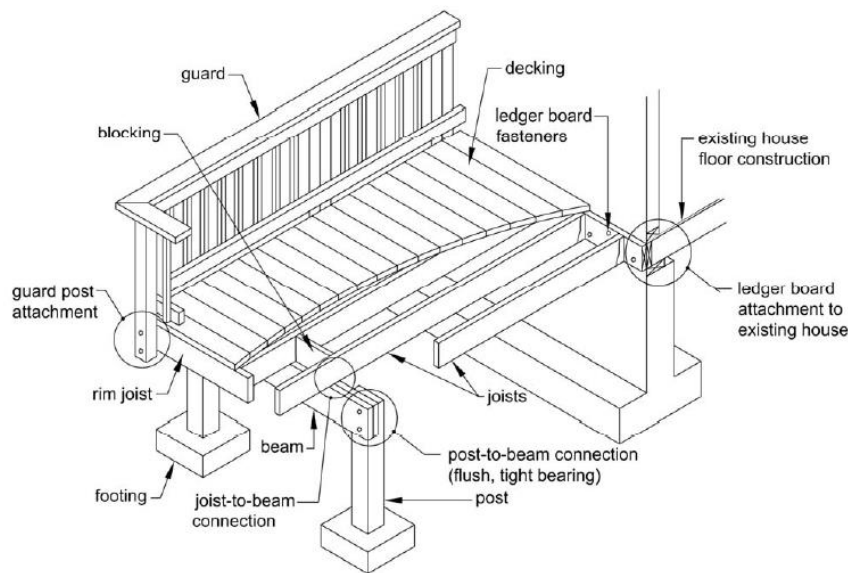


# Single Family Residential Uncovered Decks



## **Building a new deck in the City of Hays**

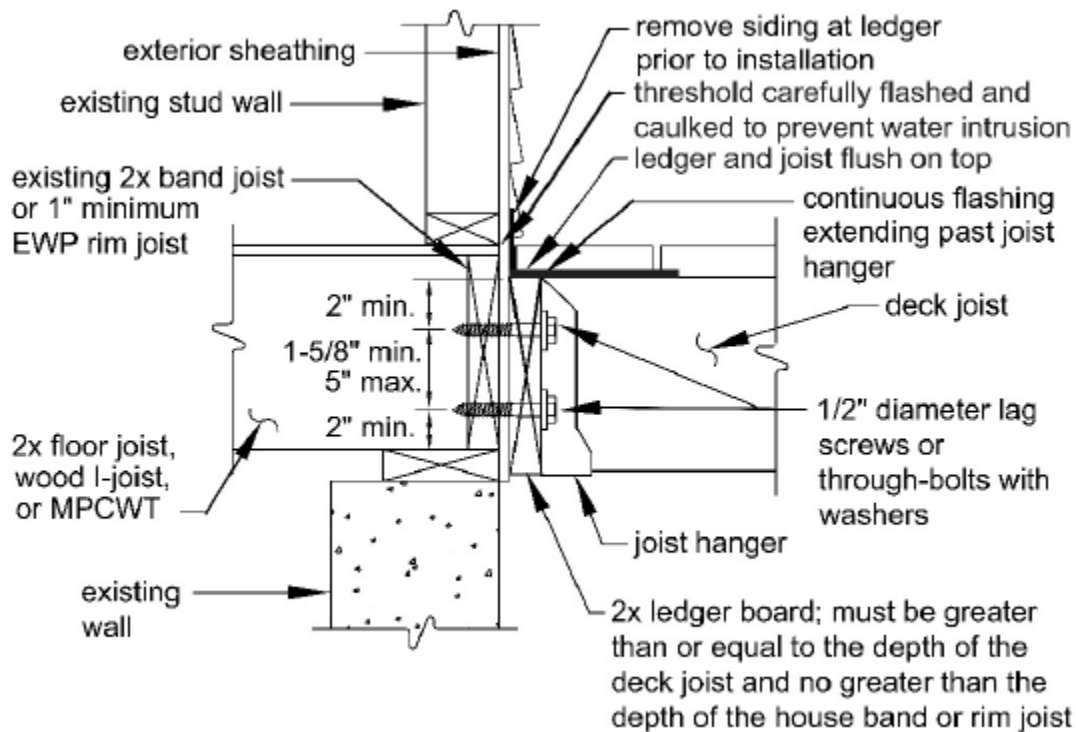
1. Review this Building Guide
2. Provide a detailed framing plan. Include post locations, joist spans, header spans, post sizes and adjacent window locations.
3. Complete a Residential Building Permit Application.
4. Pay the \$20 Permit Fee
5. Schedule the required inspections

## **Required inspections**

1. Footing Inspection – Verify Size and depth of all post footings
2. Rough Framing Inspection – This inspection is scheduled before decking material is installed
3. Final – Verify all life safety components – Guardrails, handrails, stairs and window glazing

## Provide positive ledger attachment to the exterior wall

1. Siding must be removed to attach the ledger
2. Ledgers must be flashed in to prevent leakage
3. Attachment of the ledger to stone, masonry veneer and cantilevers is prohibited
4. Deck ledgers shall be an approved treated or naturally durable lumber, minimum 2 x 8
5. Use diagram and chart below to properly attach a ledger



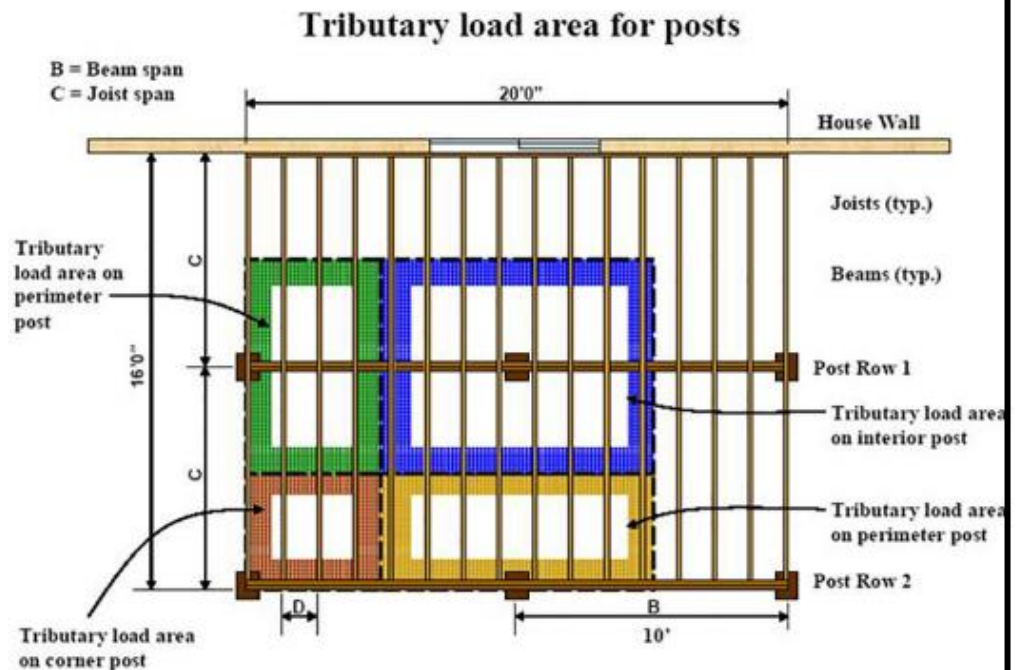
**Bolt spacing for the Deck Ledger Connection to the house**

Connection Details	Rim Joist or Band Joist	Joist Span						
		6'-0" and less	6'-1" to 8'-0"	8'-1" to 10'-0"	10'-1" to 12'-0"	12'-1" to 14'-0"	14'-1" to 16'-0"	16'-1" to 18'-0"
<b>On-Center Spacing of Fasteners</b>								
$\frac{1}{2}$ " diameter lag screw <sup>1</sup> with $\frac{15}{32}$ " maximum sheathing	1" LVL	24"	18"	14"	12"	10"	9"	8"
	1- $\frac{1}{8}$ " LVL	28"	21"	16"	14"	12"	10"	9"
	1- $\frac{1}{2}$ " Lumber	30"	23"	18"	15"	13"	11"	10"
$\frac{1}{2}$ " diameter bolt with $\frac{15}{32}$ " maximum sheathing	1" LVL	24"	18"	14"	12"	10"	9"	8"
	1- $\frac{1}{8}$ " LVL	28"	21"	16"	14"	12"	10"	9"
	1- $\frac{1}{2}$ " Lumber	36"	36"	34"	29"	24"	21"	19"
$\frac{1}{2}$ " diameter bolt with $\frac{15}{32}$ " maximum sheathing and $\frac{1}{2}$ " stacked washers <sup>2,7</sup>	1- $\frac{1}{2}$ " Lumber	36"	36"	29"	24"	21"	18"	16"

## Use Properly Sized Footings

1. Calculate the tributary area for each post (We can help with this)
2. Find your Tributary area on the chart below
3. Select the correct footing size
4. All footings shall bear on undisturbed soil below frost line (30 inches)

Tributary Area <sup>2</sup> (sq. ft.)	1500 psf		
	Round Footing Diameter (in.)	Square Footing (in.)	Footing Thickness (in.)
10	8	7	6
20	12	10	6
30	14	13	6
40	16	15	6
50	18	16	7
60	20	18	8
70	22	19	9
80	23	21	9
90	25	22	10
100	26	23	11
110	28	25	12
120	29	26	12
130	30	27	13
140	31	28	13
150	33	29	14
160	34	30	15
170	35	31	15
180	36	32	16
190	37	33	16
200	38	34	17
210	39	35	17
220	40	35	18
230	41	36	18
240	42	37	19
250	43	38	19



## Use Properly Sized Floor Joist and Headers

Use the following chart to size floor joist

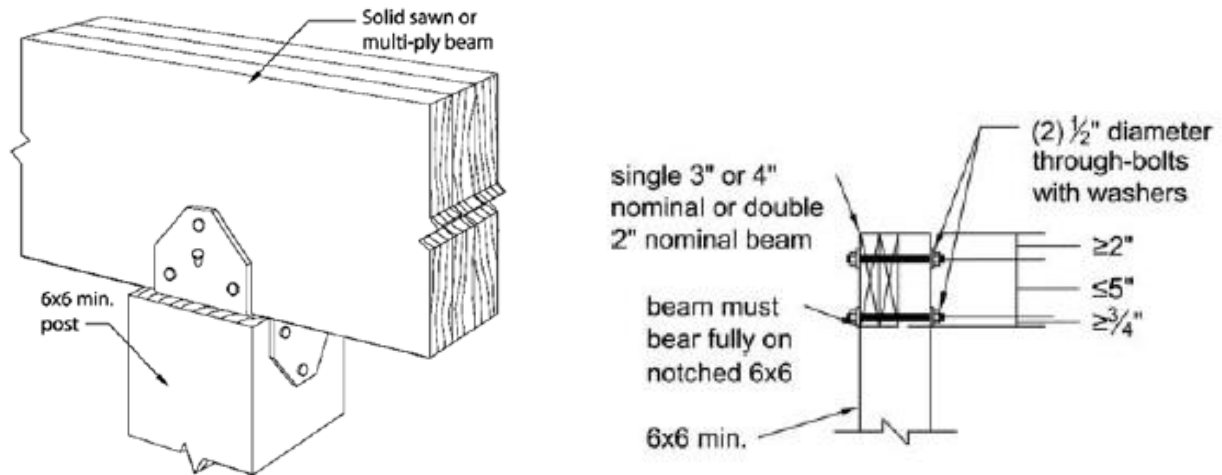
Species	Size	Joist Spacing (o.c.)					
		12"	16"	24"	12"	16"	24"
		Allowable Span <sup>2</sup> (L <sub>J</sub> )			Allowable Overhang <sup>3</sup> (L <sub>O</sub> )		
Southern Pine	2x6 <sup>6</sup>	9' - 11"	9' - 0"	7' - 7"	1' - 0"	1' - 1"	1' - 3"
	2x8	13' - 1"	11' - 10"	9' - 8"	1' - 10"	2' - 0"	2' - 4"
	2x10	16' - 2"	14' - 0"	11' - 5"	3' - 1"	3' - 5"	2' - 10"
	2x12	18' - 0" <sup>7</sup>	16' - 6"	13' - 6"	4' - 6"	4' - 2"	3' - 4"
Douglas Fir- Larch, Hem-Fir, Spruce-Pine-Fir <sup>4</sup>	2x6 <sup>6</sup>	9' - 6"	8' - 4"	6' - 10"	0' - 11"	1' - 0"	1' - 2"
	2x8	12' - 6"	11' - 1"	9' - 1"	1' - 8"	1' - 10"	2' - 2"
	2x10	15' - 8"	13' - 7"	11' - 1"	2' - 10"	3' - 2"	2' - 9"
	2x12	18' - 0" <sup>7</sup>	15' - 9"	12' - 10"	4' - 4"	3' - 11"	3' - 3"
Redwood, Western Cedars, Ponderosa Pine <sup>5</sup> , Red Pine <sup>5</sup>	2x6 <sup>6</sup>	8' - 10"	8' - 0"	6' - 10"	0' - 9"	0' - 10"	0' - 11"
	2x8	11' - 8"	10' - 7"	8' - 8"	1' - 5"	1' - 7"	1' - 9"
	2x10	14' - 11"	13' - 0"	10' - 7"	2' - 5"	2' - 7"	2' - 8"
	2x12	17' - 5"	15' - 1"	12' - 4"	3' - 7"	3' - 9"	3' - 1"

Use the following chart to size headers / Distance between posts

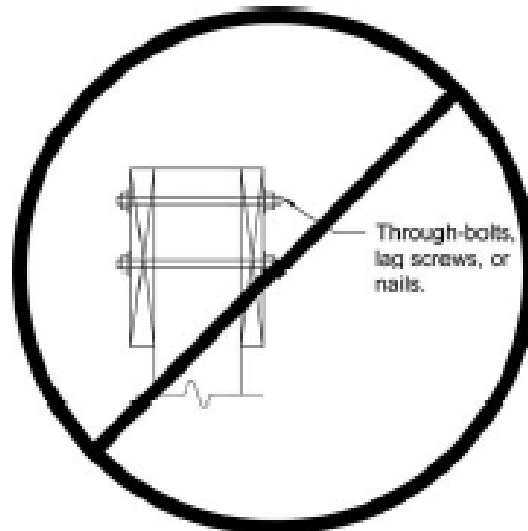
Species	Size <sup>4</sup>	Joist Spans (L) Less Than or Equal to:						
		6'	8'	10'	12'	14'	16'	18'
Southern Pine	2-2x6	6' - 8"	5' - 8"	5' - 1"	4' - 7"	4' - 3"	4' - 0"	3' - 9"
	2-2x8	8' - 6"	7' - 4"	6' - 6"	5' - 11"	5' - 6"	5' - 1"	4' - 9"
	2-2x10	10' - 1"	8' - 9"	7' - 9"	7' - 1"	6' - 6"	6' - 1"	5' - 9"
	2-2x12	11' - 11"	10' - 4"	9' - 2"	8' - 4"	7' - 9"	7' - 3"	6' - 9"
	3-2x6	7' - 11"	7' - 2"	6' - 5"	5' - 10"	5' - 5"	5' - 0"	4' - 9"
	3-2x8	10' - 7"	9' - 3"	8' - 3"	7' - 6"	6' - 11"	6' - 5"	6' - 1"
	3-2x10	12' - 9"	11' - 0"	9' - 9"	8' - 9"	8' - 3"	7' - 8"	7' - 3"
	3-2x12	15' - 0"	13' - 0"	11' - 7"	10' - 6"	9' - 9"	9' - 1"	8' - 7"
Douglas Fir- Larch <sup>2</sup> , Hem- Fir <sup>2</sup> , Spruce- Pine-Fir <sup>2</sup> , Redwood, Western Cedars, Ponderosa Pine <sup>3</sup> , Red Pine <sup>3</sup>	3x6 or 2-2x6	5' - 2"	4' - 5"	3' - 11"	3' - 7"	3' - 3"	2' - 10"	2' - 6"
	3x8 or 2-2x8	6' - 7"	5' - 8"	5' - 1"	4' - 7"	4' - 3"	3' - 10"	3' - 5"
	3x10 or 2-2x10	8' - 1"	7' - 0"	6' - 3"	5' - 8"	5' - 3"	4' - 10"	4' - 5"
	3x12 or 2-2x12	9' - 5"	8' - 2"	7' - 3"	6' - 7"	6' - 1"	5' - 8"	5' - 4"
	4x6	6' - 2"	5' - 3"	4' - 8"	4' - 3"	3' - 11"	3' - 8"	3' - 5"
	4x8	8' - 2"	7' - 0"	6' - 3"	5' - 8"	5' - 3"	4' - 11"	4' - 7"
	4x10	9' - 8"	8' - 4"	7' - 5"	6' - 9"	6' - 3"	5' - 10"	5' - 5"
	4x12	11' - 2"	9' - 8"	8' - 7"	7' - 10"	7' - 3"	6' - 9"	6' - 4"
	3-2x6	7' - 1"	6' - 5"	5' - 9"	5' - 3"	4' - 10"	4' - 6"	4' - 3"
	3-2x8	9' - 5"	8' - 3"	7' - 4"	6' - 8"	6' - 2"	5' - 9"	5' - 5"
	3-2x10	11' - 9"	10' - 2"	9' - 1"	8' - 3"	7' - 7"	7' - 1"	6' - 8"
	3-2x12	13' - 8"	11' - 10"	10' - 6"	9' - 7"	8' - 10"	8' - 3"	7' - 10"

## Use Appropriate Beam Attachment Options

### Approved methods of beam attachment



### Prohibited method of beam attachment

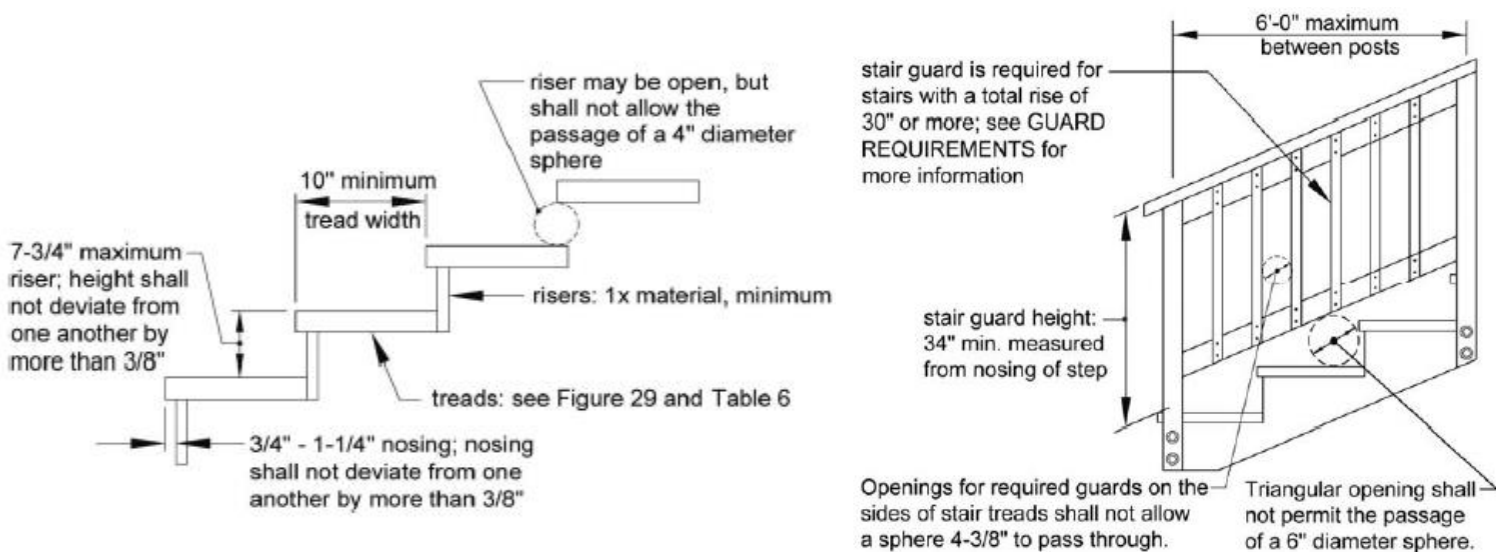


1. Beams must bear directly on posts
2. Support of beams with fasteners only is prohibited

## Install Compliant Stairs, Handrails and Guardrails

1. **Guardrail is required when more than 30 inches above grade**
2. **Minimum height of guardrail 36 inches**
3. **Openings in the guard on the edge of the deck shall not allow a 4 inch sphere to pass through**

### **Basic stair tread/riser design**



## Watch for windows that now require safety glazing

1. **New decks can change glazing requirements for existing windows**
2. **Any glazing less than 36 inches above the plane of your stair treads requires safety glazing**
3. **Glazing within 5 feet of the bottom landing at stairs many times requires safety glazing**

Any omissions of requirements on submitted plans or omissions during plan review shall in no way authorize any violation of applicable requirements under the 2015 IRC, 2009 UMC & UPC, 2014 NEC, and City of Hays Ordinances. Owner/Contractor compliance with the standards adopted by the City of Hays is expected. All construction activities are subject to verification during routine inspections by an authorized representative of the City of Hays.

This hand out is provided by the City of Hays Public Works Dept. as a basic plan submittal under the 2015 IRC, 2009 UMC & UPC, 2014 NEC. This is not intended to cover all circumstances. Check with the Building Officials for additional requirements.