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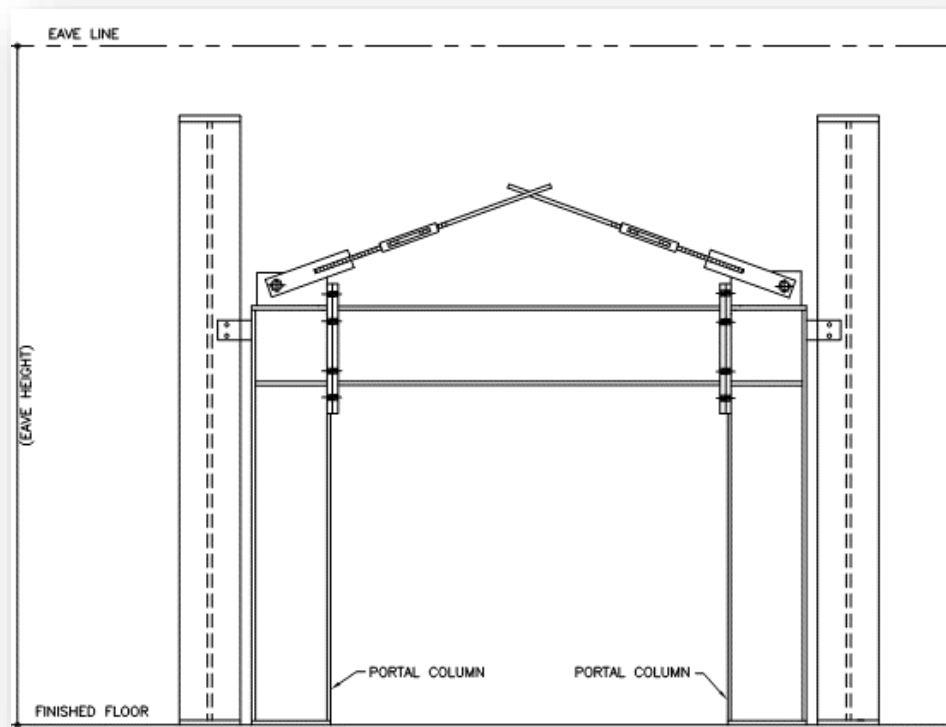
Partial Height Portal Frames Explained

Partial Height Portals vs. Full Height Portals

When you have portal frames on a project, have you ever been asked if a partial height portal frame can be used?

Partial height portal frames occur when the portal frame is ran up to a given height to clear any openings or interior processes.

Above the portal frame, switch to x-bracing from that elevation on up to the eave.



This is a good idea for several reasons.

First, X-bracing provides the least deflection in which to brace a building. So, from a performance standpoint it is the preferred method of bracing.

Second, X-bracing is a very economical way to brace a building considering that rods are between 5/8" to 1-1/4" diameter.

Third, portal frames are far less economical than X-bracing and are inherently flexible in nature. Portal Frames can be designed to be very stiff by adding more and more steel, thus more expensive. As a portal frame gets taller, it gets more and more expensive to reduce the deflection.

Therefore, a good solution when you need portal frames is to run the portal frame only high enough to give you the clear height that you need and then run x-bracing up to the eave.



Building Geometry: 100'W x 150'L x 25'EH; ½:12 Gable; 25' Bay Bracings
Loading: 115 mph; C Wind Exposure; Wind-controlled design
Clearance: 12'0" Clear Under Portal Frame to avoid conflict with 9' tall Roll-up Door

| | <u>Full Height Portal Frames</u> | <u>Partial Height Portal Frames</u> |
|----------------------|----------------------------------|-------------------------------------|
| Portal Frame Weight: | 4,400 lbs. | 2,260 lbs. |
| X-brace Weight: | 360 lbs. | 531 lbs. |

Hopefully, this cost saving solution will be one that you can implement on one of your upcoming projects to help you be the successful bidder.