



Residential Deck Permit Process

FOR YOUR OWN SAFETY, PLEASE REMEMBER TO CALL GOPHER STATE ONE AT (651) 454-0002 OR 1-800-252-1166, TO MARK YOUR PROPERTY FOR UTILITY OR PIPELINE LOCATIONS.

Submit the following documents:

- 1) **Completed building permit application**, available at City Hall. *If you are hiring a building contractor, make sure that person is licensed. You or your contractor may apply for the permit.*

- 2) A **site plan** of your lot, showing the location of the house, any detached structures, and septic system, if applicable. *Indicate where the deck will be located, including estimated distance to the nearest property lines.*

- 3) **Two sets of plans/blueprints** for the deck, with details including number, size and location of footings, joist and beam layout, etc. *A computer-generated picture of the deck is not considered a plan/blueprint.*

The Building Official will review your plans, and will call you when the permit is ready to be issued. The permit fee is due at the time you pick up your permit. The expected wait time is 10 business days for all plan review.

Some home stores sell plastic/composite decking materials that have not been tested. These will not be allowed in the City of North Branch. If you plan to use plastic/composite decking materials, make sure the brand you choose has been tested. Ask your supplier for a copy of the evaluation report.



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Residential Decks

Building Permits: A permit is required if the deck is attached to the dwelling, is 30" or more off the ground or is part of an accessible route. A building permit application must be completed and (2) sets of plans submitted to the Building Official. Please allow 10 business days for a review of the plans that are submitted. The Building Official will contact you when your permit is ready to be issued. The cost of your permit is based on the size of the deck.

Site Plan: Needs to show the **location of the deck on the house**, distance to the **property lines, well and septic system**

Set backs: Decks must be setback at least **6 feet** from the side and **30 feet** from rear lot lines and may not be located in an easement.

Loads: All decks shall be designed to support **40 pounds** per square foot live load and **10 pounds** per square foot dead load.

Cantilever Joist and Beams: Joists should not overhang the **beams** by more than **2 feet** and the **beams** shall not overhang the posts by more than **1 foot**.

Attachment to a Cantilever on the House: Decks cannot be supported by cantilevers extending from the house or another deck. Engineering would be needed from a structural Engineer or the Truss manufacturer.

Ledger attachment: (2) 3/8 inch lag bolts minimum at 16" to 24" on Center with a minimum penetration of 1 ½ " into solid wood.

Flashing: The connection of the ledger to the house shall be flashed so this connection is weatherproof. **(This is an extremely important detail.)**

Frost Footings: 42" is the minimum depth and the base of the footing needs to be belled.

Posts and Beams: Need to be centered on the concrete piers and **securely fasted** to resist uplift and lateral forces. **Cedar posts** need to be protected from contact from the ground and concrete. Splices in the beams need to be centered over the posts

Stairs: Minimum width is 36 inches. Maximum riser height is 7 ¾ inches. Minimum tread depth is 10 inches measured from the nose of the stair tread.

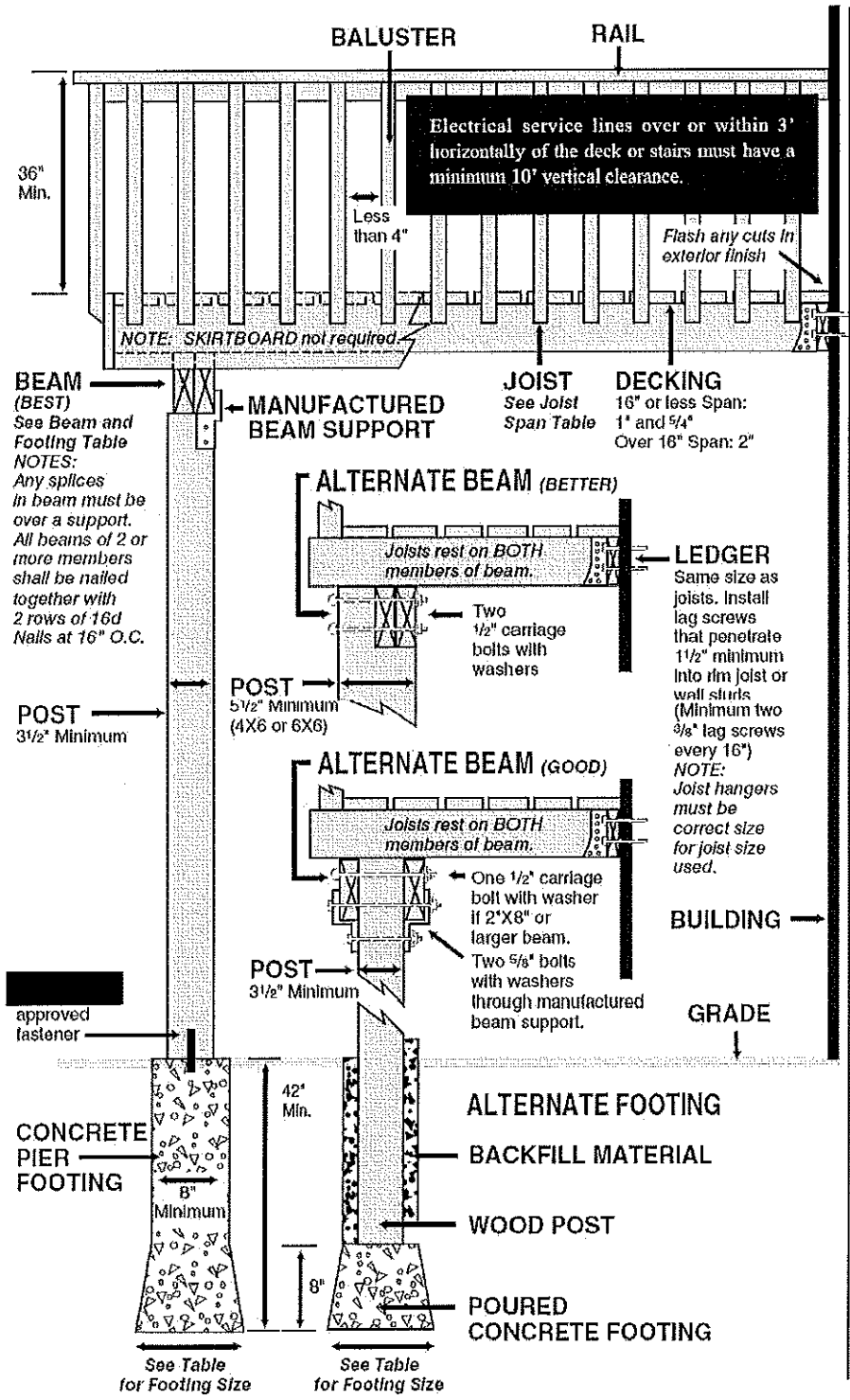
Handrails: A handrail is required on stairways having 4 or more risers the handrail needs to be between 34 -38 inches in height measured from the nose of the stair treads. The handrail needs to be continuous. The handrail must be graspable, 1 ¼ -2 inches in diameter if circular. Other handrail profiles may be acceptable. (Please check with the Building Official regarding other handrail profiles.) The handrail must protrude 1 ½" to 4 ½" from all adjoining surfaces and the ends shall terminate or be returned or terminated into the posts.

Guardrails: A guardrail is required on all decks or platforms that are 30" or more above grade or other surface. The guardrail must be a minimum of 36 inches high and the openings between the spindles and the bottom rail must be less than 4 inches.

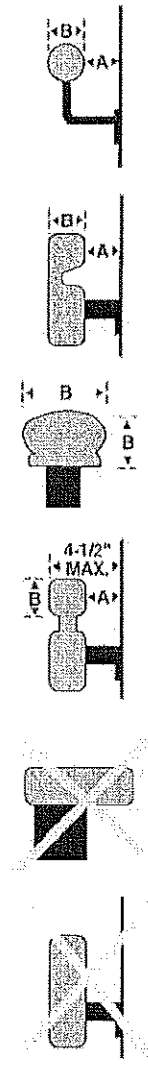
Landings: There shall be a landing at the top and bottom of stairs. The landing must be the width of the stairway and extend 3 feet in the direction of travel. The landing must match the rise of the stairs.

Nails, Screws and Hardware: Must be compatible with the new wood treatment.

**If you have any questions feel free to contact the
Building Official, Richard Meyer at
651-277-5223.**



Approved handrail solutions at stairs



A = 1-1/2" MIN.
B = 1-1/4" to 2-5/8"

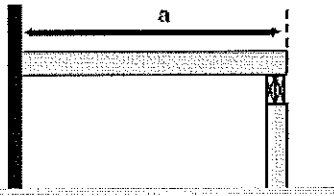
Joist span

(Design Load = 40#LL + 10#DL, Deflection = L/360)

	Ponderosa Pine or Red Pine #2			Southern Yellow Pine #2			Western Cedar #2		
	12" o.c.	16" o.c.	24" o.c.	12" o.c.	16" o.c.	24" o.c.	12" o.c.	16" o.c.	24" o.c.
2x6	8' - 9"	8' - 0"	7' - 0"	10' - 4"	9' - 4"	7' - 9"	8' - 9"	8' - 0"	7' - 0"
2x8	11' - 6"	10' - 6"	8' - 9"	13' - 6"	12' - 4"	10' - 0"	11' - 5"	10' - 6"	9' - 2"
2x10	14' - 9"	13' - 3"	10' - 10"	17' - 4"	15' - 9"	13' - 0"	14' - 9"	13' - 5"	11' - 3"
2x12	17' - 9"	15' - 4"	12' - 6"	21' - 0"	18' - 8"	15' - 3"	18' - 0"	16' - 0"	13' - 0"

Sample calculations for using joist span, beam size and footing size tables

Case I solution:

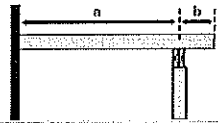


Refer to tables for joist, beam and footing size requirements.

Example: a = 12 feet; Post spacing = 8 feet

Use the **joist span** table to find the acceptable joist sizes for a 12 foot span, 2x8s at 12 inches O.C., 2x10s at 16 inches O.C. or 2x12s at 24 inches O.C. Use the **Beam and footing sizes** table and find the 8 foot post spacing column. With a 12 foot deck span, the beam may be either two 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 12 inches, 10 inches or 9 inches for the corner post and 17 inches, 14 inches or 12 inches for all intermediate posts.

Case II solution:

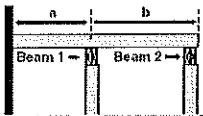


Use "a" to determine joist size and "a" + "2b" to determine beam and footing sizes. The length of "b" is restricted by both the length of "a" and the size of the joists.

Example: a = 8 feet, b = 2 feet, Post spacing = 10 feet

Refer to the **joist span** table. For an 8 foot joist span, either 2x8s at 24 inches O.C. or 2x6s at 16 inches O.C are acceptable. For sizing the beam, use a joist length of 12 feet (8 feet + 4 feet) and a post spacing of 10 feet. The **beam and footing sizes** table indicates that the beam may be either two 2x10s or two 2x12s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 15 inches, 12 inches or 11 inches for the corner post and 20 inches, 17 inches or 15 inches for all intermediate posts. Note that because of the 2 foot cantilever all footing sizes were increased by 1 inches as required by footnote 2 at the end of the table.

Case III solution:



Example: a = 6 feet, b = 7 feet, Post spacing = 9 feet

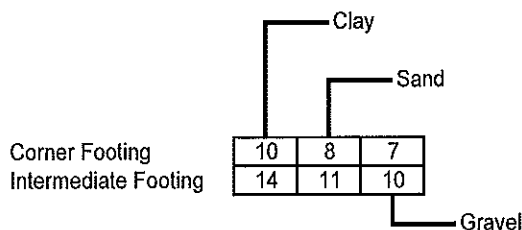
Joist size is determined by using the longest span joist (7 feet). The **joist span** table indicates that 2x6s at 24" O.C. would be adequate for this span. For Beam 1 and footings, use a joist length of 13 feet (6 feet + 7 feet) and a post spacing of 9 feet. The **beam and footing sizes** table indicates that the beam may be two 2x10s or two 2x12s, depending on the wood used. Depending on the type of soil, the footing diameters for Beam 1 posts shall be 13 inches, 11 inches or 9 inches for the corner (outside) post and 19 inches, 15 inches or 13 inches for all intermediate posts. For Beam 2 and footings use a joist length of 7 feet and post spacing of 9 feet. The beam may be two 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameters for Beam 2 shall be 10 inches, 8 inches or 7 inches for the corner posts, and 14 inches, 11 inches or 10 inches for all intermediate posts.

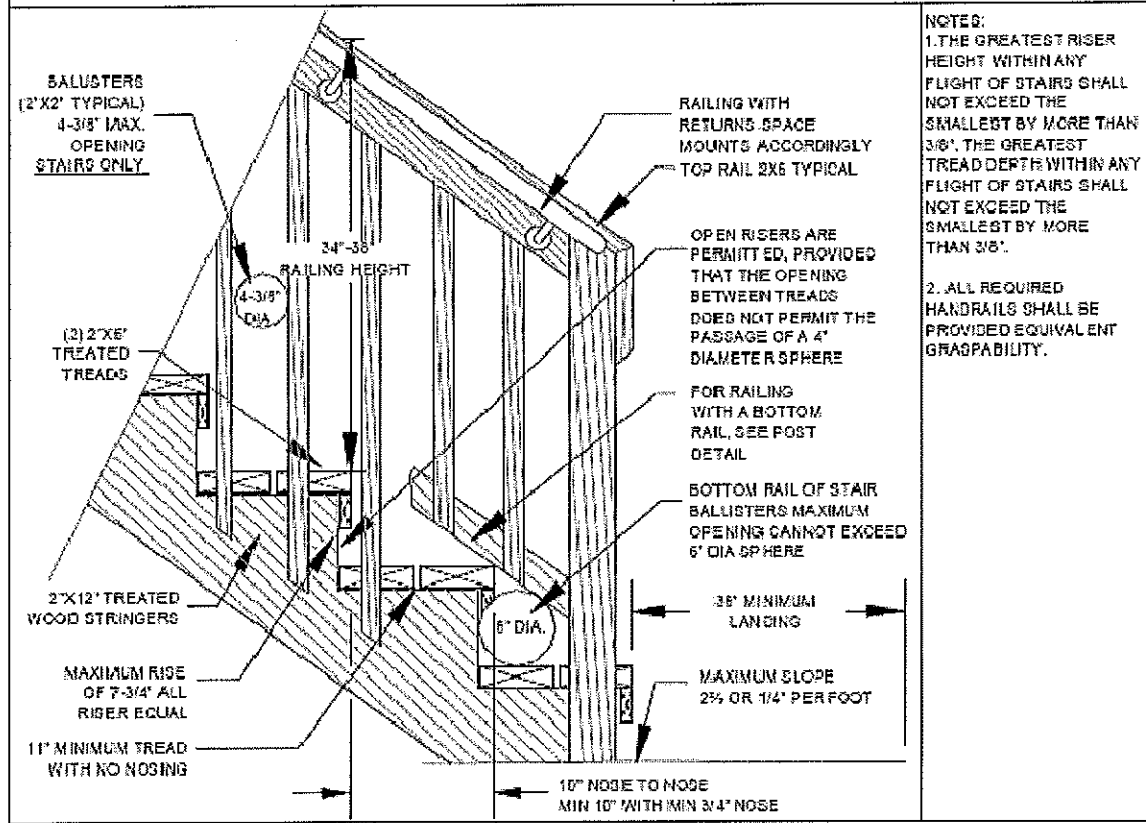
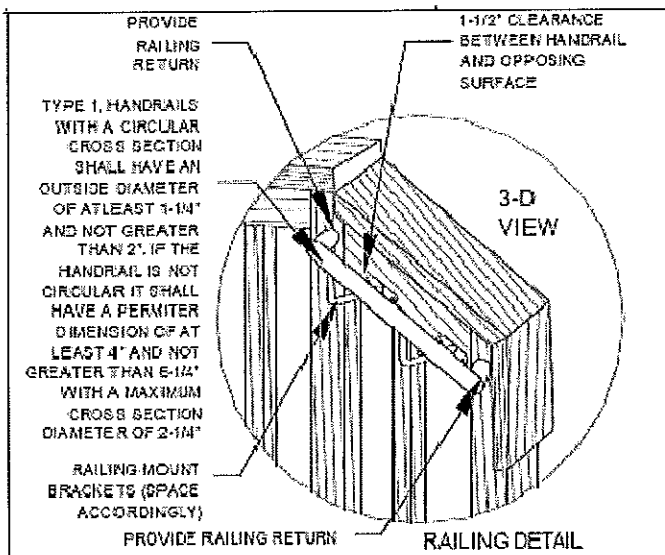
Beam and Footing Sizes

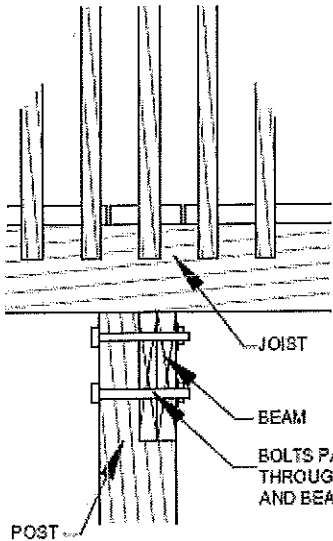
Based on No. 2 or Better Ponderosa Pine and Southern Pine
(Treated for weather and/or ground exposure)

		Post Spacing											
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	
6'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	
	Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	
	Corner Footing	6 5 4	7 6 5	7 6 5	8 7 6	9 7 6	9 7 6	10 8 7	10 8 7	10 9 7	11 9 8	11 9 8	
		Intermediate Footing	9 8 7	10 8 7	10 9 7	11 9 8	12 10 9	13 10 9	14 11 10	14 12 10	15 12 10	15 13 11	16 13 11
7'	Southern Pine Beam	1-2x6	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	
	Ponderosa Pine Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	
	Corner Footing	7 5 5	7 6 5	8 7 6	9 7 6	9 8 7	10 8 7	10 8 7	11 9 8	11 9 8	12 10 9	12 10 9	
		Intermediate Footing	9 8 7	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	15 13 11	16 13 11	17 14 12	17 14 12
8'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	
	Corner Footing	7 6 5	8 6 6	9 7 6	9 8 7	10 8 7	10 8 7	11 9 8	11 9 8	12 10 9	13 10 9	13 11 9	
		Intermediate Footing	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	16 13 11	16 13 12	17 14 12	18 15 13	18 15 13
9'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	
	Corner Footing	7 6 5	8 7 6	9 7 6	10 8 7	10 9 7	11 9 8	12 10 8	12 10 9	13 10 9	13 11 9	14 11 10	
		Intermediate Footing	10 9 7	12 10 8	13 10 9	14 11 10	15 12 10	16 13 11	17 14 12	17 14 12	18 15 13	19 15 13	20 16 14
10'	Southern Pine Beam	1-2x6	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	
	Ponderosa Pine Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
	Corner Footing	8 6 6	9 7 6	10 8 7	10 8 7	11 9 8	12 10 8	12 10 9	13 11 9	14 11 10	14 12 10	15 12 10	
		Intermediate Footing	11 9 8	12 10 9	14 11 10	15 12 10	16 13 11	17 14 12	17 14 12	18 15 13	19 16 14	20 16 14	21 17 15
11'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
	Corner Footing	8 7 6	9 7 6	10 8 7	11 9 8	12 9 8	12 10 9	13 11 9	14 11 10	14 12 10	15 12 10	15 13 11	
		Intermediate Footing	12 9 8	13 11 9	14 12 10	15 12 10	16 13 11	17 14 12	17 14 12	18 15 13	19 16 14	20 16 14	21 17 15
12'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm	
	Corner Footing	9 7 6	10 8 7	10 9 7	11 9 8	12 10 9	13 10 9	14 11 10	14 12 10	15 12 10	15 13 11	16 13 11	
		Intermediate Footing	12 10 9	14 11 10	15 12 10	16 13 11	17 14 12	18 15 13	19 16 14	20 16 14	21 17 15	22 18 15	23 18 16
13'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm	
	Corner Footing	9 7 6	10 8 7	11 9 8	12 10 8	13 10 9	13 11 9	14 12 10	15 12 10	15 13 11	16 13 11	17 14 12	
		Intermediate Footing	13 10 9	14 12 10	15 13 11	17 14 12	18 15 13	19 15 13	20 16 14	21 17 15	22 18 15	23 19 16	24 19 17
14'	Southern Pine Beam	1-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	3-2x10	3-2x12	3-2x12	3-2x12	
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm	
	Corner Footing	9 8 7	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	15 13 11	16 13 11	17 14 12	17 14 12	
		Intermediate Footing	13 11 9	15 12 10	16 13 11	17 14 12	18 15 13	20 16 14	21 17 15	22 18 15	23 18 16	24 19 17	24 20 17
15'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm	
	Corner Footing	10 8 7	11 9 8	12 10 8	13 10 9	14 11 10	14 12 10	15 12 11	16 13 11	17 14 12	17 14 12	18 15 13	
		Intermediate Footing	14 11 10	15 12 11	17 14 12	18 15 13	19 16 14	20 17 14	21 17 15	22 18 16	23 19 17	24 20 17	25 21 18
16'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x10	2-2x10	3-2x10	3-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm	Eng Bm	
	Corner Footing	10 8 7	11 9 8	12 10 9	13 11 9	14 11 10	15 12 10	16 13 11	16 13 11	17 14 12	18 15 13	18 15 13	
		Intermediate Footing	14 11 10	16 13 11	17 14 12	18 15 13	20 16 14	21 17 15	22 18 16	23 19 16	24 20 17	25 21 18	26 21 18

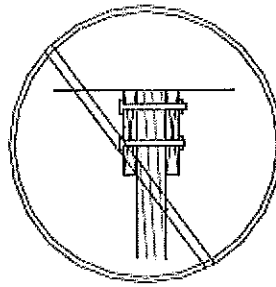
- Notes: 1. Joist length is total length of joist, including any cantilevers.
 2. When joist extends (cantilevers) beyond support beam by 18 inches or more, add 1 inch to footing dimensions shown.
 3. Requirements for future 3-season porches or screen porches:
 a. Increase corner footing size shown by 90%.
 b. Increase center footing size shown by 55%.
 c. Locate all footings at extremities of deck (no cantilevers.)
 d. Beam sizes indicated need not be altered.
 4. All footing sizes above are base diameters (in inches) and are listed for THREE SOIL TYPES:



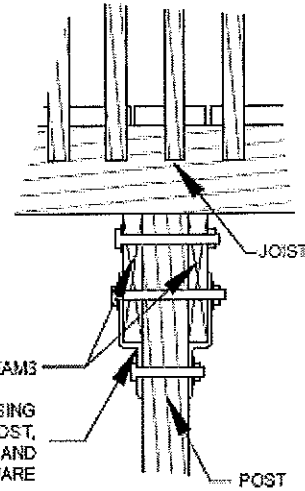




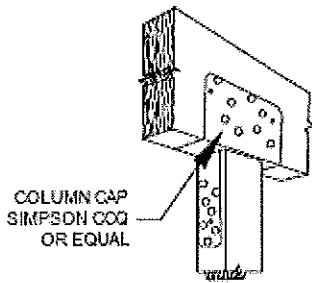
BEAM/POST CONNECTION USING NOTCHED POST



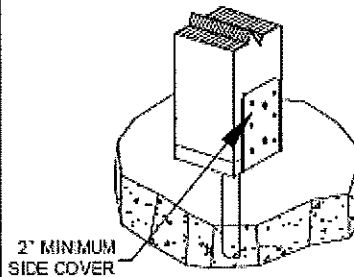
SPLIT BEAM CONNECTION WITHOUT HARDWARE NOT ACCEPTABLE



SPLIT BEAM CONNECTION USING HARDWARE/BRACKETS

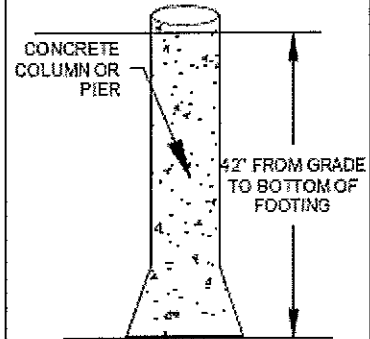


BEAM/POST CONNECTION USING COLUMN CAP



POST ANCHOR USP-PAU OR EQUAL

FOOTINGS MUST HAVE FLARE OR BE WIDER THAN THE COLUMN OR PIER BY MINIMUM OF 4" (2" ALL THE WAY AROUND)



CONCRETE FOOTING WITH FLARE

Residential Deck Inspection Punch List

Footing Inspection

- Verify setbacks to property lines, easements, well and septic system
- Verify the footings are below frost depth and the size of the footing diameters prior to the placing of concrete.

Framing Inspection

Verifies the following

- The flashing of the ledger board.
- The spacing and the location of the lag bolts in the ledger board.
- Joist hangers have nails in all the holes.
- Posts are secured to the footings with approve post bases.
- The beam is resting on the posts and secured to the posts.
- The joists are secured to the beam.
- The connection of the stair stringers to the deck platform.

Stair inspection

- The steps may not vary more than $3/8^{\text{th}}$ of an inch over the entire run of the stairs.
- The maximum rise is $7 \frac{3}{4}$ of an inch.
- The minimum tread depth is 10 inches measured from the nose of the stair tread.
- The maximum riser opening is less than 4 inches.
- The handrail height is between 34-38 inches measured from the nose of the stair tread.
- The handrail must be graspable per the code requirements.
- The spindle spacing on the stair must be less than $4 \frac{3}{8}^{\text{th}}$ inches.
- A landing that matches the rise of the stairway is required at the top and bottom.

Guardrail Inspection

- The minimum height of the guardrail is 36 inches.
- The spindle spacing and any openings in the guardrail is less than 4 inches.

These are the general guidelines for the inspection of a deck.

Any questions feel free to call the building Department @ 651-277-5223

Reasons your deck did not pass inspection

Footing inspection

- Failure to bell the base of the footing to the proper diameter.
 - The footing is not below the frost depth.
- Note: (For this area 42" is the minimum depth.)

Framing / Final Inspection

- Not enough lag bolts in the ledger board.
 - Improper or no flashing of the ledger board connection at the house.
- Note: (These are very important details because most deck failures happen at the house connection.)
- Not securing the post to the footing with proper hardware.
 - The beam is not resting on the post.
 - The joists are not secured to the beams.
 - Joist hangers that are not nailed
- Note: (Nails are needed not screws.)
- The guardrail is too low.
 - The spindle spacing exceeds 4" in the guard rail.
 - The guardrail is not able to withstand 200lbs when a force is applied in any direction.
 - The stairs vary more than 3/8" over the run.
- Note: (If using Pre cut stair stringers make sure they are appropriate for your project.)
- The stair riser(s) exceed 7 ¾ "
 - The stair tread depth is less than 10" measured from the nose of the stair tread above.
 - The stair riser opening(s) exceed 4"
 - The triangular area formed by the tread and the riser guardrail come together exceeds 6"
 - A level landing that does not meet the rise of the stairs.
 - A handrail that is not between 34"-38" measured from the nose of the stairs.
 - A handrail that is not graspable and returned to the post.
- Note: (A 2x6 laid flat is not a handrail.)
- Using hardware and fasteners that are not listed for use with the wood treatment.
 - Composite decking that has not been approved by an accredited testing agency.

These are some of the most common items that require corrections. If you have any questions or if anything is not clear please call Richard Meyer, Building Official at 651-277-5223.