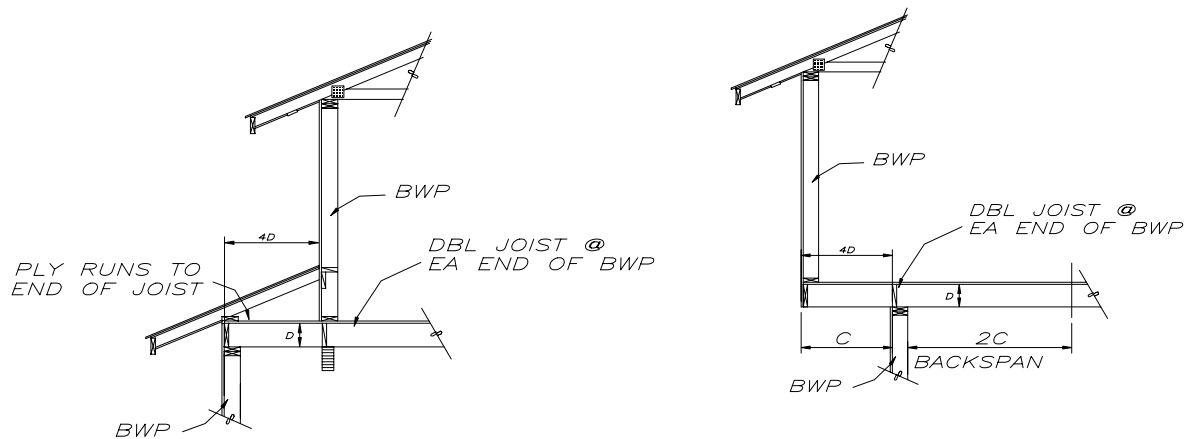


## TC Fig 31 Identifying Buildings of Irregular Shape

A portion of a building shall be considered to be irregular when one or more of the following conditions occur:

1. When exterior shear wall lines or braced wall panels are not in one plane vertically from the foundation to the uppermost story in which they are required.

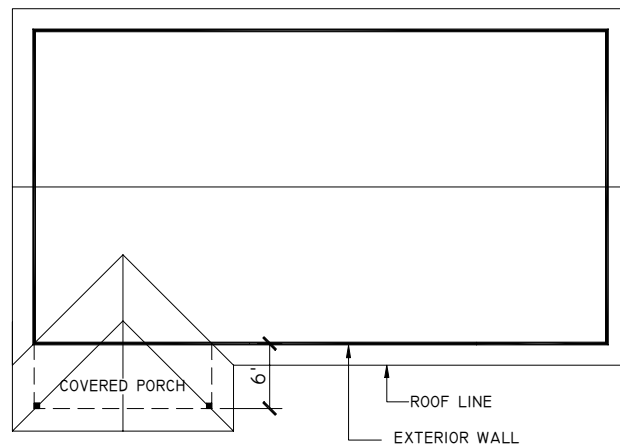


**Exception:** For wood light-frame construction, floors with cantilevers or setbacks not exceeding four times the nominal depth of the wood floor joists are permitted to support braced wall panels that are out of plane with braced wall panels below provided that:

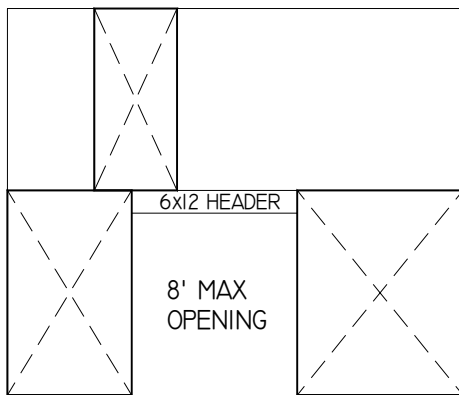
1. Floor joists are nominal 2 inches by 10 inches (51 mm by 254 mm) or larger and spaced not more than 16 inches (406 mm) on center.
2. The ratio of the back span to the cantilever is at least 2 to 1.
3. Floor joists at ends of braced wall panels are doubled.
4. For wood-frame construction, a continuous rim joist is connected to ends of all cantilever joists. When spliced, the rim joists shall be spliced using a galvanized metal tie not less than 16 gage and 11/2 inches wide fastened with six 16d nails on each side of the splice or a block of the same size as the rim joist of sufficient length to fit securely between the joist space at which the splice occurs fastened with eight 16d nails on each side of the splice; and
5. Gravity loads carried at the end of cantilevered joists are limited to uniform wall and roof load and the reactions from headers having span of 8 feet or less.

2. When a section of floor or roof is not laterally supported by shear walls or braced wall lines on all edges.

**Exception:** Portions of floors that do not support shear walls or braced wall panels above, or roofs, shall be permitted to extend no more than 6 feet beyond a shear wall or braced wall line.

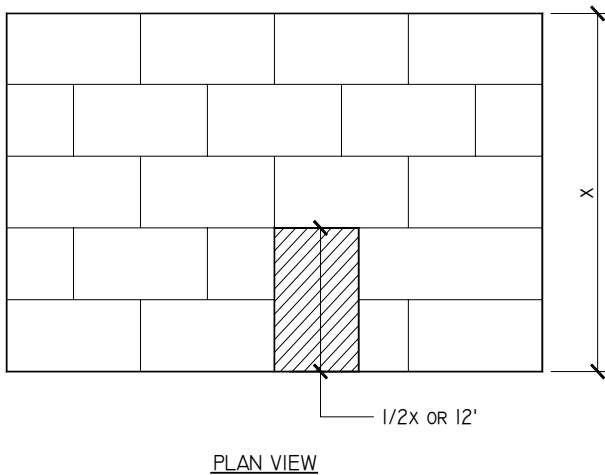


**3.** When the end of a braced wall panel occurs over an opening in the wall below and ends at a horizontal distance greater than 1 foot from the edge of the opening. This provision is applicable to shear walls and braced wall panels offset in plane and to braced wall panels offset out of plane as permitted by the exception to Item 1 above.



**Exception:** For wood light-frame wall construction, one end of a braced wall panel shall be permitted to extend more than 1 foot over an opening of not more than eight feet in width in the wall below provided that the opening includes a header in accordance with the following:

1. The building width, loading condition, and member species limitations of Table R502.5 (1) shall apply and
2. Not less than 1-2x12 or 2-2x10 for an opening not more than 4 feet in width or
3. Not less than 2-2x12 or 3-2x10 for an opening not more than 6 feet in width or
4. Not less than 3-2x12 or 4-2x10 for an opening not more than 8 feet in width and
5. The entire length of the braced wall panel shall not occur over an opening in the wall below.

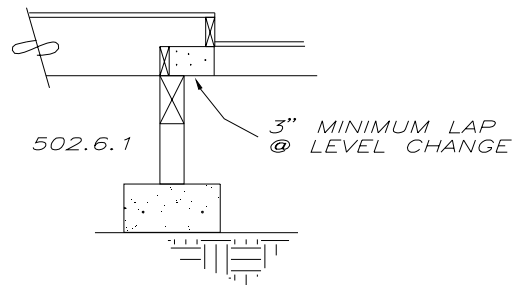
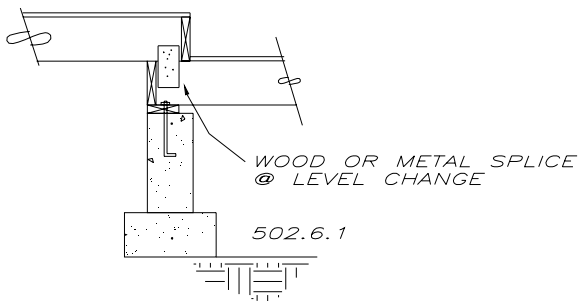


**4.** When an opening in a floor or roof exceeds the lesser of 12 feet or 50 percent of the least floor or roof dimension.

**5.** When portions of a floor level are vertically offset.

**Exceptions:**

1. Framing supported directly by continuous foundations at the perimeter of the building.
2. For wood light-frame construction, floors shall be permitted to be vertically offset when the floor framing is lapped or tied together.



**6.** When shear walls and braced wall lines do not occur in two perpendicular directions.

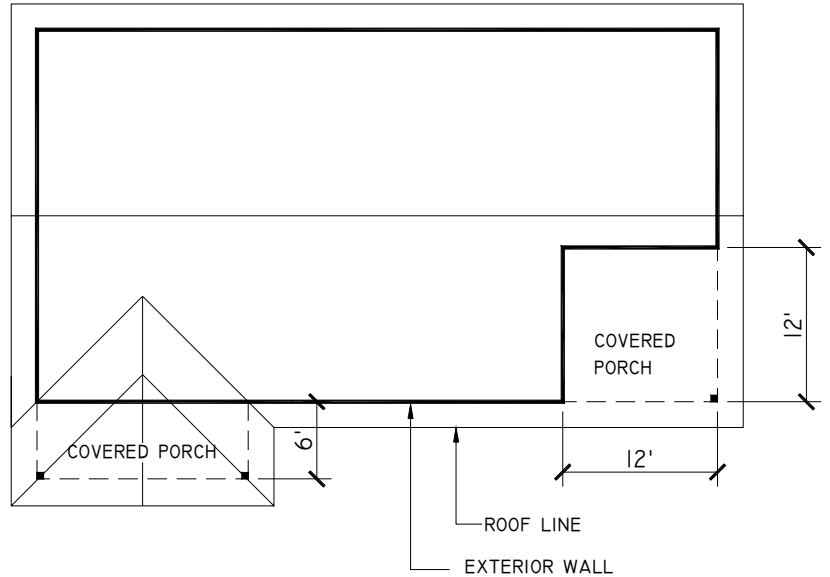
**7.** When stories above grade partially or completely braced by wood wall framing include masonry or concrete construction.

**When a building of otherwise conventional construction contains structural elements exceeding the limits of IRC Section R301 or otherwise, not conforming to this code, these elements shall be designed in accordance with accepted engineering practice. Design of portions shall demonstrate compliance of non-conventional elements with applicable code provisions and shall be compatible with the performance of the conventional system.**

## Thurston County Alternates

The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved.

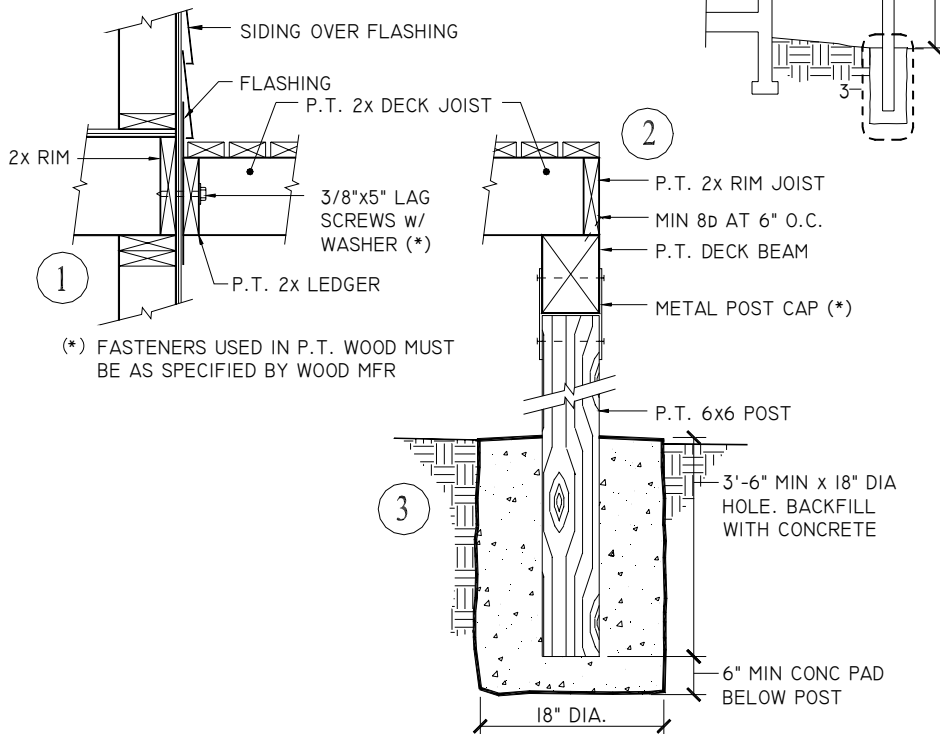
Covered decks and porches can extend up to 12 feet using the following details.



REQUIRED LEDGER CONNECTION FOR EXT. DECKS USING MIN 3/8x5" LAG SCREWS w/ WASHERS

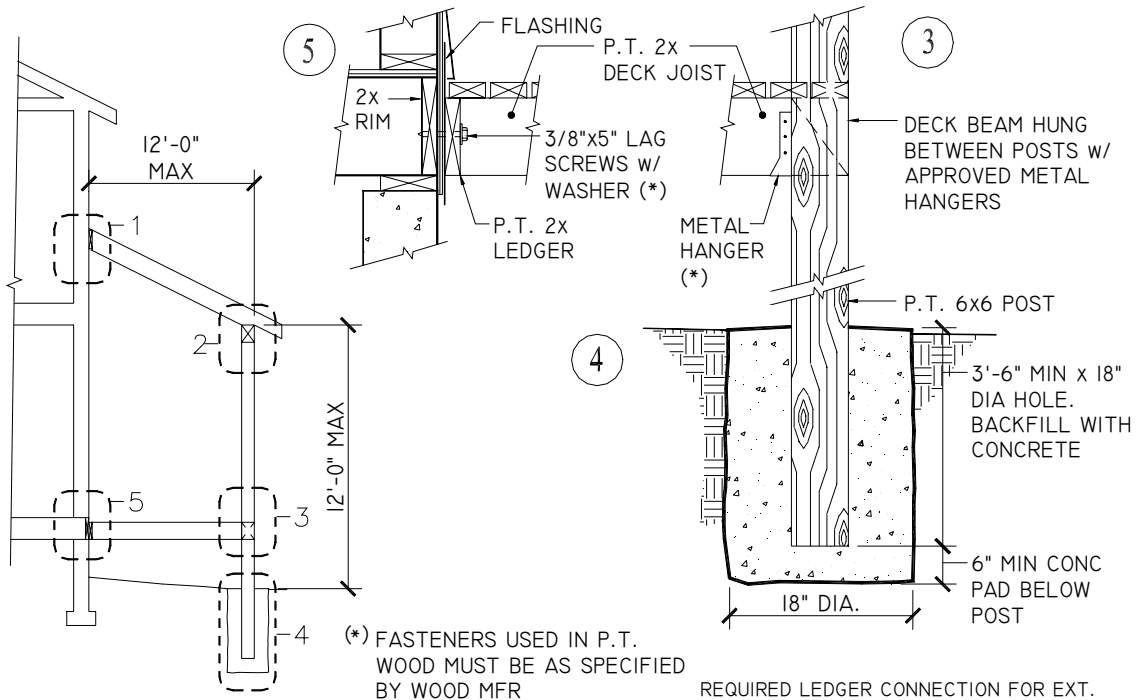
JOIST SPAN	6'	8'	10'	12'
12"	2 SCREWS	2 SCREWS	2 SCREWS	3 SCREWS
16"	2 SCREWS	3 SCREWS	3 SCREWS	4 SCREWS
24"	4 SCREWS	4 SCREWS	4 SCREWS	6 SCREWS

LAGS INTO MANUFACTURED LUMBER MUST HAVE APPROVAL DOCUMENTATION OR HAVE SOLID WOOD RIM BACKING w/ PENETRATING LAG SCREWS



(\*) FASTENERS USED IN P.T. WOOD MUST BE AS SPECIFIED BY WOOD MFR

## Deck Detail



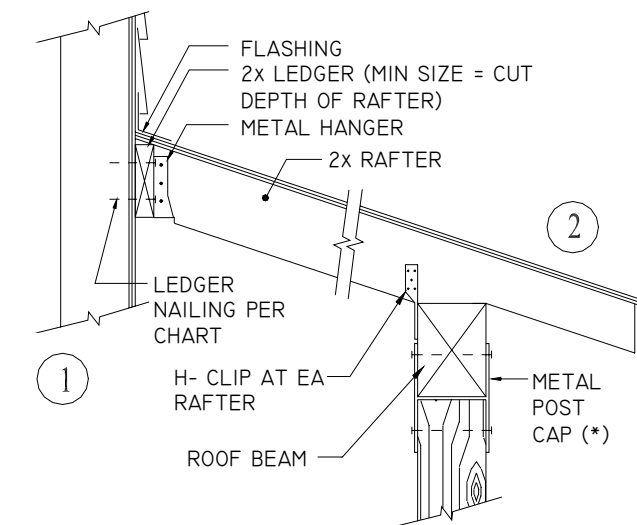
REQUIRED LEDGER CONNECTION FOR EXT. DECKS USING MIN 3/8x5" LAG SCREWS W/ WASHERS

		JOIST SPAN	6'	8'	10'	12'
SPACING OF LAG SCREWS	12"	2 SCREWS	2 SCREWS	2 SCREWS	3 SCREWS	
	16"	2 SCREWS	3 SCREWS	3 SCREWS	4 SCREWS	
	24"	4 SCREWS	4 SCREWS	4 SCREWS	6 SCREWS	

REQUIRED LEDGER CONNECTION FOR COVERED PORCH USING MIN 16d COMMON NAILS

		RAFTER SPAN	6'	8'	10'	12'
NAIL SPACING	12"	2 NAILS	2 NAILS	3 NAILS	3 NAILS	
	16"	2 NAILS	3 NAILS	3 NAILS	3 NAILS	
	24"	4 NAILS	4 NAILS	4 NAILS	4 NAILS	

LAGS INTO MANUFACTURED LUMBER MUST HAVE APPROVAL DOCUMENTATION OR HAVE SOLID WOOD RIM BACKING W/ PENETRATING LAG SCREWS



## Porch Detail

### Note:

**All braced walls and connection details must be clearly illustrated on the building plan for permit application.**

**These descriptions and details are intended as an introduction to conventional wall bracing in light frame residential construction. Specific requirements governing residential bracing can be found in the International Residential Code chapter 3.**