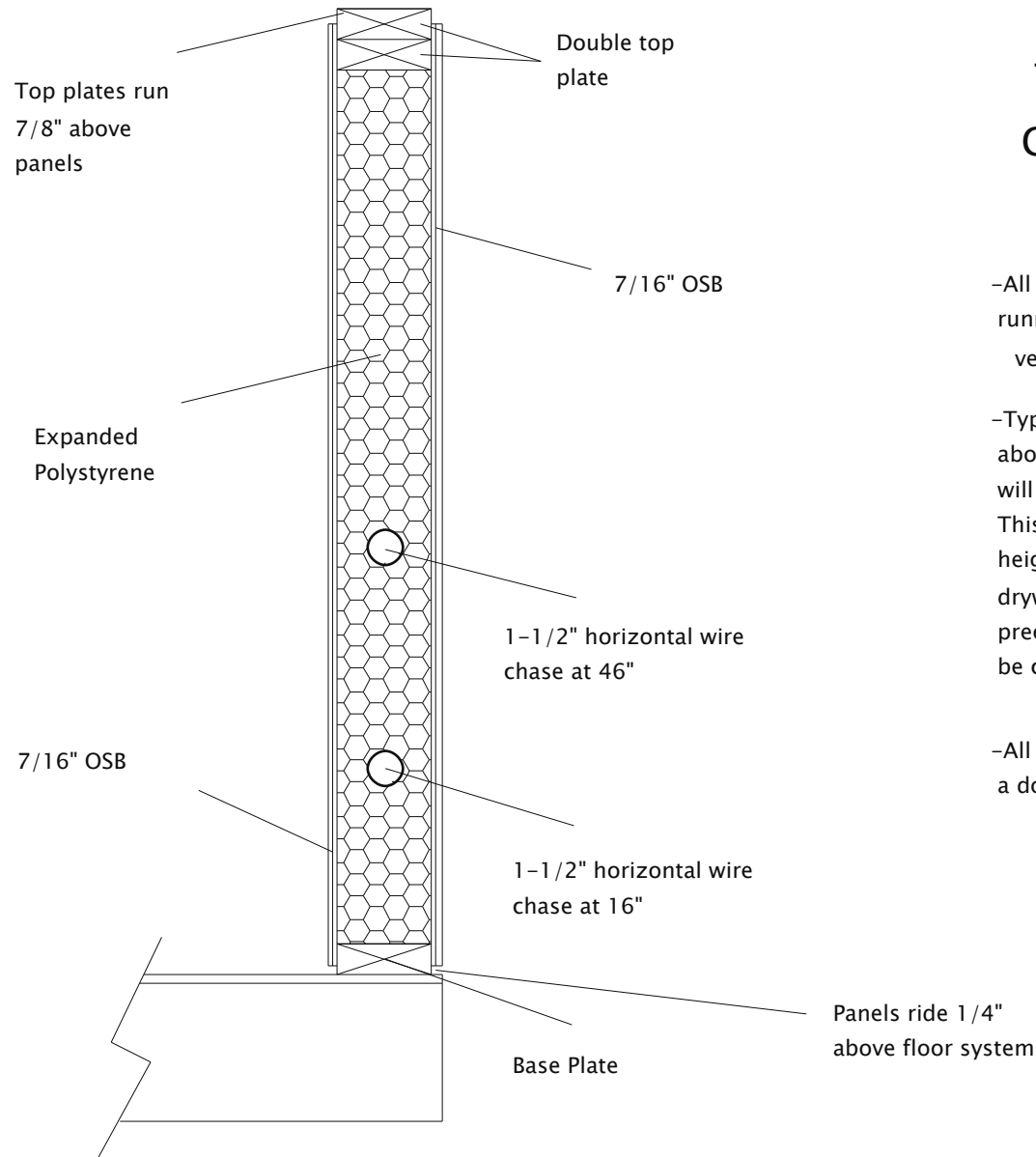
WALL PANELS

INTERMOUNTAIN BUILDING PANELS



1-888-799-1398

TYPICAL PANEL CROSS SECTION



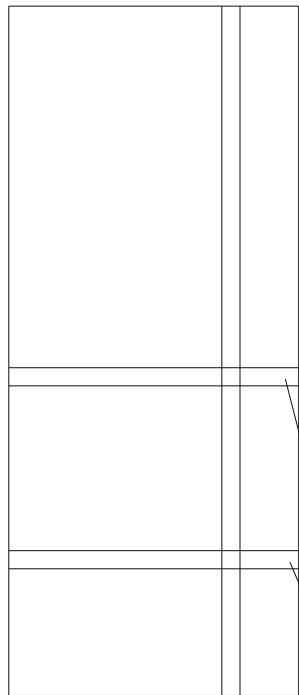
-All panels will have 1-1/2" wire chases running at 16", 46" horizontally and a vertical chase.

-Typical wall panels will have the top plates above the panels 7/8" and the panels will also ride 1/4" above the floor system. This enables the panel to have a finished height of 8'-1 1/8", 9'-1 1/8", etc.. for drywall. This also enables the builder to use precut studs for all interior walls. This can be changed upon request.

-All structural panels have a recess for a double top plate.

WALL PANEL IDENTIFICATION

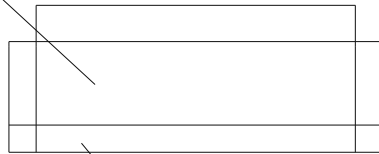
Continuous metal
2 x 10 stud for
extra support in
header



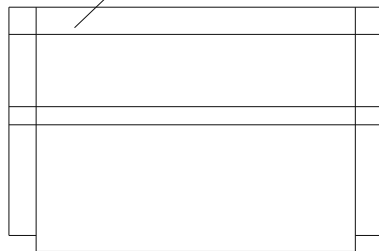
Open Panel

1-1/2" horizontal
wire chases run at
16" and 46"

Header Panel

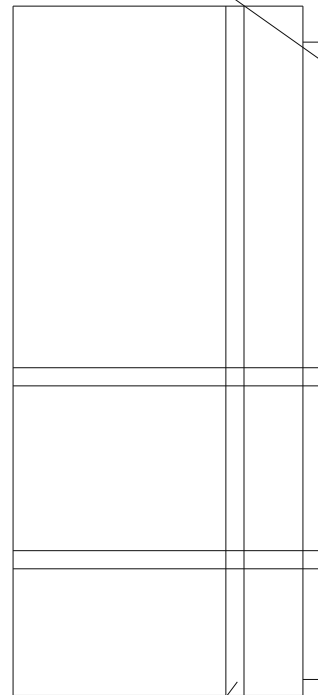


2x stud continuous
along bottom of
header and top
of sill



Sill Panel

Metal 2x4 stud on
each side of panel
allows for tongue and
groove connection



Standard Panel

1-1/2" vertical
wire chase in
every open or
standard panel

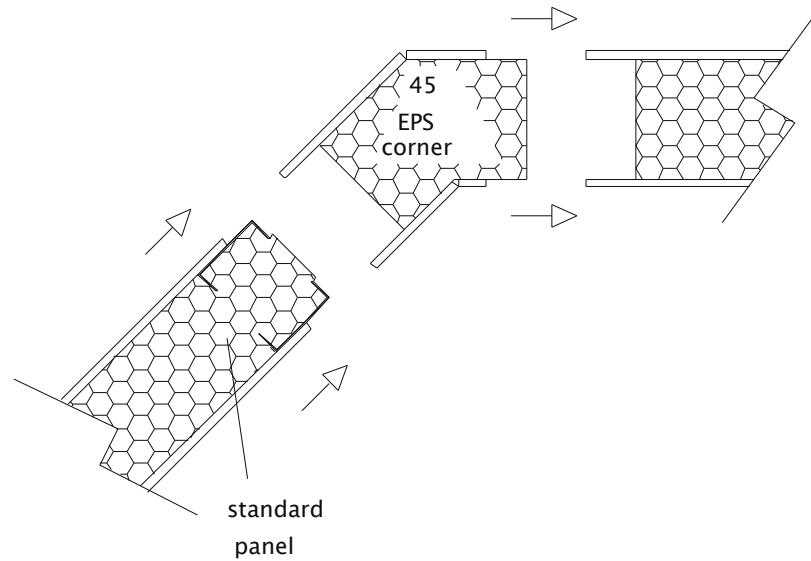
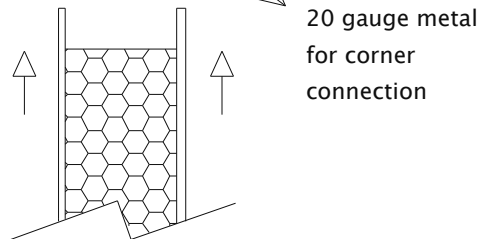
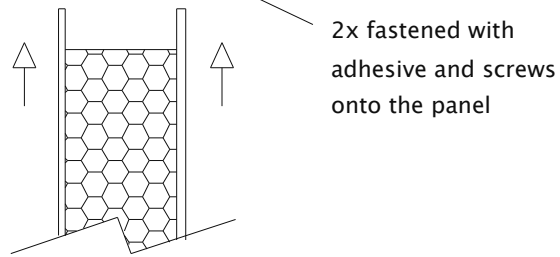
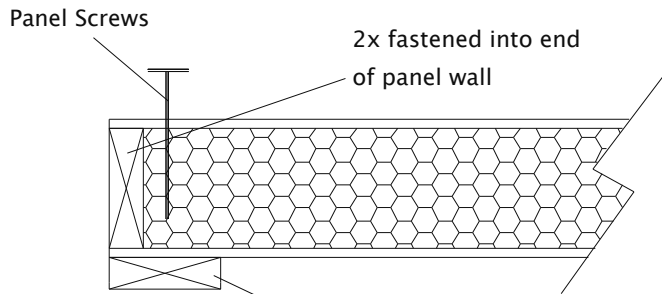
Each of our panels are
either open, standard, sill
or header panels.

-Open panels have no
metal in the panels and
usually will have a recess
of 1-1/2" on both sides.

-Standard panels will have
one side with a typical
1-1/2" recess and the
other will have a 3-1/2"
metal stud on each side
of the panel for the
connection of the panels.

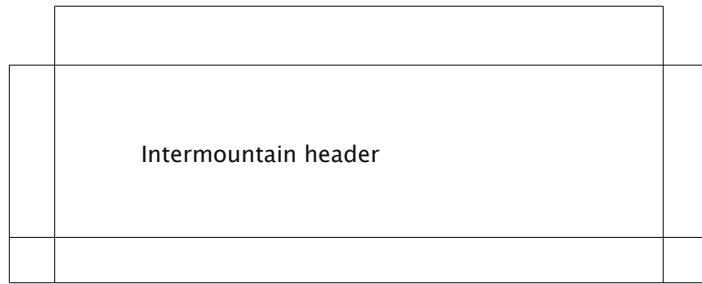
-Sill panels will be below
each window. They have the
metal studs on both sides
to slide into recessed
panels.

-Header panels have a
continuous 2x10 metal stud
that runs 1-1/2" past
the osb. This stud will slide
into recessed panels to give
greater support to the
header.

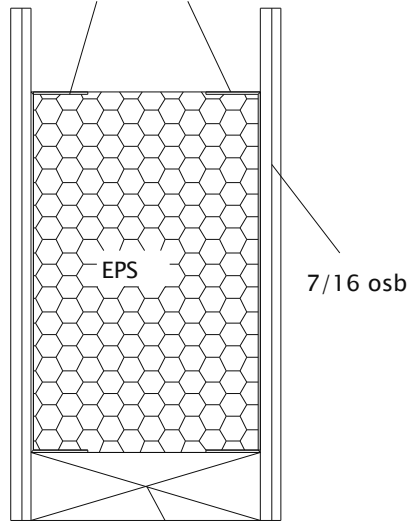


CORNER POSTS

- Lap corners are typically used when panel heights are over 10' or when insulation is not as crucial as residential.
- Our 90 degree corner posts are designed to eliminate any thermal leaks in the corners. They are typically used with panels that are 10' and shorter. These corner posts save time in installation as well as energy efficiency.
- 45 degree corners were designed for the same reasons as the 90 degree corners. Their main benefits are on bay windows or any other 45 degree corner.

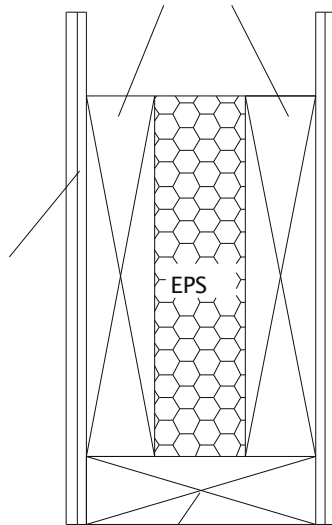


Continuous 18 gauge metal studs



A

Continuous microlams



B

2x (continuous)

HEADER SYSTEM

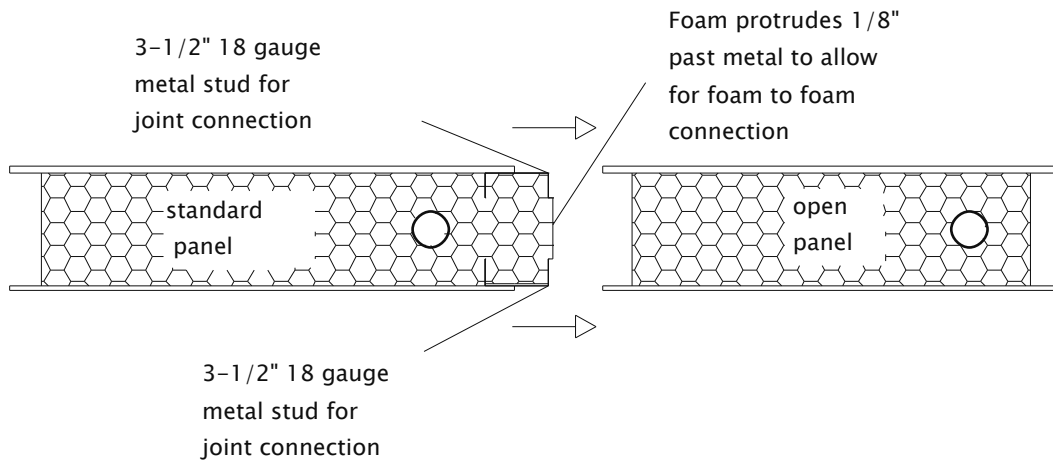
Intermountain's header system is built to be structurally sound as well as keeping our extreme R-factor.

-Header A is our most common header system. We laminate 18 gauge metal onto EPS and then fasten it to osb and 2x material.

The osb on the headers will be the same width as the RO of the window or door. The metal/foam case and 2x are 3" longer than the osb to allow it to slide into the outside panels.

-Header B is a header that is used when there are extreme loads or spans. We take the appropriate size micro lams and laminate them with foam and then fasten it to the osb and 2x material.

-Every header that we use in our system is engineered by our engineer. He considers loads and spans.



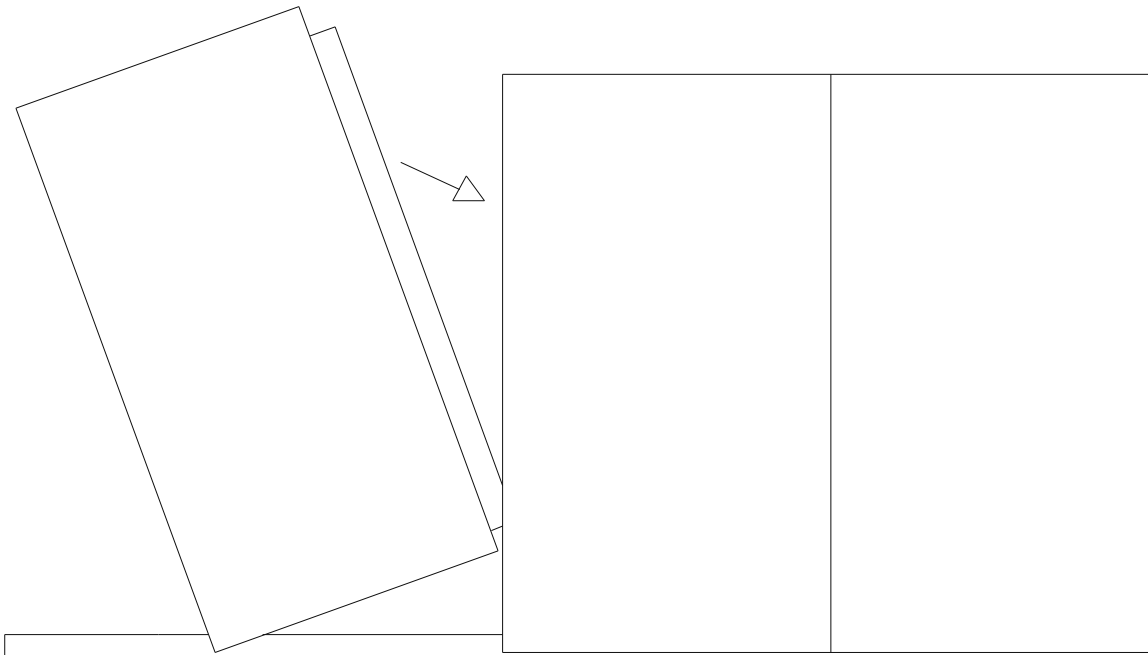
PANEL CONNECTIONS

-Intermountain's panel system uses a tongue and groove system to join panels. The standard panels have metal studs laminated into the panel. The standard panel slides into the open panel and then is fastened together with screws.

-Typical wall panels will have a bottom recess of 1-1/4" to ride over the bottom plate and will also have a recess at the top of each panel for a double top plate.

-When joining the panels, it works better to tilt the panels over the base plate, slide the bottom of the panel into the previous panel. Then slide the rest of the panel into place.

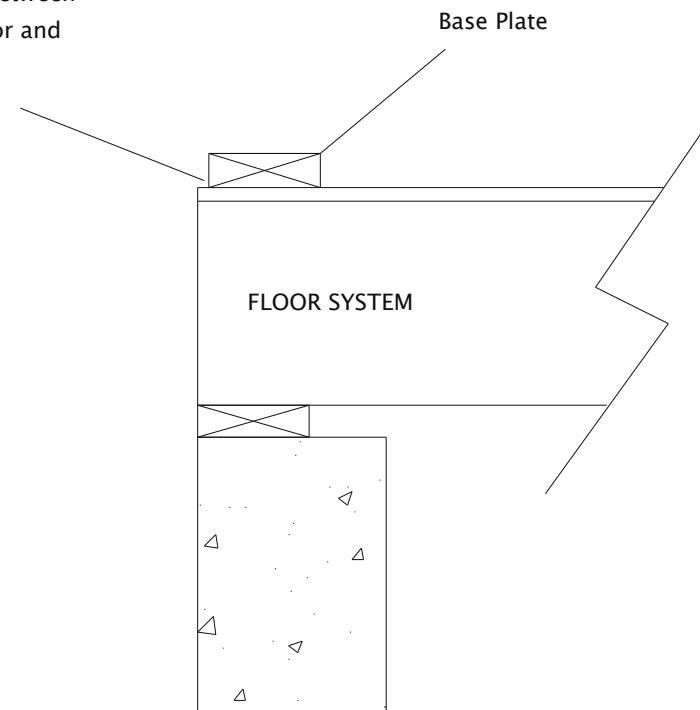
-Each panel is numbered in order for installation. We will supply a panel plan with each job showing where each panel goes.



BASE PLATE ATTACHMENT

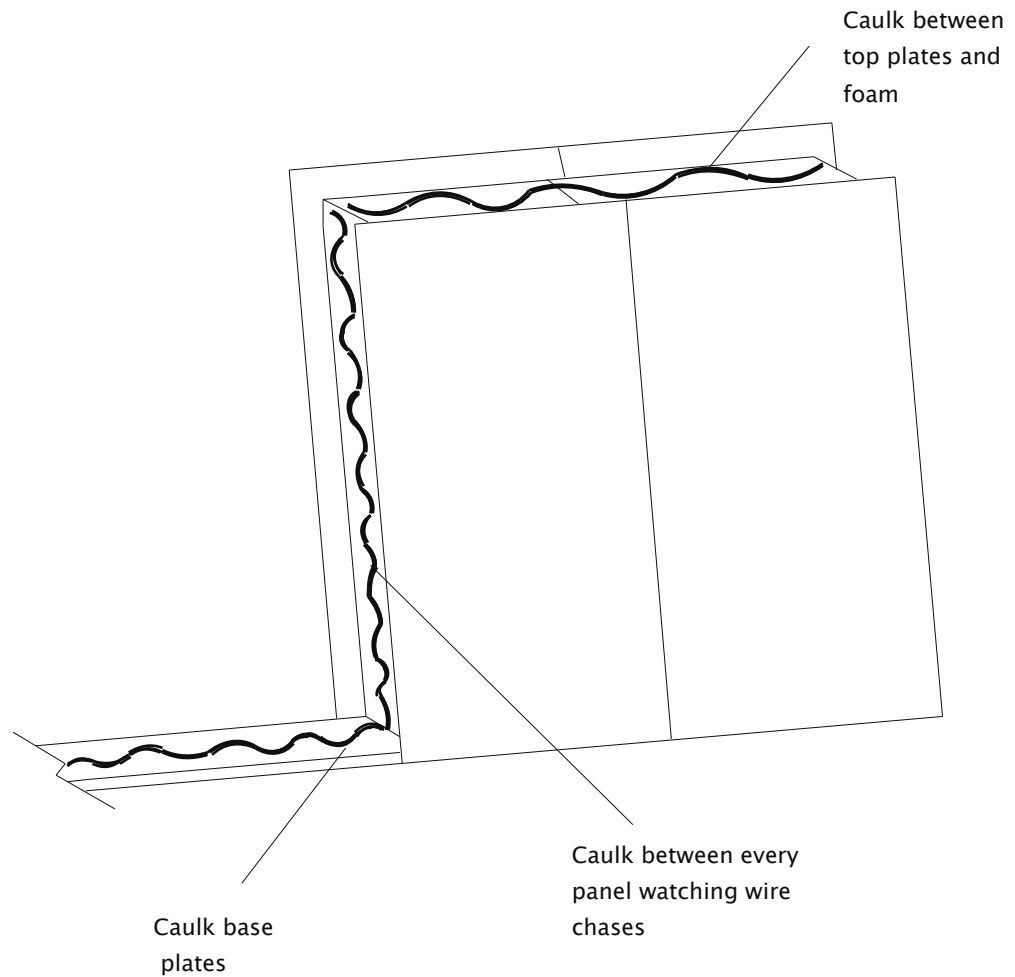
- When setting base plates allow $7/16"$ from outside of floor system to outside of plate. This allows for outside sheet of osb on panel.
- Check plate layout for squareness before attaching to floor system. The straighter and more square the plate is the easier the panels will be to set.
- Attach plate with 16 penny nails and adhesive.
- If attaching plate directly to concrete pad, we recommend using redwood over pressure treated. Redwood is more true in width and thickness.
- If attaching to concrete, use j-bolts to attach redwood.

$7/16"$ space between outside of floor and plate.



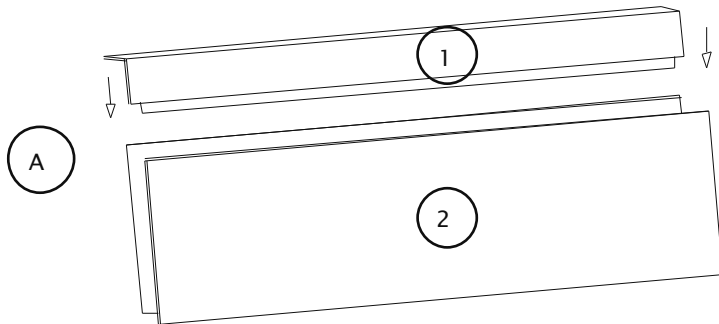
CAULKING PANELS

Although caulking is not required, it is highly recommended. Even though the panels will touch foam to foam at all connections, it is still a good idea to caulk each joint to make sure that the best seal possible is made. We recommend that each panel is caulked along the bottom to seal against the bottom plate. A single 1/4" bead of caulk or sealant is all that is needed. We also recommend caulking between panels, between panels and uprights of doors and windows and between top plates and panels. Make sure not to get caulk inside of electrical chases, this can plug the cases making it tough to run wires.



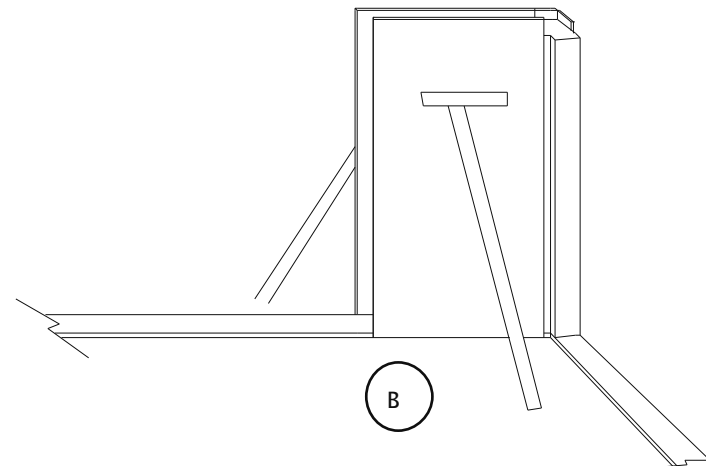
SETTING WALL PANELS

- 1-Make sure that the floor system is completed and everything is nailed and screwed off.
- 2-Lay the bottom plate (see base plate attachment).
Remembering that the more square and true the plate, the easier the panels will be to install.
- 3-The first thing to do is to look at the panel plan.
Find panel #1 and take it to the appropriate location.
- 4-If the first panel is a corner post, get panel #2 and screw the two panels together before setting on the base plate. See example A.



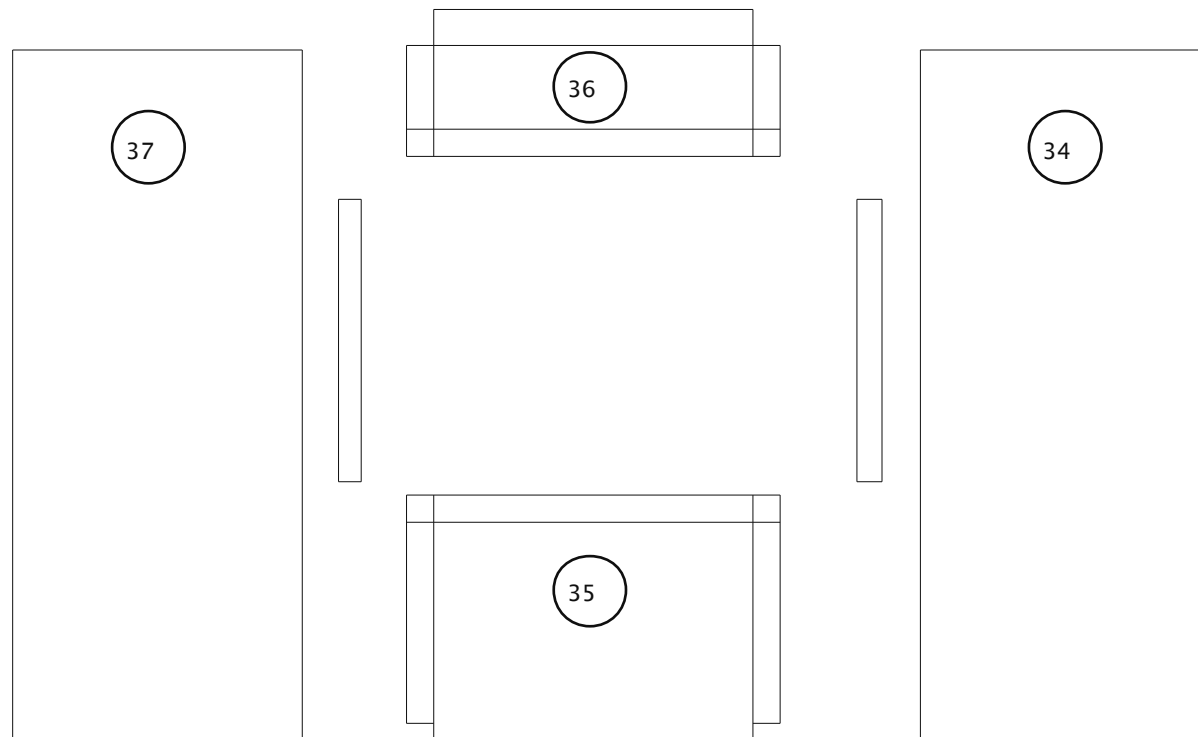
Lay panel #2 on edge and set corner post down inside panel #2. Remember that the bottom recess is 1-1/4" and top is 2-1/2". Once the panels are joined together, screw the two together. During the installation process, we recommend putting as few nails and/or screws into the panels as possible. This allows for adjustment of the walls later in the process.

- 5-Once the two are joined together, set them on the bottom plate.
Level the two panels and place a few nails into the bottom plate and brace from both sides. See example B.



- 6-After first panel is set and level start setting panels in order, following panel plan and not mixing numbers.

SETTING WINDOW PANELS



NOTE* Window openings make good places for bracing. Just nail a brace from the inside of the window and secure to the ground or floor system.

Using Intermountain's system, as the panels are erected the window openings are automatically installed.

-The first panel of the window will be set as normal, in this case it is panel #34.

-Set sill panel #35 next. Simply slide the sill end into #34 and level.

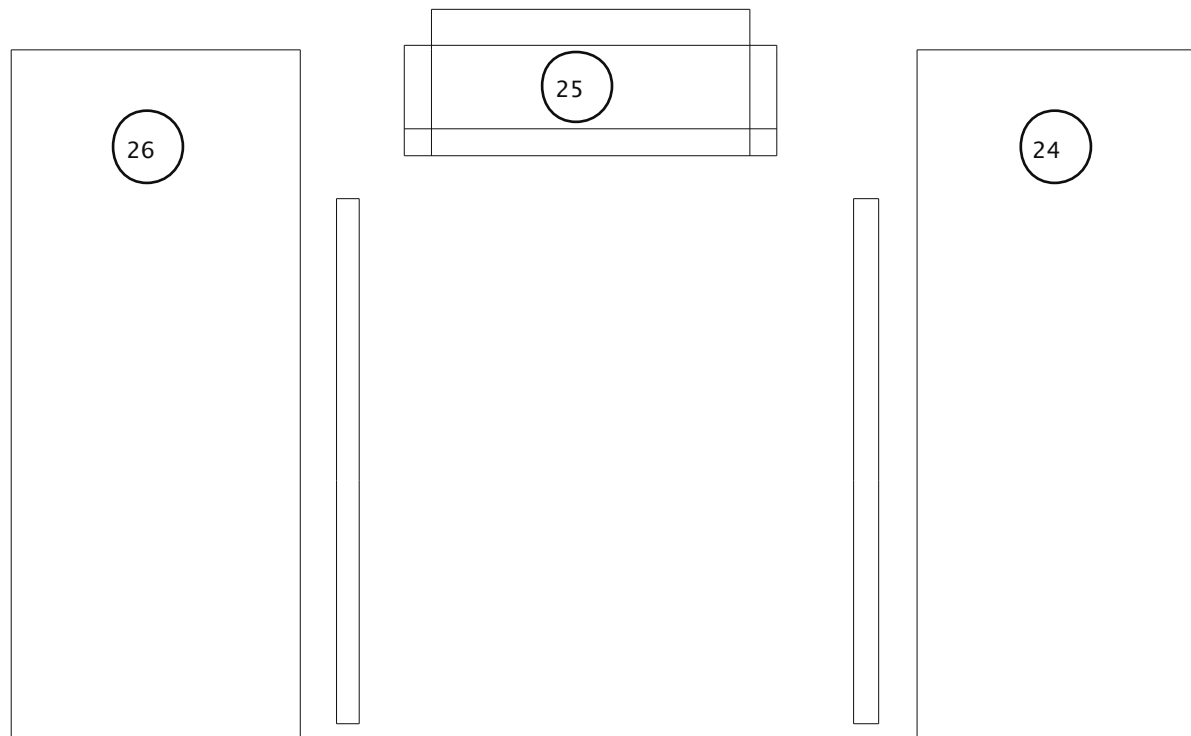
-Once the sill is in place, take panel #37 and slide into the stationary sill panel. Make sure that #37 is touching #35 and level. Once it is level fasten it down.

-Then, cut upright 2x's. These will be the same height as the vertical rough opening. Slide uprights into panels #34 and #37 and nail.

-Finally, slip header panel #36 down from the top. Make sure header is all the way down resting on the uprights.

-Once all four panels have been erected, the window rough opening is now in place.

SETTING DOOR PANELS

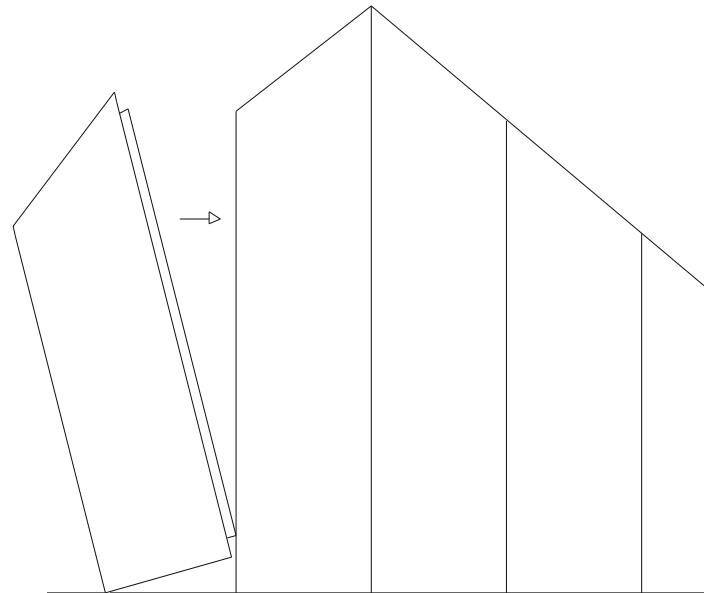


NOTE* Door openings make good places for bracing. Nail brace on side of uprights and then fasten to floor system or to the ground outside.

- The first panel of a door will be set as normal, in this case it is panel #24.
- Once panel #24 is set, measure over the width of the rough opening. When measuring this, measure from the osb on #24. Make a mark on the base plate at this measurement. If there are any questions concerning width of rough opening, measure the width of the osb on the header.
- Then set the edge of the osb on panel #26 on the mark that was made.
- Level and plumb, then fasten panel #26 to plate.
- Cut upright 2x's to rough opening height. If there are questions on this, measure height of header and subtract from wall height.
- Install uprights into panels #24 and #26.
- Slide panel #25 down from top onto uprights and fasten.

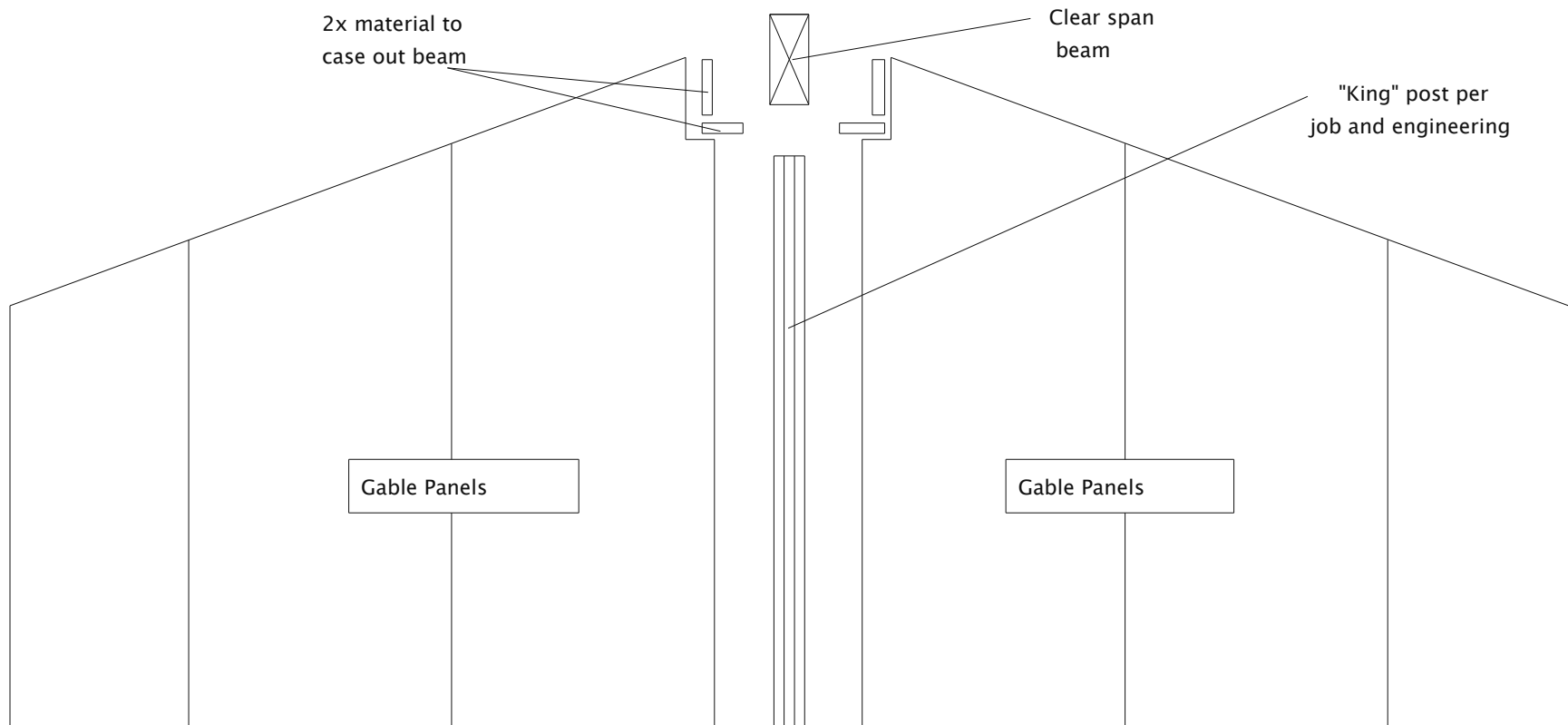
GABLE PANELS

Typically all pitches to gable end walls will be cut in our plant and shipped out precut. The panels will be sent full height. Gable panels are set in same manor as typical wall panels. Once gable panels are set in place, they will require only a single top plate.



CENTER "KING" POST INSTALLATION

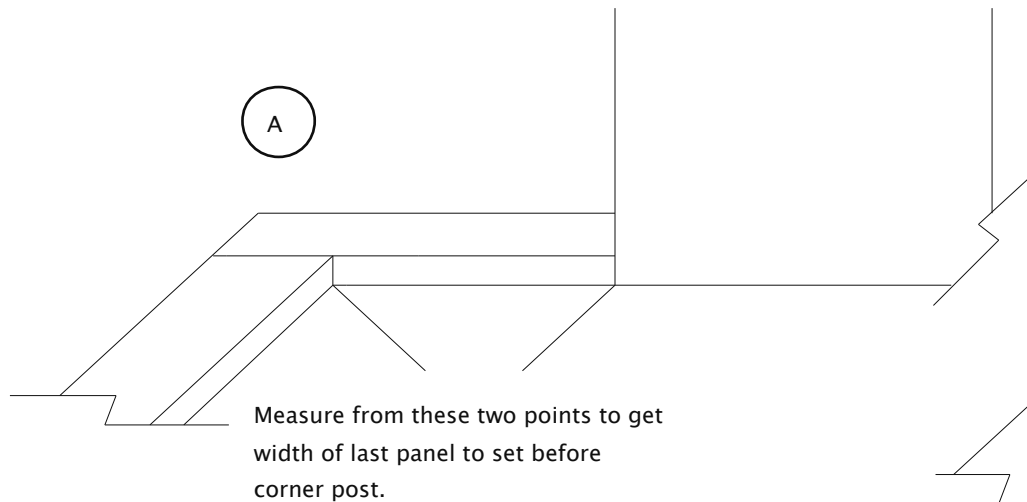
When a clear span roof beam is necessary, the gable panels will be recessed to hold the "King" post. The beam pocket will need to be cut on the job site per beam size.



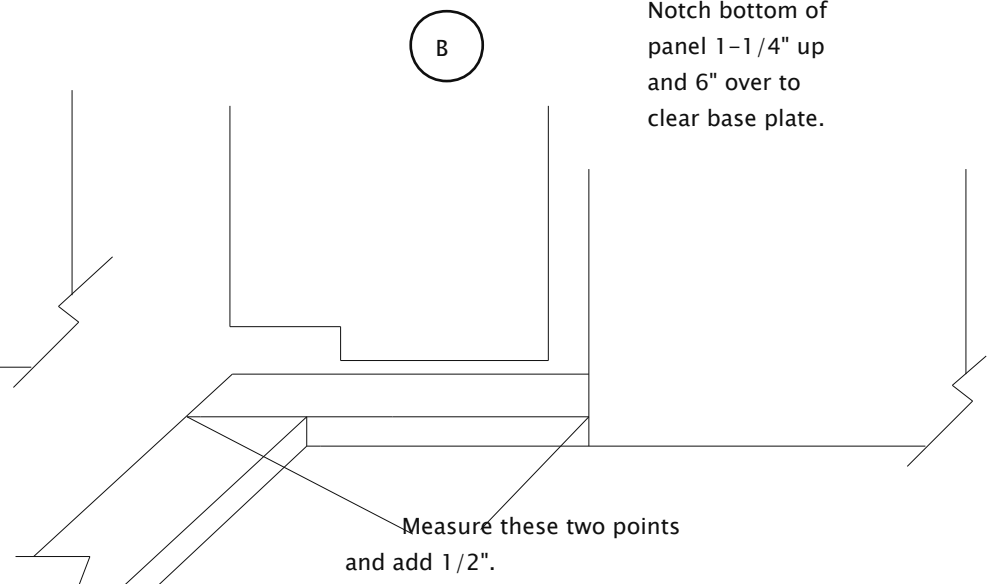
PANEL GROWTH

The osb on each panel requires a minimum of 1/8" spacing at each panel joint. The 1/8" spacing is for the expansion and contraction of the osb sheeting. From this, as a panel wall is erected the wall length continues to grow after each panel. So at the end of each wall a minor cut may be needed.

-If corner posts are being used, a measurement will need to be made before setting the last panel of the wall. Measure from the sheeting of the prior panel to the inside of the plate running perpendicular to the wall that is being set. Subtract 3/4" from this measurement, that is what the last panel needs to be cut at. See example A.



-If corner posts are not being used, then the last panel will need to run 1/2" past the end of the base plate. So before setting the last panel of the wall, measure from the prior panel to the end of the base plate and add 1/2". Then cut the final panel of wall to this length. Also, this last panel will also have to be notched to go over the base plate that is perpendicular to the wall that is being set. See example B.



CUTTING PANELS

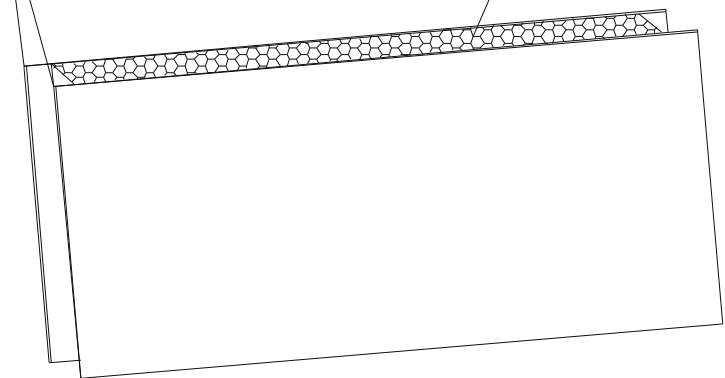
Due to panel growth and other minor adjustments panels will often need to be cut. This is a very simple process.

- Once the measurement has been figured, lay the panel down and mark measurement on each end of the panel.
- Take a chalk line and snap a line on the marks that have been made.
- Then take a circular saw and cut osb along the chalk line.
- Flip the panel over and repeat process.
- Once both sides of osb have been cut, take a hand saw or a sawsall and run all the way through the panel. This will cut the foam on an even edge.
- Then after excess panel has been removed, take a foam rasp and rasp the foam down even with the osb.
- Now set the panel on edge, with the newly cut edge facing up.
- Take the groove jet and make sure that wire is set to appropriate depth. After wire has heated up, pull the groove jet through the foam. Make sure and go slow enough that the groove jet is riding on the two sheets of osb. Also if the groove jet is pulled too quickly through the panel the wire will bend and the foam will not have a true flat cut.

- After the foam has been removed, go back through with foam rasp and rasp away any excess foam.

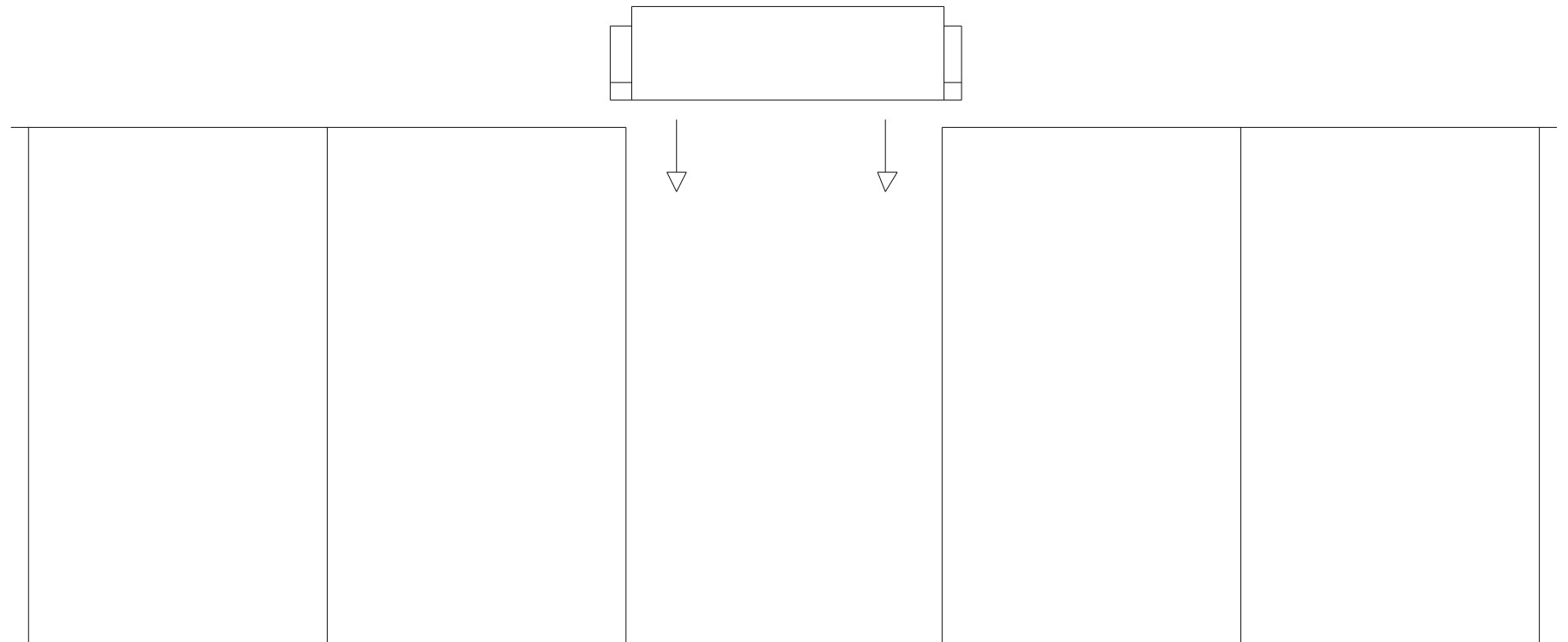
Make sure that groove jet rides tight on osb to ensure true cut of foam.

Before using the groove jet, make sure foam is even with osb sheeting



SETTING FINAL PANEL

Typically we try to end each wall system at a door. This way after each panel on the sides of the door has been set, it is just a matter of dropping the header in from the top.



RUNNING TOP PLATES

After the final panel has been set in place, go back through and level and plumb all walls and corners. After this has been done, the next step is to run the double top plates.

- Take 2x material and place the first of the two plates into the top recess. Do not splice any of the two plates above a window or door.
- After the first plate has been run, go back through with the second plate. Do not splice this plate within 4' of first plate splice. At corners overlap the two plate joint.
- When running top plates, the longer the plate, the easier it is to keep wall straight.
- Once both plates have been set into top recess, go back through and nail the two plates together from the top. Use 16 penny nails on 6" staggered centers.
- Once both plates have been nailed together, run a string line along the top of the wall at the desired overall height of the wall.
- Then come back through and pry the plates up to this height, nailing them off as you go.
- Nail spacing on top plates is 6" on center. Nailing into both of the plates.
- By raising the top plates, two things are being accomplished. This will make the top of the wall perfectly level and will bring the overall wall height to specified height.

-After all top plates have been leveled and nailed off, go back through and nail off around all windows and doors. Also nail off bottom plate.

-Then go around to each panel joint and screw on both sides of the seams.

-All nailing and screwing requires a minimum of 6" on center. Panel systems receive a lot of structure from the fasteners used. So make sure to nail and screw every seam and joint at required spacing.

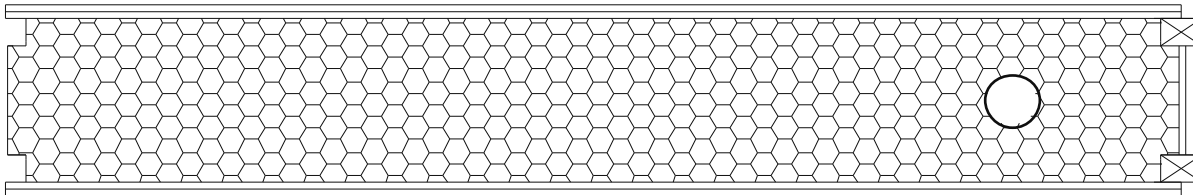
-Before setting roof system or second level make sure all fasteners are in place.

-Once the wall system is completed, it is very crucial to go back through and drill top plates at each vertical chase. Mark each vertical chase on the top plate and drill with a 1" to 1-1/2" spade bit. The wire chases will be marked on the panels inside, and will be directly in the center of the panels.

-This is the most common mistake, not drilling these out. It is necessary for the electrician, so he can access the wire chases.

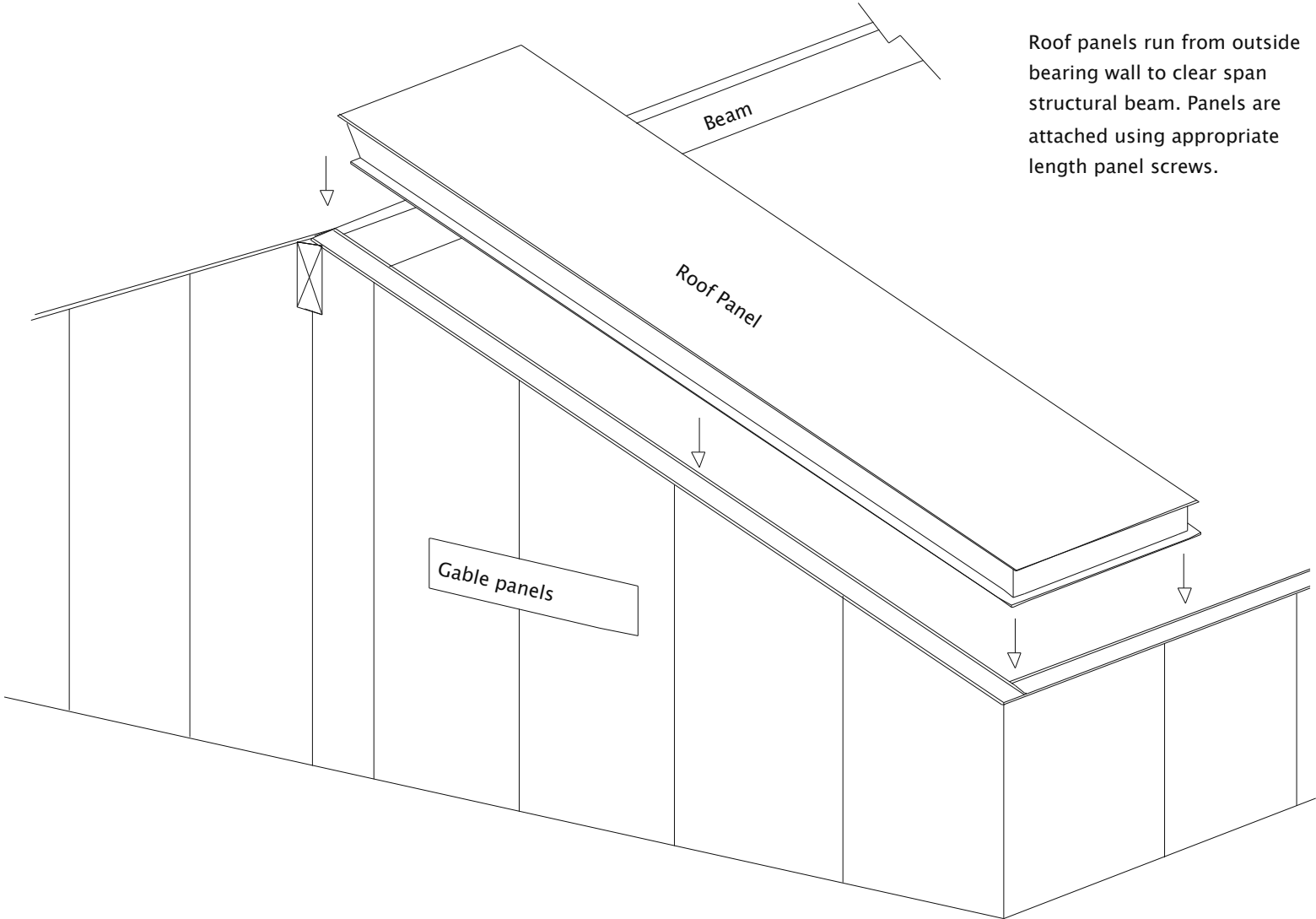
ROOF PANELS

**INTERMOUNTAIN
BUILDING PANELS**



1-888-799-1398

ROOF PANEL SYSTEM

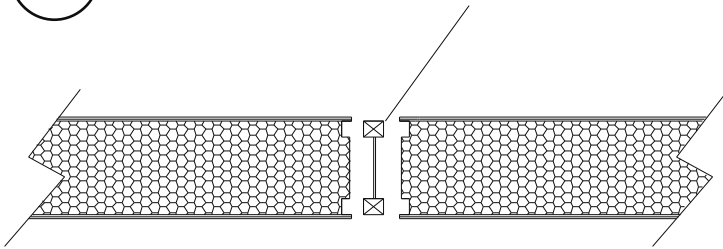


Roof panels run from outside bearing wall to clear span structural beam. Panels are attached using appropriate length panel screws.

ROOF PANEL CROSS SECTIONS

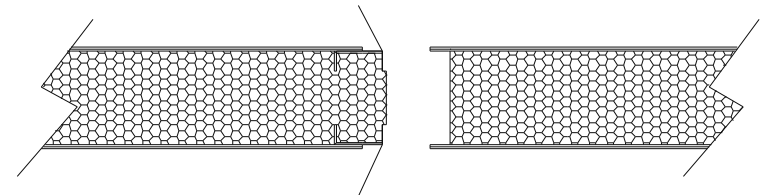
A

Roof panels can be joined using 2x material or TJI's



B

Metal stud for joining roof panel



Metal stud for joining roof panel

Roof panels can be joined together using connection A or connection B.

-Connection A uses a single TJI or 2x material. The TJI's/2x slide into the panels and are then nailed off at a 6" spacing.

-When using connection A, TJI's/2x material can be run long to be used as support for eaves.

-Connection B uses Pre-installed metal studs. The metal studs are laminated into the panel and then fit together with a tongue and groove system. Then screwed together using a 6" spacing.

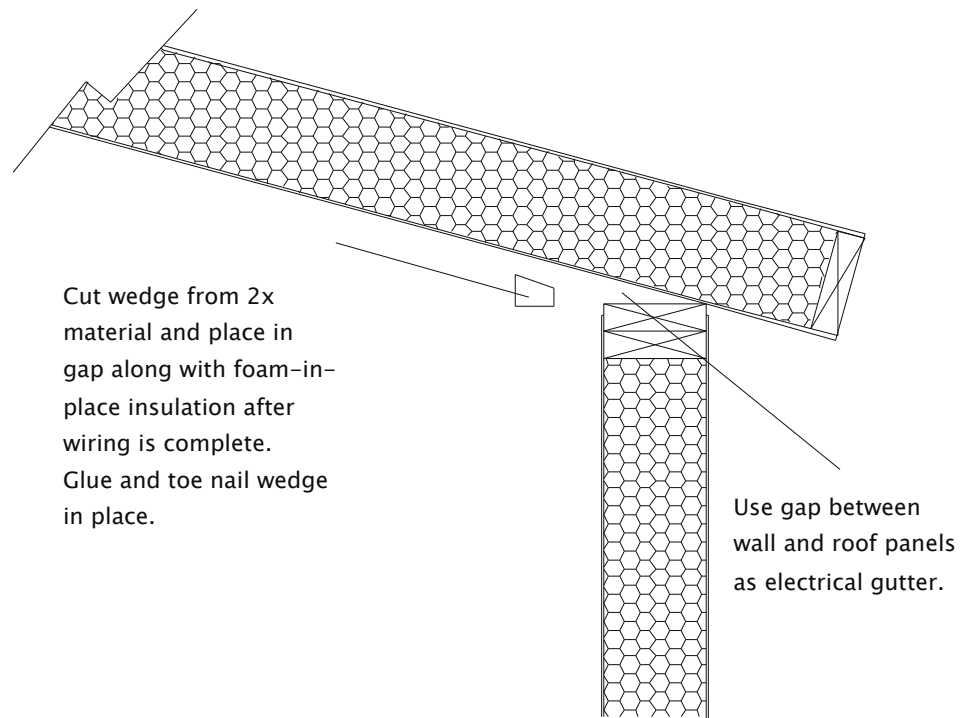
-When using connection B panels must run long to make eave.

Roof panels use appropriate length panel screws to attach to walls. Panel screws have a 12" spacing on center along bearing wall, ridge beam and gable panels.

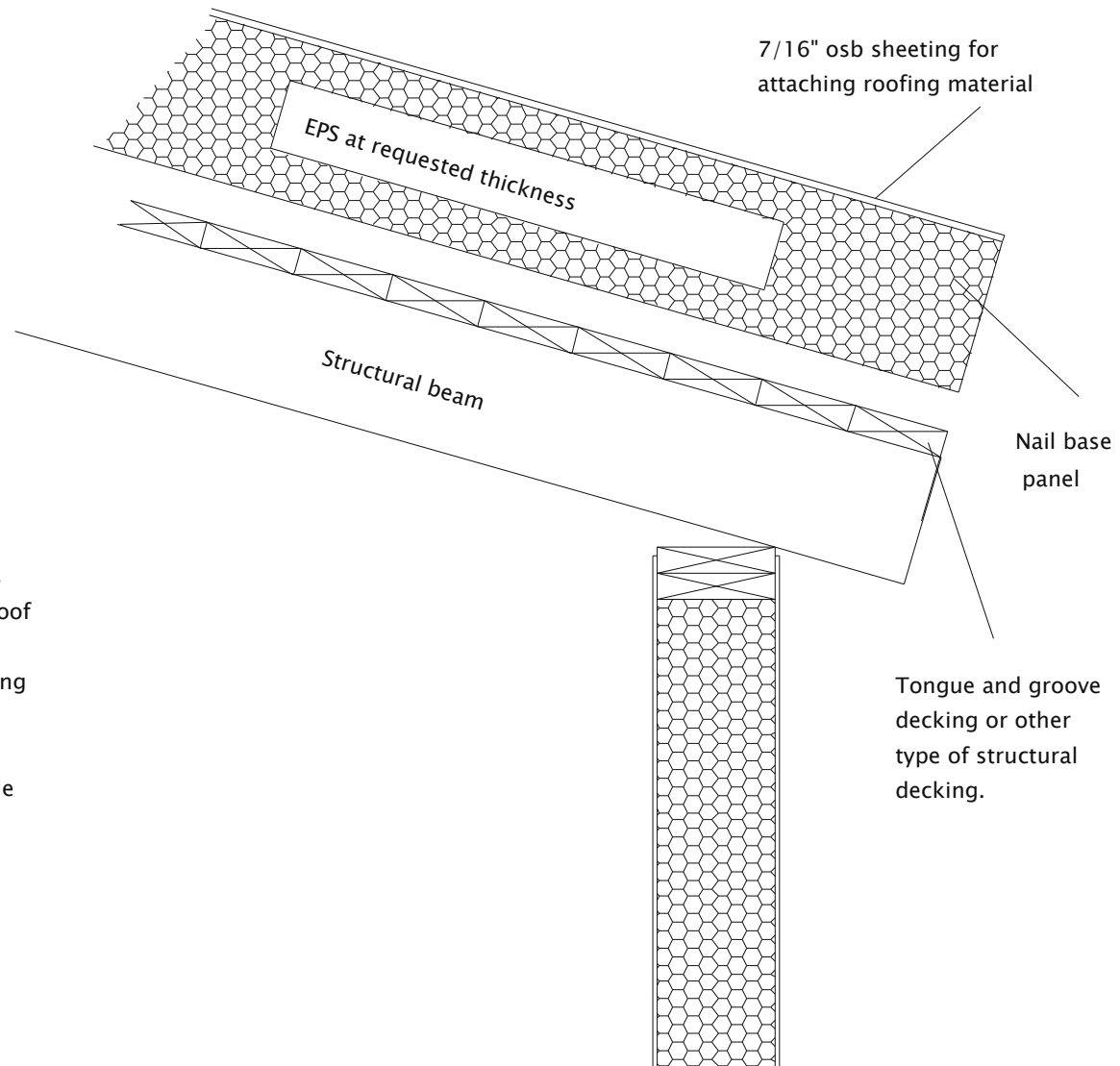
ROOF PANEL INSTALLATION

When installing roof panels, lifting equipment is highly recommended. Make sure that all wall panels and other bearing walls are completely fastened down and completed.

- Construction adhesive is required anytime the roof panels meet a wall or beam.
- Metal ridge straps are recommended at 24" spacing along the ridge after installation.
- Metal strapping can be used where roof panels meet walls for extra support.
- After roof panels have been completely installed and wiring has been completed use a wedge plate and foam-in-place insulation to fill gap between exterior walls and roof panels. See example A.



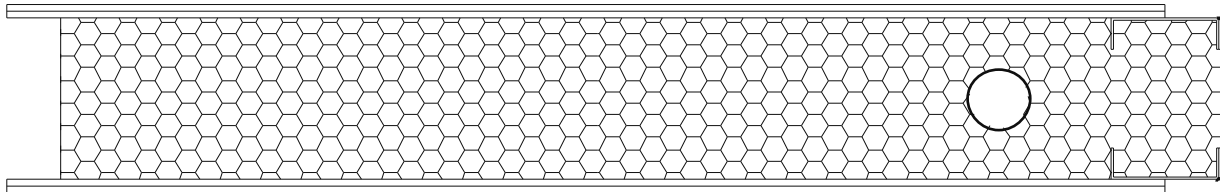
NON-STRUCTURAL ROOF PANELS



On roof systems that will be using a structural decking, non-structural roof panels take the place of fiberglass insulation. They lay on top of decking and are fastened with panel screws through the "nail base" panels and into the structural deck. See example

ELECTRICAL

**INTERMOUNTAIN
BUILDING PANELS**



1-888-799-1398

RUNNING ELECTRICAL WIRING

All wall, roof, and floor panels have 1-1/2" wire chases running inside the panels. Each chase is marked on the inside of the panels.

-During panel installation, it is very crucial that the top plates are drilled before the roof system or second level floor system is in place.

-If the walls are to be wired from below the walls, it is necessary to drill out the base plate with a spade bit while setting panels. Measure the wire chase in the panel and drill the plate as each panel is set.

-If roof panels are used, use top gap between wall panels and roof panels as a gutter for wiring. Then fill in gap after wiring is complete.

-The easiest way to cut out boxes in the panels is to set up a jig and use a plunge router.

-If it is necessary to access a horizontal chase from a vertical, run wire down vertical chase and then drill out a small plug at the junction of the vertical and the horizontal. Then reach inside panel and turn the wire and push down the chase.

-Cut all boxes in panels before wiring, then run the wires to the boxes.

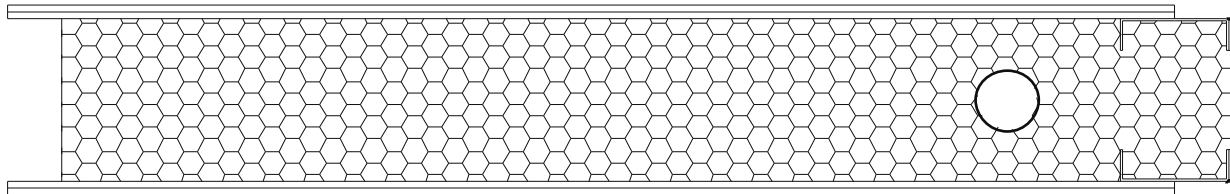
-It is recommended that any chases accessed from the outside be filled with insulation after wires have been run.

-Cut as little osb as possible when wiring. If necessary, osb can be routed horizontally, but this takes away from the structure of the panel so do not make long runs in this fashion

-Wall panels have set heights of 16" and 46" for horizontal chases. They also have one vertical chase in every panel. Specialized chases can be installed in the panel upon customer request.

PLUMBING AND VENTS

INTERMOUNTAIN BUILDING PANELS



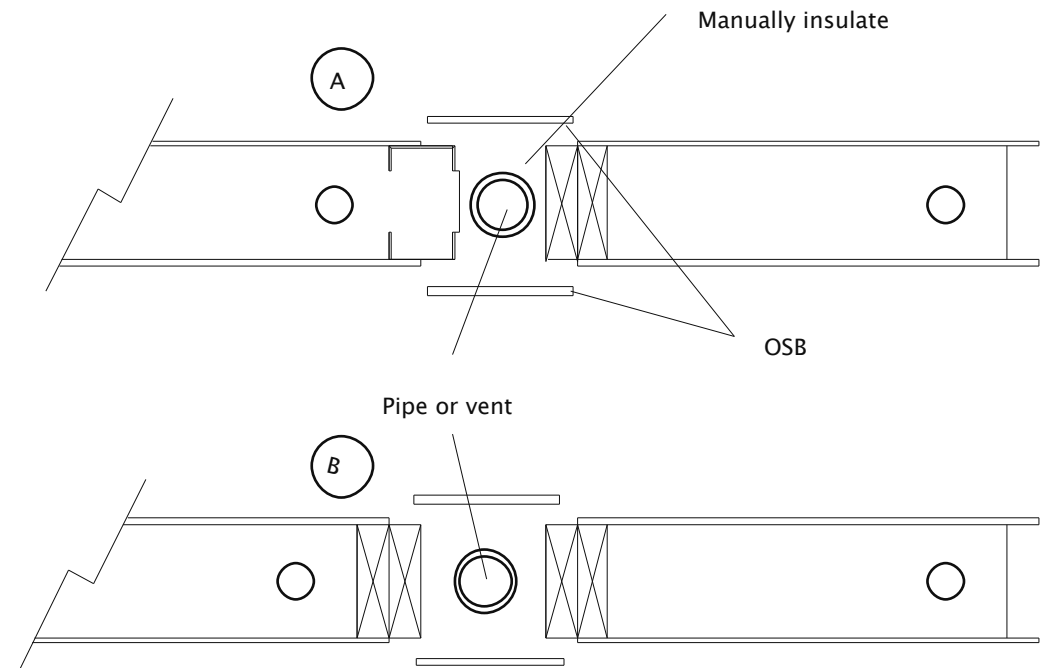
1-888-799-1398

PLUMBING AND VENTS

Although most all pipes and vents are on interior walls, there is often a vent or pipe on an exterior wall. If it is known about before hand, we can modify the panels in the plant. If not it is not a problem to build around them in the field.

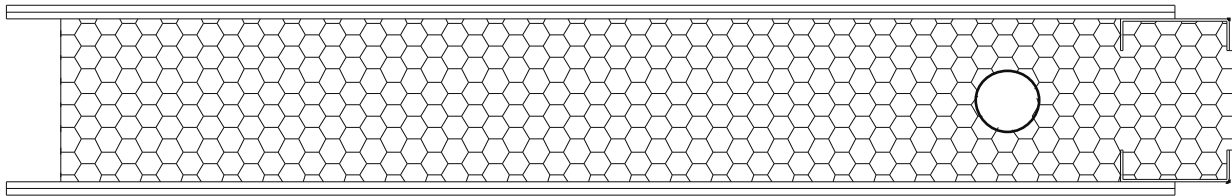
-Example A shows how to build around a pipe or vent using a standard panel. Simply leave a void in the panel where the pipe is at and then start the panels from there. Nail two 2x's in the open panel and then put sheeting on the outside. Once plumber has completed his work, manually insulate around pipe and sheet the inside.

-Example B shows two open panels. Insert two 2x's into each panel and sheet outside. Once plumber is done insulate around pipe and sheet the inside. Sheet rock over as normal.



QUESTIONS & ANSWERS

INTERMOUNTAIN BUILDING PANELS



1-888-799-1398

QUESTIONS AND ANSWERS

If I am building on a concrete slab, does it matter if I use redwood or pressure treated lumber?

Yes, we have found that pressure treated lumber is very inconsistent and can vary up to 1/2" in width. So we recommend using redwood.

Can I buy a groove jet and a foam rasp at the local lumber yard?

No, these are specialty items. Although we can order these tools for you, we do supply them for one week free of charge and then after that we can rent them to you.

Can I nail the panel joints together instead of screwing them?

We highly recommend screwing all metal joints, although an 8 penny ring shank nail can be used.

Since I am screwing into metal, do I have to use self tapping screws?

No, a common sheet rock screw will grab the osb and punch through the light metal.

What type of spans can I get using floor and roof panels?

This depends on several things, we get every job engineered and our engineer determines spans.

Since the metal studs are laminated into the panel, do I need to screw both sides of the panel joint?

Yes, the stud is laminated in the panel for assembly only, it does need screwed on both sides.

There are gaps between the osb after panels have been set, does this mean there are gaps in my insulation?

No, the osb requires a minimum of 1/8" gap at all joints. We compensate for this, we make sure there is a foam to foam connection on the inside of the walls.

QUESTIONS AND ANSWERS

When I set the panels on the base plate the osb lacks 1/4" from touching the floor, is this bad?

No, we manufacture our panels to have a 1/4" spacing from the bottom of the panel to floor. We also have the top plates stick up 3/4" above the panels, this gives us a total height of 8'1", 9'1", etc... to allow for sheet rock, this also enables the framers to use precut studs on interior walls.

Can I use an adhesive instead of a caulk on the panels?

Yes, adhesive can be used on the foam as long as it is compatible with foam. Not all adhesives are, so make sure and read the label before using on foam products.

Should I only drill out the top plates to the vertical chases that I will be using?

No, we recommend drilling holes for every vertical chase, this allows for access into the chases at a later time.

If I make a mistake and cut the wrong panel or damage a panel, what do I do?

Although we recommend cutting as few panels as necessary, we understand that mistakes do happen. So along with your panel system, we send out two extra panels with each job.

Where do I get the panel screws for the roof and floor system?

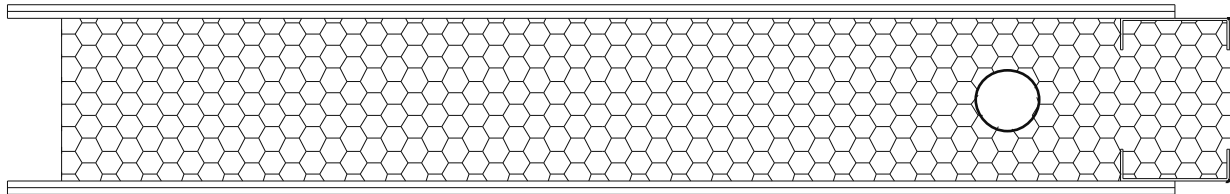
These screws can not be purchased at the local lumber yard, but we will supply enough panel screws for each job, and if any extras are needed you can purchase them from Intermountain.

What type of electrical box do I need to use with the panels?

There are several different boxes that can be used, try and get boxes that have a flange on the side, this will enable you to screw into the osb.

CROSS SECTIONS

INTERMOUNTAIN BUILDING PANELS

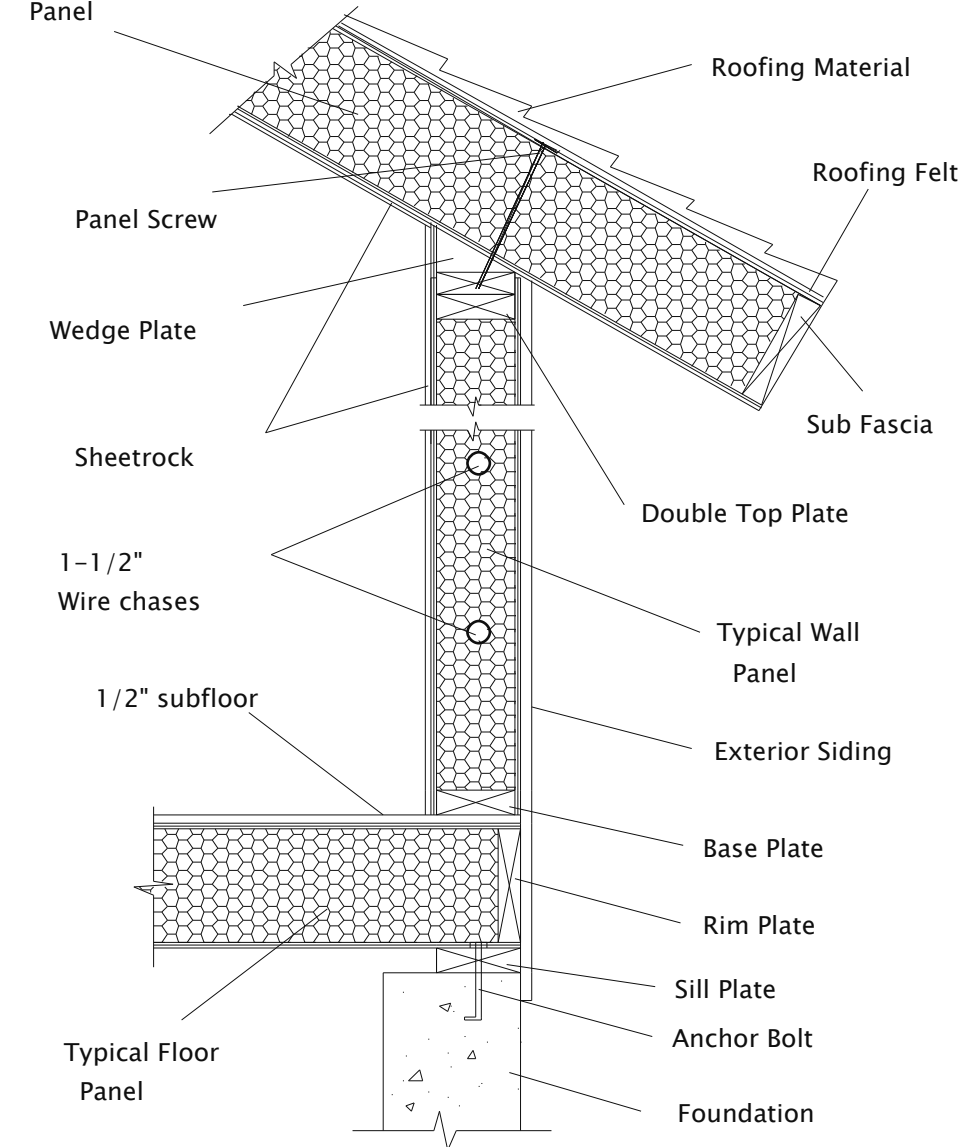


1-888-799-1398

Intermountain Building Panels Construction Details

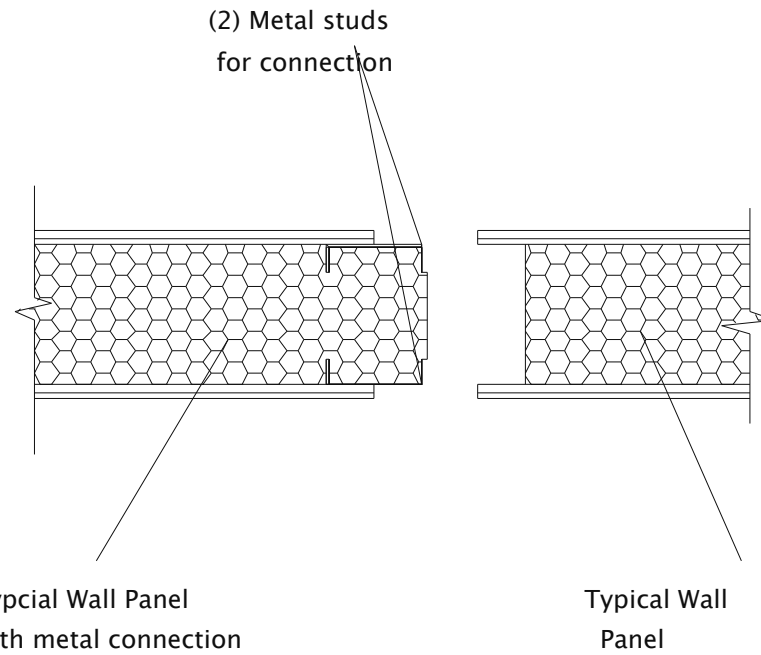
Typical Roof
Panel

TYPICAL PANEL LAYOUT



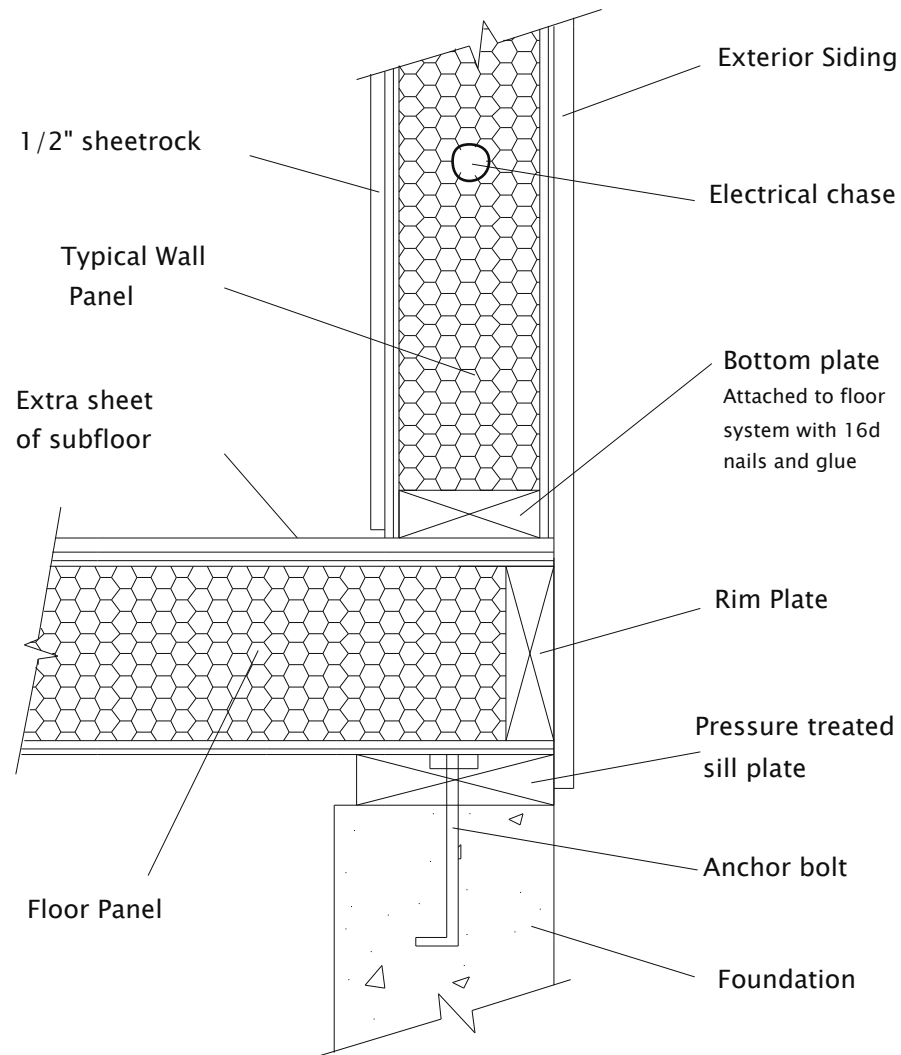
Intermountain Building Panels Construction Details

TYPICAL PANEL CONNECTION



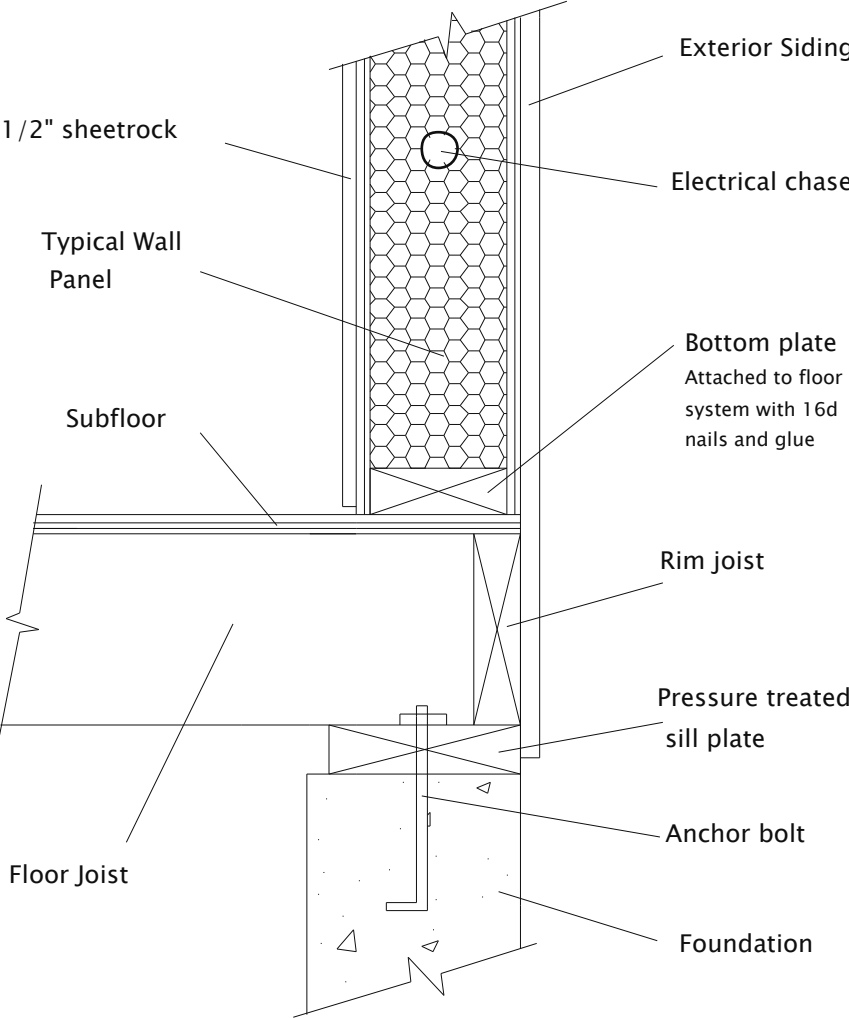
Intermountain Building Panels Construction Details

FOUNDATION DETAIL



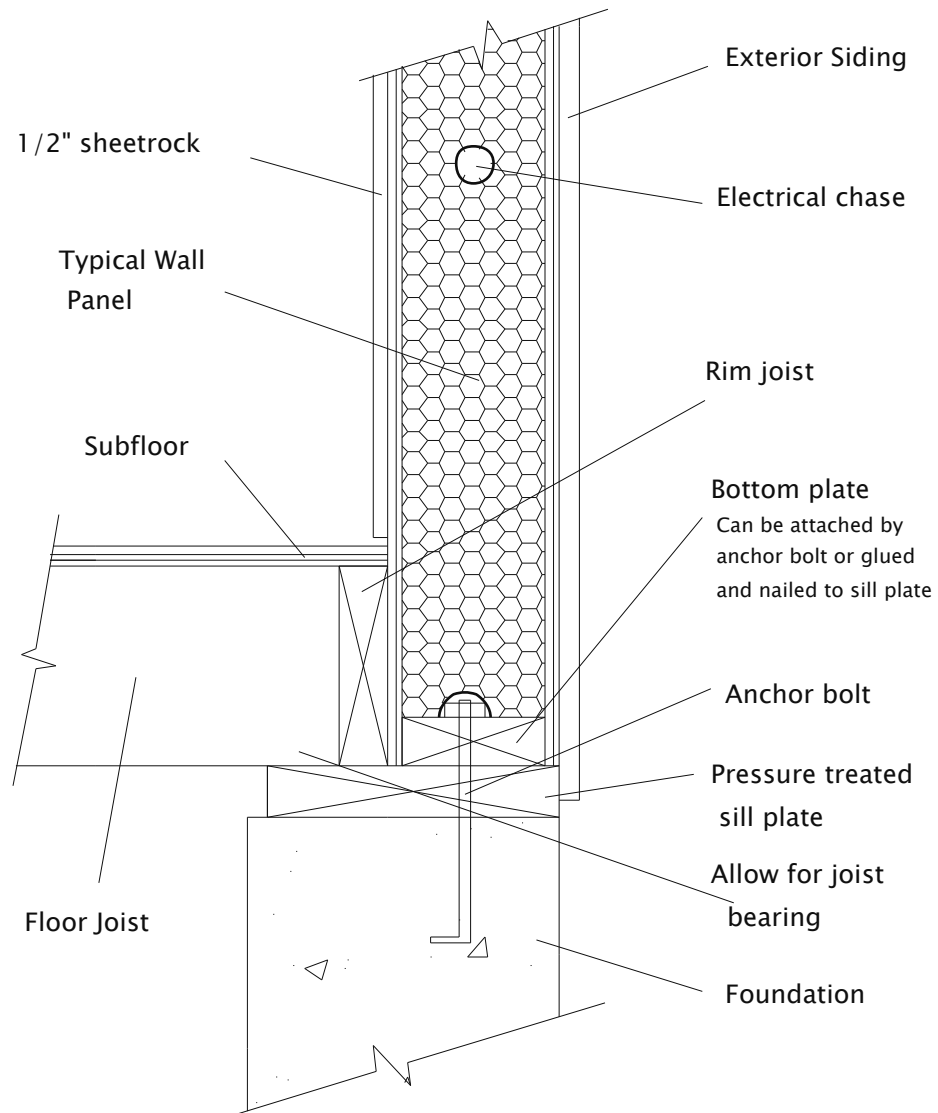
Intermountain Building Panels Construction Details

FOUNDATION DETAIL



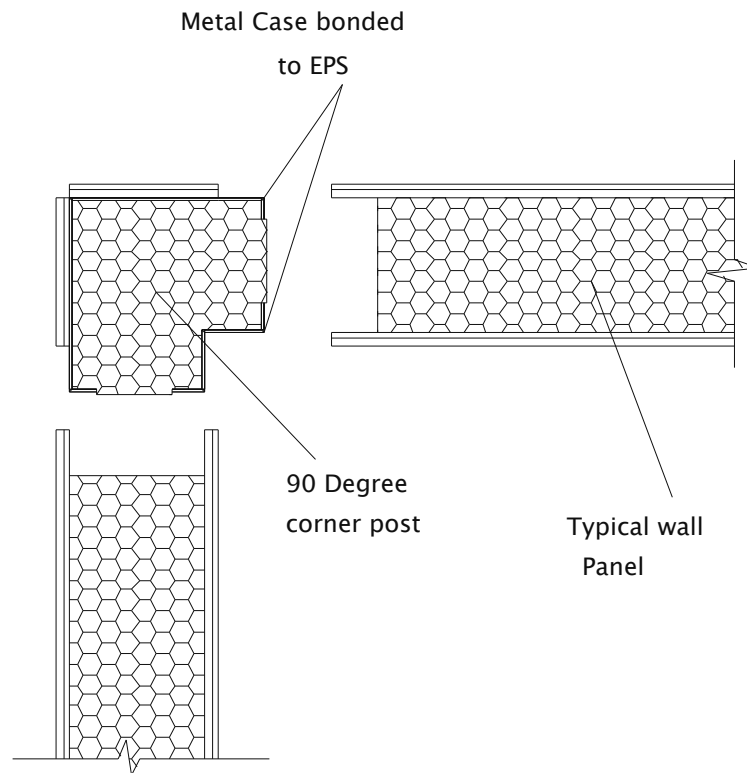
Intermountain Building Panels Construction Details

FOUNDATION DETAIL



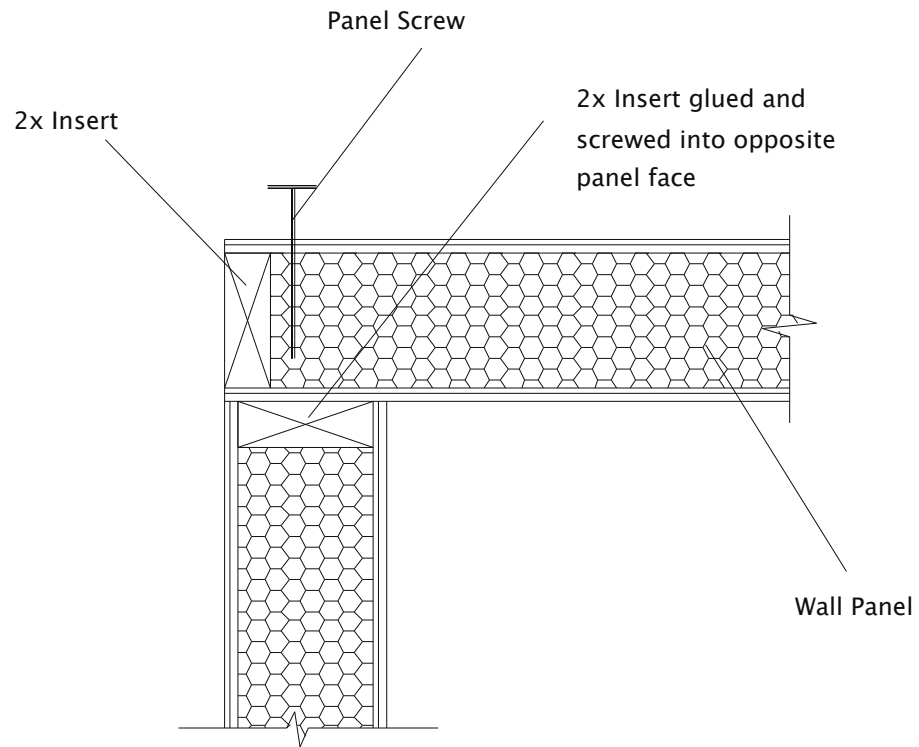
Intermountain Building Panels Construction Details

CORNER POST



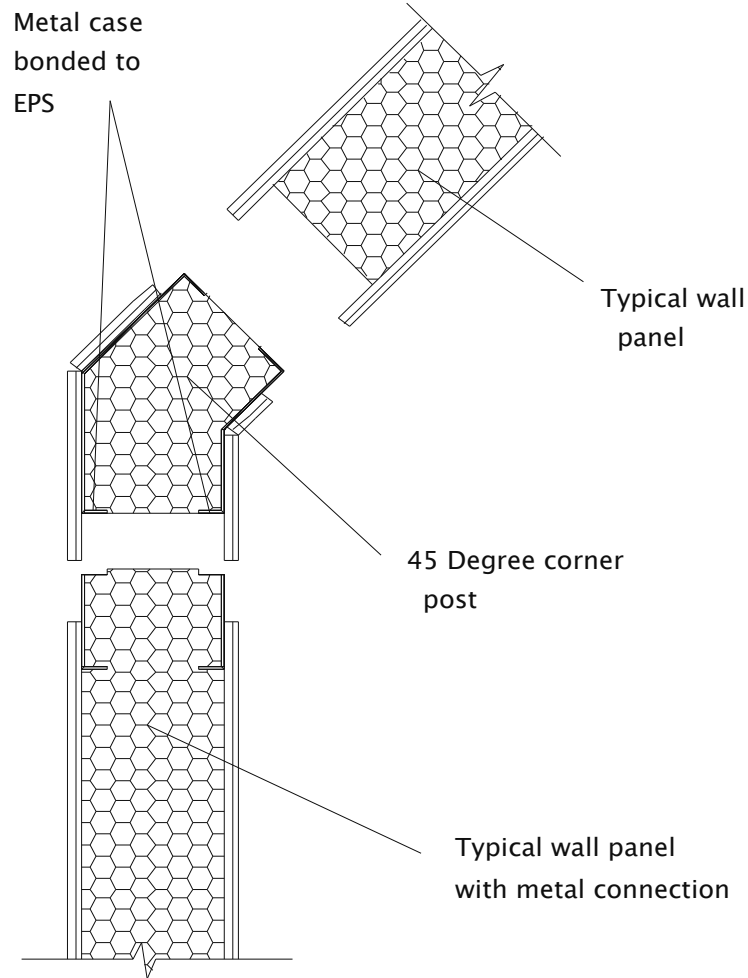
Intermountain Building Panels Construction Details

LAP CORNER



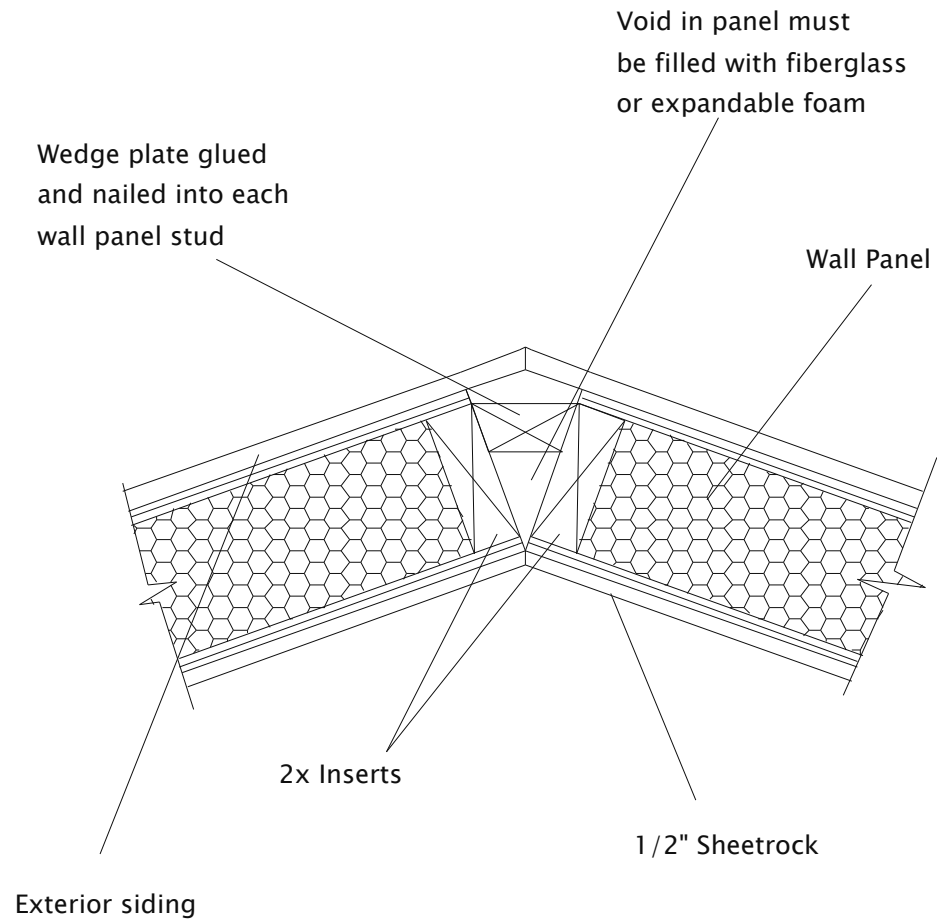
Intermountain Building Panels Construction Details

45 CORNER POST



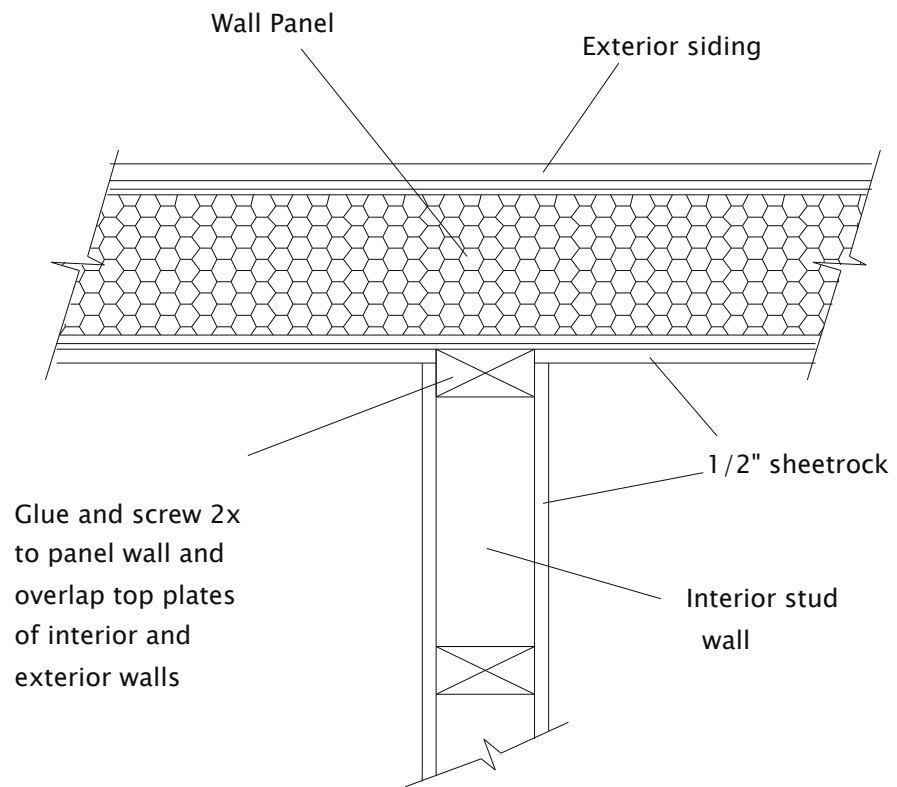
Intermountain Building Panels Construction Details

COMPLEX WALL ANGLE



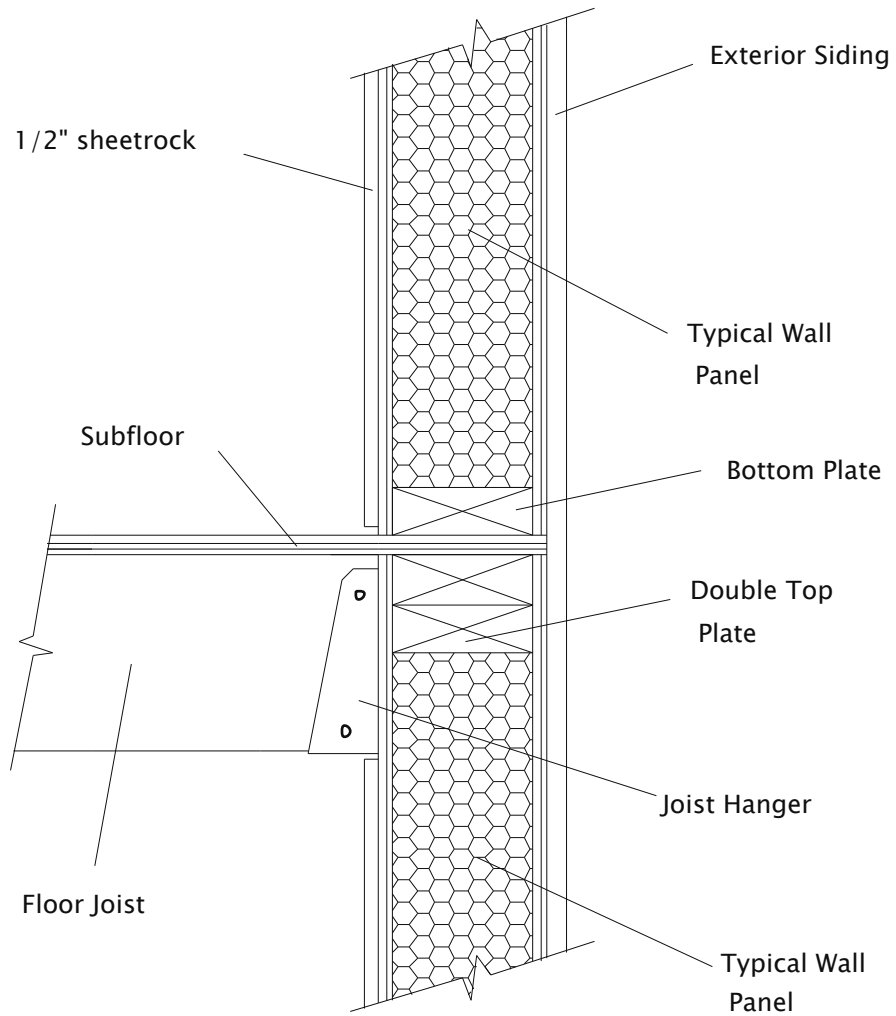
Intermountain Building Panels Construction Details

INTERIOR WALL DETAIL



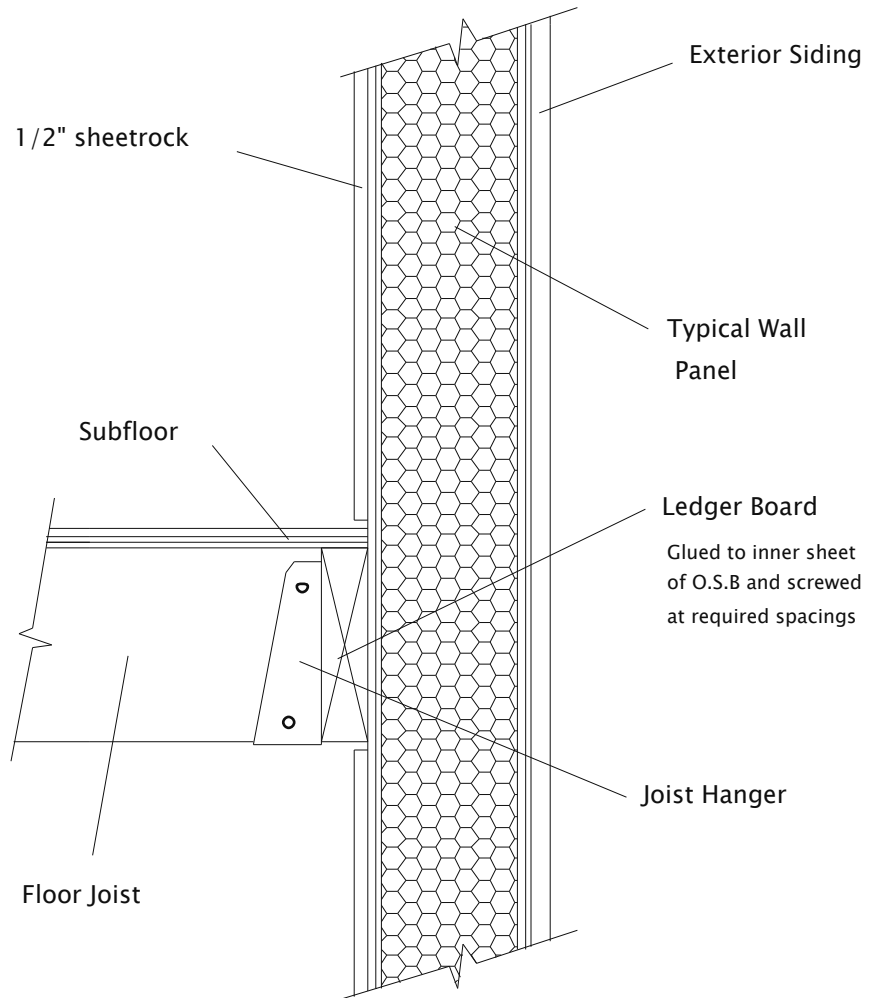
Intermountain Building Panels Construction Details

LEDGER DETAIL



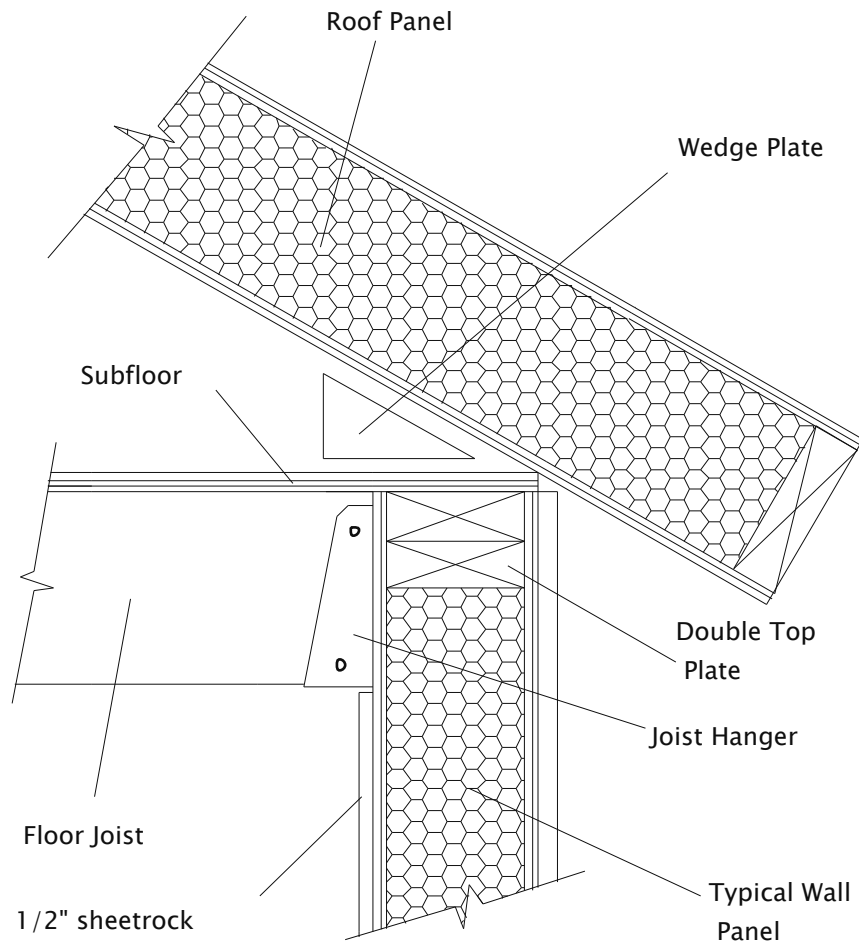
Intermountain Building Panels Construction Details

LEDGER DETAIL



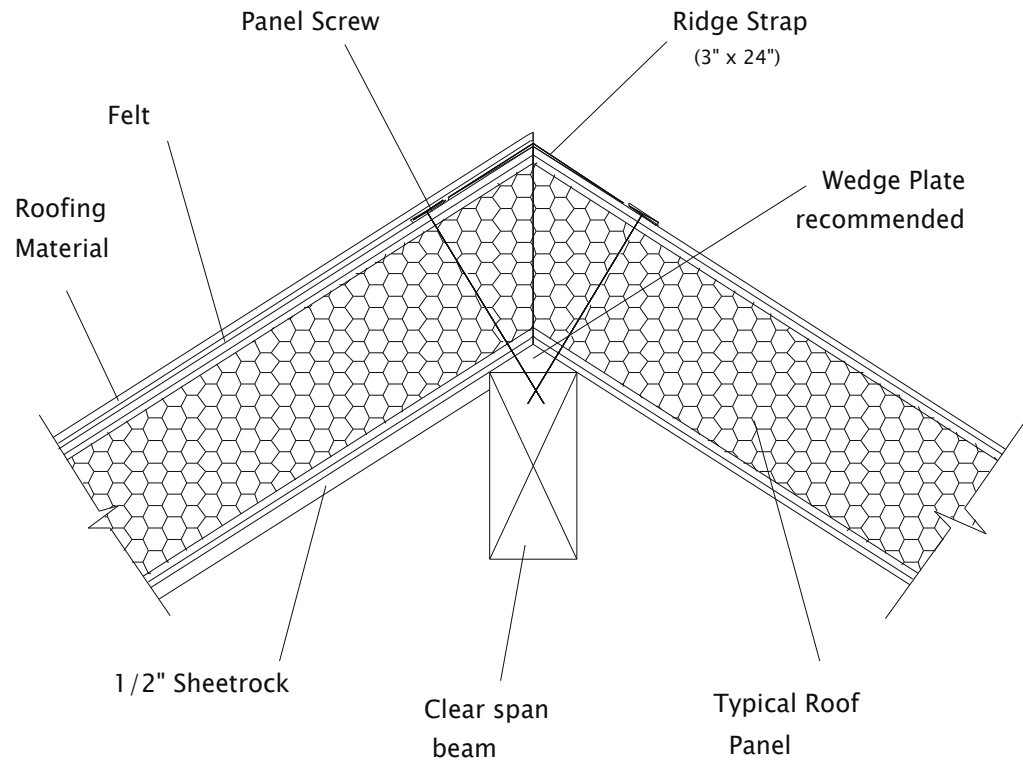
Intermountain Building Panels Construction Details

LEDGER DETAIL



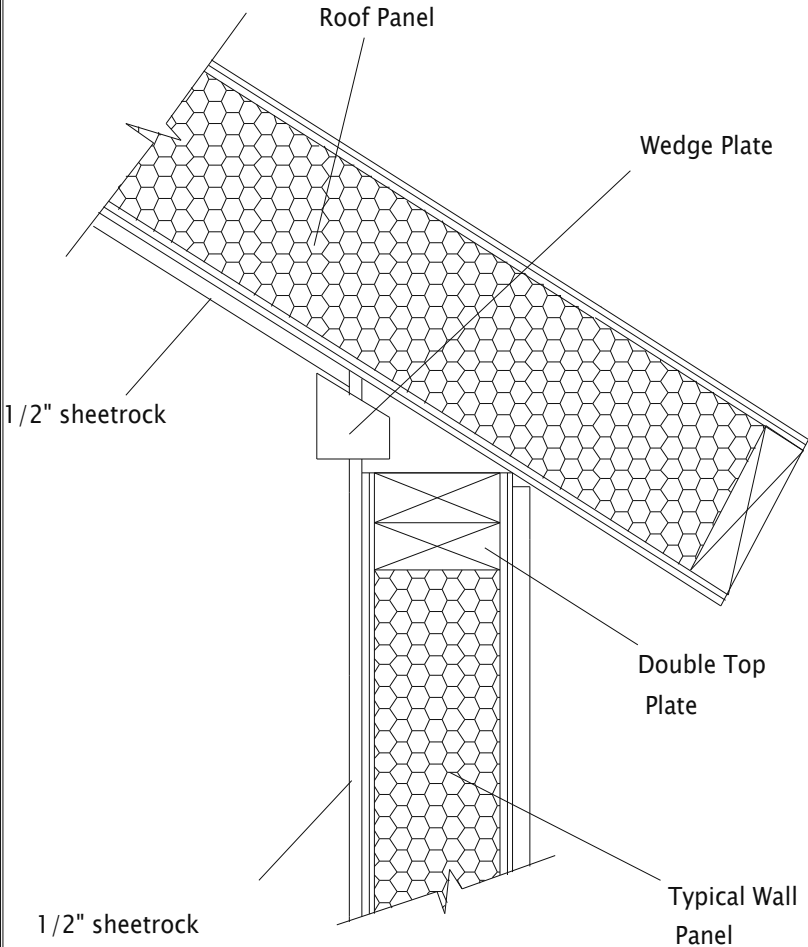
Intermountain Building Panels Construction Details

ROOF PANEL DETAIL



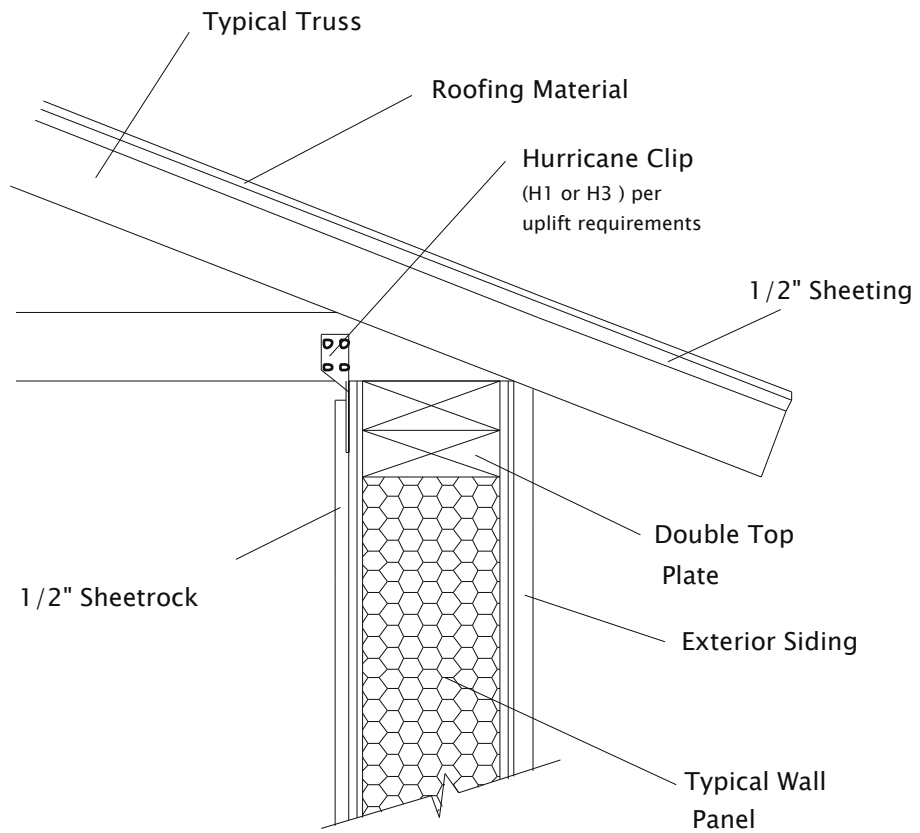
Intermountain Building Panels Construction Details

ROOF PANEL DETAIL



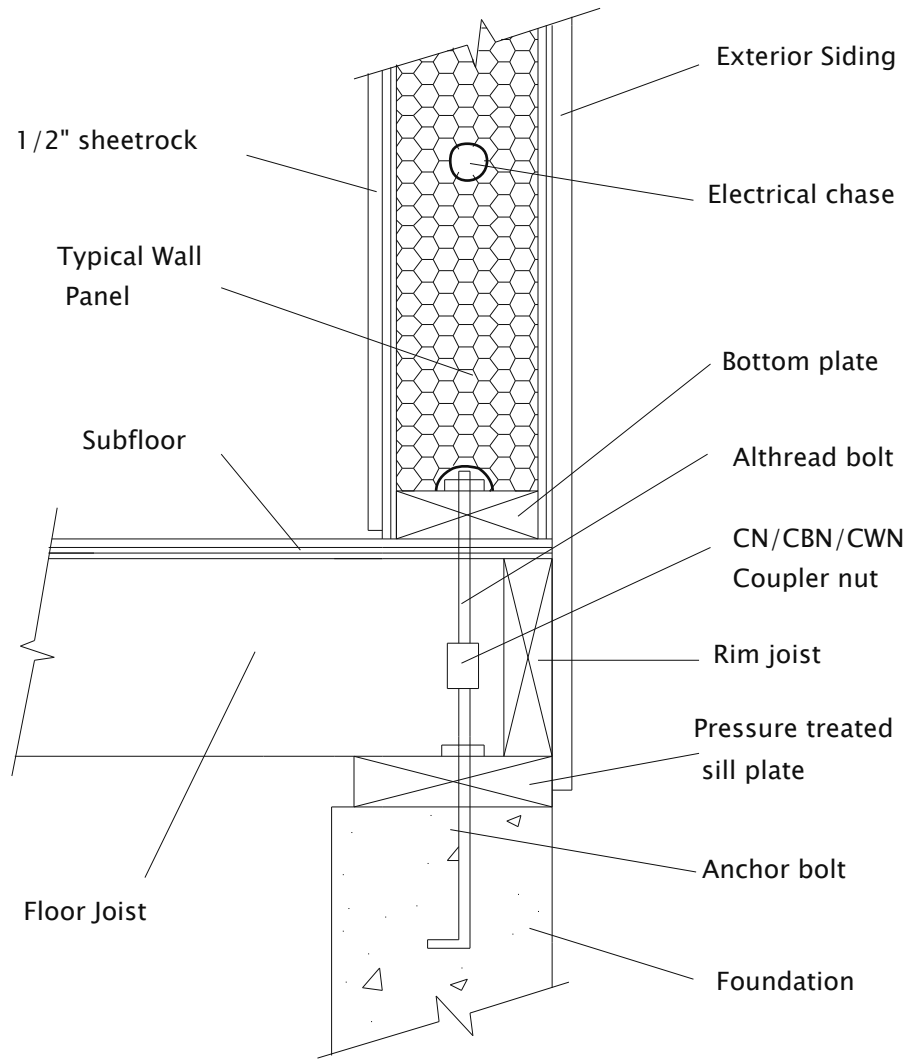
Intermountain Building Panels Construction Details

TRUSS DETAIL



Intermountain Building Panels Construction Details

UPLIFT DETAIL



Intermountain Building Panels Construction Details

UPLIFT DETAIL

