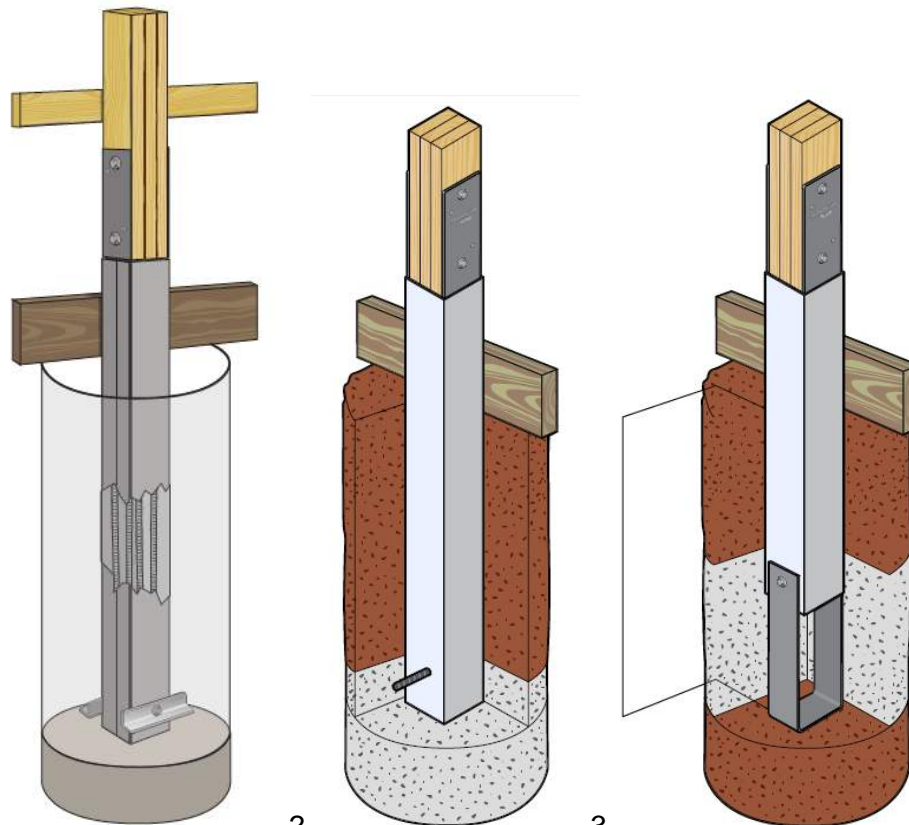


## Perma-Column Installation Instructions

Unlike any other concrete post-frame foundation system, Perma-Column Precast Concrete Piers use 10,000 psi concrete and our unique Sturdi-Wall Plus wet-set bracket design to achieve shear and moment capacity comparable to a treated wood post or column set in soil. This allows Perma-Columns and Sturdi-Wall Plus brackets to be confidently used in place of a soil-embedded wood column as an “as good or better” substitution in standard designs. Other brackets, such as the drill-set Sturdi-Wall bracket, provide less shear strength and a pin connection instead of a moment connection; additional lateral and/or knee bracing may be required.

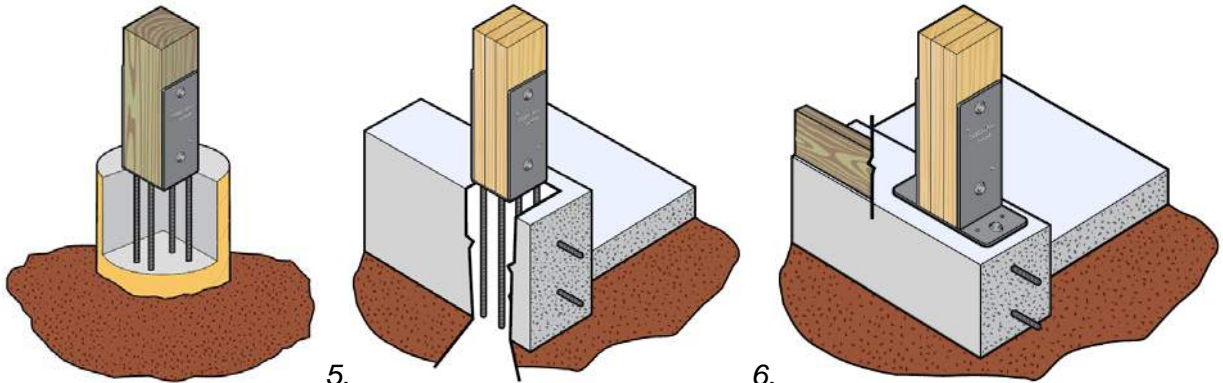
Perma-Columns provide you a variety of foundation options to choose from:



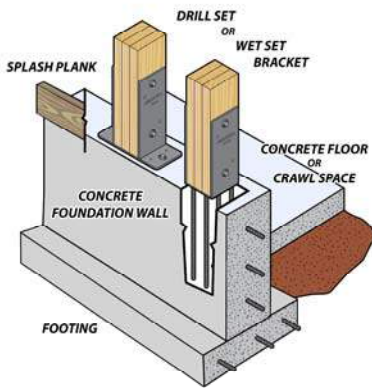
1. Concrete or composite footings with Uplift Anchors; 2. Concrete collar; 3. Column extender;

The quickest and easiest way to install a Perma-Column is to attach an Uplift Anchor to the bottom of the Perma-Column, place the entire assembly on a pre-cast concrete footing or composite FootingPad, and backfill with dirt. Unless it is required for sound reason (such as abnormal uplift-resisting characteristics of soils in your specific area) you may simply tamp the soil taken from your hole around the Perma-Column while holding it plumb. If you do not have pre-cast or composite footings, you may pour at least 6” wet concrete in the bottom of the hole and place the Perma-Column on top after the concrete has set. ASABE 486.2 allows in-situ hydration of dry concrete, so unless prohibited by local codes you may alternatively add at least 6” of dry concrete to create a footing and place the Perma-Column on top if you take care to avoid shifting of the dry concrete. There is no need to add concrete around the Uplift Anchors that attach at the bottom of the Perma-Column, they are available in different lengths to provide different uplift characteristics. In place of an Uplift Anchor, you may instead “concrete collar” the bottom of the Perma-Column with a minimum 8 ½” stick of ½” diameter rebar or 1’ or 2’ column extender, similar to how many builders install treated posts embedded in soil.

**Sturdi-Wall drill-set brackets and Sturdi-Wall Plus wet-set brackets**



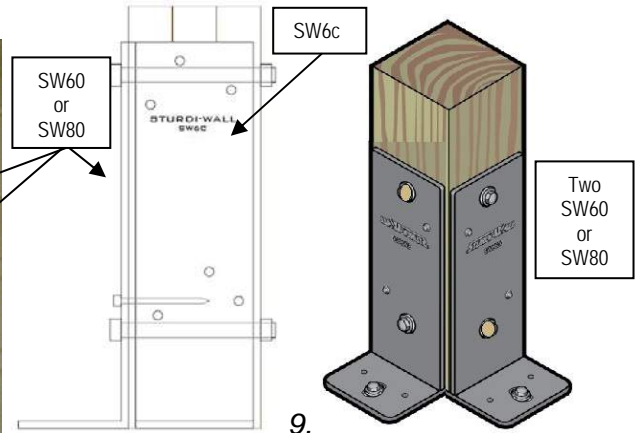
4. Cast-in-place concrete pier; Frost wall, stem wall or thickened edge with: 5. Wet-set bracket, or 6. Drill-set bracket;



7.



8.



9.

7. Frost wall;

Two universal drill-set brackets in corners or doorways with: 8. Laminated columns 9. Solid-sawn posts

For the Sturdi-Wall drill-set brackets, a 5/8" screw-type, expanding or epoxy concrete anchor is used; or anchor "L-Bolts" may be set in wet concrete with threads protruding up. The type of fastener used determines the ultimate strength of the bracket, as it is the weakest link. Grade 5 hardware must be used to attach the bracket to the wood with all of these products, otherwise the wood-to-bracket connection will be the weakest link. Consult the Perma-Column and Sturdi-Wall design guides for specific engineering data, and Table 6.1 comparing Allowable Shear and Uplift for Standard Sturdi-Wall Anchor Brackets.

To attach Sturdi-Wall drill-set brackets on concrete, consult installation instructions provided for the concrete anchor of your choice. To install Sturdi-Wall Plus wet-set brackets, carefully locate where the bracket should go and slide the rebar along a level into wet concrete, or use a jig to brace the bracket in place while you add wet concrete. Perma-Columns and Sturdi-Wall Plus brackets work best in corners and doorways; to keep drill-set brackets from protruding into a doorway or out the corner of a building use methods similar to those illustrated in #8 and #9 above.

Note also that unlike Perma-Columns and Sturdi-Wall Plus wet-set brackets, drill-set brackets are not comparable to an embedded wood post in terms of shear and moment; additional bracing may be required.

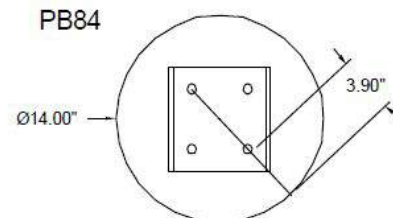
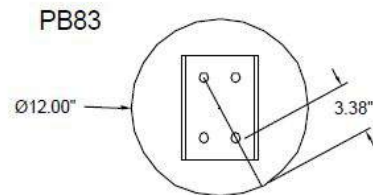
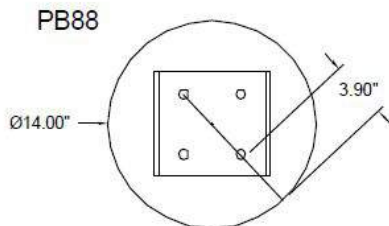
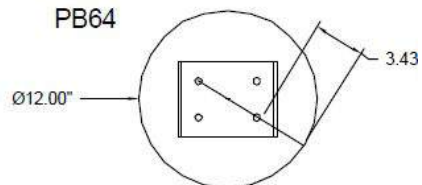
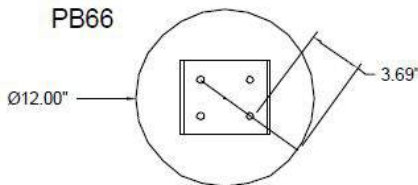
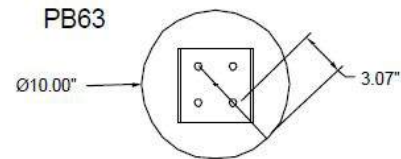
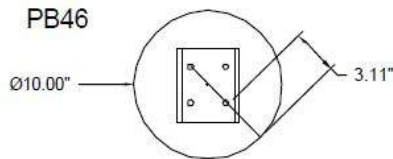
## Minimum Concrete Thickness for Brackets

### Sturdi-Wall Drill-Set Brackets

Critical Anchor Dimensions in Concrete						
Anchor Type	SW46, SW63, SW64, SW66, SW60			SW83, SW84, SW80		
	I (in)	II (in)	III (in)	I (in)	II (in)	III (in)
5/8" Anchor "L" Bolts	4	8	8.375	5	8	9.375
5/8" Epoxy Anchor	4	5	8.375	5	5	9.375
1/2" Expansion Anchors	4	3.5	8.375	5	3.5	9.375
5/8" Expansion Anchors	-	-	-	5	4	9.375
5/8" Screw Anchor	4	4.5	8.375	5	4.5	9.375
Notes:	I = Min. distance to concrete edge II = Min. embedment depth into concrete III = Min. Center to Center Dimension					

### Sturdi-Wall Plus Wet-Set Brackets

#### Minimum Concrete Pier Diameter Pier Bracket by Perma-Column



3" minimum rebar coverage as per ACI 318

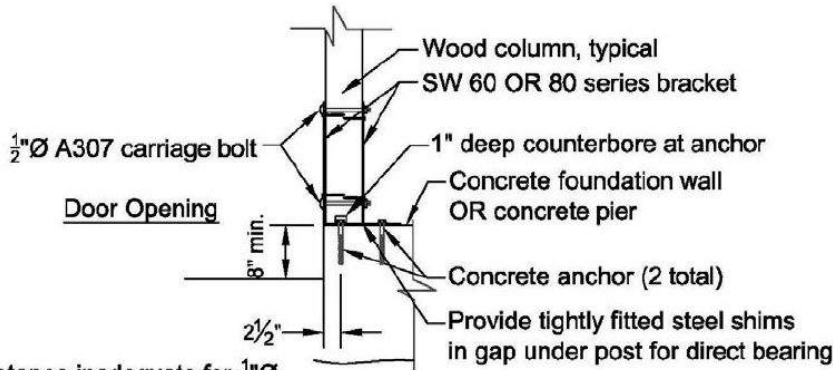
**NOTE:** Although the SWP bracket design is essentially the same as the Perma-Column bracket above the concrete, Perma-Columns are made of 10,000 psi concrete so the concrete pier may be the same size as the bracket and post above it.

Perma-Columns are patented and manufactured under license.

**Sturdi-Wall Bracket Installation in Corners and Doorways**

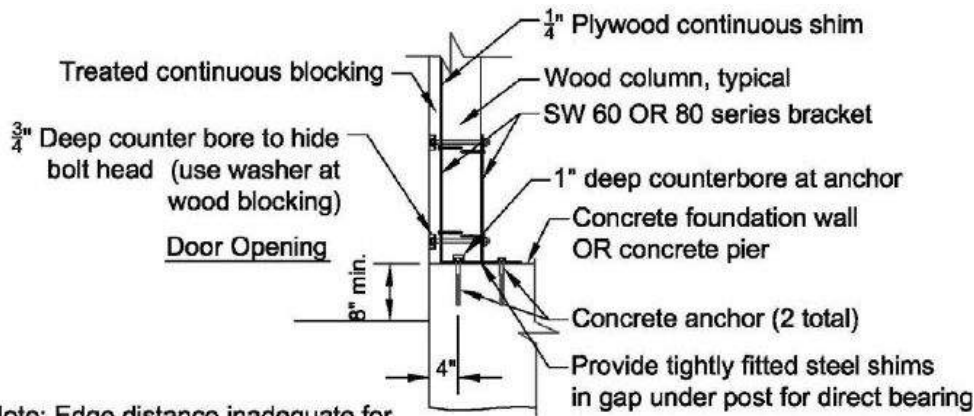
It is not recommended that one SW60 be used on posts unless the structure has been engineered with this in mind.\*

For corner or doorway posts, two SW60 brackets are typically installed on adjacent instead of opposite sides of the post. If using three-ply laminated columns, there are options for installing two brackets, first if using the **HW10 screw-type anchor**:



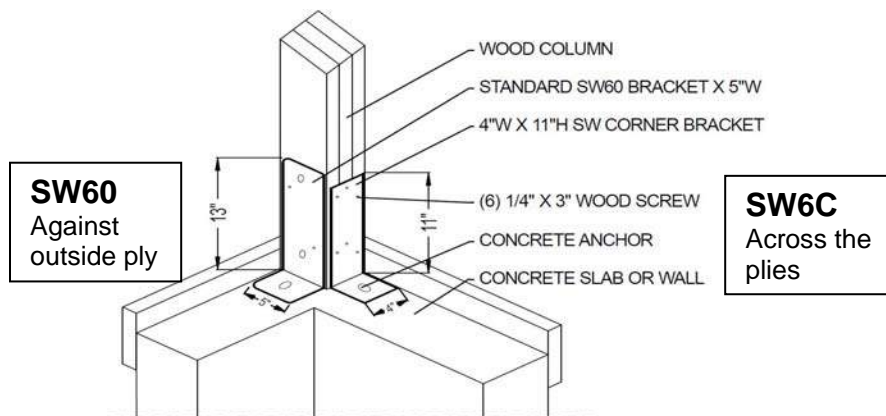
Note: Edge distance inadequate for 1/2" diameter and 5/8" diameter expansion anchors per Table 7.2

Or, if using a 1/2" expansion anchor:



Note: Edge distance inadequate for 5/8" diameter expansion anchors per Table 7.2

Or, using the **SW6C**, which is 4" wide and has additional screw holes:



*FOUNDATIONS FOR ECONOMICAL, EFFICIENT AND ECO-FRIENDLY BUILDINGS*

**HW10 Orange-Tip Wedge-Bolt Screw-Type Anchor - 5/8" Anchor and Bit**

**Installation Procedure**

Select the proper diameter Wedge-Bit for 410 Stainless Steel Wedge-Bolt installations **or** proper diameter ANSI drill bit for Wedge-Bolt OT installations. ANSI drill bits must meet the requirements of ANSI Standard B212.15.



Using the proper drill bit, drill a hole into the base material to a depth of at least one anchor diameter deeper than the embedment required.

Insert the anchor through the fixture into the anchor hole. Begin tightening the anchor with socket wrench by rotating clockwise and applying pressure in toward the base material. A powered impact wrench may also be used. This will engage the first few threads as the anchor begins to advance.



Continue tightening the anchor until the head is firmly seated against the fixture while achieving the required embedment depth.



## Post Hole Digging Requirements

- For required PC embedment depth, consult a design professional.
- Concrete portion of PC's to be flush with the sidewall girt line.
- Overhead door openings to be 3" wider than desired finished opening to accommodate 1 1/2" PC bracket trim-out. (G)
- Slide door openings to be the same as the desired finished opening.
- PC brackets intrude into the slide door opening by 3/8". (H)
- Dig post hole depth so all PC brackets are at a uniform height. If adjustment is necessary, use tamped gravel.
- If bedrock is contacted at a post hole location, the bottom of the PC may be cut off using a masonry saw. The uplift anchor hole will need to be redrilled using a 9/16" masonry drill bit.

### Perma-Column Trims and Column Placement

Plan before you start – make sure your posts will line up in the right place.

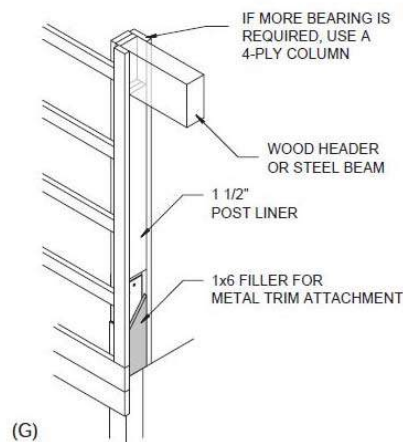
Consider the thickness of brackets, doors and corner installations – you may need to move the post back to account for filler and steel bracket materials as shown in these illustrations.

This is also crucial for setting brackets, the trim details work in the same way. Drill-set brackets need additional considerations to accommodate the flange, covered in other parts of this guide.

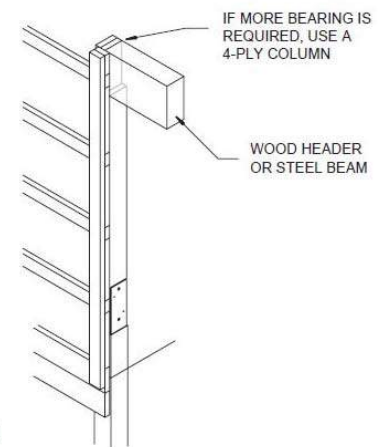
Your posts may not be on-center at doorways and corners, but offset to compensate.

You may also need to end-nail one wall girt to another one because the steel bracket may block fasteners on one side.

#### OHD DOOR JAMB

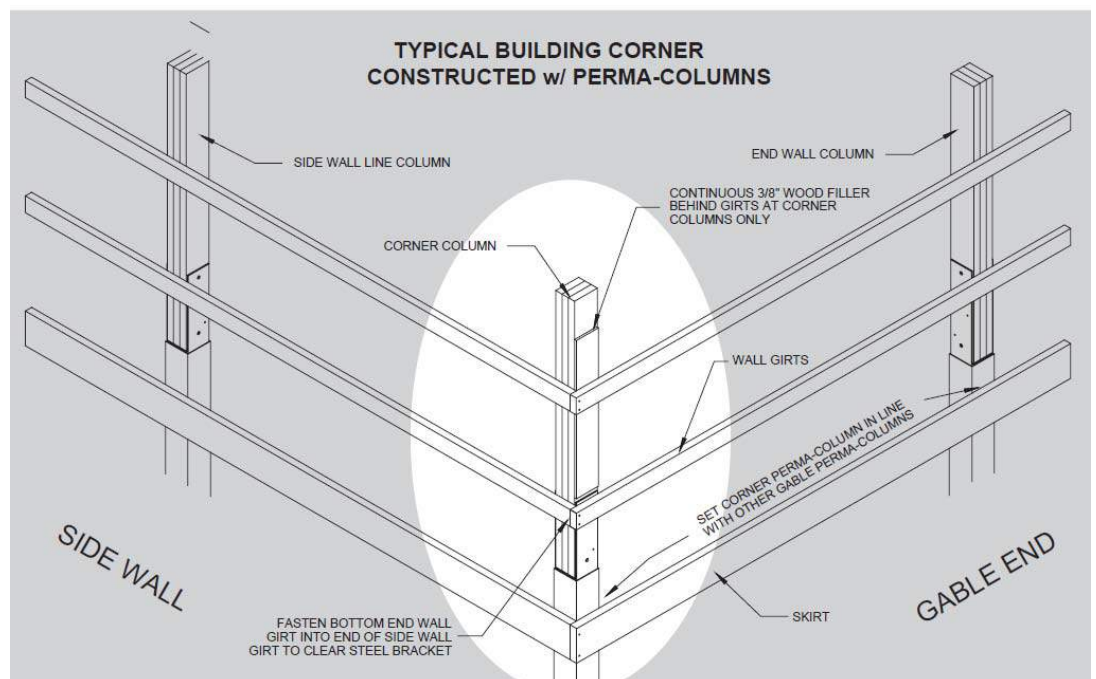


#### SLIDE DOOR JAMB



## Column Placement and Leveling

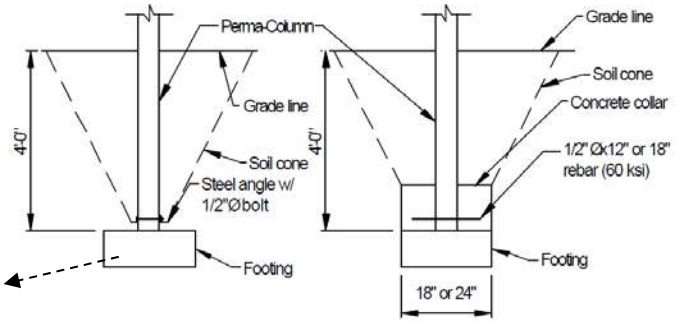
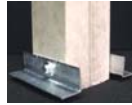
1. Attach a 3/8" wood filler to the (4) corner columns to make girts and skirt flush. (I)
2. Lift multiple PC assemblies with a skid loader and drive along the post hole line.
3. Place concrete pad in bottom of hole prior to setting PC. Consult design professional to determine thickness of concrete pad.
4. Tilt PC assemblies off skid loader forks into post hole. (J)
5. Plumb the PC columns using standard leveling procedures. (K)
6. Backfill post holes with appropriate materials, tamping 6" layers until hole is filled.



**Footing Options**

**Q. How do I do the footing at the bottom of the hole?**

**A.** First, to make them even in height/depth attach a transit to the boom on your auger or tape a 1x" strip of wood to the bottom of the transit that extends below grade to dig hole bottoms to the same depth. If you don't have a transit you may use a marked stick and line the mark up with your guide lines. The post or the outside plies on top of



a wood laminated column may stick up higher than the truss - cut them off later. The pocket in a laminated column may be lower than your bottom chord height so you can insert a block precisely the right length between plies to make the bottom of the truss the right height; or notch or bolt a block on a solid-sawn post at bottom chord height. From there, you have several options:

**Uplift Options:**  
 Galvanized Steel Uplift Anchors **OR** ½" piece of rebar with at least 3" concrete coverage above for Concrete Collar.

**Footing Options:** Composite FootingPad **OR** Perma-Pad Precast Concrete Pad **OR** Cast 6" wet concrete and allow to set **OR** Place 6" dry concrete for in-situ hydration of concrete.

1. Use a recycled plastic composite FootingPad (approx. 5 lbs.) **OR** Perma-Pad PreCast Concrete Footing (approx. 60-100 lbs.)
  - a. Tamp bottom of hole
  - b. **OPTIONAL:** Add 1-2 inches sand or dry concrete to the bottom of the hole if you have trouble getting the bottom flat and/or even
  - c. Place the Composite FootingPad or pre-cast concrete footing in the bottom of the hole
  - d. Attach Uplift Anchors to the Perma-Column and lower the Perma-Column on top of the FootingPad or Perma-Pad pre-cast concrete footing. **NOTE:** Excessive force may break concrete or composite footings - Carefully lower Perma-Columns onto footings; do not drop them.
2. Pour a concrete footing
  - a. Tamp bottom of hole
  - b. Add 6" of wet concrete and allow to harden; **OR** add 6" of dry concrete if you may use in-situ hydration of dry concrete (i.e., allow ground moisture to set the concrete or add water after backfilling with dirt; the latest ASABE 486.2 post embedment standard approves in-situ hydration of concrete footings, so the ground humidity may set the concrete or you can water the holes after installing girts if the ground is dry). **NOTE:** some jurisdictions will not allow in-situ hydration and it is possible shifting or settling may occur in some instances (installation and bracing of the bottom girt to soil before watering the holes or rains come may prevent shifting or settling).
  - c. Place the Perma-Column atop the 6" of concrete with uplift anchors attached and backfill with dirt; **OR** insert ½" rebar where uplift anchors go and add another 6" dry or wet concrete to create a concrete collar that extends at least 3" above the rebar at the bottom of the Perma-Column to prevent uplift. **NOTE:** Excessive force may break cured concrete footings or displace dry concrete; Carefully lower Perma-Columns onto footings - do not drop them.



Precast Concrete Pads are typically 6" thick. **Perma-Pads** made of our special concrete more than twice the PSI strength of typical concrete may be half as thick.



The **FootingPad** is made of recycled plastic composite and weighs about 5 lbs. The 16" dia. FootingPad may carry a load of more than 4000 lbs. per post.

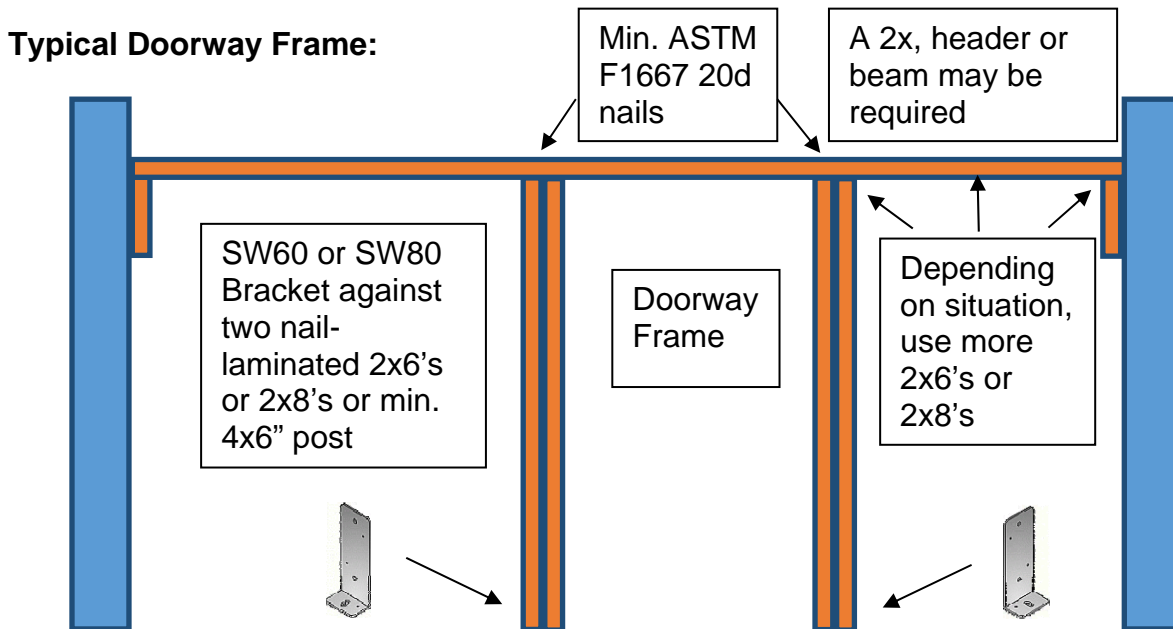
**Hardware Requirements**

**Q. What kind of hardware is required?**

**A. Hardware typically available at most stores is inadequate.** Grade 5 hardware is required as this is the weakest link in the column assembly. Most hardware is Grade 2, and may not be properly treated to resist corrosion. Grade 5 washers, locking flange nuts, hex-head bolts and flange-head screws must be used to attach the wood column to a Perma-Column. Use a washer on the hex-head bolt side of the bracket and a flange nut on the other side. Note: When drilling the ½ inch hole in the wood column do not wallow out the hole to get alignment – it may be necessary to drill from both sides of the bracket. Bolts should be tightened to 110 – 120 foot pounds. Heartland Perma-Column provides required hardware at your request to fit your particular project.

**Q. How do I attach the bottom girt (aka “splash plank,” “splashboard,” “rat guard” or “skirt board”)?**

**A. Do not use tap-cons or other screw-type concrete anchors.** Hammer-drill a 3/16” diameter hole through the bottom girt and into the concrete; you may want to install the next-to-bottom girt first and use a hanger to hold the bottom girt in place while you drill. Install split drive anchors at least 1-3/4” from edge, angling 10° toward center of the column to keep from hitting the rebar with your masonry drill. Cut bottom girts so butt joints are centered directly under the wood column. Use two hot-dipped galvanized split-drive anchors to secure each end of the bottom girt to the Perma-Column; if the girt is twice as long as your bay spacing, put two split-drive anchors in the middle of the board. We figure 3.5 times the number of posts per row of “splashboard” is typically how many you’ll need.



**Skirt Board Attachment**

1. Install first row of sidewall girts before attaching the skirtboard. The skirtboard will be hung from this first row of girts.

**Make two skirt hangers to allow for hands free skirt placement. (L)**

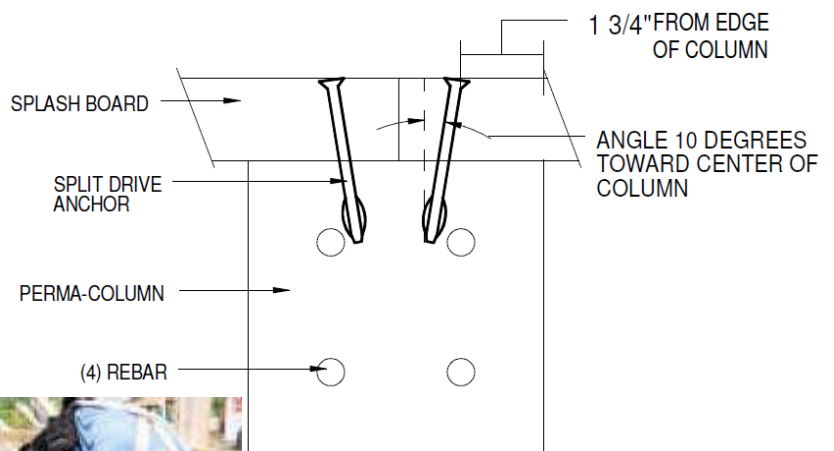
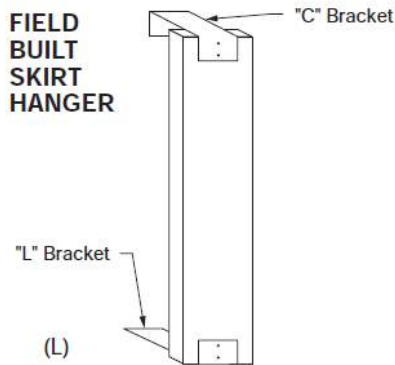
- Using a 2" x 4" board, cut the board to the proper length to hang the skirtboard.
- Attach a metal "C" bracket (1 1/2" pocket) to this board to hang over the bottom girt row.
- Attach a metal "L" bracket (1 1/2" seat) to this board to hang the skirtboard in place.

2. Hang the skirtboard from the first girt row using skirt hanger while drilling and attaching.

3. Drill a 3/16" hole through the skirt board and 2" into the concrete post using a hammer drill. (M)

**NOTE: Angle the drill toward the center of the concrete post to avoid hitting the interior rebar. (E page 2)**

4. Drive a 3/16" x 3" Powers stainless steel split drive anchor (PC3DA-SS) into the post until the skirt is secure. (N)



**Q. What if wood columns are planed or odd-sized?**

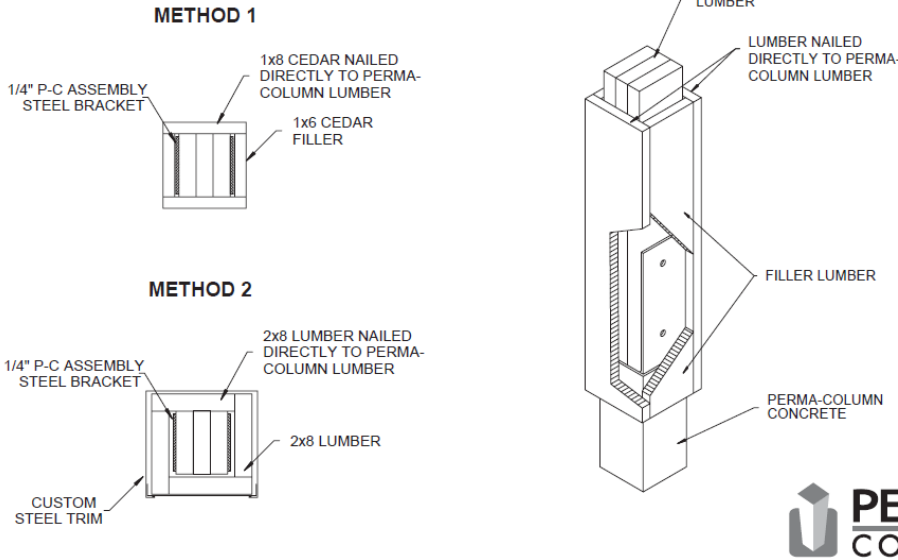
**A:** The brackets will draw in to make a solid connection to most nominally-sized posts and 2x laminated wood columns. If wood is narrower than the bracket pocket use planking or other suitable wood, composite or steel shims to fill gaps.



**Options to Trim Out the Bracket**

*Porch Post Trim Detail*

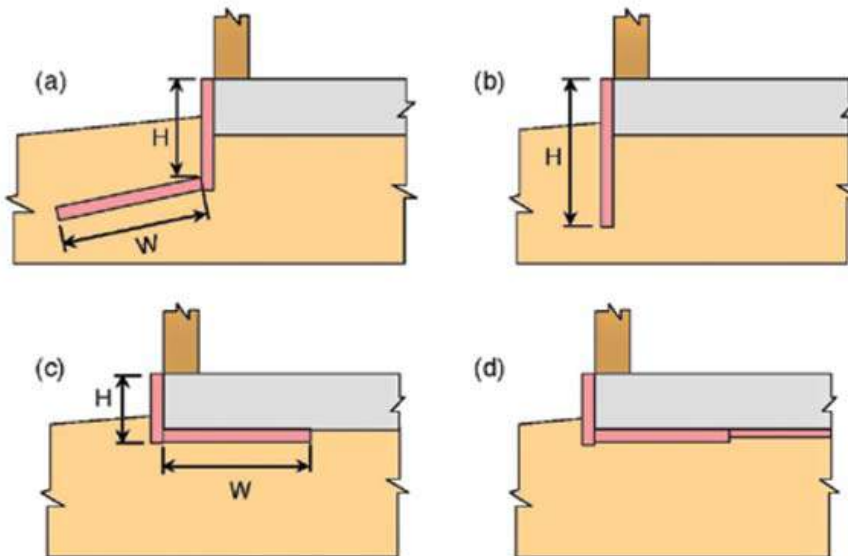
1. Porch posts can be trimmed-out using the following methods.



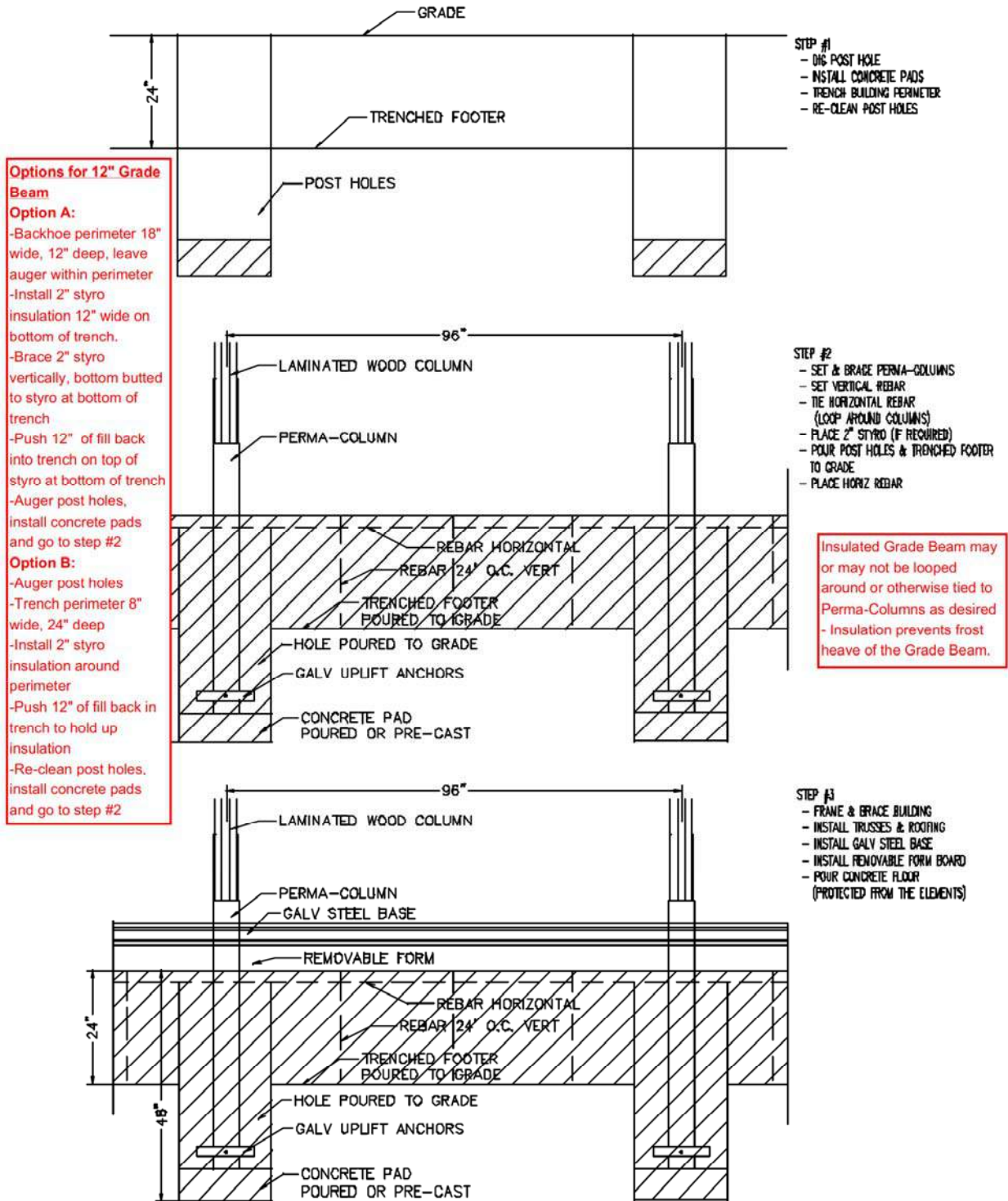
**Another Option:** add trimmed outside plies and face with planks



**Other Foundation Options**



Below-Grade insulation options for a concrete slab-on-grade: (a) vertical and horizontal wing insulation for heated buildings; (b) vertical insulation only for heated buildings that may extend as much as twice as deep in soil than if wing insulation is not used; (c) insulation on outside and underside of perimeter edge for unheated building to prevent structural heaving; and (d) insulation on the outside edge and entire underside of slab to prevent both structural and floor heaving



Detail showing precast concrete piers with a grade beam or “ribbon,” which may be commonly referred to as a “necklace.” Text in black font describes steps for placing insulation on edge to a depth of 24” similar to techniques shown on previous page item (b); text in red describes measures to install wing insulation similar to techniques shown in previous page item (a).

# PERMA-COLUMN POST SIZING CHART

2/20/2007

POST SPACE FT.	BLDG WIDTH FT.	TTL RF DL LL	TOTAL ROOF LOAD 30	To be used for Estimating purposes only and Engineer of record is required Condition 1 / DL increase of 1.2 / LL increase of 1.6 / Building Length not to exceed 2 1/2 times the width / 4'-0" Post Depth is assumed						18' UNDER TRUSS	20' UNDER TRUSS
				8' UNDER TRUSS	10' UNDER TRUSS	12' UNDER TRUSS	14' UNDER TRUSS	16' UNDER TRUSS	18' UNDER TRUSS		
8	24	10 20 =	4.22 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	26	10 20 =	4.58 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	28	10 20 =	4.93 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	30	10 20 =	5.28 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	32	10 20 =	5.63 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	34	10 20 =	5.98 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	36	10 20 =	6.34 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	38	10 20 =	6.69 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	40	10 20 =	7.04 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	42	10 20 =	7.39 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
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8	50	10 20 =	8.80 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
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8	56	10 20 =	9.86 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	58	10 20 =	10.21 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	60	10 20 =	10.56 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	62	10 20 =	10.91 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	64	10 20 =	11.26 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	66	10 20 =	11.62 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	68	10 20 =	11.97 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	70	10 20 =	12.32 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	72	10 20 =	12.67 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	74	10 20 =	13.02 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	76	10 20 =	13.38 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	78	10 20 =	13.73 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	80	10 20 =	14.08 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	82	10 20 =	14.43 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	84	10 20 =	14.78 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	86	10 20 =	15.14 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	88	10 20 =	15.49 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	90	10 20 =	15.84 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	92	10 20 =	16.19 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	94	10 20 =	16.54 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	96	10 20 =	16.90 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	
8	98	10 20 =	17.25 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP	

Chart data is based on the Perma-Column Design and Use Guide table 7.1.

NOTE: A 3 ply x 6" #1 SYP column can be used to replace a 4" x 6" or 6" x 6" post



# PERMA-COLUMN POST SIZING CHART

2/20/2007

POST SPACE FT.	BLDG WIDTH FT.	TTL RF DL	TTL RF LL	TOTAL ROOF LOAD 50 KIPS	To be used for Estimating purposes only and Engineer of record is required								
					8' UNDER TRUSS	10' UNDER TRUSS	12' UNDER TRUSS	14' UNDER TRUSS	16' UNDER TRUSS	18' UNDER TRUSS	20' UNDER TRUSS		
					Condition 1 / DL increase of 1.2 / LL increase of 1.6 / Building Length not to exceed 2 1/2 times the width / 4'-0" Post Depth is assumed								
8	24	10	40	=	7.30 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	26	10	40	=	7.90 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	28	10	40	=	8.51 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	30	10	40	=	9.12 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	32	10	40	=	9.73 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	34	10	40	=	10.34 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	36	10	40	=	10.94 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	38	10	40	=	11.55 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	40	10	40	=	12.16 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	42	10	40	=	12.77 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	44	10	40	=	13.38 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	46	10	40	=	13.98 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	48	10	40	=	14.59 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	50	10	40	=	15.20 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	52	10	40	=	15.81 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	54	10	40	=	16.42 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	56	10	40	=	17.02 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	58	10	40	=	17.63 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	60	10	40	=	18.24 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	62	10	40	=	18.85 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	64	10	40	=	19.46 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	66	10	40	=	20.06 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	68	10	40	=	20.67 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	70	10	40	=	21.28 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	72	10	40	=	21.89 KIPS	4" X 6" SYP POST	4" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	4 PLY X 6 # 1 SYP	4 PLY X 6 # 1 SYP	3 PLY X 8 # 1 SYP
8	74	10	40	=	22.50 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	76	10	40	=	23.10 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	78	10	40	=	23.71 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	80	10	40	=	24.32 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	82	10	40	=	24.93 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	84	10	40	=	25.54 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	86	10	40	=	26.14 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	88	10	40	=	26.75 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	90	10	40	=	27.36 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	92	10	40	=	27.97 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	94	10	40	=	28.58 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	96	10	40	=	29.18 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP
8	98	10	40	=	29.79 KIPS	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	6" X 6" SYP POST	3 PLY X 8 # 1 SYP	3 PLY X 8 # 1 SYP	4 PLY X 8 # 1 SYP

Chart data is based on the Perma-Column Design and Use Guide table 7.1.

NOTE: A 3 ply x 6" #1 SYP column can be used to replace a 4" x 6" or 6" x 6" post