

Attached or Detached Decks

Date Issued: December 09, 2020
ITS BC Guide - 06

Note: This is a sample of what is required for attached or detached deck building permit applications. Please ensure to submit plans that are applicable to your proposed construction project, as this document is for reference purpose only.

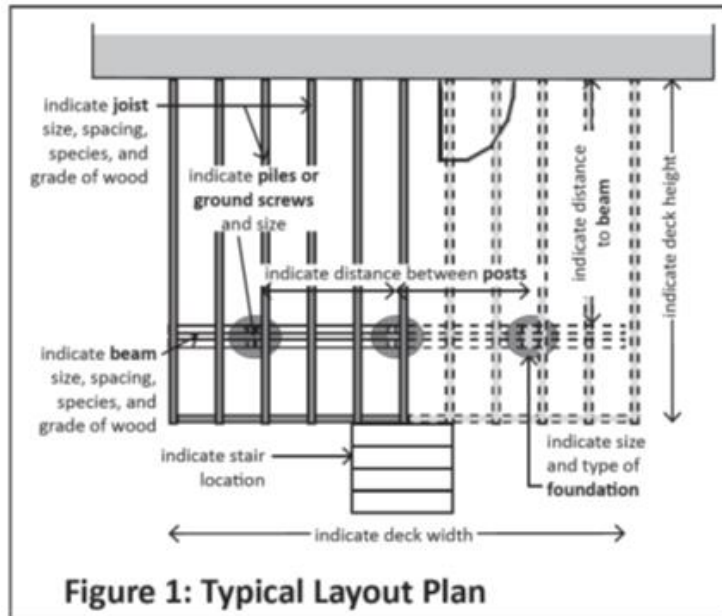
Information to include with building permit application:

- Completed Application Form
- Building Plans (front elevation, type of roof construction, floor plan, wall construction and foundation - as shown and detailed within this document)
- Site Plan
- Building Permit Fee
- Other approvals may be required (MIT approval, geotechnical report, etc.)

Required construction plans:

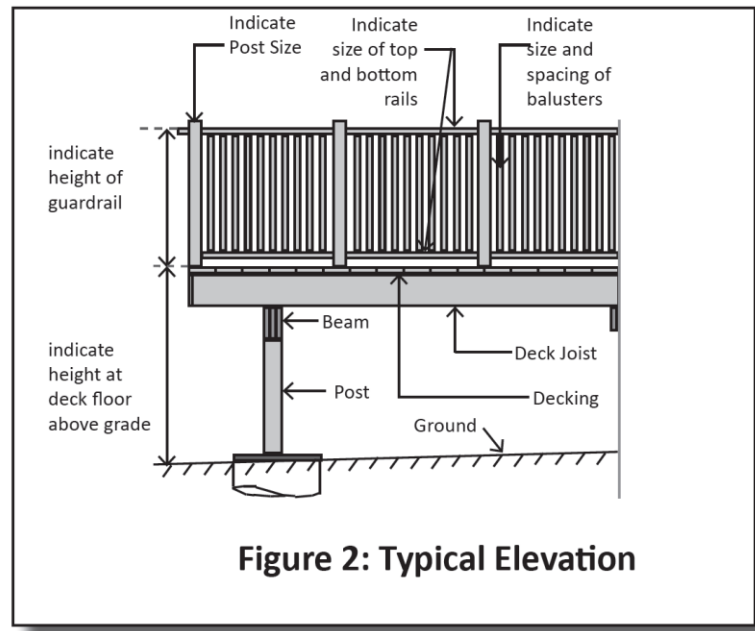
Layout Plans and Elevation Plans which must show:

- the overall size of the deck, the size and spacing of the beam(s), posts and deck joists;
- the species and grade of the wood being used (e.g., SPF #2 means: species - spruce, grade #2);
- the type of foundation you have chosen to support the deck, the location of any stairs leading to or from the deck and the location of all doors accessing the deck.



The elevation plans must show:

- the height of handrails and spacing of guards, height of deck above grade; and
- verify dimensions and specifications from the layout plans.



Foundation Requirements:

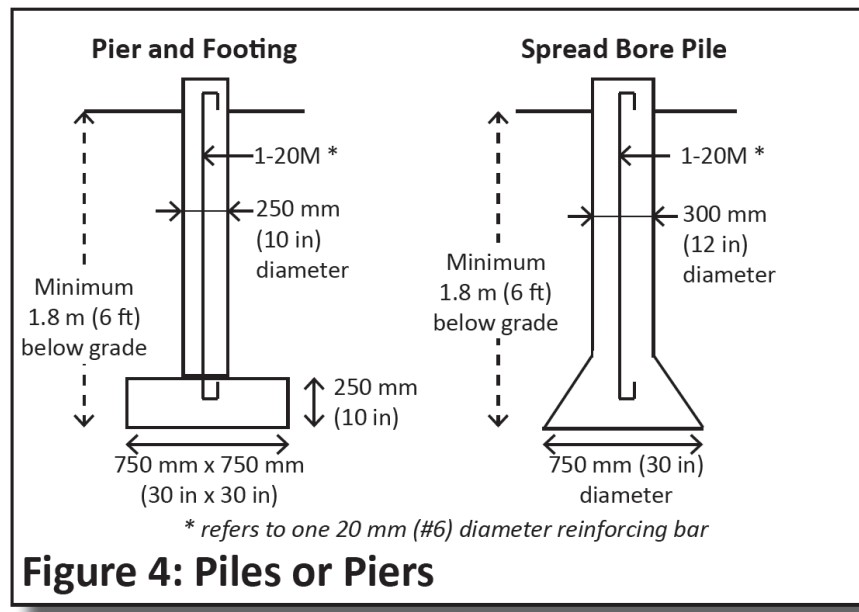
OPEN DECKS UNDER 600 millimetres (2 feet) IN HEIGHT AND NOT ATTACHED TO THE DWELLING.

1) Surface Pad Foundations (see Figure 3) are only permitted when an open deck is:

- not more than one storey;
- not more than 55 metres square (592 square feet) in area;
- not more than 1300 millimetres (4 feet) in distance from finished ground to the underside of the joist;
- not supporting a roof;
- not attached to another structure, unless it can be demonstrated that differential movement will not adversely affect the performance of that structure, as determined by the authority having jurisdiction; and
- surface pads are permitted on decks attached to the house with a similar foundation. If the house or cottage has a surface foundation not protected from frost then a deck that is attached may be on surface pads.

2) Pile or Pier Foundations

When the underside of the deck joists are more than 600 millimetres (2 feet) above the ground, the foundation depth must be at least the depth of frost penetration: 1.8 metres (6 feet). A pier or pile type foundation, as shown in Figure 4, or alternatively a foundation designed by a Professional Engineer is required.



3) What other options are available?

A foundation using “ground screws” may be permitted providing the anchor extends to below the depth of frost penetration and has been approved by an engineer. You may need to retain someone to do load calculations to determine that the loads transferred to the foundation do not exceed the loads for the approved screws. If your future plans are to enclose the deck with a sunroom, screened patio, or other similar structure, the type of “ground screws” must be designed for a sunroom, screened patio, or other similar structural uses.

Structural requirements:

How far can the joists project beyond the face of the outside beam?

If you are planning to eventually enclose all or a portion of the deck with a roofed structure which could carry snow, the Manitoba Building Code states that the joists can only project 400 millimetres (16 inches) where 2x8 joists are used, and 600 millimetres (2 feet) where 2x10 or larger joists are used.

The projection of 2x4 or 2x6 joists would require engineering analysis to determine if the floor assembly would be sufficient to carry the superimposed roof loads (see Figure 6).

Note that even if you are not planning to enclose the deck in the future, any projections beyond those indicated above would require engineering analysis.

What size of deck joists do I require?

The size of the joists are governed by the distance they have to span and the spacing at which the joists are installed. The table shown below indicates sizes of wood and the acceptable span distances for wood decks. Joist spans are measured from face of support (i.e., beam/ledger) to face of support.

DECK JOIST SPANS			
JOIST SIZE	MAXIMUM SPAN JOIST SPACING		
	12 in	16 in	24 in
2" x 6"	9'-6 ¹⁵ / ₁₆ "	8'-10 ¹¹ / ₁₆ "	8'-2 ¹ / ₁₆ "
2" x 8"	11'-7 ³ / ₈ "	11'-0 ⁵ / ₁₆ "	10'-6"
2" x 10"	13'-8 ³ / ₁₆ "	12'-11 ⁷ / ₈ "	12'-4 ⁷ / ₁₆ "

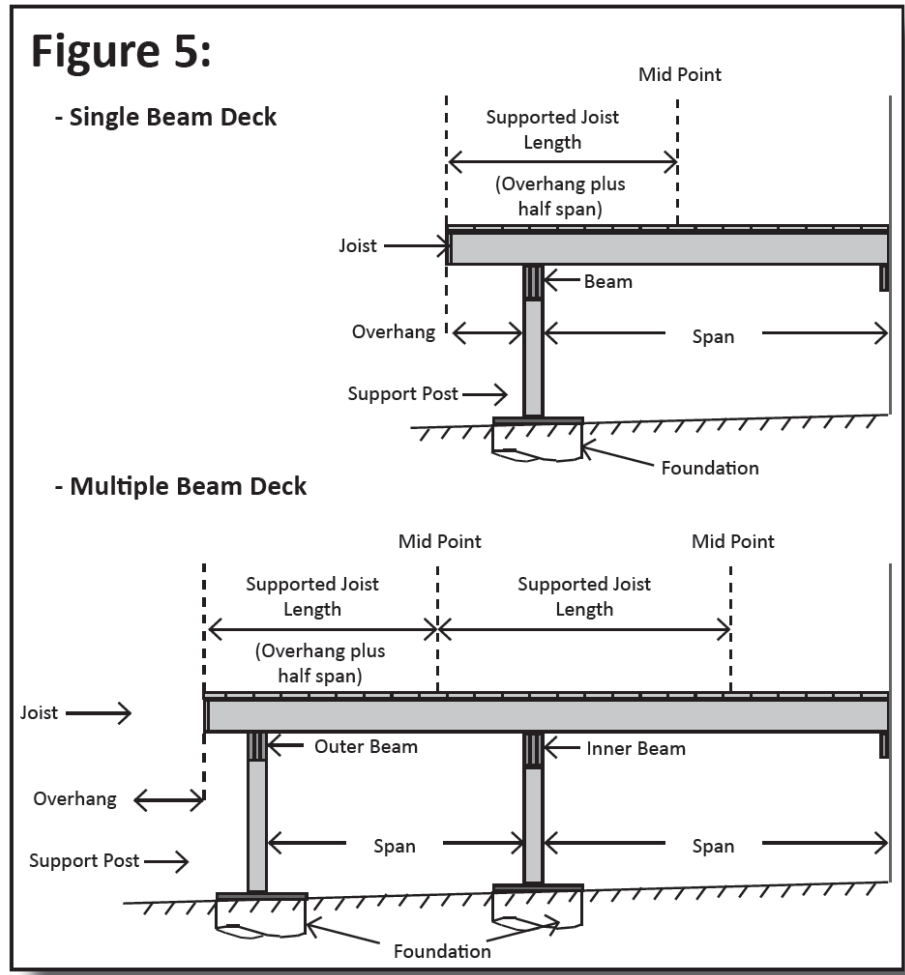
2' x 12"	15'-7"	14'-9 ¹⁵/₁₆"	14'-1 ¹⁵/₁₆"
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Do the deck members need to be pressure treated?

When the vertical clearances between the wood elements and the finished ground level is less than 150 millimetres (6 inches) or when the wood elements are not protected from exposure to precipitation, they must be pressure treated with a preservative to resist decay.

What size of beams do I need?

The beam table (as shown below) is intended to assist with the measurements of intervals along the beam. See also Figure 5.



BEAM SPANS									
(SPANS TAKEN BETWEEN SUPPORTING POSTS)									
Supported Joist Length	3 ply 2 x 8	4 ply 2 x 8	5 ply 2 x 8	3 ply 2 x 10	4 ply 2 x 10	5 ply 2 x 10	3 ply 2 x 12	4 ply 2 x 12	5 ply 2 x 12
7'-10'	10'	11'-1"	11'-11"	12'-10	14'-2"	15'-3"	14'-11"	17'-2	18'-4"
9'-10"	9'-4"	10'-3"	11'-1"	11'-6"	13'-1"	14'-2"	13'-5"	15'-5"	17'-2"
11'-9"	8'-7"	9'-8"	10'-5"	10'-6"	12'-2"	13'-3"	12'-2"	14'-1"	15'-9"
13'-9"	8'	9'-2"	9'-10"	9'-9"	11'-3"	12'-7"	11'-4"	13'-1"	14'-7"

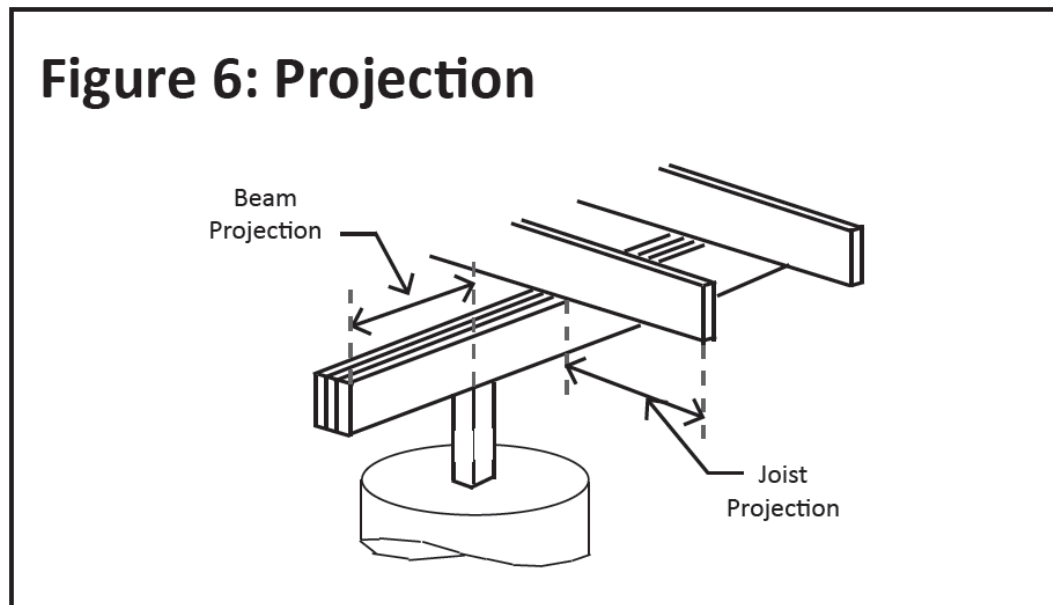
14'-9"	7'-5"	8'-7"	9'-5"	9'-1"	10'-6"	11'-9"	10'-7"	12'-2"	13'-8"
17'-8"	7'	8'-1"	9'-1"	8'-7"	9'-11"	11'-1"	10'	11'-6"	12'-10"
19'-8"	6'-8"	7'-8"	8'-7"	8'-2"	9'-5"	10'-6"	9'-5"	10'-11"	12'-2"

What size posts should I use and how should they be anchored?

Posts, if used, should be at least the width of the beam, centered on the pad, pile, or pier, and securely fastened to the beam by means of toe-nailing, wood gussets, angle brackets, or other equivalent method. Posts exceeding 1.5 metres (5 feet) in height should be braced to each other or up to the beam and floor or alternatively they should be anchored to the pad, pile, or pier in order to prevent them from shifting at the bottom.

How far can I project the beam beyond the end support?

The beam can project up to a maximum of 600 millimetres (2 feet) beyond the end support (see Figure 6).



How should beam laminations be nailed together?

Individual members must be nailed together with a double row of nails at least 89 millimetres (3.5 inches) in length, spaced not more than 450 millimetres (18 inches) apart in each row with the end nails located between 100 millimetres (4 inches) and 150 millimetres (6 inches) from the end of each piece.

Handrails and guardrails:

What is the difference between guardrails and handrails?

Guardrails are intended to prevent persons from falling off the edge of a stair or a raised floor area such as a deck. The guardrail must be able to withstand the pressure of a human body applied horizontally to it. Handrails are required to assist persons in ascending or descending stairs. They offer a continuous handhold to support persons who may be using the stairs. Guards are only required on decks that are more than 600 millimetres (2 feet) above finished grade level measured from the finished deck surface.

Are guardrails required for stairs?

Guards are required on stairs where there is a difference in elevation of more than 600 millimetres (2 feet) to finished ground level. The height of guards for flights of steps shall be 900 millimetres (3 feet) and be measured vertically from the top of the handrail to a line drawn through the leading edge of the treads served by the guard.

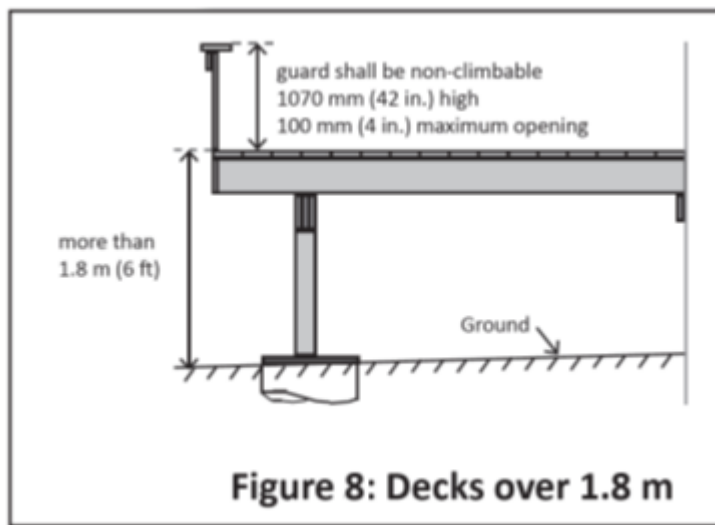
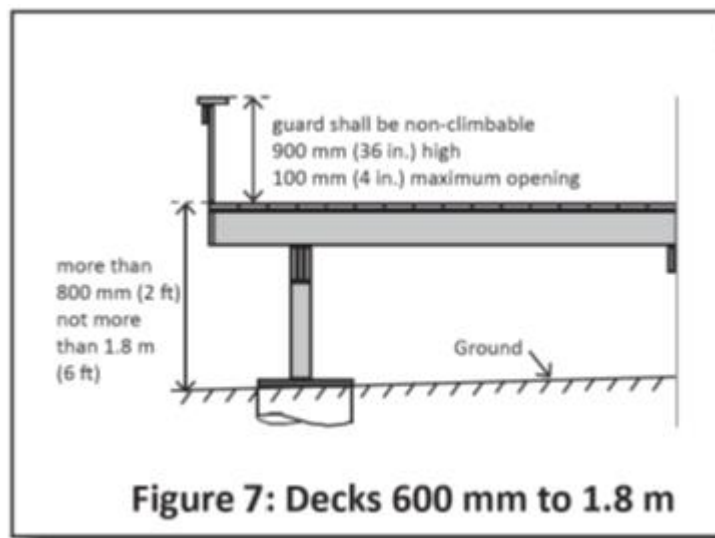
Will the stair also require a handrail?

The Building Code states that if any outside stair has more than three (3) risers, a handrail is required on one side of the stairs. The handrail is to be located between 865 millimetres (34 inches) and 965 millimetres (38 inches) in height measured vertically above a line drawn through the outside edges of the stair nosing. Stairs with 3 risers or less do not require handrails.

See Figure 7.

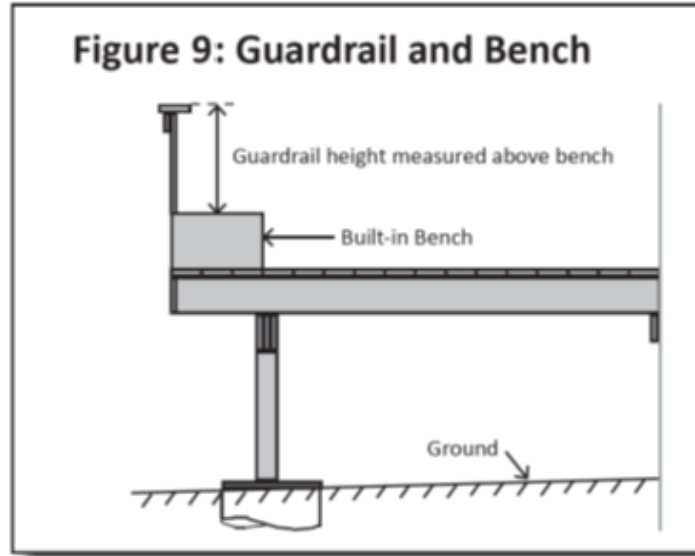
Will my deck require guardrails?

Guards are only required on decks that are more than 600 millimetres (2 feet) above finished ground level.



Can a built-in bench serve as a guardrail?

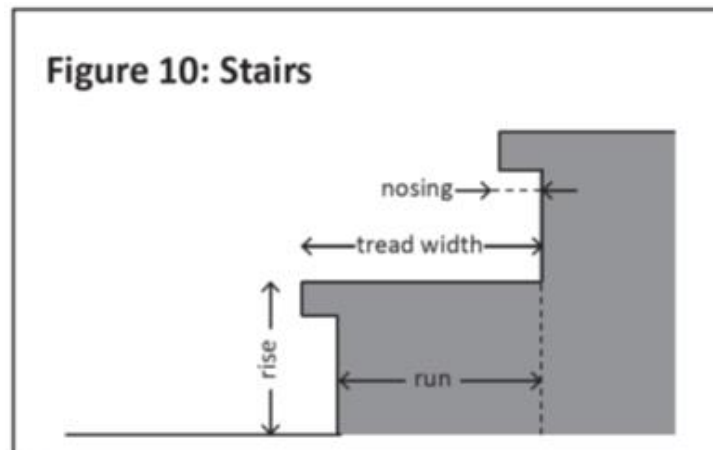
No, unless a guardrail meeting the previously described height and opening requirements is provided above the flat surface of the bench and any openings below the bench also meet the maximum opening requirements.



Stairs:

Are there any requirements for stairs?

The Building Code requires stair width to be at least 900 millimetres (36 inches) and that treads and risers have uniform rise and run in any one flight with riser heights not exceeding 200 millimetres (8 inches) and not less than 125 millimetres (5 inches). The Building Code also requires the minimum run of each tread to be 210 millimetres (8.25 inches) / maximum to be no more than 355 millimetres (14 inches) and the minimum tread depth to be 235 millimetres (9.25 inches) and the maximum to be no more than 355 millimetres (14 inches). See Figure 11.



Further information:

Please contact the Inspection and Technical Services at 204-945-3373 or at TechnicalServices@gov.mb.ca with any questions or for clarifications.