

INSPECTION SERVICES OF CENTRAL MINNESOTA, INC.



Phone (320) 532-3629

DECKS

REQUIRED INFORMATION WHEN APPLYING FOR A PERMIT:

1. Submit 2 copies of a Certificate of Survey or 2 copies of a site plan drawn to scale indicating the lot dimensions, the location of all existing structure(s) and the location and area of the proposed structure. Indicate the distance from property lines to all existing and proposed structures.
2. Submit 2 copies of drawings showing proposed designs and materials. Drawings shall be drawn to scale and shall include the following information:
 - Floor plan(s) including:
 - Proposed size
 - Size and spacing of floor joists
 - Size, location and spacing of posts
 - Size of headers/beams
 - Cross section of either side or rear view including:
 - Diameter and depth of footings
 - Size of posts
 - Header size supporting floor joists
 - Floor joist size and spacing
 - Decking material
 - Guardrail height and spindle spacing
 - Type of lumber to be used

BUILDING CODE REQUIREMENTS:

Building Permit	Required for any deck attached to a structure or any detached deck more than 30 inches above grade.
Frost Footings	Footing depth for structures in ZoneII is 42" (three feet six inches) minimum below grade, structures in ZoneI the minimum footing depth is 60" (five foot depth) below grade. See map at www.dli.mn.gov/cld/pdf/bc_map_frost_depth.pdf .
Live Load	All decks shall be designed to support a live load of 40 pounds per square foot, balconies shall be designed to a live load of 60 pounds per square foot.

Guardrails	<p>Guardrails, minimum 36 inches high, are required on all porches, balconies, ramps or raised floor surfaces more than 30 inches above grade or a lower deck. Guardrails on open sides of stairs, with total rise more than 30 inches above floor or grade below, shall have guards not less than 34 inches in height measured vertically from the nosing of the treads. All guards shall have intermediate rails or ornamental closures which do not allow passage of a 4 inch sphere. Open risers are permitted, provided the opening between treads does not allow the passage of a 4 inch sphere.</p> <p>Exceptions: 1. The triangle openings formed by the riser, tread and bottom rail of a guard at the open side of a stairway shall not allow a 6 inch sphere to pass through.</p> <p>2. Openings for the required guards on the sides of stair treads shall not allow a 4 $\frac{3}{8}$ inch sphere to pass through.</p>
Cantilevers	Joists shall not overhang beams by more than 2 feet, nor should beams overhang posts by more than 1 foot unless a special has been approved.
Flashing	All connections between deck and structure shall be weatherproof. Any cuts in exterior finish shall be flashed.
Framing Details	Header beams and joists that are connected to ledgers or beams shall be supported by approved framing anchors such as joist hangers.
Nails and Screws	Use only stainless steel, high strength aluminum or hot dipped galvanized fasteners.
Wood Required	All wood used in the construction of decks is required to be of approved woods with natural resistance to decay (redwood, cedar, etc.) or approved treated wood. This includes posts, beams, joists, decking, and railings. Note: when posts are buried in the ground they must be treated to a .60.
Stairs	All stairways shall be a minimum of 36" in width; the rise shall be 7 $\frac{3}{4}$ " maximum and have a minimum of 10" run. The largest stair rise and tread run may not exceed the smallest stair rise or tread run by more than $\frac{3}{8}$ inch. Open risers are permitted, provided that the opening between treads does not permit the passage of a 4 inch diameter sphere. All interior and exterior stairs shall also be provided with a means to illumination, including the landings and treads. Exterior stairways shall be provided with a light source located in the immediate vicinity of the top landing of the stairway. The illumination of exterior stairs shall be controlled from inside the dwelling unit.
Handrails	A handrail shall be provided to all stairways having four or more risers. Handrails shall be placed not less than 34" or more than 38" above the nosing of treads. Handrails for stairways shall be continuous for the full length of the flight, from a point directly above the top riser of the flight to a point directly above the lowest riser of the flight. Handrail ends shall be returned or shall terminate in newel posts or safety terminals. Handrails projecting from a wall shall have a space of not less the 1 $\frac{1}{2}$ " between the wall and the handrail. The handrail grip with a circular cross section shall have an outside diameter not less than 1 $\frac{1}{4}$ " and not more than 2".

For more information go to www.dli.mn.gov/cclld/pdf/bc_webdecks_06_07.pdf.

REQUIRED INSPECTIONS

1. Footing: To be conducted after all holes have been dug.
2. Framing: To be conducted after all framing has been completed. This can be done at the same time as the final if all framing will be visible and accessible.
3. Final: To be conducted after all work is complete, including approval of all electrical, plumbing and mechanical work.

GENERAL

1. The “approved” plans and the Inspection Record Card shall be made available to the inspectors during inspections. The Building Permit is to be posted in a prominent location visible from the street.

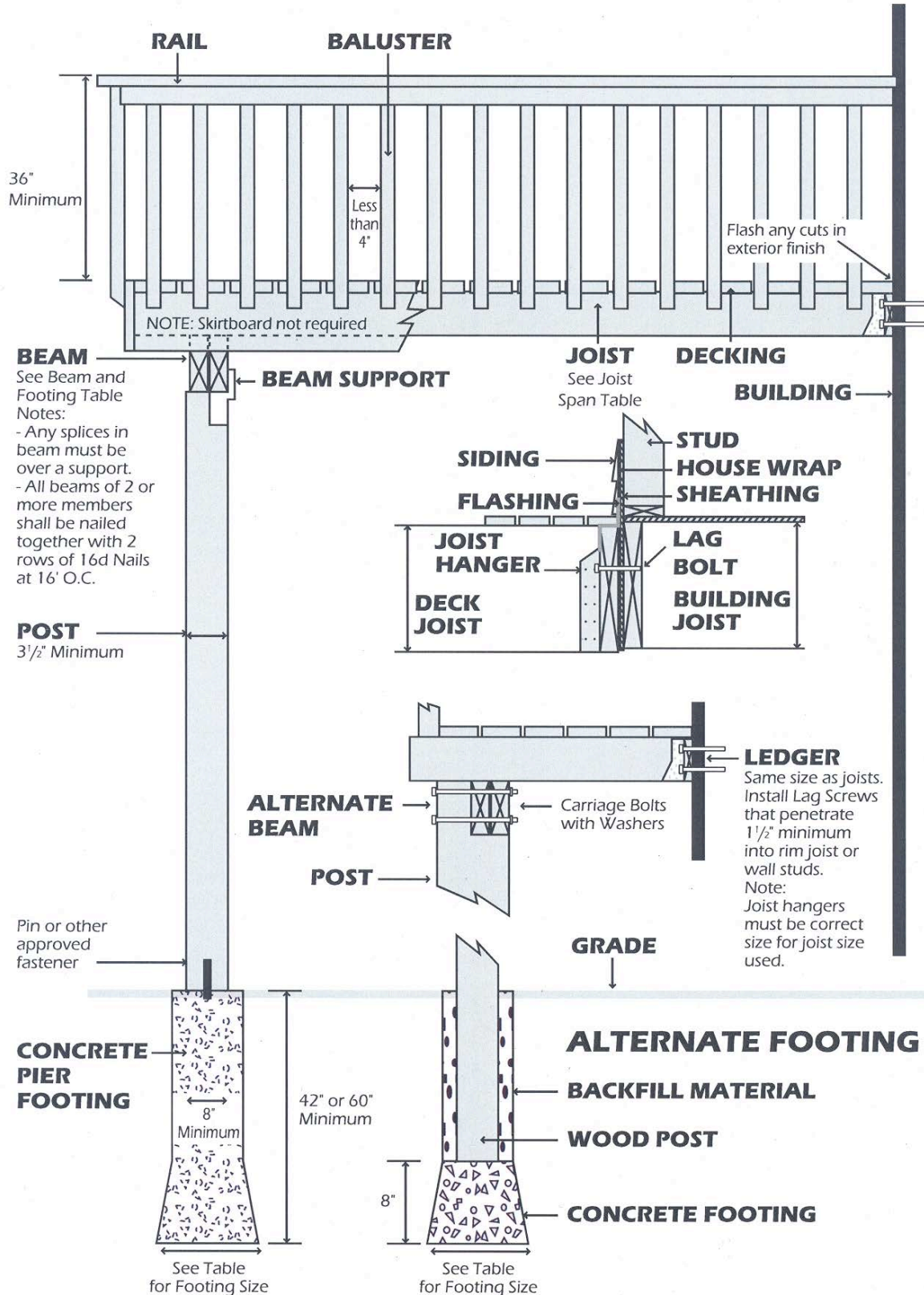
24-Hour Notice is required for all Inspections.

Special Design Note

Some deck designs may not be appropriate should the placement of a screen porch or 3-season porch on the deck platform be a future consideration. Setbacks for porches may not be the same as setbacks for decks.

Inspection of footings is required before pouring concrete.

Final inspection of completed work is required.



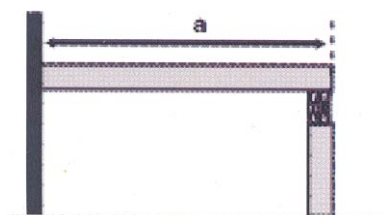
Joist Span

Based on No. 2 or better wood grades.
(Design Load = 40#11 + 10#DL, Deflection= 1/360)

	Ponderosa Pine			Southern Pine			Western Cedar		
	12"OC	16"OC	24"OC	12"OC	16"OC	24"OC	12"OC	16"OC	24"OC
2x6	9-2	8-4	7-0	10-9	9-9	8-6	9-2	8-4	7-3
2x8	12-1	10-10	8-10	14-2	12-10	11-0	12-1	11-0	9-2
2x10	15-4	13-3	10-10	18-0	16-1	13-5	15-5	13-9	11-3
2x12	17-9	15-5	12-7	21-9	19-0	15-4	18-5	16-0	13-0

Sample Calculations for Using Joist Span, Beam Size and Footing Size Tables

CASE I SOLUTION:

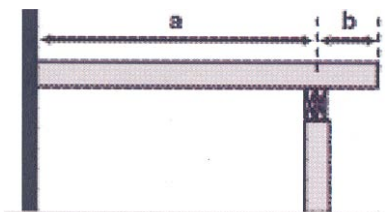


Refer to tables for joist, beam and footing size requirements.

Example: $a = 12'$; Post Spacing = 8'

Use the **Joist Span** table to find the acceptable joist sizes for a 12' span, 2x8s at 12" O.C., 2x10s at 16" O.C. or 2x12s at 24" O.C.

Use the **Beam and Footing** Sizes table and find the 8' post spacing column. With a 12' deck span, the beam may be either two 2x8s or two 2x10s, depending on the type of soil, the footing diameter at the base must be a minimum of 12", 10" or 9" for the corner post and 17", 14" or 12" for all intermediate posts.



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.

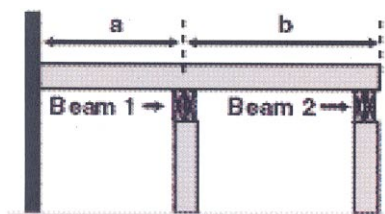
Example: $a = 8'$, $b = 2'$, Post Spacing = 10'

Refer to the **Joist Span** table. For an 8' joist span, either 2x8s at 24" O.C. or 2x6s at 16" O.C are acceptable.

For sizing the beam, use a joist length of 12' ($8' + 4'$) and a post spacing of 10'. 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", 12" or 11" for the corner post and 20", 17" or 15" for all intermediate posts. Note that because of the 2' cantilever all footing sizes were increased by 1" as required by footnote 2 at the end of the table.

Use "a" or "b", whichever is greater, to determine joist size. Use "a" + "b" to determine the size of Beam 1 and the post footing size for the posts supporting Beam 1. Use joist length "b" to determine both the size of Beam 2 and the post footing size for the posts supporting Beam 2.

Example: $a = 6'$, $b = 7'$, Post Spacing = 9'



Joist size is determined by using the longest span joist (7'). 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' ($6' + 7'$) and a post spacing of 9'. 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", 11" or 9" for the corner (outside) post and 19", 15" or 13" for all intermediate posts. For Beam 2 and footings use a joist length of 7' and post spacing of 9'. 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", 8" or 7" for the corner posts, and 14", 11" or 10" for all intermediate posts.

