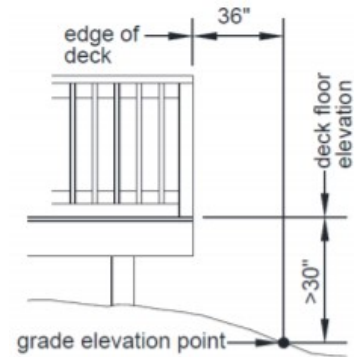


This guide is intended to assist homeowners to better understand the plan submittal requirements for a Post Falls residential deck Building Permit. The information provided is based on the most common questions and does not cover all situations and/or options. This information is generalized and is not comprehensive of all code requirements.

A **Building Permit** is required for a residential deck if it has one or more of the following characteristics:

- Exceeds 200 sq. ft. in floor area.
- Is attached to any structure regardless of square footage.
- Any portion of the walking surface is greater than 30 inches above grade. Grade includes a 36-inch perimeter around the deck (see *Figure A*).
- If it serves the main egress of a building, regardless of size or height.

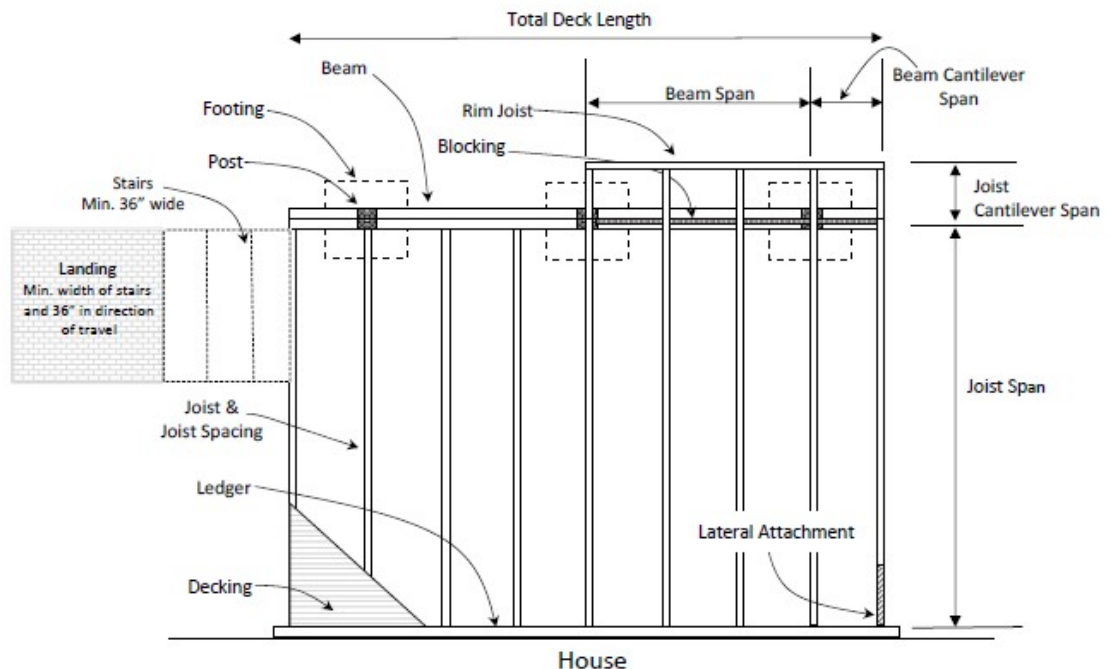


(Figure A)

Building Permit plan submittal requirements

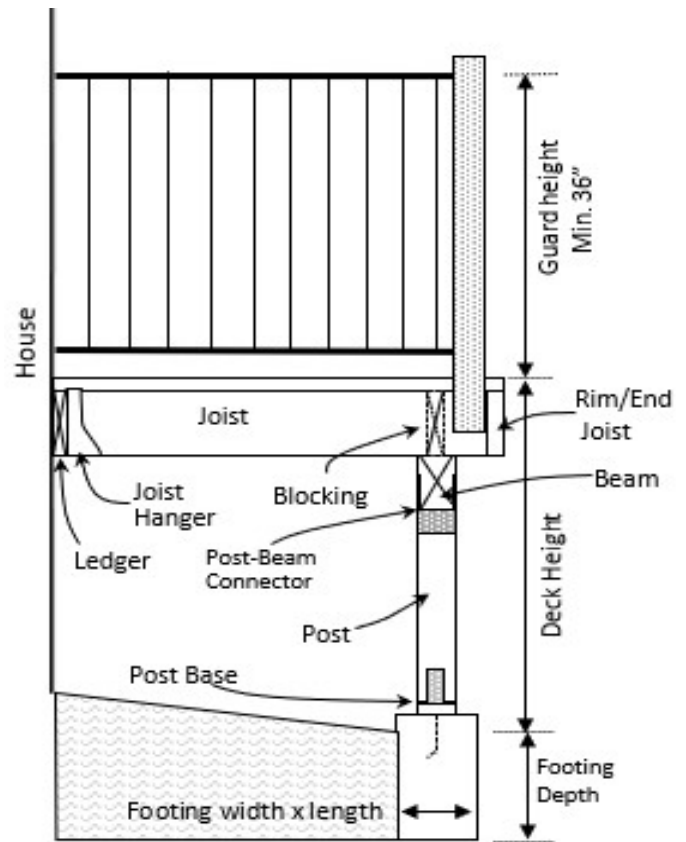
- Building Permit Application.**
- Site Plan** (see Post Falls Handout “Residential Site Plan Requirements”)
- Deck Framing Plan** (See *Figure B*) Draw your own framing plan and label all components of the deck. Include the types of lumber (include if they are pressure treated), lumber sizes, number of ply’s, span lengths, and footing locations and sizes. Provide as much detail as possible.
 - See Additional Information section for specific code requirements.
 - See Tables section for joist and beam span requirements.

(Figure B)

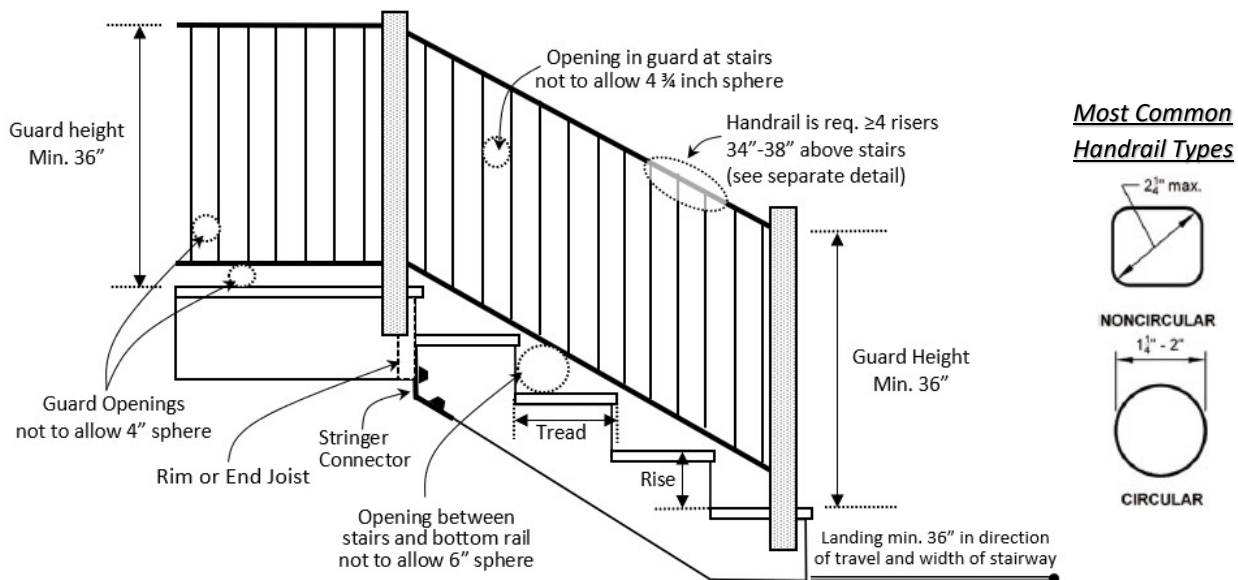


4. **Deck Cross Section** (see Figure C) Draw your own cross section and label all components of the deck. Specify the type of all connectors, lumber types and sizes (include if they are pressure treated), footing size and depth, height of walking surface, height of guardrail and openings (see plan submittal requirement #5).

(Figure C)

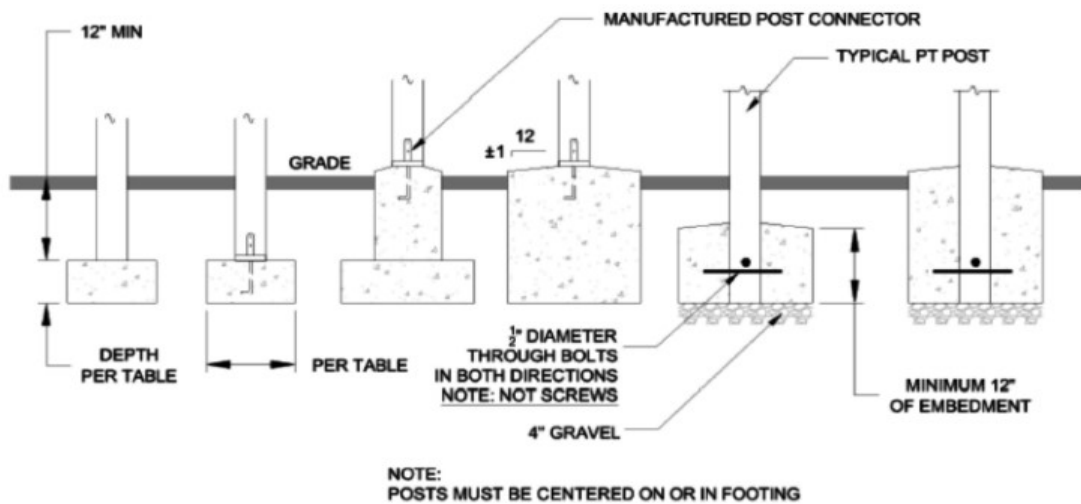


5. **Stair & Guardrail Detail** (see Figure D) This detail can be combined with the Deck Cross Section. Guardrails are required at any location where the walking surface is more than 36" above grade. Handrails are required for stairs that have 4 or more risers. Label the minimum dimensions of all components of the stairs, guardrail, and handrail (as applicable).



(Figure D)

6. **Deck Footing & Post Detail** (see *Figure E*) This detail can be combined with the Deck Cross Section. The following diagram depicts types of acceptable deck footings. Minimum frost depth for Post Falls is 24". Draw the type of footing, width, length (or diameter), and depth of the footing below grade.
- See Tables section for footing size requirements.



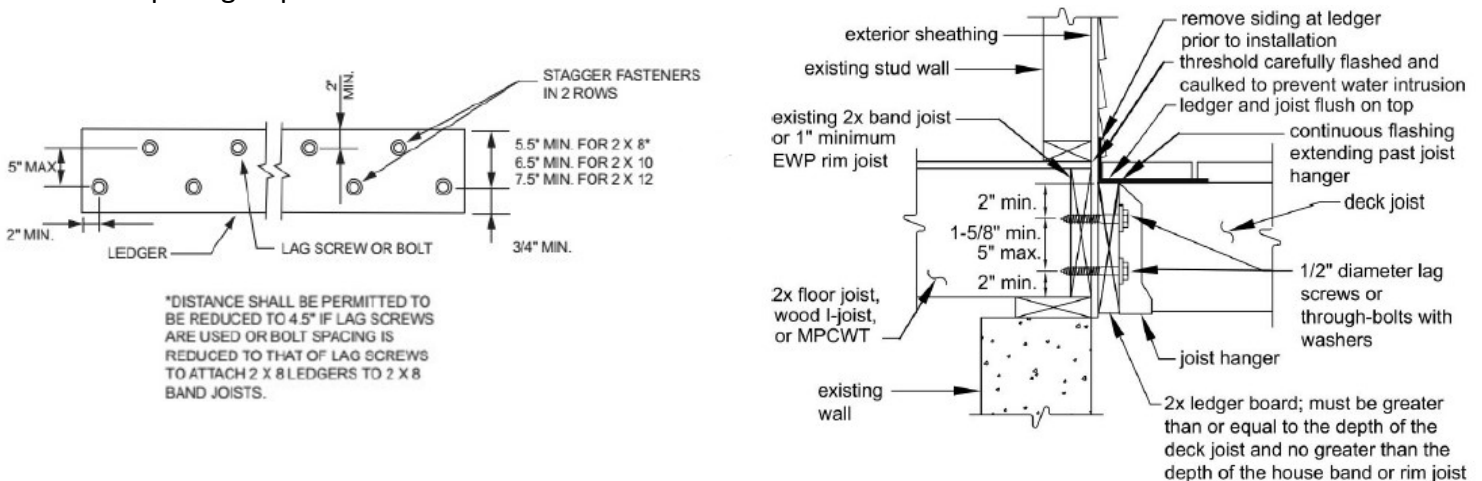
(Figure E)

Additional Information

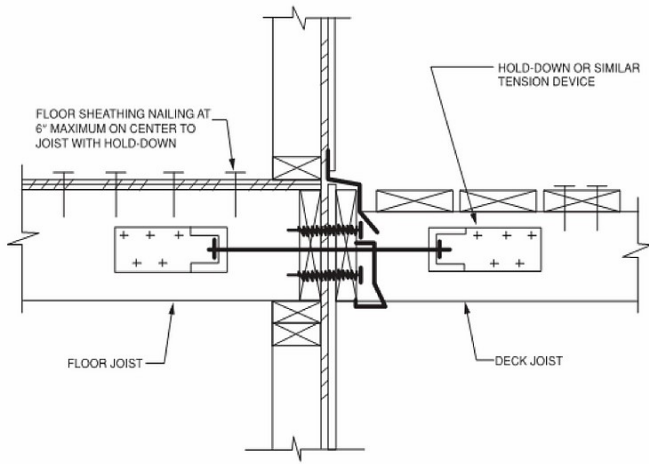
Preservative treated lumber (aka pressure treated wood)

- Required for ALL DECK LEDGERS.
- Required when posts are supported by concrete less than 6 inches above exposed ground.
- All lumber in contact with exposed ground or embedded in concrete needs to be preservative treated for ground contact and needs to be labeled for such usage.
- All screws, bolts, washers, nuts, and nails for use with preservative treated wood must be hot-dipped zinc-coated galvanized steel, stainless steel, silicon bronze, or copper. Fasteners other than nails and timber rivets are permitted to be of mechanically deposited zinc-coated steel. All connectors (hangers, post base, post-beam connector, etc.) must be galvanized or stainless steel.
- All cuts, notches and drilled holes are required to be field treated with an approved preservative.

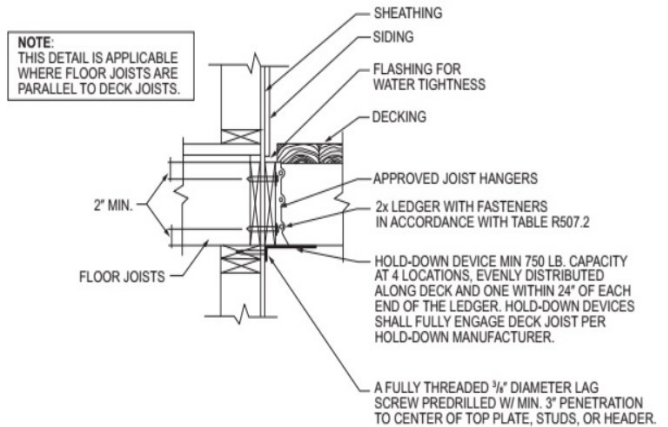
Ledger must be preservative treated lumber and a minimum 2x8, or the dimension of the joists, whichever is greater. Fasteners shall be hot-dipped galvanized or stainless steel. See Ledger to Band Joist table for fastener spacing requirements.



Lateral Support is required for all decks. Minimum stress capacity of 3,000 total. List type of hold-down tension device and show locations on framing plan. All hold-downs shall be installed per the manufactures' specifications. Options A & B (below) are the two types of lateral supports. Engineering can be provided for alternative methods of lateral support.

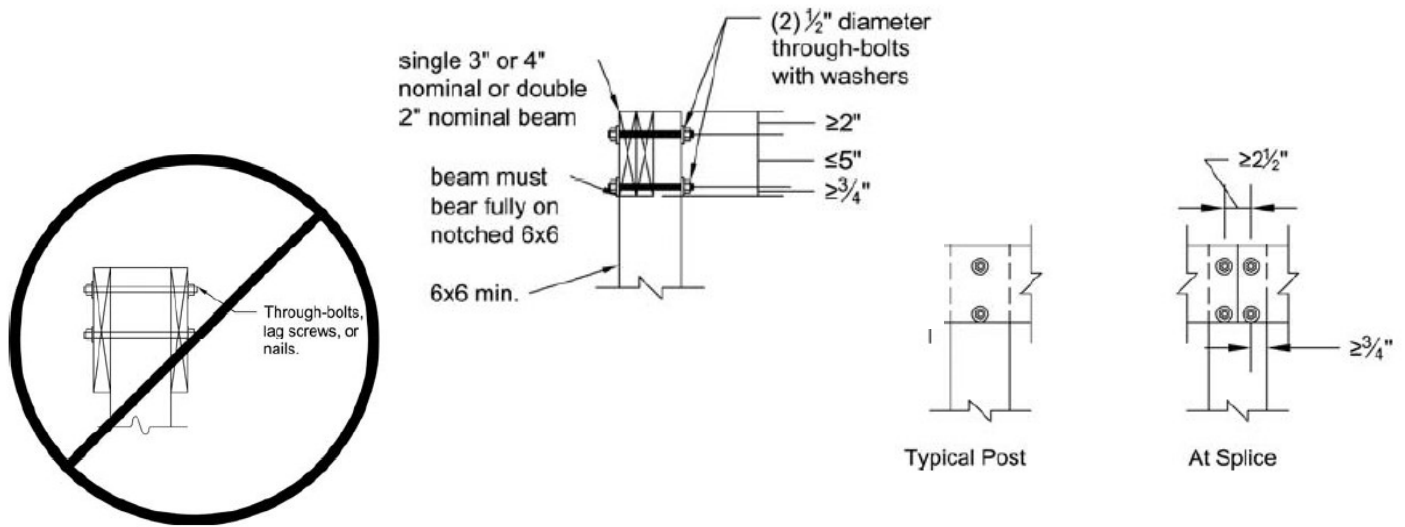


(Option A)



(Option B)

Post to Beam Connection



Tables (all tables ref. 2018 IRC, Section R507)

Minimum Footing Size for Decks

| Live or Ground Snow Load | Tributary Area (sq. ft.) | Load Bearing Value of Soils | | |
|--------------------------|--------------------------|-----------------------------------|--------------------------------------|--------------------|
| | | 1500 | | |
| | | Side of a square footing (inches) | Diameter of a round footing (inches) | Thickness (inches) |
| 60 | 20 | 12 | 14 | 6 |
| | 40 | 16 | 19 | 6 |
| | 60 | 20 | 23 | 7 |
| | 80 | 23 | 26 | 9 |
| | 100 | 26 | 29 | 10 |
| | 120 | 28 | 32 | 11 |
| | 140 | 31 | 35 | 12 |
| 160 | 33 | 37 | 13 | |

Deck Ledger Connection to Band Joist^{a,b}
(Deck live load = 40 psf, deck dead load = 10 psf, snow load ≤ 40 psf)

| CONNECTION DETAILS | JOIST SPAN | | | | | | |
|--|--------------------------------|------------|-------------|--------------|--------------|--------------|--------------|
| | 6' and less | 6'1" to 8' | 8'1" to 10' | 10'1" to 12' | 12'1" to 14" | 14'1" to 16' | 16'1" to 18" |
| | On-center spacing of fasteners | | | | | | |
| 1/2-inch diameter lag screw with 1/2-inch maximum sheathing ^{c,d} | 30 | 23 | 18 | 15 | 13 | 11 | 10 |
| 1/2-inch diameter bolt with 1/2-inch maximum sheathing ^d | 36 | 36 | 34 | 29 | 24 | 21 | 19 |
| 1/2-inch diameter bolt with 1-inch maximum sheathing ^e | 36 | 36 | 29 | 24 | 21 | 18 | 16 |

a. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.
b. Snow load shall not be assumed to act concurrently with live load.
c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
d. Sheathing shall be wood structural panel or solid sawn lumber.
e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard, lumber or foam sheathing. Up to 1/2-inch thickness of stacked washers shall be permitted to substitute for up to 1/2-inch of allowable sheathing thickness where combined with wood structural panel or lumber sheathing.

Deck Joist Spans for Common Lumber Species (ft. - in.)

| Species ^a | Size | Allowable Joist Span ^c | | | Maximum Cantilever ^{c,f} | | |
|---|------|--|------|-------|--|------|-----|
| | | Spacing of Deck Joists with no Cantilever ^b (inches) | | | Spacing of Deck Joists with Cantilevers ^c (inches) | | |
| | | 12 | 16 | 24 | 12 | 26 | 24 |
| Douglas fir-larch ^d , Hem-fir ^d , Spruce-pine-fir ^d | 2x6 | 9-6 | 8-8 | 7-2 | 1-2 | 1-3 | 1-5 |
| | 2x8 | 12-6 | 11-1 | 9-1 | 1-11 | 2-1 | 2-3 |
| | 2x10 | 15-8 | 13-7 | 11-1 | 3-1 | 3-5 | 2-9 |
| | 2x12 | 18-0 | 15-9 | 12-10 | 4-6 | 3-11 | 3-3 |
| Redwood, western cedars, ponderosa pine ^e , red pine ^e | 2x6 | 8-10 | 8-0 | 7-0 | 1-0 | 1-1 | 1-2 |
| | 2x8 | 11-8 | 10-7 | 8-8 | 1-8 | 1-10 | 2-0 |
| | 2x10 | 14-11 | 13-0 | 10-7 | 2-8 | 2-10 | 2-8 |
| | 2x12 | 17-5 | 15-1 | 12-4 | 3-10 | 3-9 | 3-1 |

a. No. 2 grade with wet service factor.
b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360.
c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at cantilever with a 220-pound point load applied to end.
d. Includes incising factor.
e. Northern species with no incising factor.
f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.

Deck Beam Span Lengths^{a,b,g} (ft. - in.)

| Species ^c | Size ^d | Deck Joist Span Less Than or Equal To: (feet) | | | | | | |
|---|-------------------|--|------|------|------|------|------|------|
| | | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
| Douglas fir-larch ^e , Hem-fir ^e , Spruce-pine-fir ^e , redwood, western cedars, ponderosa pine ^f , red pine ^f | 3x6 or 2-2x6 | 5-5 | 4-8 | 4-2 | 3-10 | 3-6 | 3-1 | 2-9 |
| | 3x8 or 2-2x8 | 6-10 | 5-11 | 5-4 | 4-10 | 4-6 | 4-1 | 3-8 |
| | 3x10 or 2-2x10 | 8-4 | 7-3 | 6-6 | 5-11 | 5-6 | 5-1 | 4-8 |
| | 3x12 or 2-2x12 | 9-8 | 8-5 | 7-6 | 6-10 | 6-4 | 5-11 | 5-7 |
| | 4x6 | 6-5 | 5-6 | 4-11 | 4-6 | 4-2 | 3-11 | 3-8 |
| | 4x8 | 8-5 | 7-3 | 6-6 | 5-11 | 5-6 | 5-2 | 4-10 |
| | 4x10 | 9-11 | 8-7 | 7-8 | 7-0 | 6-6 | 6-1 | 5-8 |
| | 4x12 | 11-5 | 9-11 | 8-10 | 8-1 | 7-6 | 7-0 | 6-7 |
| | 3-2x6 | 7-4 | 6-8 | 6-0 | 5-6 | 5-1 | 4-9 | 4-6 |
| | 3-2x8 | 9-8 | 8-6 | 7-7 | 6-11 | 6-5 | 6-0 | 5-8 |
| | 3-2x10 | 12-0 | 10-5 | 9-4 | 8-6 | 7-10 | 7-4 | 6-11 |
| | 3-2x12 | 13-11 | 12-1 | 10-9 | 9-10 | 9-1 | 8-6 | 8-1 |

a. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied at the end.
b. Beams supporting deck joists from one side only.
c. No. 2 grade, wet service factor.
d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.
e. Includes incising factor.
f. Northern species. Incising factor not included.
g. Beam cantilevers are limited to the adjacent beam's span divided by 4.

Frequently Asked Questions

Can I support my deck on blocks?

The ONLY deck that can be supported by pier blocks (does not require a footing) is if it meets ALL of the following criteria:

1. Joist must bear directly on the blocks (no posts). Joists must be pressure treated for ground contact.
2. The area of the deck does not exceed 200 sq. ft.
3. The walking surface is not more than 20 inches above grade. This includes the 36" perimeter around the edge of the deck (see Figure A at the beginning of this handout).

Do my footings need to be 24 inches deep?

The frost depth for City of Post Falls is 24 inches (below grade). All footings must meet frost depth EXCEPT:

1. Freestanding decks.
 - a. The freestanding deck must not be attached to any other structure.
 - b. The minimum footing depth for a freestanding deck is 12 inches, below grade. It cannot be supported by pier blocks and must be one of the footing types in *Figure E*.

What if I want to use glulam's or LVL's in my deck framing?

- You must supply a beam calculation report from a lumber company or engineering for any glulam or LVL beams or joists.
- Glulam's and LVL's must be protected from weather by a roof, eave or similar covering, or shall be pressure treated with preservative, or be manufactured from naturally durable or preservative treated wood. Decking does NOT provide sufficient protection from weather, so you must provide a method of protection for any glulam's or LVL's on your plans.

How tall can my deck be without engineering?

Typically, engineering is required if the walking surface of the deck exceeds 12 feet above grade but depending on the size and design of the deck, engineering may be required at any height.

Additional Resource

American Wood Council Prescriptive Residential Wood Deck Construction Guide
<https://www.awc.org/codes-standards/publications/dca>