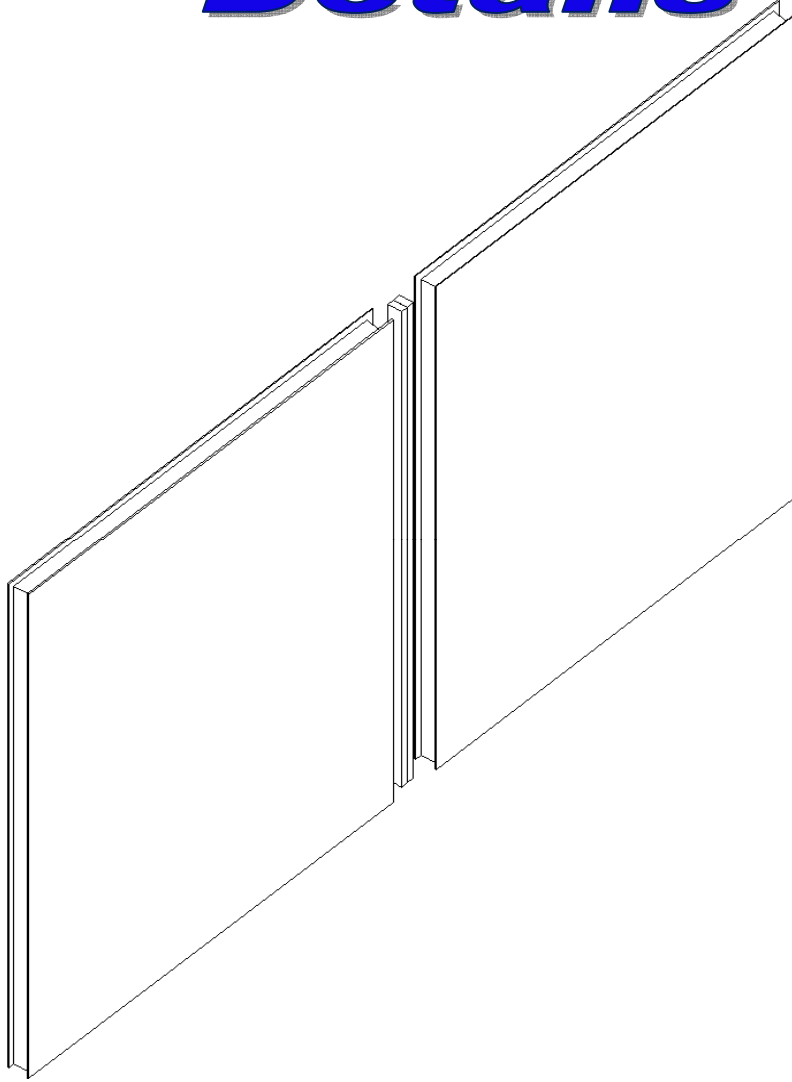


# ***Construction & Fabrication Details***



**LAMIT INDUSTRIES, INC.**

**STRUCTURAL INSULATED PANELS  
FOR THE BUILDING INDUSTRY**

P.O. Box 07750 710 Marion Rd.

Columbus, Ohio 43207-0750

[www.lamitindustries.com](http://www.lamitindustries.com)

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# THE DO'S AND DON'TS

## **Do make safety your first and foremost consideration**

- Do handle panels with care
- Don't lift panels by the top skin of OSB.
- Don't drop panels on corners.
- Do provide adequate support for panels when storing them. Store panels laying flat and covered, also prevent ground contact.
- Do store all sealants in a warm dry area for best application results in cold weather.
- Do provide level and square foundations or floors that support wall panels.
- Do hold sill plate back from edge of rim board 7/16" to allow full bearing of OSB skins.
- Do provide 1½" diameter access holes in plating to align with electrical wire chases in panels
- Do remove debris from plate area prior to panel placement.
- Don't install panels directly on concrete.
- Don't use excessive force when installing dimensional lumber plates and splines.
- Do provide adequate bracing of panels during erection.
- Do place sealant along the leading edge of wood being inset into panel.
- Do use sealant on wood-to-wood, wood-to-EPS and EPS-to-EPS connections.
- Don't overcut the skins for field-cut openings
- Don't put plumbing in panels without consulting panel manufacturer.
- Don't install recessed lighting in panels

## TOOL LIST

Power-Driven Screw Gun	Safety Glasses	Long Drill Bits
Phillips Screw bit set	Jig Saw	(3/16, 7/32, & 1/4)
#R3 square head bit	Plunge router (optional)	Masonry Bits
Power-Nailer	Spray Insulation (expanding	Square
Stepladder	foam type)	Trucker's Strap
Hammer	Hot rod foam cutter	Clamps
Caulk gun	Hand rip saw	Saw Horses
Carpenter's Pencil	Table saw (optional)	Chisels
7- 1/4" Circular saw	Nylon string	Tarps & Covers
Tape Measure	Extension Ladder	Tie downs
Chalk Line	4 Foot Level	Scaffolding (optional)
Set of hand screwdrivers	Adjustable Square	Utility Knife
2X lumber for temporary bracing		Power drill & bits

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### **HARDWARE & MATERIALS**

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### **USED FOR:**

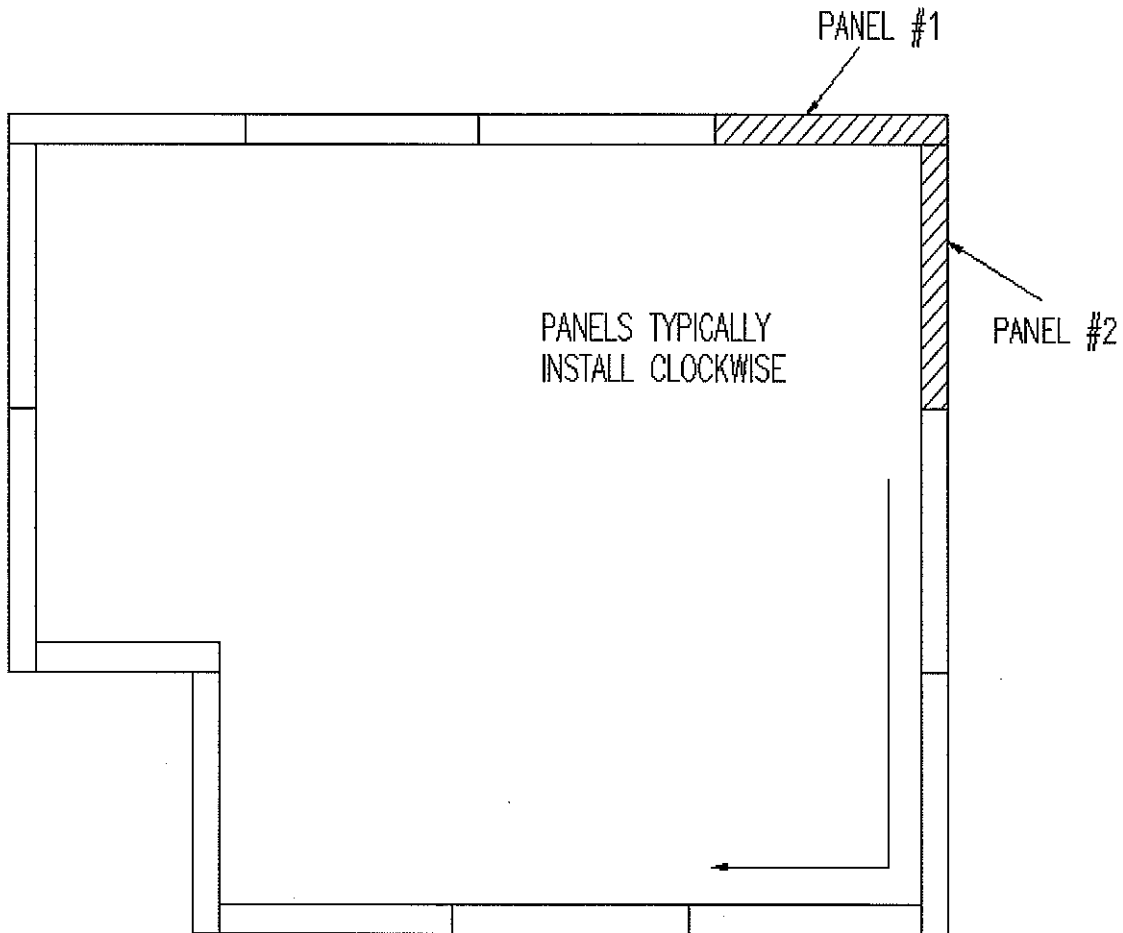
1 1/4" Drywall-type screws OR #8-D Pneumatically-driven Ring-Shank Nails	Securing panels to the splines (spaced 6" apart) or securing the panel skins to dimensional lumber.
#16-D Ring-Shank nails OR 2- 1/2" Drywall-type screws	Securing dimensional lumber components (spaced 6" apart and doubled)
Waferhead screws (2" longer than the panel thickness)	Used when a panel rests on a beam or on dimension lumber or joins an interior wall (placed 12" apart)
Various dimensional lumber	Top plates, bottom plates, rim joists, connection splines etc.(per plans)
Adhesive/Sealant	Gluing panels at plates, corners, joists etc.
Splines - 4" wide by 1/2" thick OSB strips, same length as panels	Used to secure panels to each other at joints
Wall, floor and roof panels	Per your building plans

---

## BEFORE STARTING TO ERECT PANELS:

**PROTECT FROM MOISTURE:** Be prepared to keep your panels and splines dry prior to their use. When wet, they can swell slightly making the splines difficult to insert into the slots.

**REVIEW THE PLANS:** Make sure you've gathered all tools and materials necessary to erect your panels.



When we make the plan layout for your house, we will normally number the panels beginning at a selected corner of the print.

The panels you receive will be sequentially numbered. They will be labeled with a number that matches your print and indicates assembly sequence.

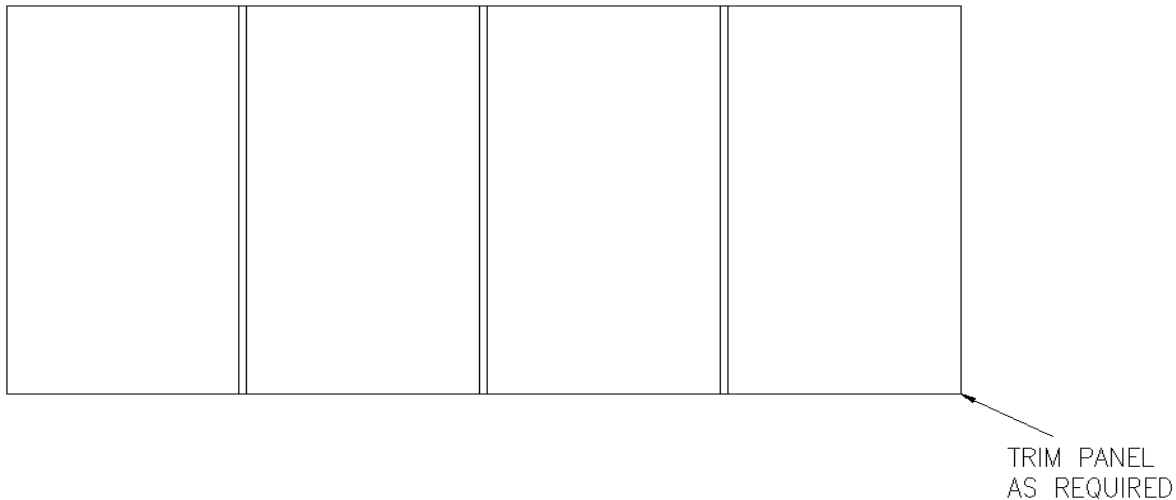
Roof panels use a similar numbering scheme. Each roof panel will be designated with the prefix "R" then its sequential number.

## ASSEMBLY TOLERANCE OF A RUN OF PANELS

Wall Panels are erected with a normal gap of about 1/8" between panel edges (to allow for expansion of the OSB). Therefore a run of panels will be their nominal designed length plus this 1/8" per panel joint. See illustration below for an example.

In order to compensate for the dimensional accumulation in a run of panels, the last panel in a wall run can be adjusted by trimming. The accumulated tolerance can equal 1/8" times the number of panel joints in the wall run.

In the example below, there are four panels in this wall and therefore, three panel-to-panel junctions. The last panel in the run will therefore be trimmed approximately 5/8"±.



**TREATED LUMBER BASE PLATES:** When using treated lumber base plates, you may find that they are wider than the nominal dimension due to expansion in the pressure-treating process. These wider plates must be ripped down before using. Some builders run all of the lumber plates through a rip saw to verify they are to the correct nominal dimension.

**FASTENERS:** Pneumatically driven #8D Ring-shank nails or 1-¼" drywall screws are required every six inches for all structural edges of panel facings. Power-driven nails or screws are necessary when surface splines are used. #8 screws are also to be used for roof attachment and must have a large head or use a fender washer under the head to prevent pull-through.

**ADHESIVE AND SEALANT:** The adhesive and foam sealant used are not required to obtain the structural values in the load tables. Adhesive and foam sealant are used primarily to improve the insulation efficiency and increase the life of the structure. Care should be used in selecting the adhesive since many adhesives can attack the foam core of the panels.

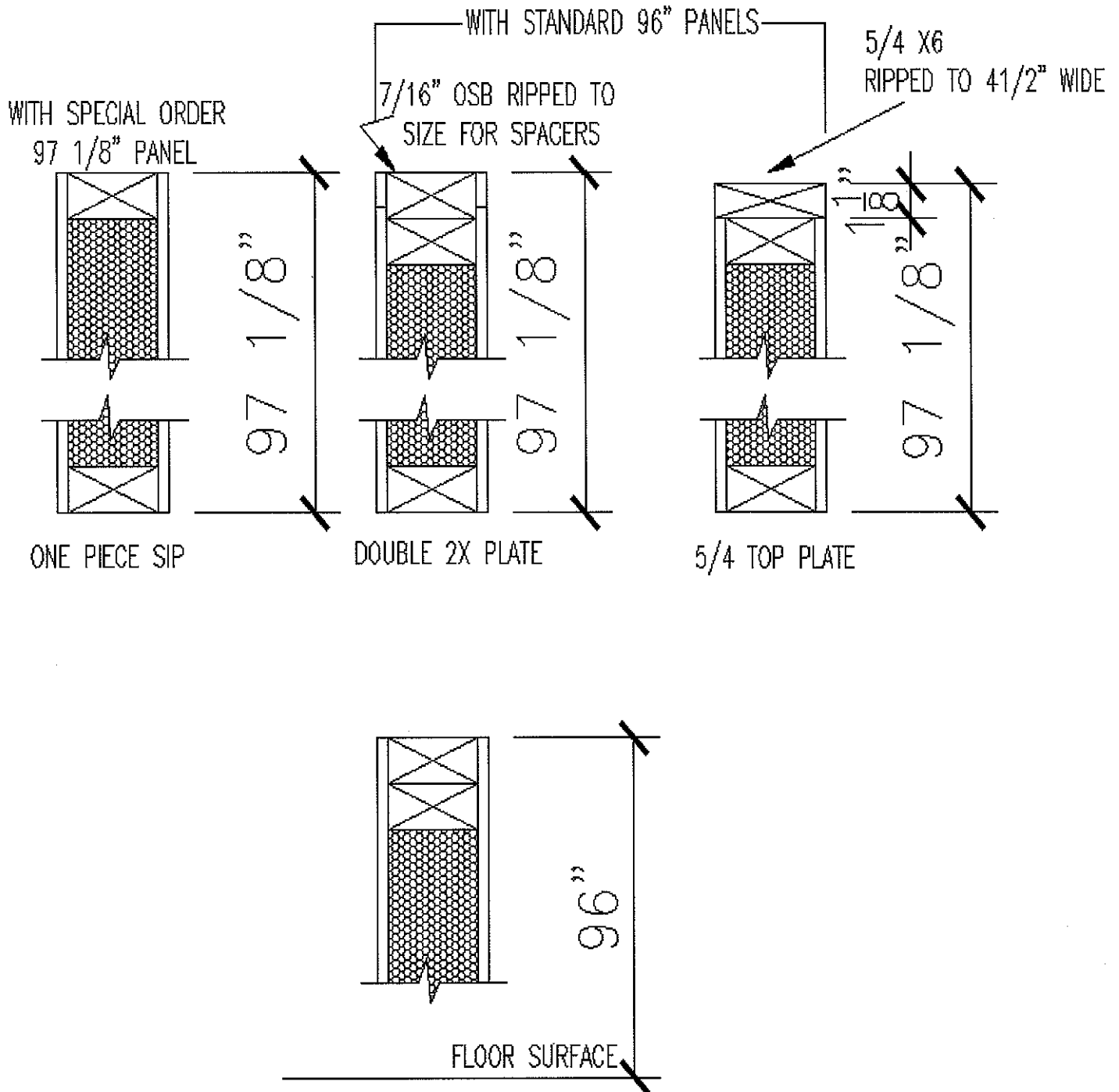
**POLYETHYLENE FOAM SILL SEALER:** Panels are to be installed over a plate of treated lumber that is separated from the concrete with a sill sealer. The sill sealer material is used between the masonry and the bottom of the sill plate and must extend to also seal the area between the bottom edge of the panel skin and the masonry as shown.

**NOTE:** Fiberglass is not to be used as sill filler as the fiberglass can wick moisture up into the panel's OSB skin.

## METHODS TO ACHIEVE STANDARD 97 1/8 INCH CEILING HEIGHT

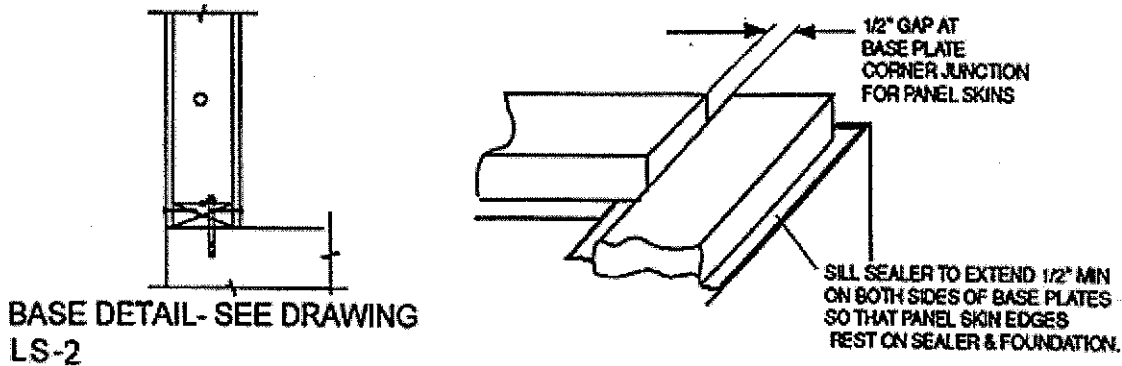
The diagrams below show the various ways to achieve the standard 97 1/8" ceiling height. Standard 96" panels can be recessed in one of the two depths shown (depending on whether a 5/4 or 2X top plate is chosen). If using 95-5/8" panels and a 2x plate see the diagram below right.

Although it is possible to supply 97-1/8" panels on a special order basis, it is usually more economical to accomplish the standard 97-1/8" height by constructing the top plates by other methods as shown. The cost of a 97-1/8" panel is the same as the cost of a 108" panel. The top plate methods shown, when used with the standard 96" panels or the 95-5/8" panels, can represent a savings over the cost of 97-1/8" panels.



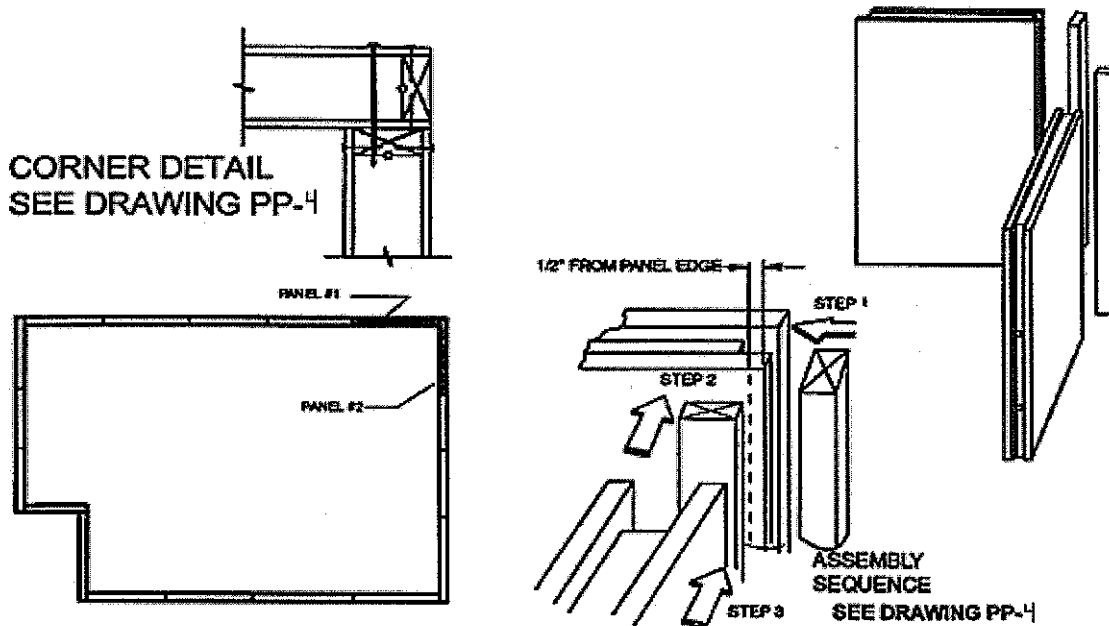
## SETTING THE BASE PLATE AND THE FIRST CORNER PANELS:

Check the width of all treated lumber base plates and rip to the correct width dimension if necessary (so they fit correctly into the panel recesses). Apply the polyethylene foam sill sealer. Attach base plate to foundation using appropriate masonry fasteners leaving a 1/2 inch gap as shown to allow the bottom edges of the panel skins to rest fully on the foundation.



## INSTALLING THE FIRST PANELS:

**Panel Numbering:** Each panel is numbered to match a corresponding number on the plans which denotes the order in which to erect them. If this numbering system is carefully followed, the building will go together quickly and easily and all door and window openings should be in their correct locations.



Beginning at the first corner, put up two panels that will form a corner. Screw this joint together following the assembly sequence shown above, making sure the corner square and both wall panels are plumb. Place the next panel in the sequence onto the base plate and slide the panels together at the joint (except for the specified 1/8" gap). Continue erecting the wall panels in sequence.



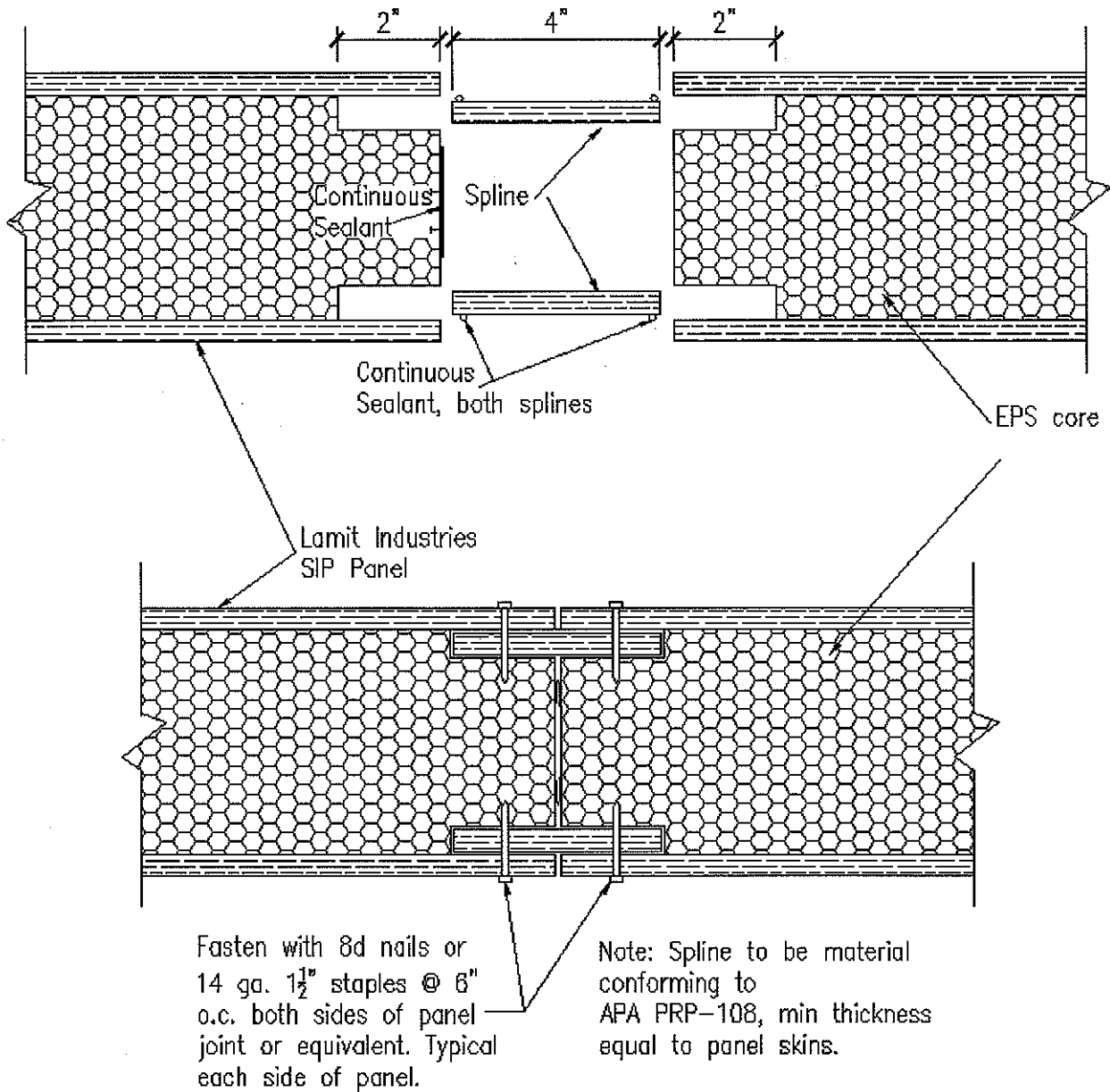
## SPLINES AT WALL JOINTS

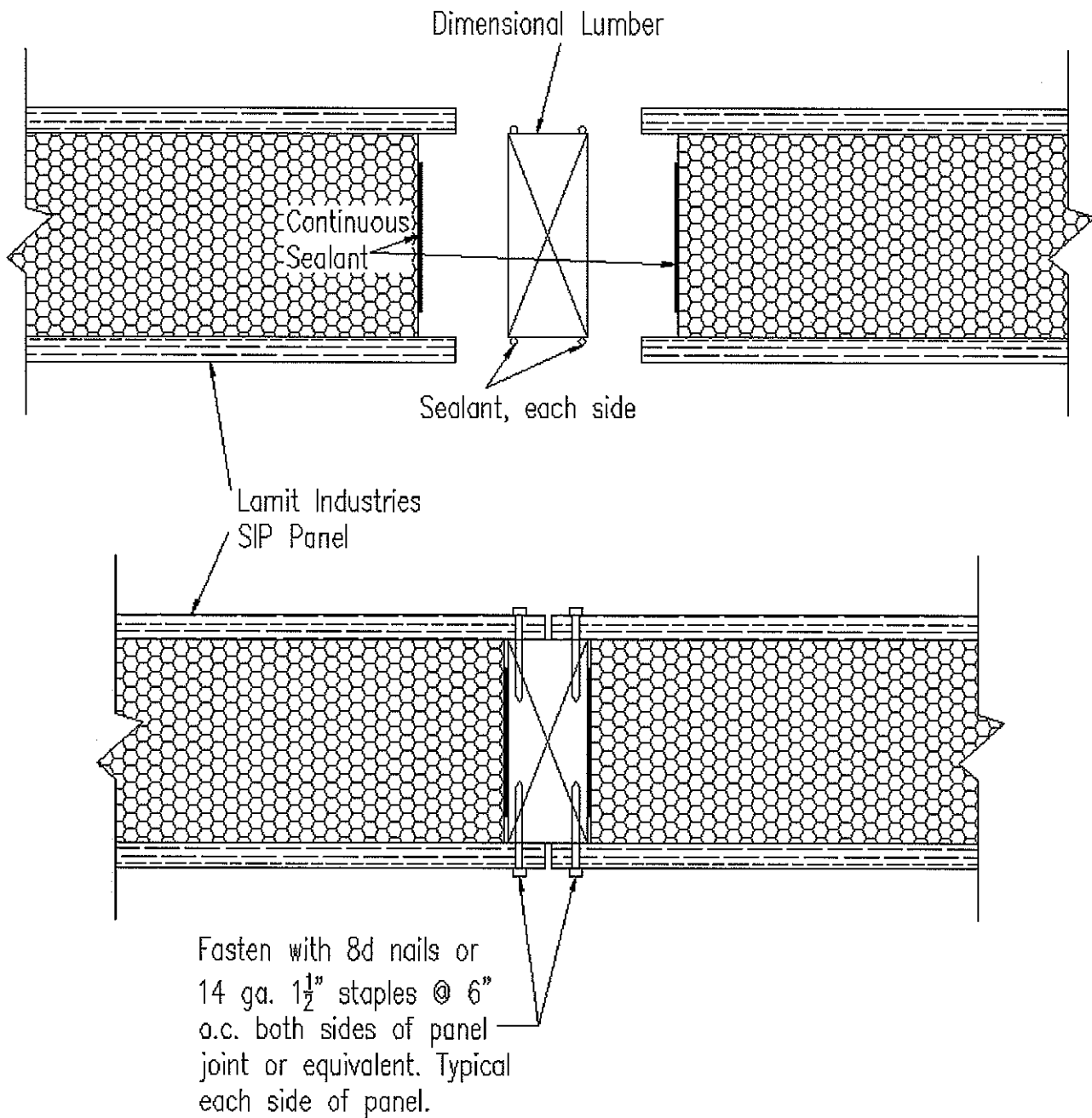
There are two methods of securing the panels to each other at their joints. The first is surface splines made of 5/8" thick OSB. The second is to join the panels with splines made of standard dimensional lumber.

Surface splines simplify the installation of electrical and provide some additional energy efficiency. Surface splines cannot be hand nailed into place and must be power nailed or screwed into place.

Both types of splines can be inserted from the top of the panel and slid into position while the panels are held in position.

See the drawings below for details of how to correctly assemble both types of splines.



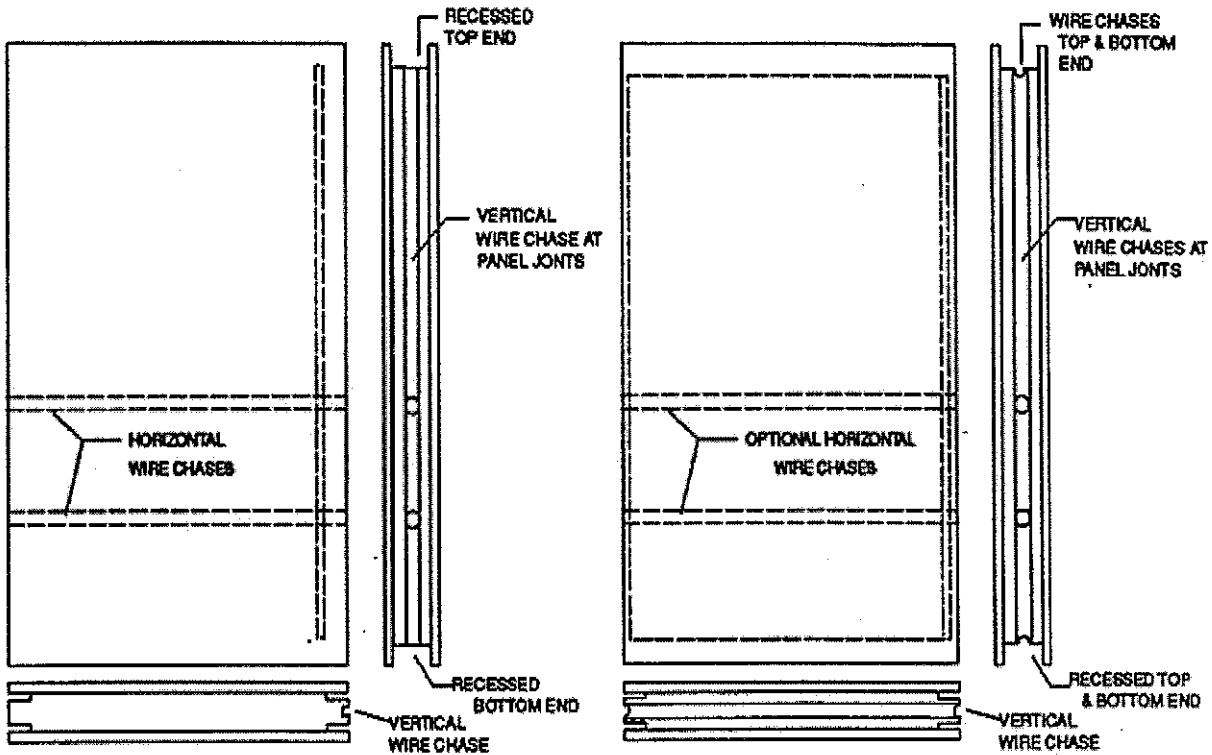


After joining the remaining wall panels, install the top plates and bevel plates to the tops of walls and screw or nail together.

At the gable ends, install the support posts for the ridge beam as indicated on the plans, and then install the ridge beam.

## WORKING WITH ELECTRICAL IN SIPS

Typically, your SIP's will have wiring channels or chases in the panels. There are horizontal wire chases at two locations. These permit running wires through the panels to connect standard height receptacles and switches. These chases are indicated on the interior face of the panels by a line.



## WIRING CHASE CONFIGURATIONS IN PANELS

Additionally there are wire chases around the perimeter of the panel as well, to facilitate the routing of wiring along the sill and top plates and to run wires either up or down between panels.

If your panels are being assembled with dimensional lumber splines (instead of surface splines), it will be necessary to drill holes through the splines at the correct heights to allow the wiring to be fed through as the panels are being erected.

## WIRING AT CORNER JUNCTIONS

When a circuit continues around a corner, The wire can be brought out of the panel, Either upward or downward, through the Top or base plate and then around the Corner as shown.

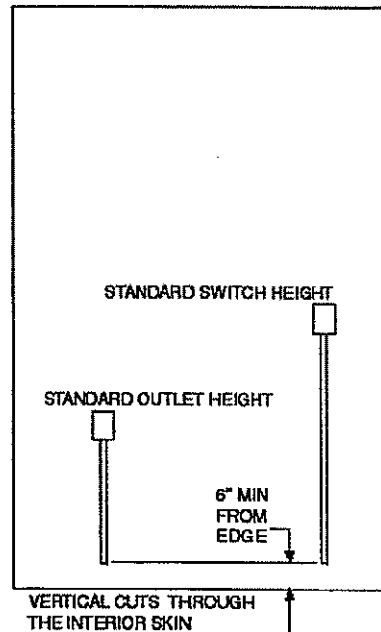
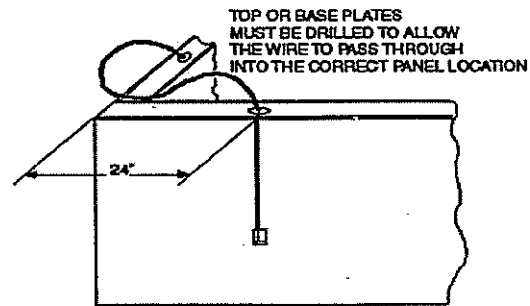
## INSTALLATION OF SWITCH AND OUTLET BOXES

When electrical boxes for switches and receptacles need to be

located in locations on the panel face inside of the panel edges, vertical cuts may be made as shown through the interior of the panel in which to locate the wire. After placing the wire in the cut groove and into the box, the groove should be foamed and filled.

If horizontal cuts need to be made to feed wires into locations other than those provided, the length of the cut should be limited to no more than 12 inches in length.

The top or base plate (depending on whether the wire is to come in from the top or bottom) needs to be drilled for the wire to feed through into the panel before the panel is installed.



## PLANNING YOUR ELECTRICAL LAYOUT

Good planning of the layout of your electrical circuits can help your building project go faster and more smoothly. For example, when wiring for a circuit does not have to go around a corner through the panels, time & effort can be saved. Similarly, taking into consideration of the routing or wiring around you windows and doorways can also simplify the task. In short, it's best to take advantage of the electrical chases already in the SIP wherever possible.

When it is necessary to continue a circuit around a corner, the cable can be fed down through a hole on the base plate (or up through the top plate) from about two feet in from the corner junction and then pulled around the corner and routed through the joists. (See illustration on the previous page.

To rout wiring around doorways or large window openings, a similar method applies. The wiring is routed either up through the top plate or downward through the base plate then back into the panel's wire chases at the next panel junction.

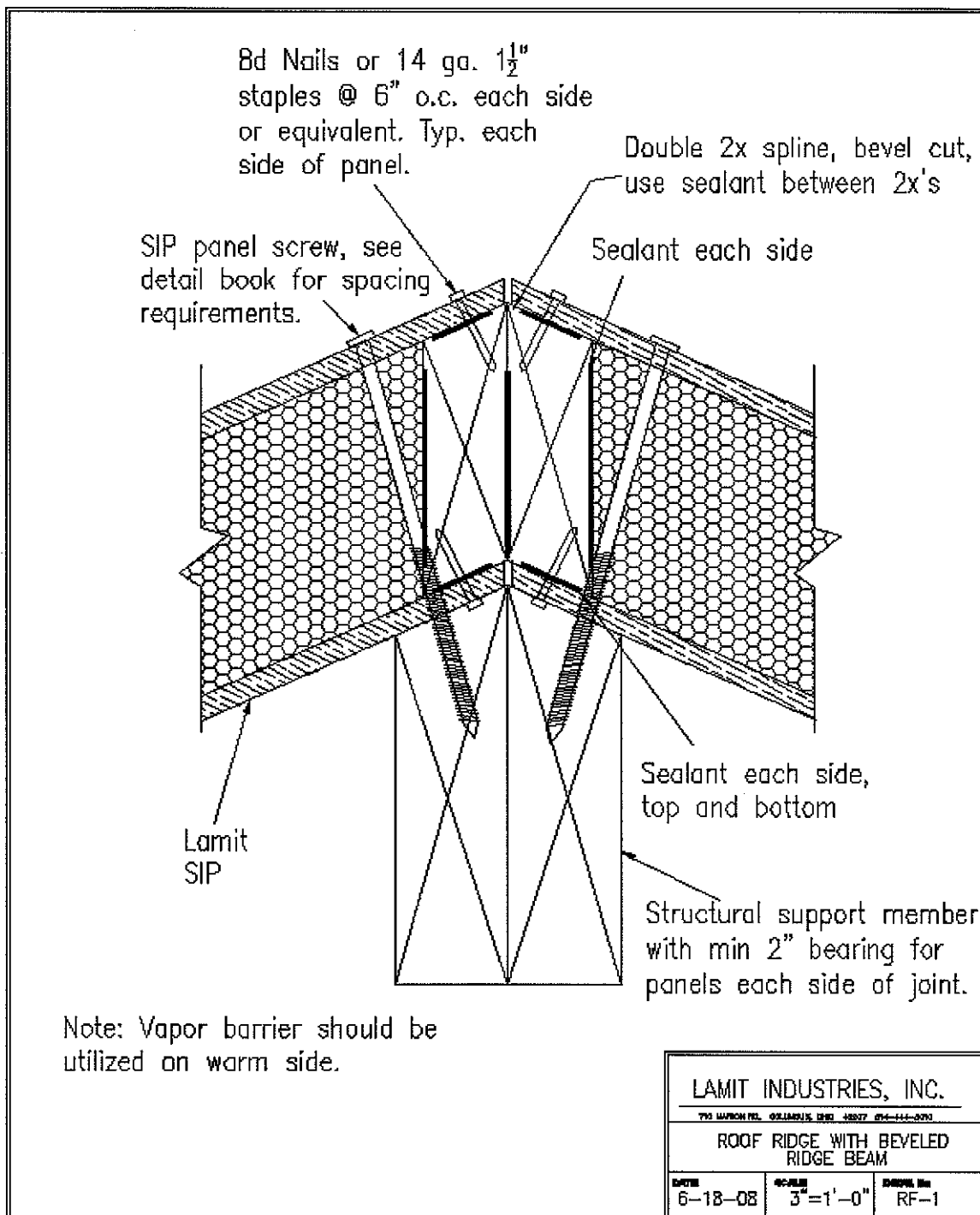
Your wiring can also be preinstalled as the panels are being put up by lying the cabling in the grooves provided at the base and/or top.

## INSTALLING THE ROOF

Start at one end of the roof and install the first panel with the edge out over the gable end to provide the overhang (as indicated on the plans). Once the panel is in place and squared, fasten it down with the tap deck screws.

Tap deck screws are to be installed at one foot intervals up the slope, along the ridge beam and along the top wall.

Following the numbering system, install the rest of the panels. **Note: Roof panels using surface splines, must have splines installed at both skins.**



SIP panel screw, see detail book for spacing requirements.

Lamit SIP

Beveled blocking predrilled for SIP screw. Use 16d nails to attach blocking to top plate until screw is in place.

8d Nails or 14 ga. 1½" staples @ 6" o.c. each side or equivalent.

Use sealant each side, and @ roof panel/blocking joint.

2x top plate

Lamit SIP

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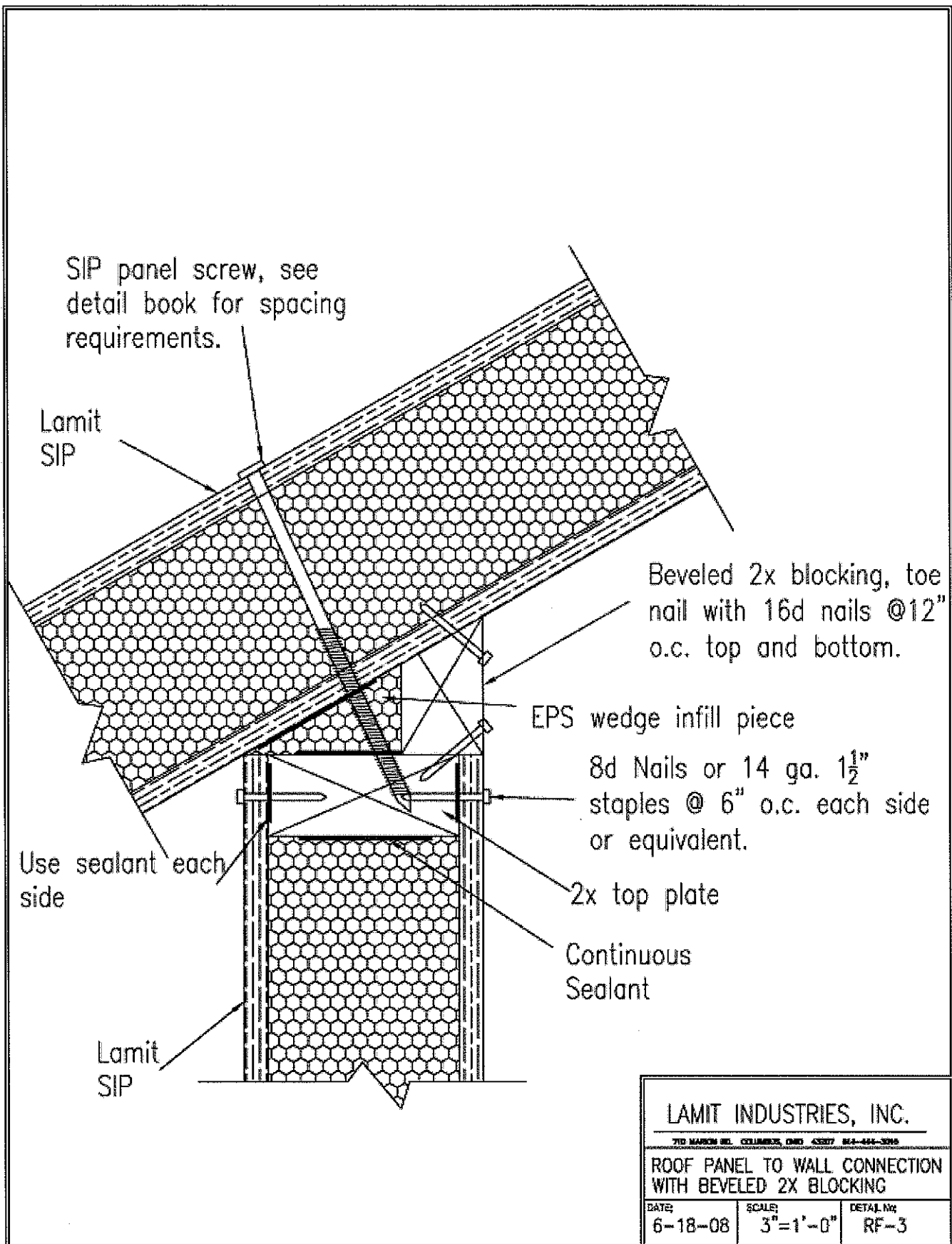
710 MAPON RD. COLUMBUS, OHIO 43237 614-444-3090

ROOF PANEL TO WALL CONNECTION WITH SOLID BLOCKING

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
RF-2



SIP panel screw, see detail book for spacing requirements.

Lamit SIP

8d Nails or 14 ga. 1½" staples @ 6" o.c. each side or equivalent.

Beveled 2x top plate

Continuous Sealant

Use sealant each side, and @ roof panel/2x joint.

Lamit SIP

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710 MARSH RD. COLUMBUS, OHIO 43207 614-444-3290

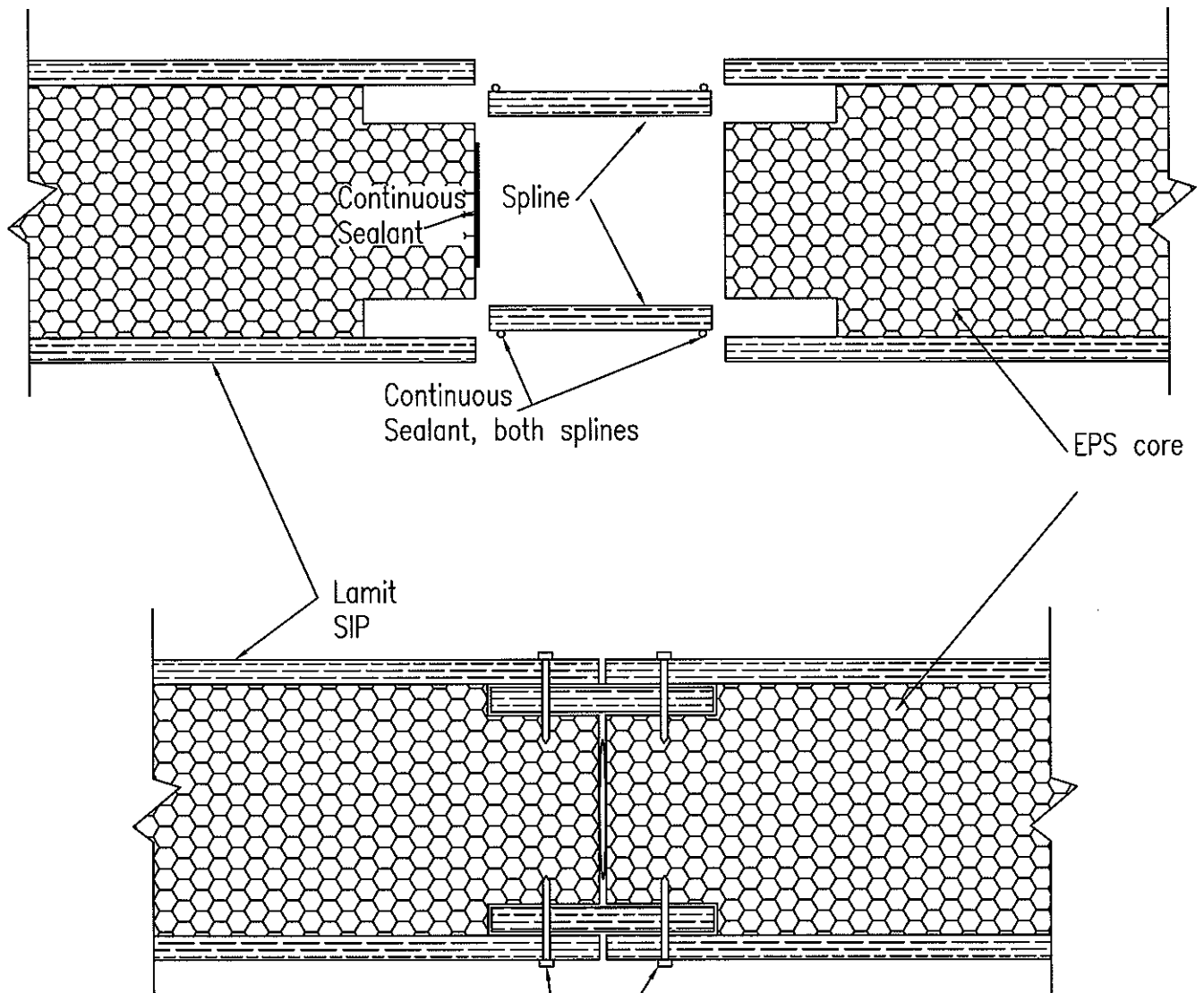
ROOF PANEL TO WALL USING ANGLE-CUT PANEL

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
RF-4





Fasten with 8d nails or 14 ga. 1½" staples @ 6" o.c. both sides of panel joint or equivalent. Typical each side of panel.

Note: Spline to be material conforming to APA PRP-108, min thickness equal to panel skins.

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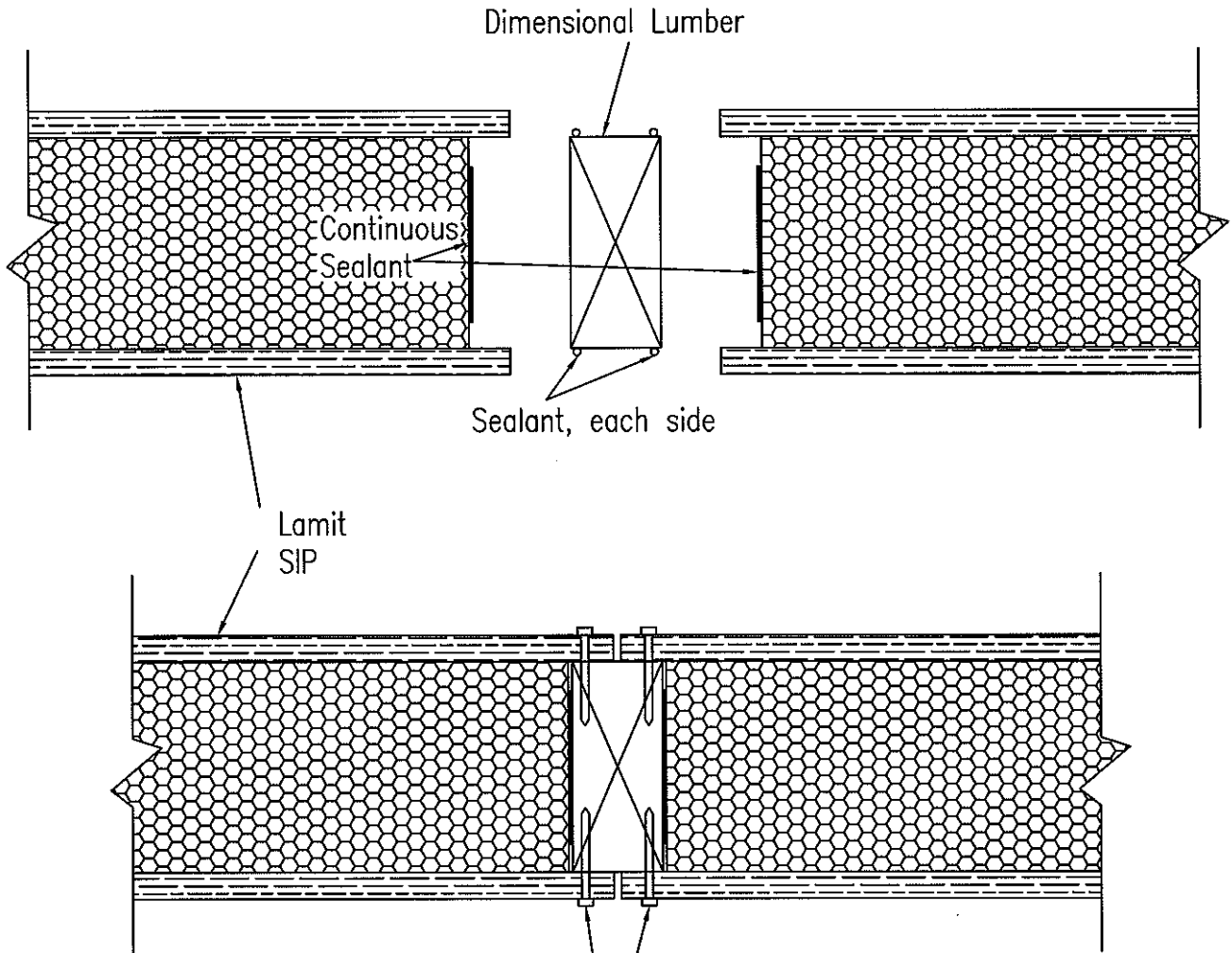
710 MARION RD. COLUMBUS, OHIO 43207 614-444-3010

SURFACE SPLINE CONNECTION

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
PP-1



Fasten with 8d nails or  
14 ga. 1½" staples @ 6"  
o.c. both sides of panel  
joint or equivalent. Typical  
each side of panel.

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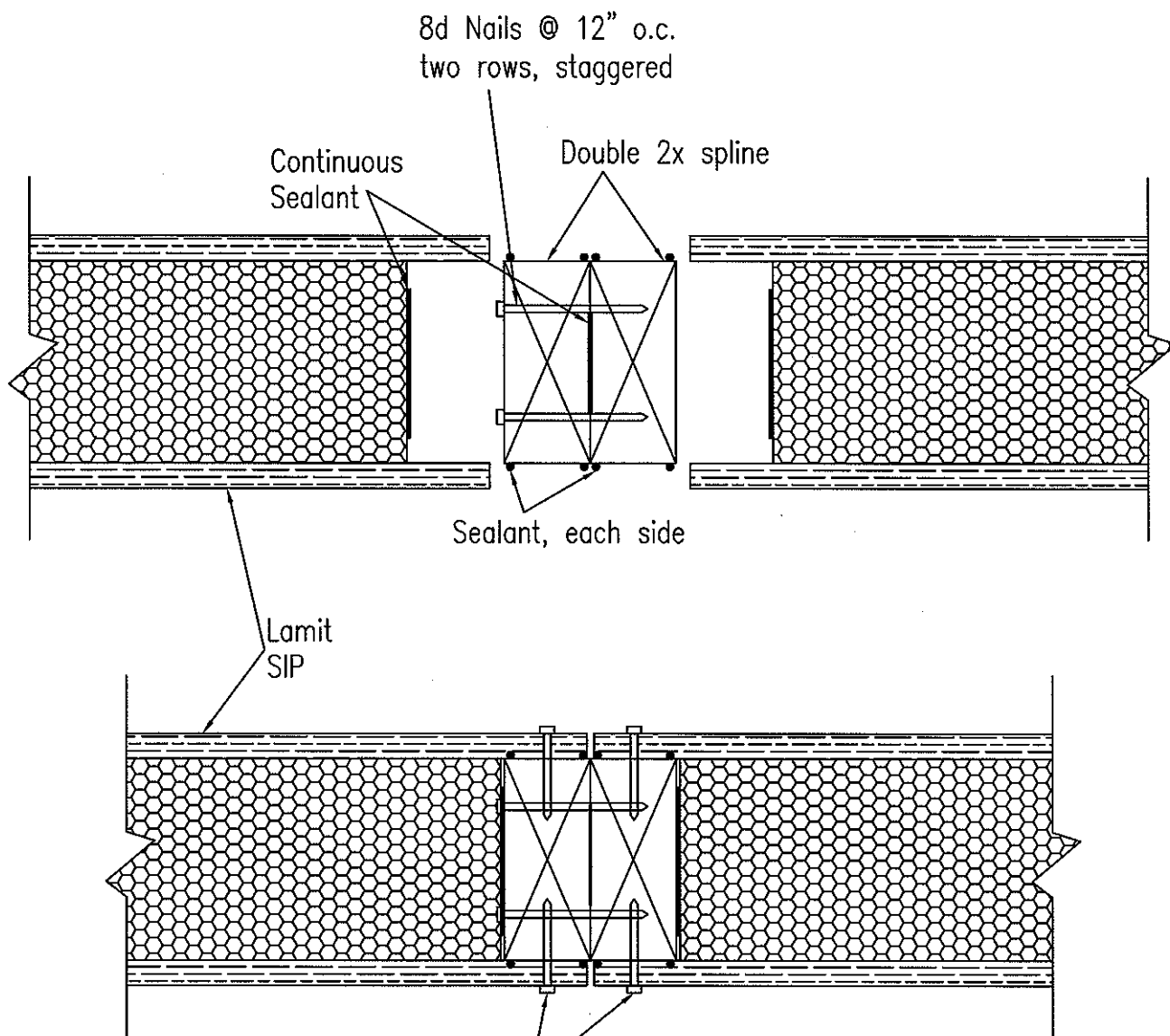
710 MARKON RD. COLUMBUS, OHIO 43207 614-444-3010

DIMENSIONAL LUMBER CONNECTION

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
PP-2



Fasten with 8d nails or  
14 ga. 1½" staples @ 6"  
o.c. both sides of panel  
joint or equivalent. Typical  
each side of panel.

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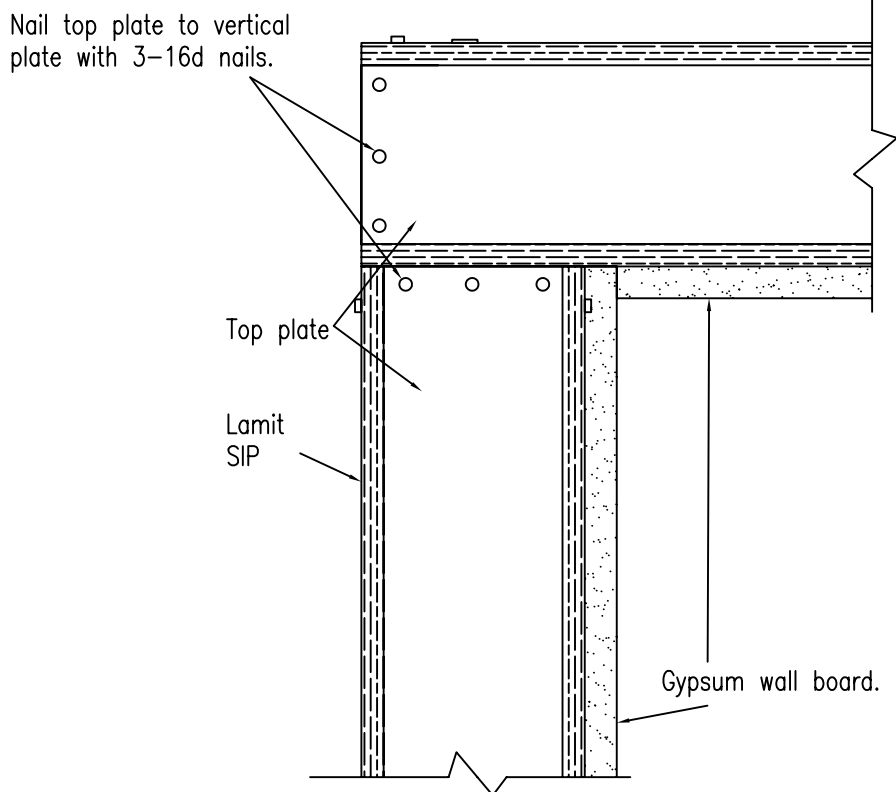
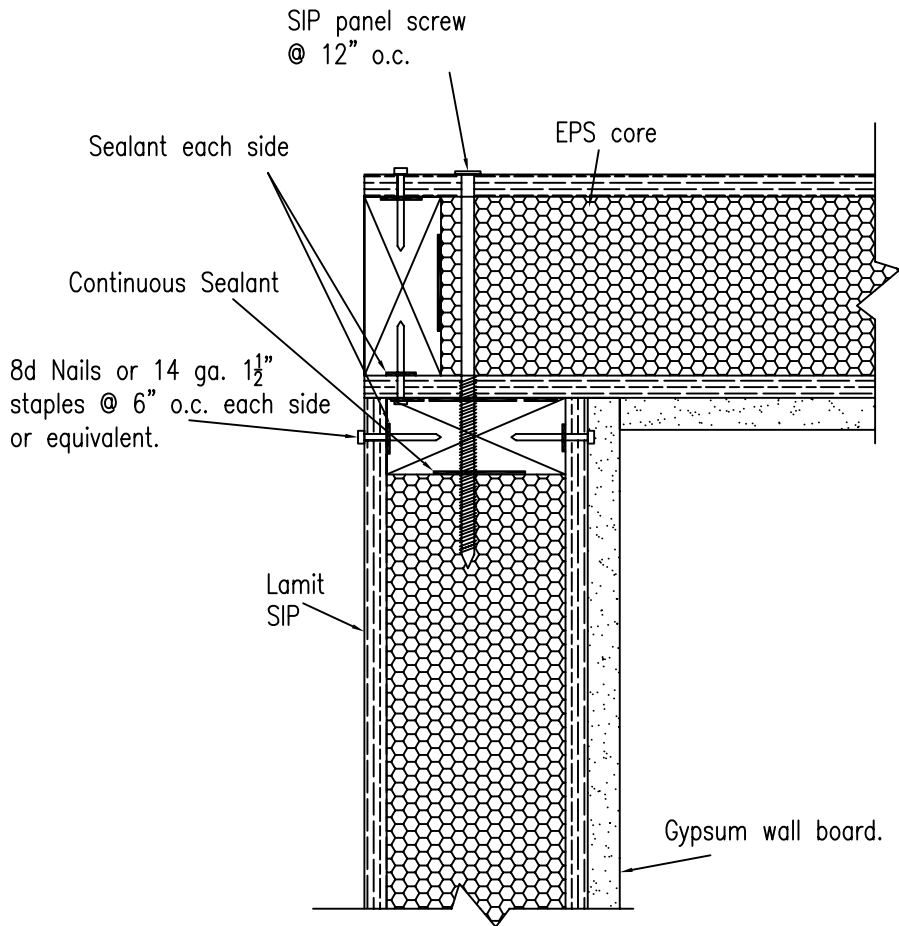
710 MARRON RD. COLUMBUS, OHIO 43207 614-444-3010

DOUBLE DIMENSIONAL  
LUMBER CONNECTION

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
PP-3



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TYPICAL RIGHT ANGLE CORNER

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
PP-4

SIP panel screw  
@ 12" o.c.

Sealant each side

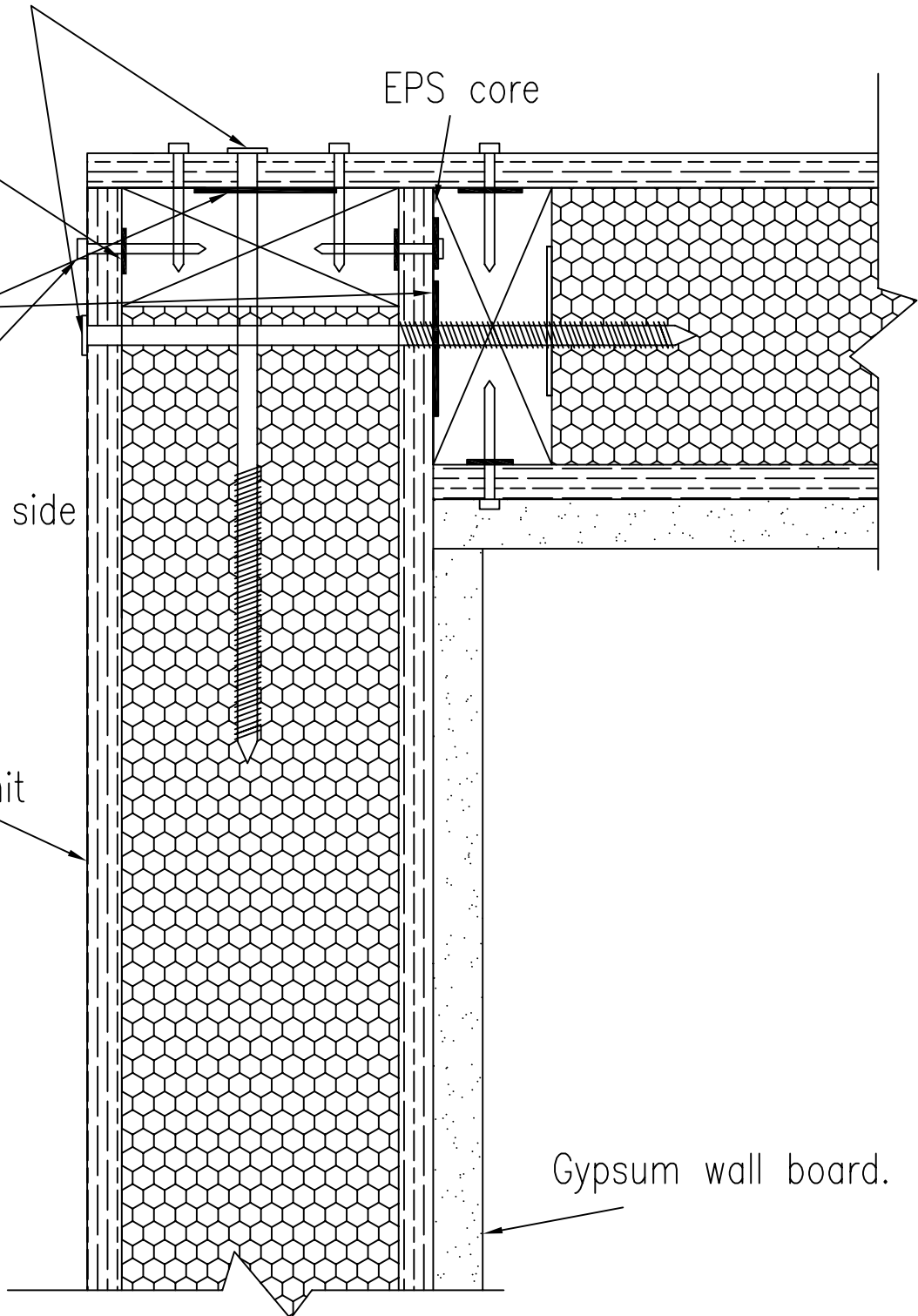
EPS core

Continuous Sealant

8d Nails or 14 ga. 1 1/2" staples @ 6" o.c. each side or equivalent.

Lamit SIP

Gypsum wall board.



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INTERSECTING CORNER  
(FLY-BY CORNER)

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
PP-5

## Case 1: SIPs up to 16' long.

SIPs 16' or less in length require 4 Lamit Screws per support for one & two span conditions. (See Diags 1 & 2)

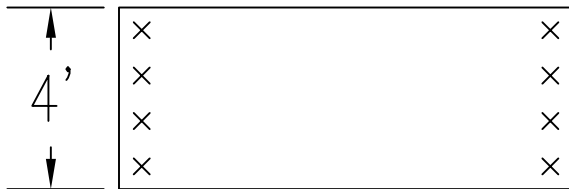


Diagram 1: Single span condition  
(2 points of attachment)

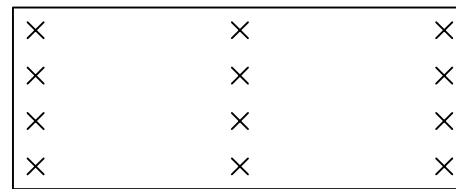


Diagram 2: Two span condition  
(3 points of attachment)

## Case 2: SIPs 16'–24' long.

SIPs greater than 16' in length require 6 Lamit Screws per support for one & two span conditions. (See Diags 3 & 4)



Diagram 3: Single span condition  
(2 points of attachment)

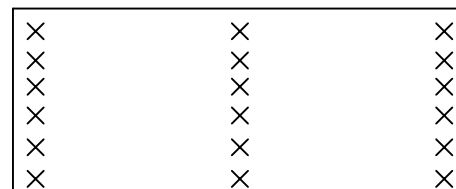


Diagram 4: Two span condition  
(3 points of attachment)

## Case 3: SIPs with 3 or more spans.

SIPs any length with 3 or more spans require 4 Lamit Screws per support. (See Diag 5)

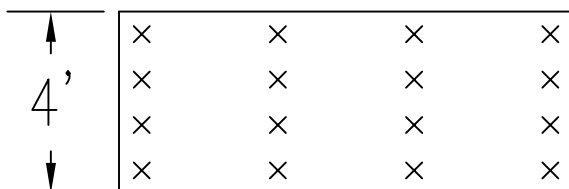


Diagram 5: 3 spans or greater  
(multiple points of attachment)

### Notes:

1. Perimeter attachment of roof panels requires a minimum of 1 fastener per 2 lined feet of panel.
2. The recommendations are based on 90 psf of uplift resistance with a minimum screw penetration of 1" for Lamit Wood Screws and Heavy Duty Metal Fasteners.
3. The bottom of screw head must remain flush with top facing.
4. Attachment recommendations are for uplift only. Requirements for diaphragm or other bracing by others.

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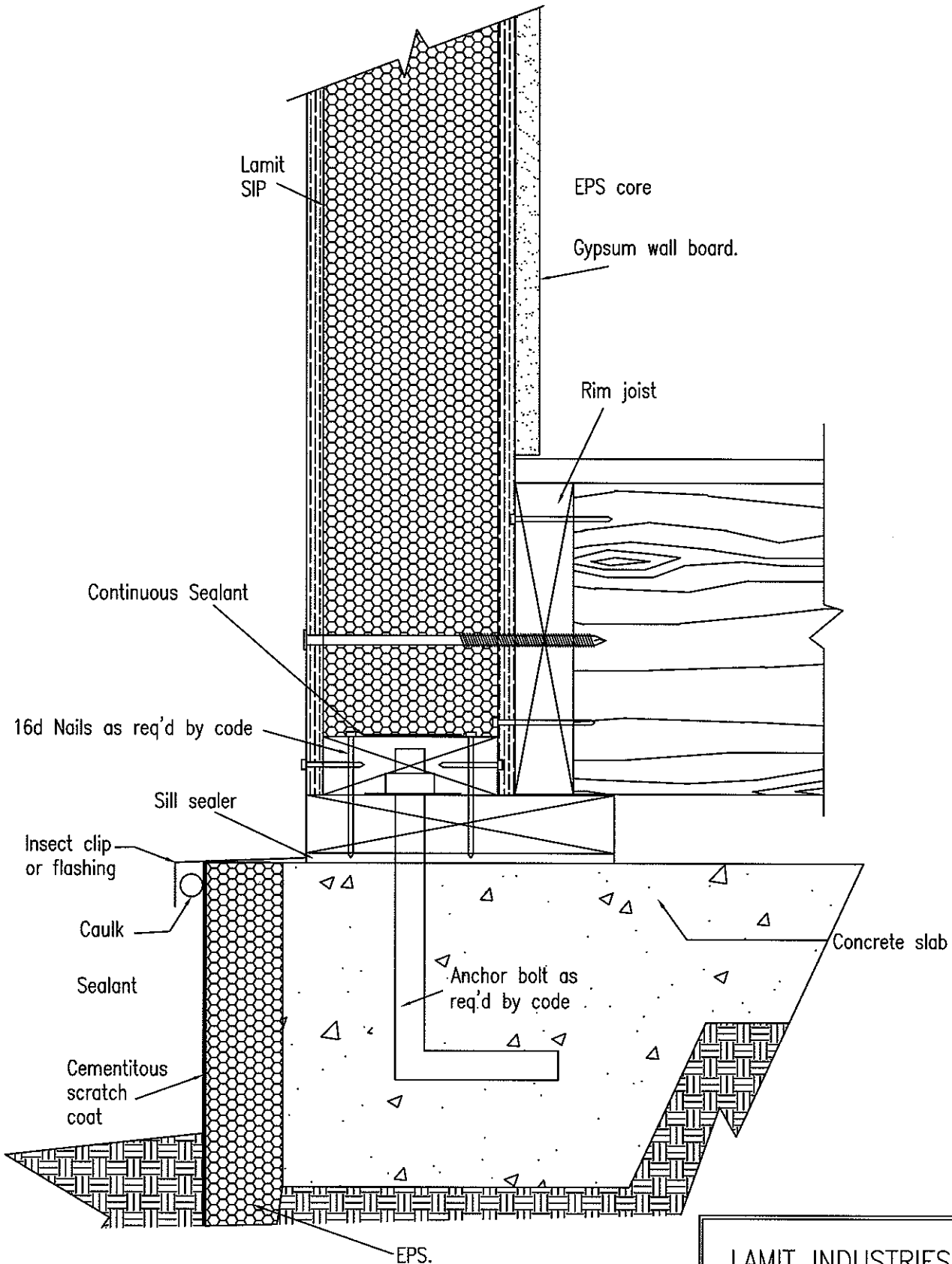
710 MARION RD. COLUMBUS, OHIO 43207 614-444-3010

Roof Panel Fastening Patterns

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
PF-1



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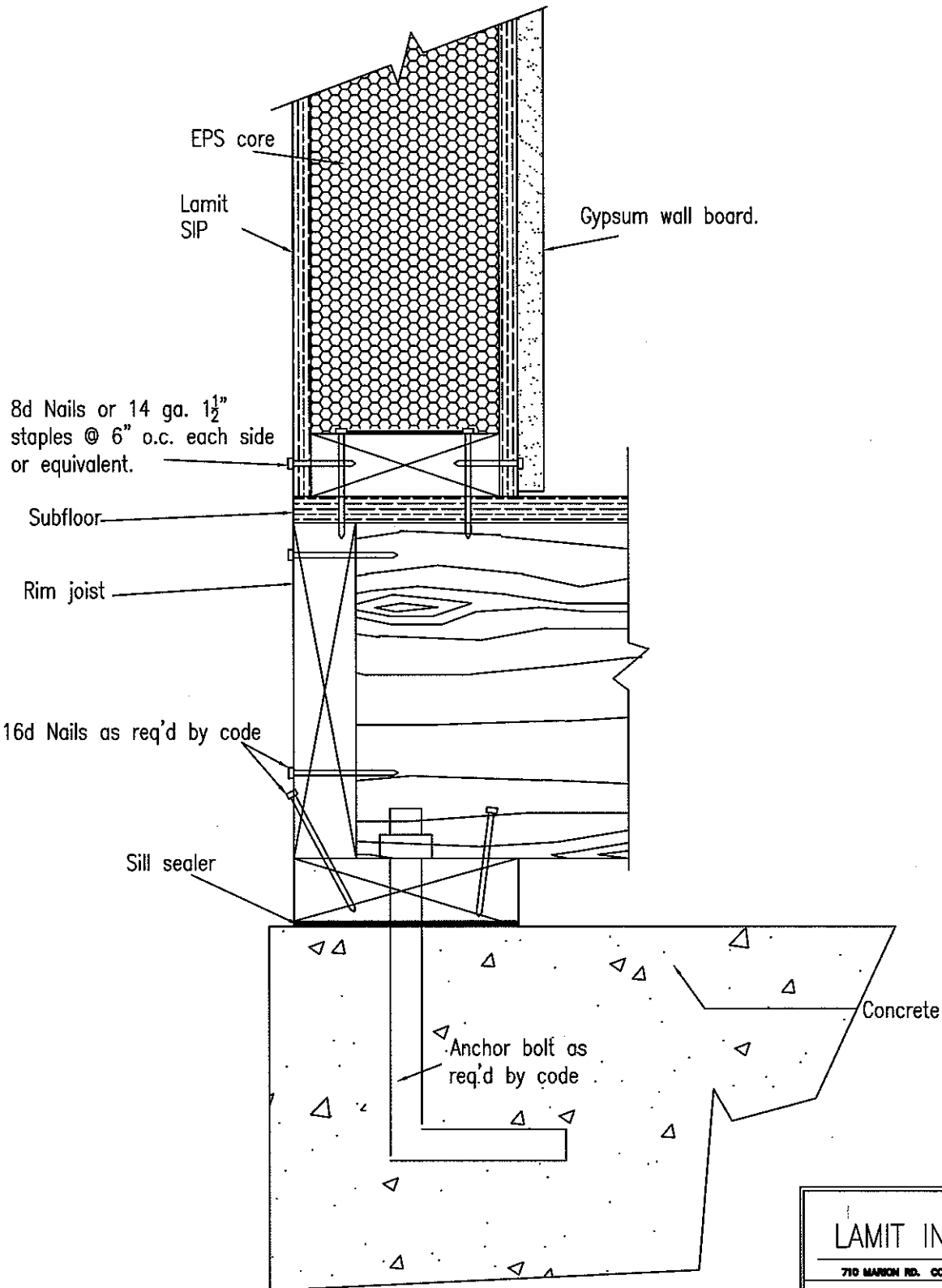
710 MARION RD. COLUMBUS, OHIO 43227 614-444-3010

PANEL ON SILL PLATE

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
LS-2



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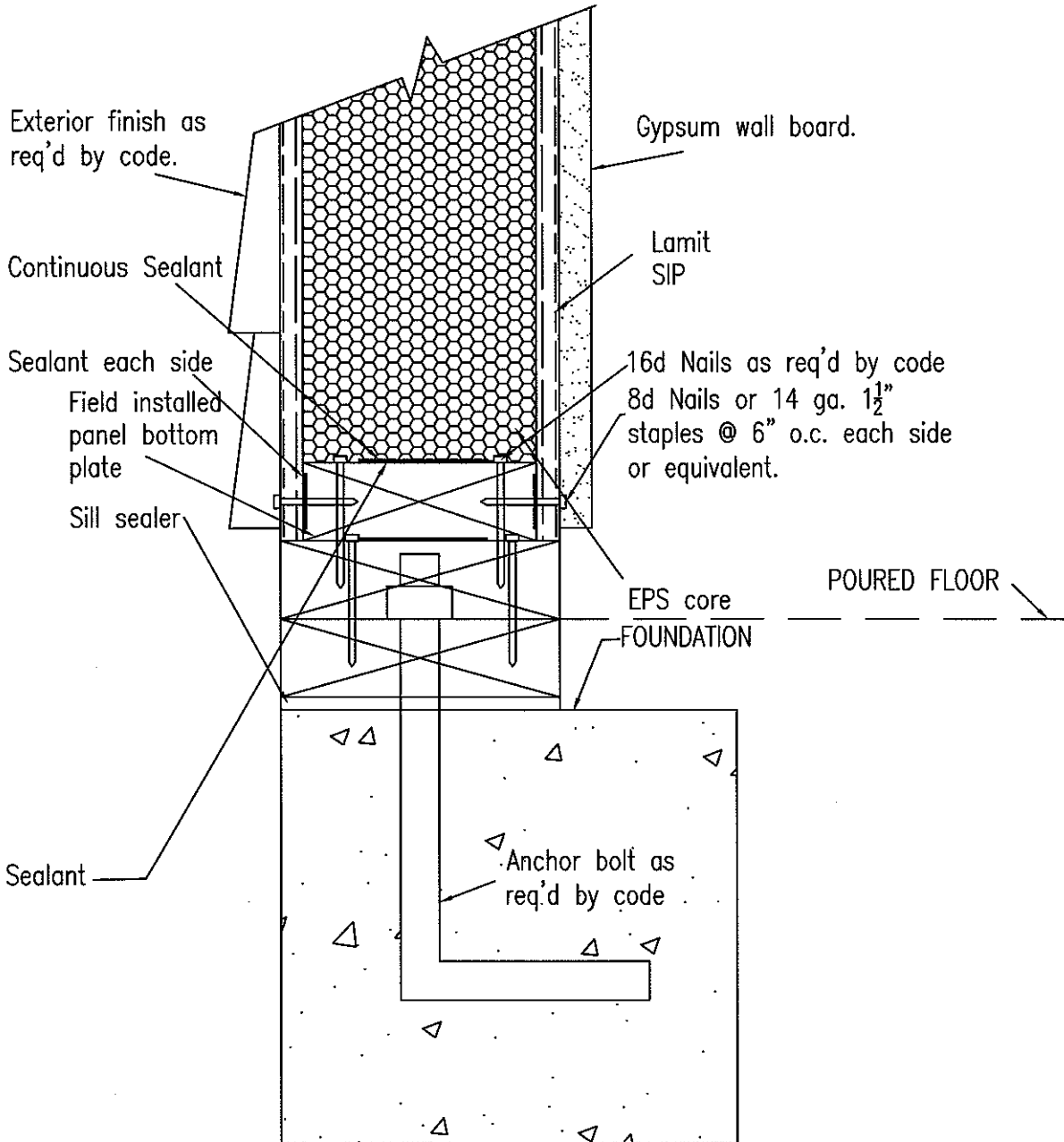
FLOOR JOIST TO WOOD DECK

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
LS-3



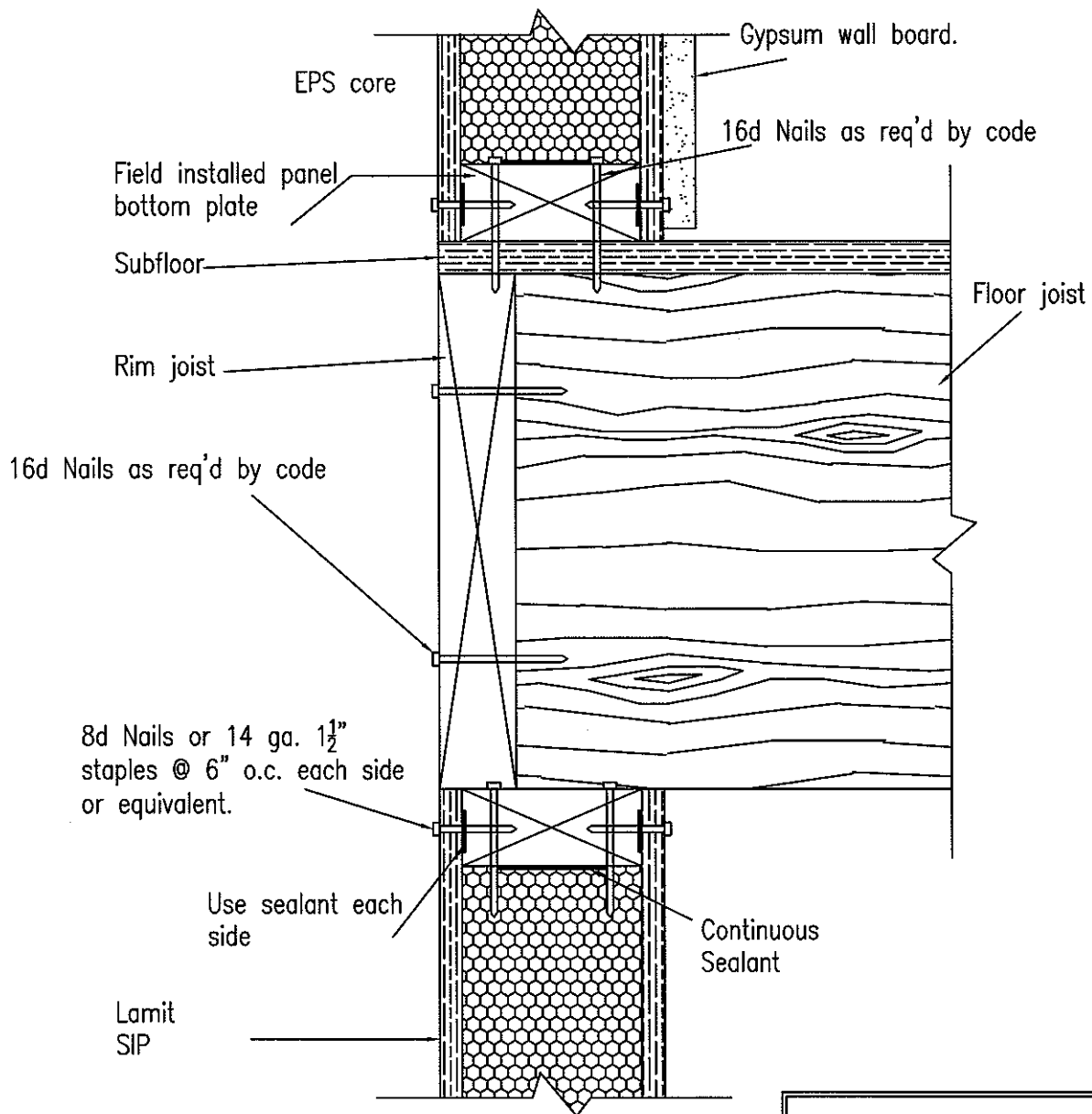


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BASEMENT WALL WITH FLOOR  
POURED AFTER ERECTION OF WALL

DATE: 6-18-08	SCALE: 3"=1'-0"	DETAIL No: LS-4
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JOIST AND BEARING WALL

DATE:  
6-18-08

SCALE:  
3"=1'-0"

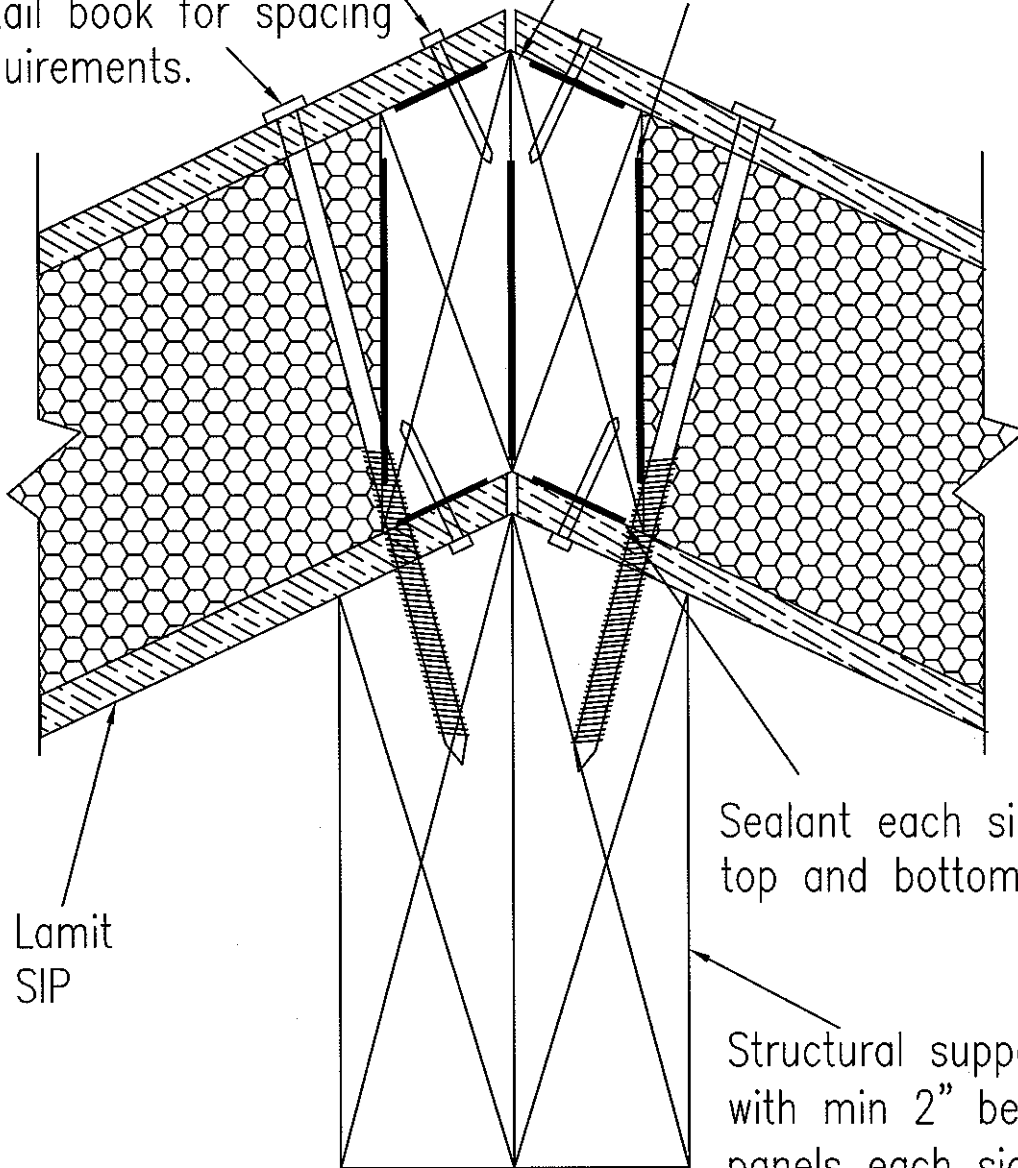
DETAIL No:  
JW-1

8d Nails or 14 ga. 1½" staples @ 6" o.c. each side or equivalent. Typ. each side of panel.

Double 2x spline, bevel cut, use sealant between 2x's

SIP panel screw, see detail book for spacing requirements.

Sealant each side



Lamit SIP

Sealant each side, top and bottom

Structural support member with min 2" bearing for panels each side of joint.

Note: Vapor barrier should be utilized on warm side.

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ROOF RIDGE WITH BEVELED RIDGE BEAM

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
RF-1

SIP panel screw, see detail book for spacing requirements.

Lamit SIP

Beveled blocking predrilled for SIP screw. Use 16d nails to attach blocking to top plate until screw is in place.

8d Nails or 14 ga. 1 1/2" staples @ 6" o.c. each side or equivalent.

Use sealant each side, and @ roof panel/blocking joint.

2x top plate

Lamit SIP

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ROOF PANEL TO WALL CONNECTION WITH SOLID BLOCKING

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
RF-2

SIP panel screw, see detail book for spacing requirements.

Lamit SIP

Beveled 2x blocking, toe nail with 16d nails @12" o.c. top and bottom.

EPS wedge infill piece

8d Nails or 14 ga. 1 1/2" staples @ 6" o.c. each side or equivalent.

Use sealant each side

2x top plate

Continuous Sealant

Lamit SIP

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ROOF PANEL TO WALL CONNECTION WITH BEVELED 2X BLOCKING

DATE: 6-18-08	SCALE: 3"=1'-0"	DETAIL No: RF-3
------------------	--------------------	--------------------

SIP panel screw, see detail book for spacing requirements.

Lamit SIP

8d Nails or 14 ga. 1½" staples @ 6" o.c. each side or equivalent.

Beveled 2x top plate

Continuous Sealant

Use sealant each side, and @ roof panel/2x joint.

Lamit SIP

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ROOF PANEL TO WALL USING ANGLE-CUT PANEL

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
RF-4

SIP roof panel screw, see detail book for spacing requirements.

Lamit Roof SIP

2x lumber

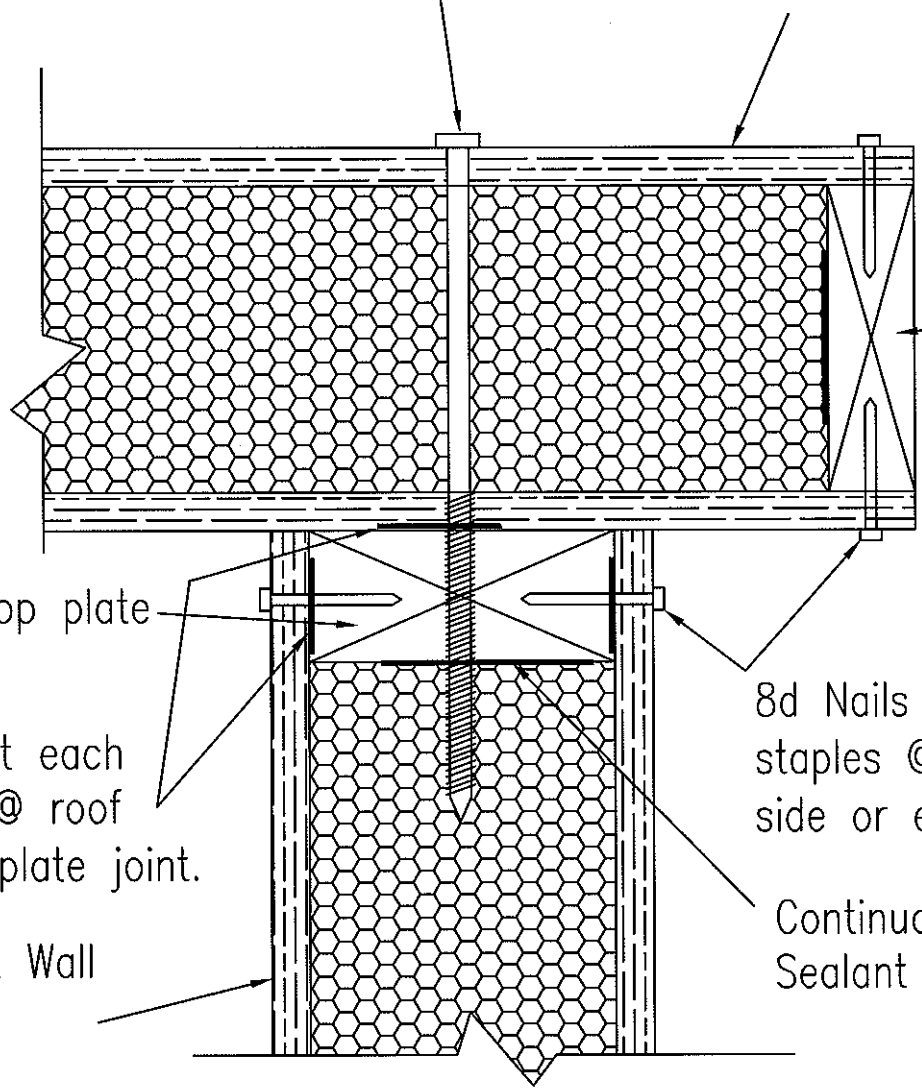
2x top plate

Use sealant each side, and @ roof panel/top plate joint.

8d Nails or 14 ga. 1 1/2" staples @ 6" o.c. each side or equivalent.

Continuous Sealant

Lamit Wall SIP



LAMIT INDUSTRIES, INC.		
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RAKE CONNECTION		
DATE: 6-18-08	SCALE: 3"=1'-0"	DETAIL No: RK-1

8d Nails or 14 ga. 1½" staples @ 6" o.c. each side or equivalent.

Lamit SIP

2x lumber

Fascia

Soffit board

4' Max

LAMIT INDUSTRIES, INC.

710 MARION RD. COLUMBUS, OHIO 43207 614-444-3010

TYPICAL FASCIA

DATE:  
6-18-08

SCALE:  
3"=1'-0"

DETAIL No:  
FA-1