

VILLAGE OF ALGONQUIN

Community Development

Deck Permit Submittal and Construction Requirements

Based on the 2018 International Residential Code with Village amendments

The requirements herein are the most common and are not representative of all the conditions you may encounter when designing and constructing a deck.





Village of Algonquin
Community Development

**Deck Permit Submittal
Requirements**

The Village will not accept incomplete permit submittals. Please check to make sure you have completed the following requirements prior to applying for a permit.

Application:

- Owner information must be completed
- Contractor information must be completed
- Construction cost must be calculated (if unsure; please estimate)
- Square footage must be calculated
- Describe improvements (be as detailed as possible)
- Sign the permit application (owner or agent)

Plat of Survey:

- Two copies of a complete Plat of Survey for the property is required.
- The survey shall be current (within the last 12 months if a roofed structure)
- The survey shall be full size and to scale (typical scale 1":20')
- The location and dimensions of the deck shall be drawn to scale on the Plat of Survey.

Construction Plans:

- Two copies of the plans must be submitted
- All plans must be drawn to scale
- Minimum scale $\frac{1}{8}":1'$; preferred scale $\frac{1}{4}":1'$
- Name of the owner and address of the project on the plans
- Specify the overall dimensions of the deck
- Specify post and beam locations with dimensions indicating beam spans between posts
- Specify the type and direction of the decking
- Specify nominal lumber sizes of all joists, beams, and posts
- Specify height above grade
- Indicate location of underground or overhead electric lines if located near the deck
- Indicate the location of basement window wells, hose bibs, clothes dryer vents, electric and gas meters if located near the deck
- Provide the above information on both a plan view, and a side elevation view

Note: Computer generated framing plans provided by retail outlets that do not provide the required information will not be accepted.

▶



3

3



Deck Building Requirements

General:

- The deck shall be designed for a minimum 60 pounds per square foot live load and 10 pounds per square foot dead load.
- The deck cannot be located within 5' of the property line setback and cannot be in easement.
- A switch-controlled exterior light fixture is required at each exterior door from the house to the deck.
- Decks covering basement escape window wells shall be designed to allow access to and use of the window.
- The use of deck screws for structural framing attachment is prohibited.
- Galvanized framing anchors designed for the purpose shall be used for all post-to-pier / beam-to-pier / beam-to-post / beam-to-beam connections.
- Notching of beams, joists, or headers over concrete stoops or other obstructions is prohibited. Remove stoops, or header around the obstruction.
- All leftover excavation spoils and construction debris shall be removed from the site prior to the final inspection.

Piers:

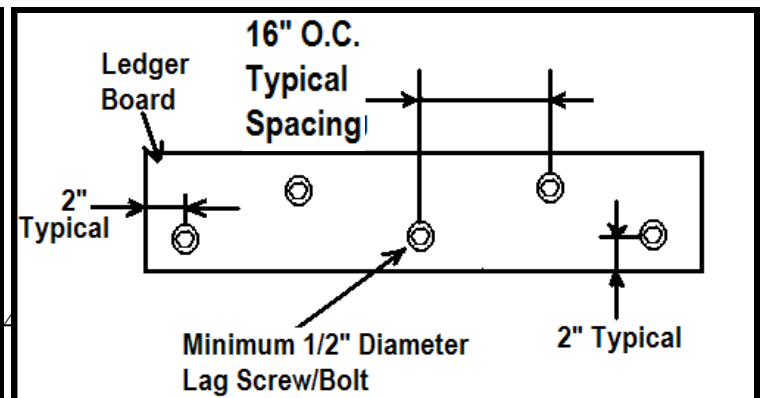
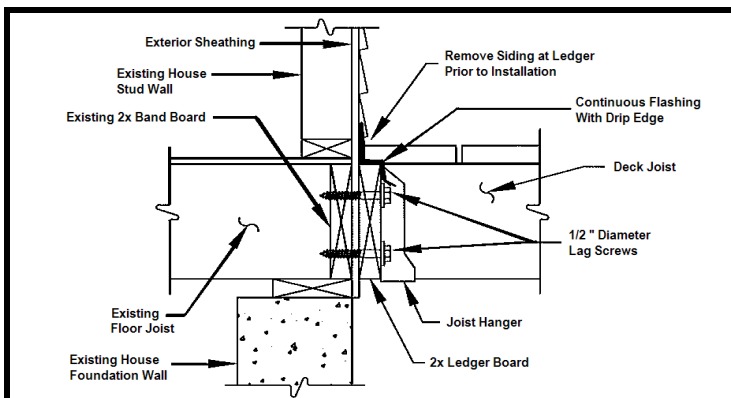
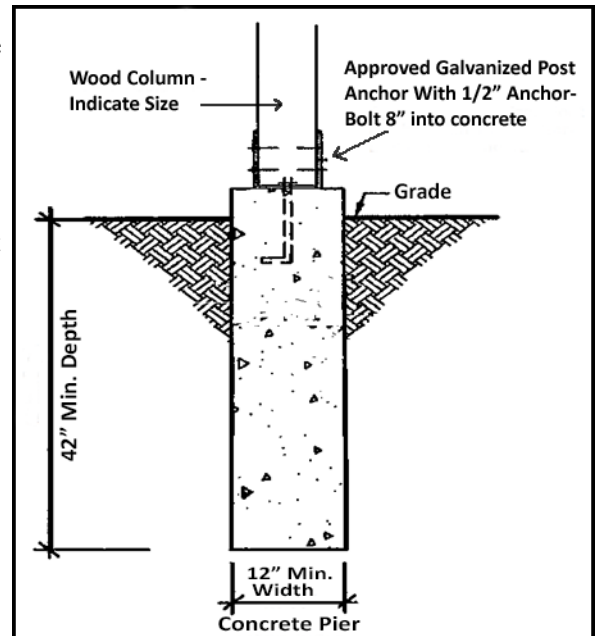
- Deck piers shall be a minimum of 12 in. in diameter, extending a minimum of 42 in. below grade.
- The posts shall be attached to the piers with a galvanized post anchor with 1/2-in. anchor bolts at least 8 in. into the concrete.

Posts:

- 4 x 4 posts shall not exceed 6 ft. in height.
- 4 x 6 posts shall not exceed 8 ft. in height.
- Posts greater than 8 ft. in height shall be 6 x 6 minimum.

Ledger Board:

- The ledger board at the house shall not be attached directly over any type of siding (remove siding).
- The ledger at the house shall bear directly against sheathing/ framing.
- Proper Z-flashing is required over ledger board or other attachments at house.
- The ledger shall be attached to the band board of the house with a minimum 1/2-in. diameter bolts w/ washers staggered top and bottom 16 in. on center and 2 bolts 2 in. from each end.
- The attachment of ledgers for large deck areas to cantilevers should be avoided. Header around cantilevers if possible.
- See page 9 and 10 for Tension Ties.



Beams:

- Beams shall be secured to supports by a minimum of 2 bolts per support. Stagger the bolts vertically at all post-beam connections.
- Install blocking between beams 24 in. on-center between posts when beams are framed to the sides of posts.
- All beams supporting 2 or more joists shall be doubled. All beam ends shall bear at/on a post.

MAXIMUM BEAM SPANS (POST-TO-POST SPACING)

(2) 2 x 6 on edge	up to 5'-0"
(2) 2 x 8 on edge	up to 6'-6"
(2) 2 x 10 on edge	up to 8'-0"
(2) 2 x 12 on edge	up to 9'-0"

MAXIMUM BEAM CANTILEVERS

(2) 2 x 6	0'-9"
(2) 2 x 8	1'-0"
(2) 2 x 10	1'-3"
(2) 2 x 12	1'-6"

Joists:

- Maximum 16 in. on-center joist spacing when using 5/4-in. nominal decking.
- Maximum 24 in. on-center joist spacing when using 2 in. nominal decking.

MAXIMUM JOIST SPANS

(60 psf live load using treated #2 SYP)

Joist Spacing	Maximum Clear Span
2 x 6 @ 12" o.c.	9 feet 1 inches
2 x 6 @ 16" o.c.	8 feet 1 inches
2 x 6 @ 24" o.c.	6 feet 8 inches
2 x 8 @ 12" o.c.	11 feet 11 inches
2 x 8 @ 16" o.c.	10 feet 6 inches
2 x 8 @ 24" o.c.	8 feet 7 inches
2 x 10 @ 12" o.c.	15 feet 2 inches
2 x 10 @ 16" o.c.	13 feet 7 inches
2 x 10 @ 24" o.c.	11 feet 1 inches
2 x 12 @ 12" o.c.	18 feet 5 inches
2 x 12 @ 16" o.c.	15 feet 11 inches
2 x 12 @ 24" o.c.	13 feet 0 inches

MAXIMUM JOIST CANTILEVERS

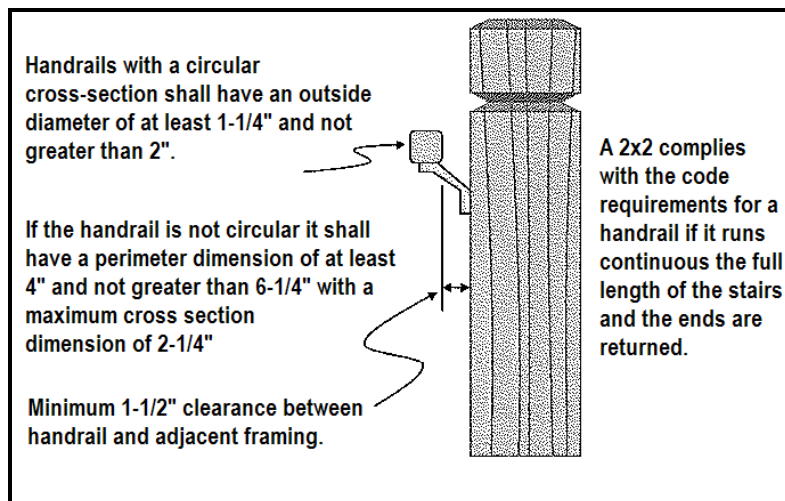
2 x 6	1'-6"
2 x 8	2'-0"
2 x 10	2'-6"
2 x 12	3'-0"

Stairs:

- Minimum 36 in. clear width above handrail; 31½ in. at or below single handrail; 27 in between 2 handrails.
- 7¾ in. maximum riser height. The riser height shall be measured vertically between leading edges of the adjacent treads. Open risers are permitted when openings between treads are less than 4 in. Open risers are permitted with unlimited openings when total stair rise is 30 in. or less.
- 10 in. minimum tread depth. The tread depth shall be measured horizontally between the leading edge of nosings.
- Nosing required when risers are solid: minimum of ¾-in and maximum of 1¼-in.
- Nosing not required if tread depth is 11 in. or greater.
- The largest riser/tread within a flight of stairs shall not exceed the smallest riser/tread by ⅜-in.
- Maximum spacing between stringers is 24 in. with 2x treads; 16 in with 5/4-in treads.
- Stringers with 3 risers or more shall bear on concrete piers.
- Stairs with less than 3 risers may bear on a 4-in. thick patio block or 4 in. concrete slab.

Handrails/Guards:

- A graspable handrail is required on at least one side of all stairs with 4 or more risers. Handrail minimum height shall be 34 in. and maximum height shall be 38 in. when measured vertically from the nosing of the treads.
- Required handrails shall be continuous the full length of the stair. Ends shall be returned or terminated in newel posts or safety terminals. Handrails shall have a minimum clearance of 1½ in. between a wall and the handrail.
- Handrails shall have a circular cross-section with a diameter of 1¼-in. to 2 in., or a perimeter of 4 in. to 6¼ in. with a maximum cross-section of 2¼ in..
- Guards are required on open sides of stairs, porches, decks, balconies, ramps or other raised floor surfaces more than 30 in. above floor or grade below.
- Minimum guard height is 36 in. for porches, decks, balconies, ramps or other raised floor surfaces. Balusters or ornamental closures shall not allow the passage of a 4-in. sphere.
- Minimum guard height is 34 in. at open sides of stairs measured vertically from the nosing of the treads. Balusters or ornamental closures shall not allow the passage of a 4⅜-in. sphere. A 6-in. sphere shall not pass through the triangular opening at the intersection of the tread and riser.
-



Required In-

- **Piers:** After dug and prior
- **Rough:** After the deck is framed and prior to installing decking and handrail. The stairs shall be framed at this time. Any electrical work installed under the deck shall be installed at this time.
- **Final:** After the deck is completed and all debris is removed.

specations:

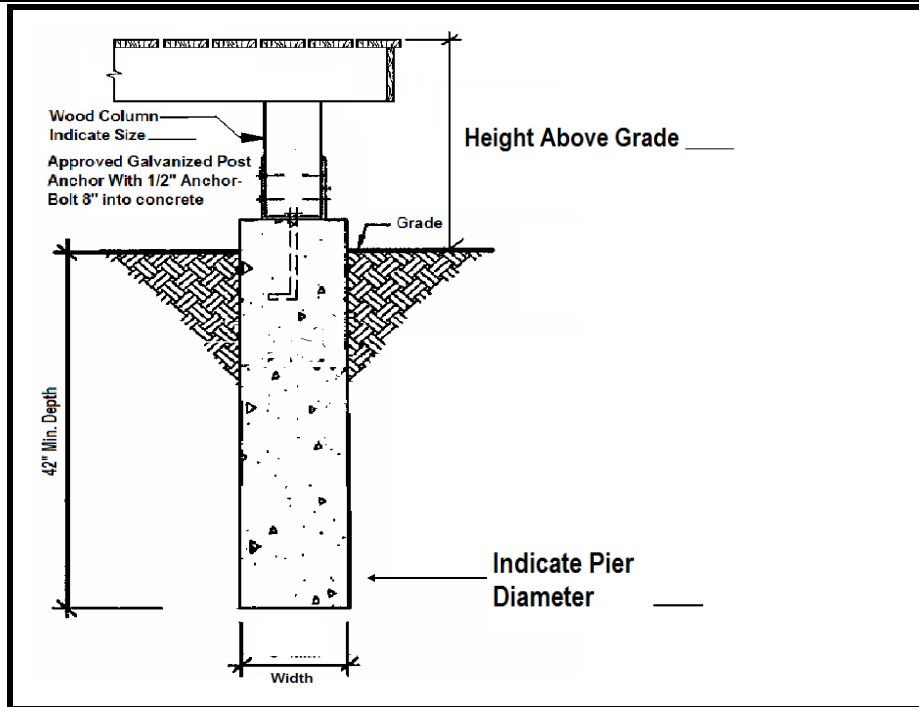
the holes for the piers are to pouring any concrete.

**Please allow 24-48 hours notice prior to scheduling inspections.
To schedule an inspection call (847)658-2700 (option 3)**

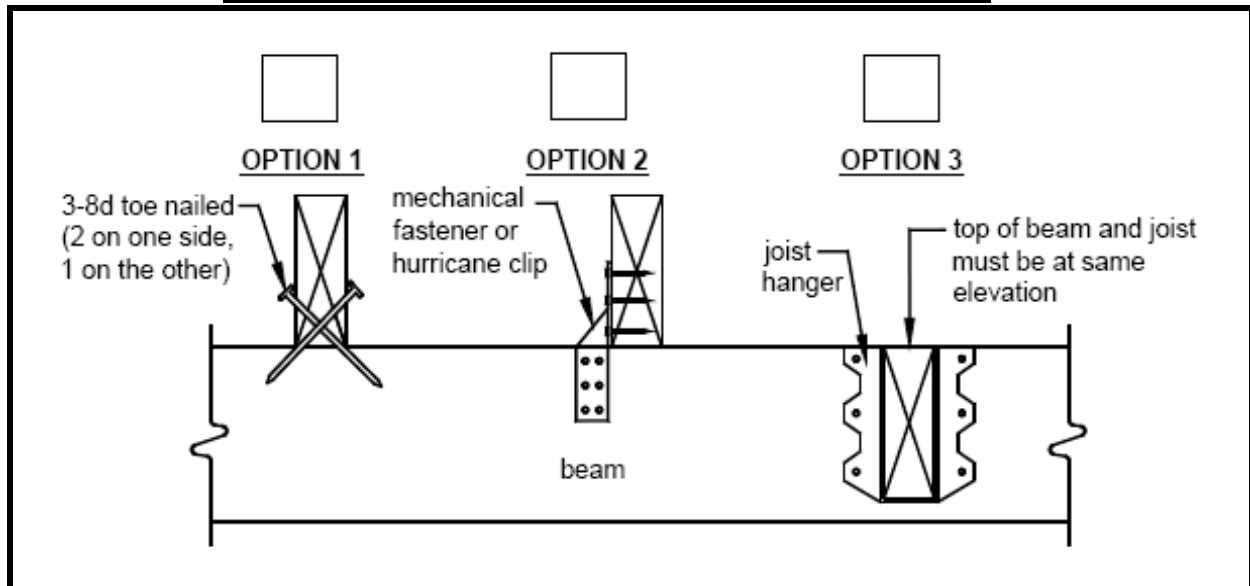
**Contact J.U.L.I.E. 48 hours before you dig.
8-1-1 or 800-892-0123 (excluding Sat., Sun., and holidays)**

Please detach and include the following details with the required plan view and elevation view and construction plans.

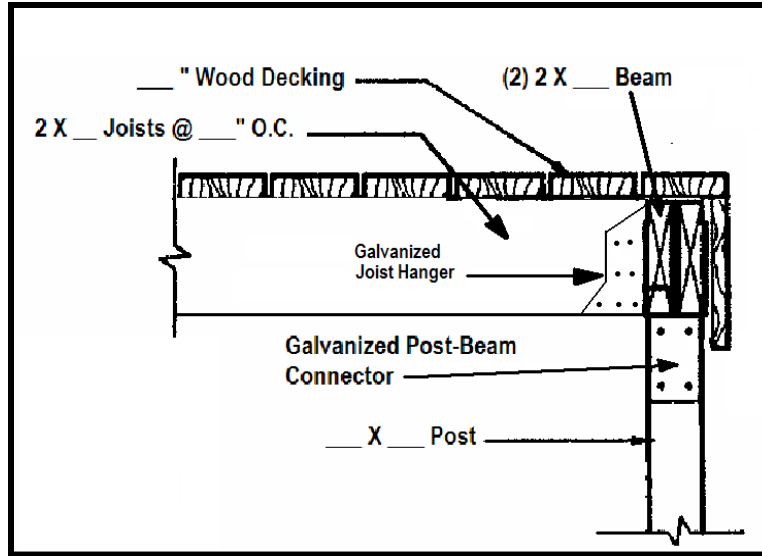
Please Indicate Column Size, Height Above Grade, and Pier Diameter

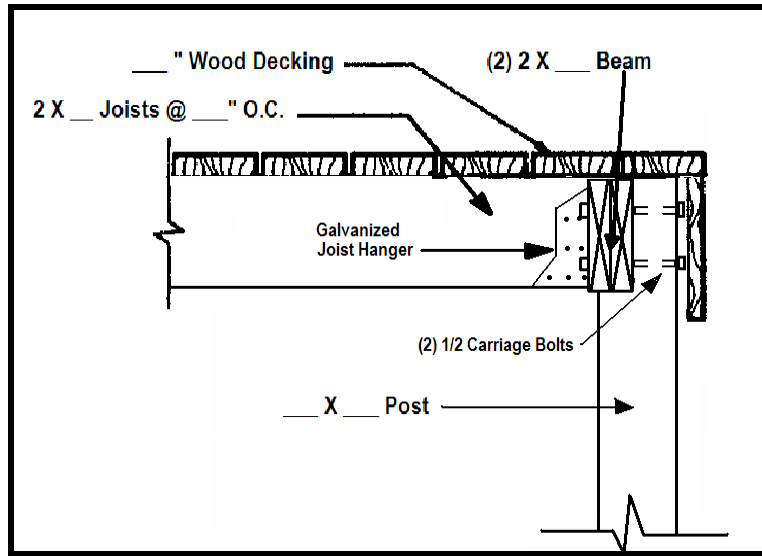


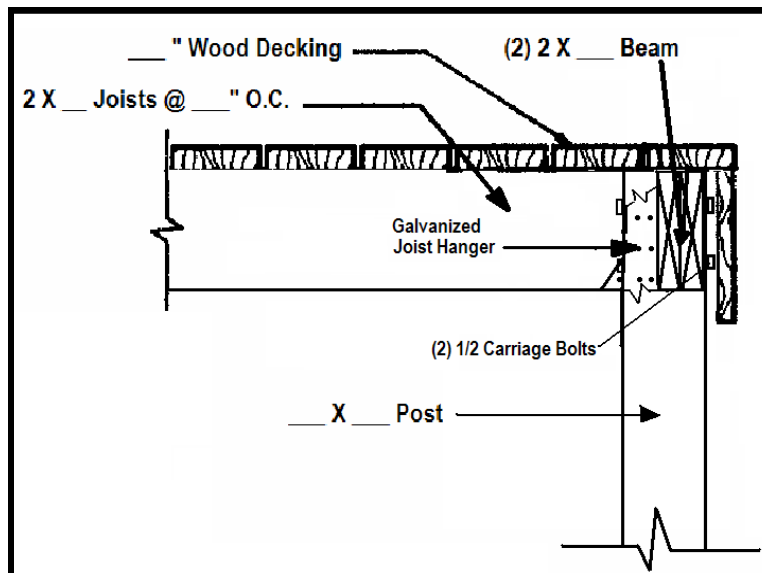
Please Choose a Joist to Beam Connection Option



Please choose the appropriate beam configuration and joist-beam connection for your project. Please fill in all blanks.







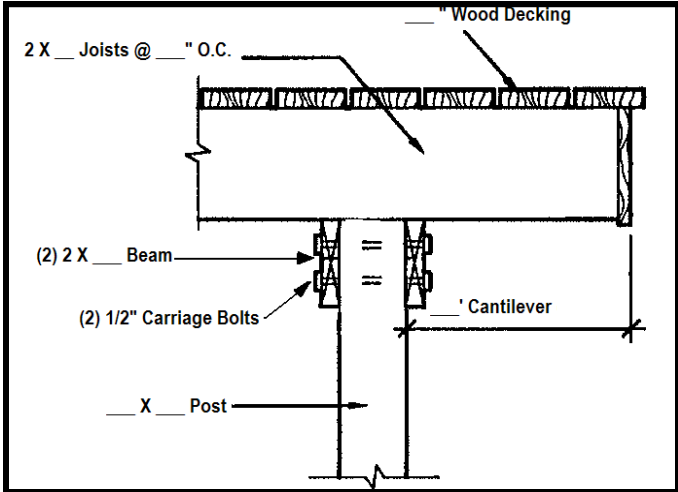
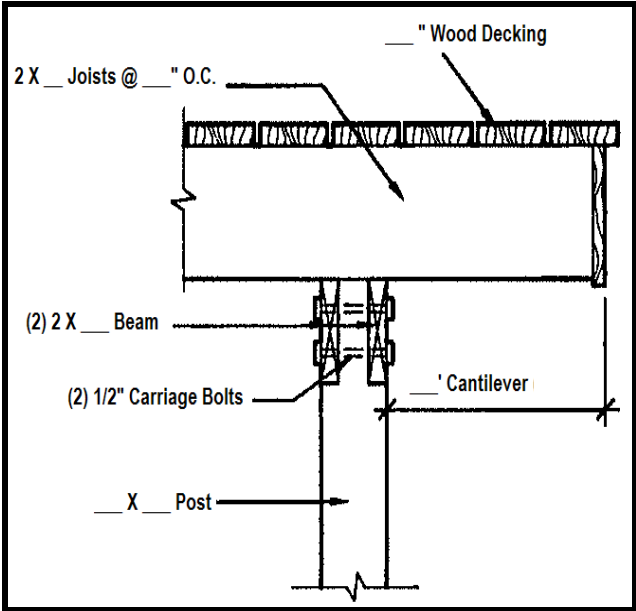
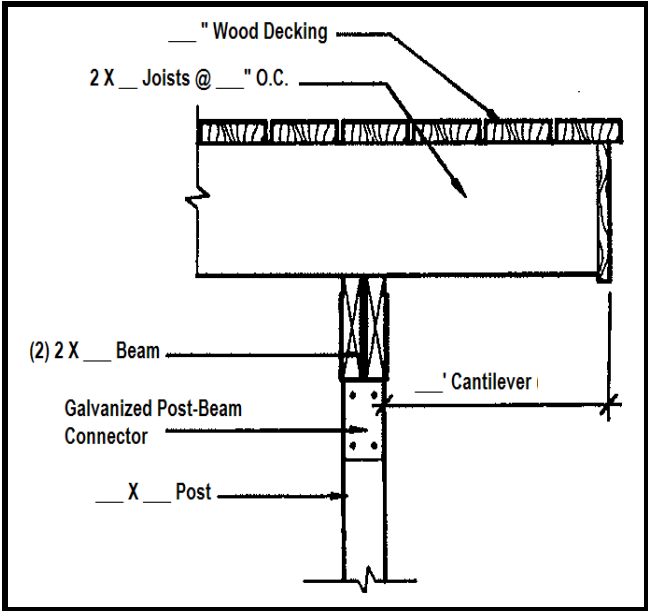
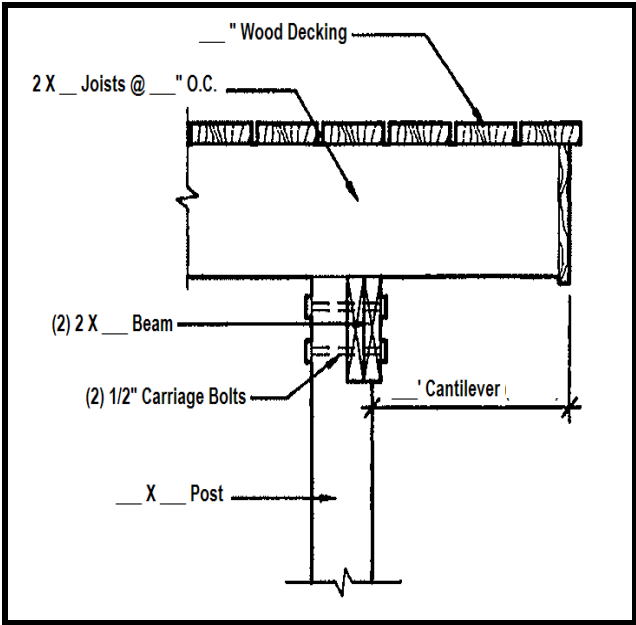
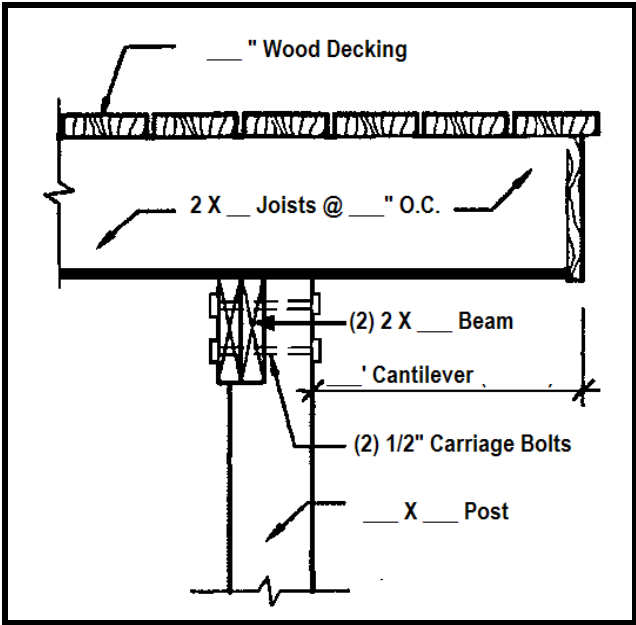


Table 3A. Dimension Lumber Deck Beam Spans (L_B)¹ for Joists Framing from One Side Only.

Species	Size ⁴	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 ² , Hem-Fir ² , Spruce-Pine-Fir ² , Redwood, Western Cedars, Ponderosa Pine ³ , Red Pine ³	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"

1. Assumes 40 psf live load, 10 psf dead load, L/360 simple span beam deflection limit, cantilever length/180 deflection limit, No. 2 stress grade, and wet service conditions.

2. Incising assumed for Douglas fir-larch, hem-fir, and spruce-pine-fir.

3. Design values based on northern species with no incising assumed.

4. Beam depth must be equal to or greater than joist depth if joist hangers are used (see Figure 6, Option 3).