

Building Standards Department

RESIDENTIAL DECKS : A Homeowner's Guide

This guide is intended to inform the public about the requirements for building permits and construction standards for residential decks. It does not include every detail of building construction and is not a substitute for the standards that regulate the construction of buildings. Reference should always be made to the Ontario Building Code and all other applicable law including the City of Markham Zoning By-Laws.

Our Mission

We strive to enhance the quality of community life with particular emphasis on environmental, health, accessibility and life safety issues related to building construction.

This mission is accomplished by meeting or exceeding Provincially prescribed levels of service in a cost-effective and consistent manner within a corporate climate that is open, responsive, progressive and fair.

We are leaders in the promotion of technologies and practices that facilitate sustainable development, prevent building failure and satisfy our customers.

Our motto is: "Raising Standards . . . Meeting Needs".

Residential Decks

General

Residential decks are a common feature used today to extend the living area of the house beyond its walls. Generally, the construction of a deck is regulated by two pieces of legislation; The City of Markham Zoning By-Laws and the Ontario Building Code. Zoning By-laws help guide development and protect the rights of residents. The Ontario Building Code establishes standards for public health and safety, fire protection and structural sufficiency in the design and construction of buildings.

Do I need a Building Permit?

According to the Building Code Act, the construction of any raised deck attached and/or adjacent to a building requires a building permit. As a matter of policy however the City of Markham does not insist on a permit for an uncovered deck that is 600mm (1' 11") or less above the adjacent pre-construction ground-level at all locations around its perimeter. The policy does not apply where the ground has been artificially raised through grading, landscaping or planters.

Zoning Information

Attached to this guide are the zoning provisions that apply to a deck. The location of your residence dictates which of those by-laws apply. Those provisions apply where the deck is located in the rear yard and is more than 0.6m (2 feet) above grade at any point around the perimeter of the deck. A deck located in the rear yard and less than 0.6m (2 feet) above grade at any point is not subject to zoning. A deck located in the front, side or flankage yards is subject to other requirements of the applicable zoning by-laws. It is recommended that you verify the by-law requirements applicable to your property through the use of the Zoning Search Form. The form, accessed through the link below, can be used by you to request zoning information for any property within Markham.

www.markham.ca/zoningsearch

Application Checklist

* In making a permit application; Please make sure the following information is provided.

Application Requirements

- ⇒ Completed Permit Application form, Schedule 1 Designer Information form and Applicable Law Checklist
- ⇒ 2 complete sets of plans that are legible and drawn to scale
- ⇒ prescribed fees

Drawing Requirements

[The sample drawings attached to this guide illustrate typical construction details for a wood deck. These details can be used to supplement your permit application]

Site Plan

- ⇒ lot lines including dimensions
- ⇒ location of proposed deck dimensioned to other building and lot lines
- ⇒ municipal address/ legal description
- ⇒ location of on-site sewage (septic) system, if applicable

Foundation/ Floor Plan

- ⇒ footing size, location and dimensions
- ⇒ structure with full dimensions, including beams, floor joist size, floor joist span and direction

Elevations/ Cross Section

- ⇒ footing depth and construction
- ⇒ height of deck walking surface above grade
- ⇒ height of guard above walking surface
- ⇒ stair details/dimensions
- ⇒ deck and/or guard construction details
- ⇒ support details such as deck to house connection

Ontario Building Code Requirements

The construction of a deck consists of the following main components each of which have corresponding requirements regulated by the Ontario Building Code:

- ⇒ Foundations
- ⇒ Deck Structure
- ⇒ Stairs, handrails and guards

Foundations

- Most decks must be anchored to foundations (ie. piers);
- Piers must extend 1.2m (3' 11") into ground and be sized according to the load they carry;
- Piers must be founded on undisturbed soil having a minimum bearing capacity of 75 kPa (1500 psf);
- Precast 'deck blocks' can be used where the deck does not support a roof and does not exceed 55m² (595ft²) in area or 600mm (1' 11") in height;

Deck Structure

- Beams and joists must be sized according to the grade & type of lumber and the span & load they carry;
- Maximum spans must comply with the Ontario Building Code;
- Landings are required at the top of all exterior stairs except where the stair does not contain more than 3 risers, it serves a secondary entrance and the door to the stair is sliding or swings inward;
- Posts must be 89mm by 89mm (4" by 4") or 140mm by 140mm (6" by 6") depending on their height;
- Free standing decks exceeding 600mm (1' 11") in height must be designed or braced (ie. knee braces) to resist lateral loads and movement;
- Decking may be 2 by 4, 2 by 6 or 5/4 lumber. Where 5/4 lumber is used joist must be spaced at 400mm (16") on centre maximum;
- Composite decking materials may be used provided they have been approved by the Canadian Construction Materials Centre (CCMC at www.irc.nrc-cnrc.gc.ca) of the Building Materials Evaluation Commission (BMEC at www.obc.mah.gov.on.ca);

Ontario Building Code Requirements cont'd

Stairs, handrails and guards

Stairs

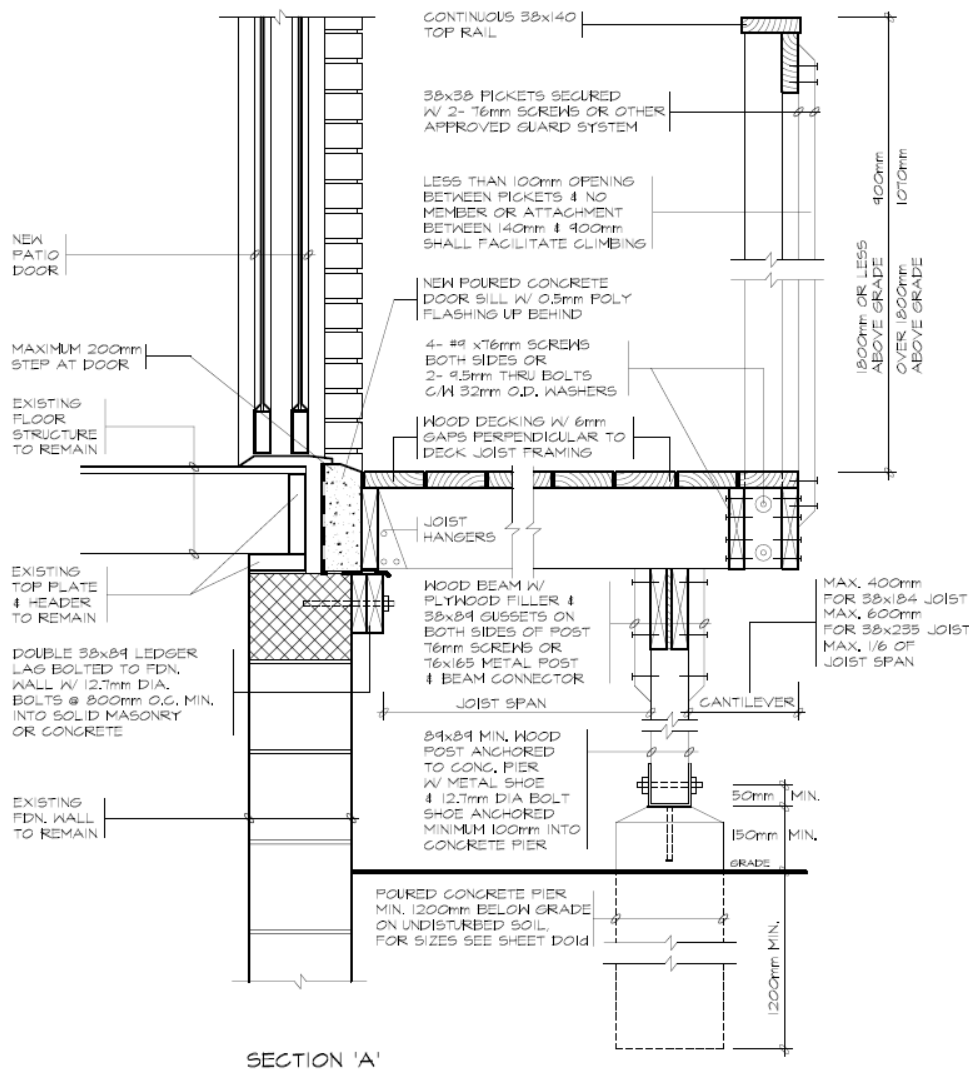
- Stairs must be designed for safe navigation. They must have uniform treads and risers throughout their length and be designed so that the path of travel down the stair is perpendicular to the tread;
- Minimum width 860mm (2' 10")
- Maximum rise is 200mm (7 7/8"); minimum rise is 125mm (4 7/8");
- Maximum tread depth is 355mm (14"); minimum tread depth is 235 (9 1/4");
- Maximum run is 355mm (14"); minimum run is 210mm (8 1/4").

Handrails & Guards

There is a distinction between handrails and guards required by the Ontario Building Code. Handrails are used for support to assist in negotiating a stair. Guards are structural barriers to help prevent accidental falls from one level to another but they can also serve as handrails.

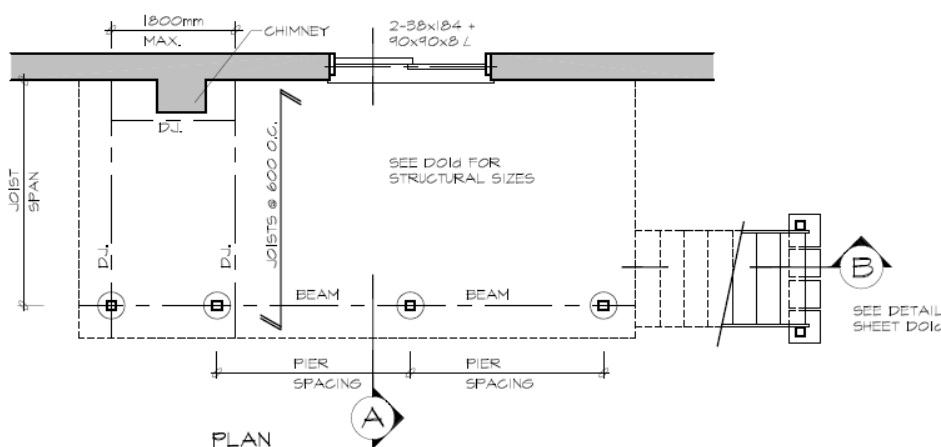
- Handrails are required on stairs having more than 3 risers;
- Guards are required on stairs and on raised decks where the walking surface is more than 600mm (1' 11") above the adjacent ground or other deck surface;
- Guards must be solid barriers or include vertical elements (ie. pickets) spaced not more than 100mm (4");
- Where a guard is not required, vertical pickets must be spaced at not more than 100mm (4") or they must be spaced at more than 200mm (7 7/8");
- Guards must be designed so as not to facilitate climbing;
- Guard height must be 900mm (2' 11") minimum where the difference in elevation is not more than 1800mm (5' 11") and 1070mm (3' 6") where the difference exceeds 1800mm (5' 11");
- Guards must be structurally adequate to resist horizontal and vertical loads (ie. from people leaning or falling against them). They must be designed to meet the loads prescribed by the Ontario Building Code or in accordance with the Supplementary Standards SB-7;
- Glass used in a guard must be laminated or tempered. Such guards must be designed by a professional Engineer

Sample Drawings Plan & Section –Fixed to Solid Masonry Foundation Wall

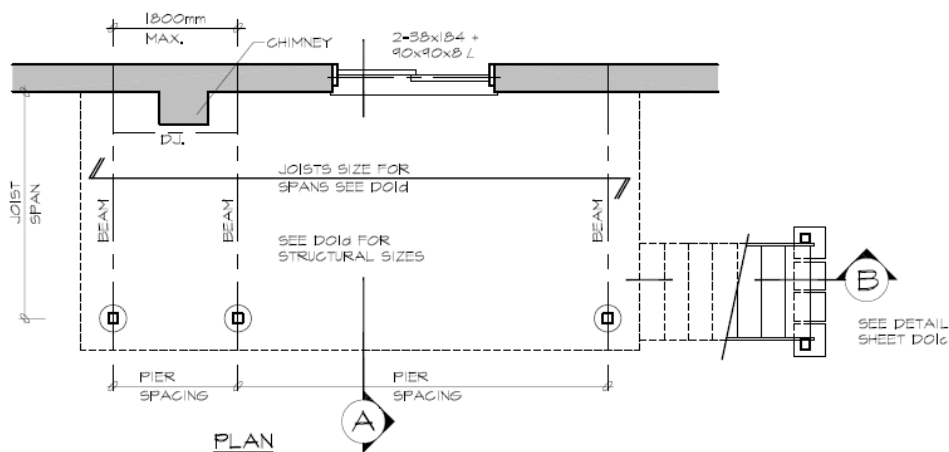
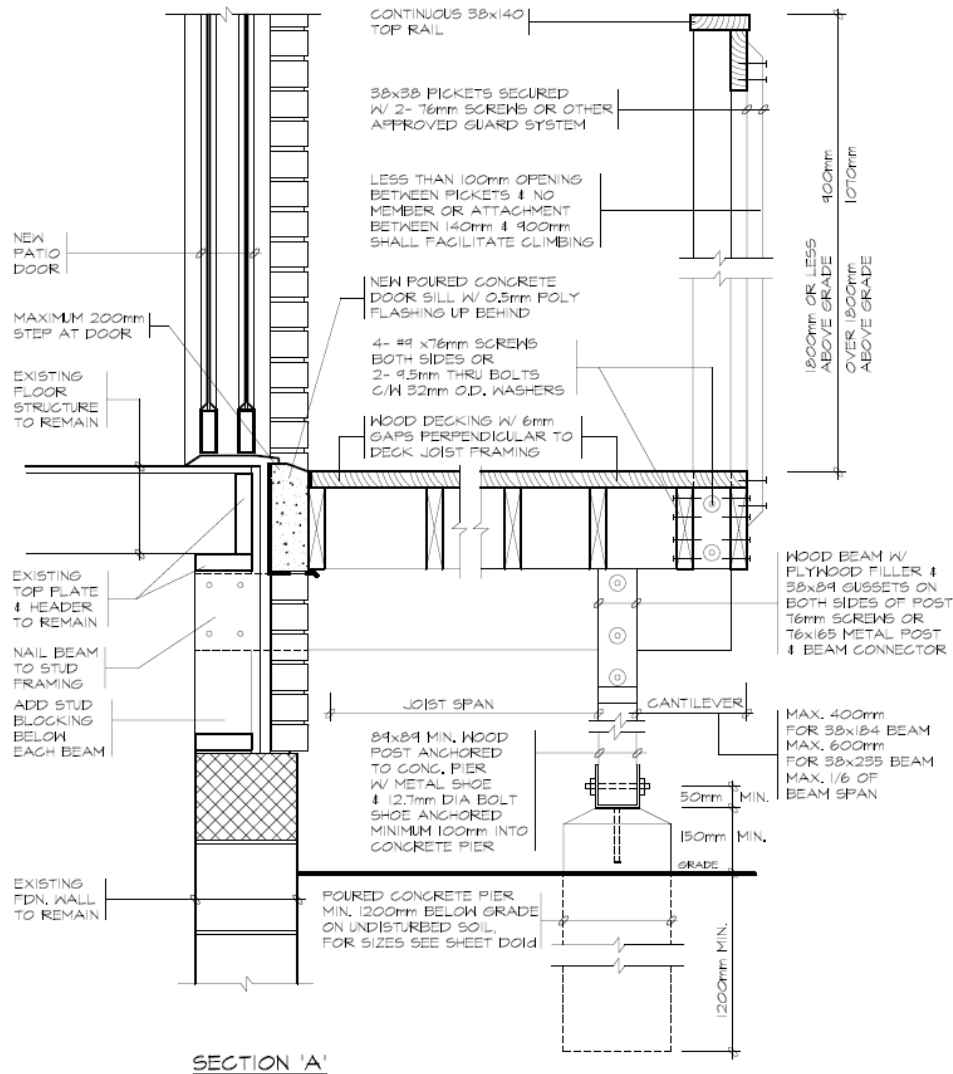


Sample Drawings

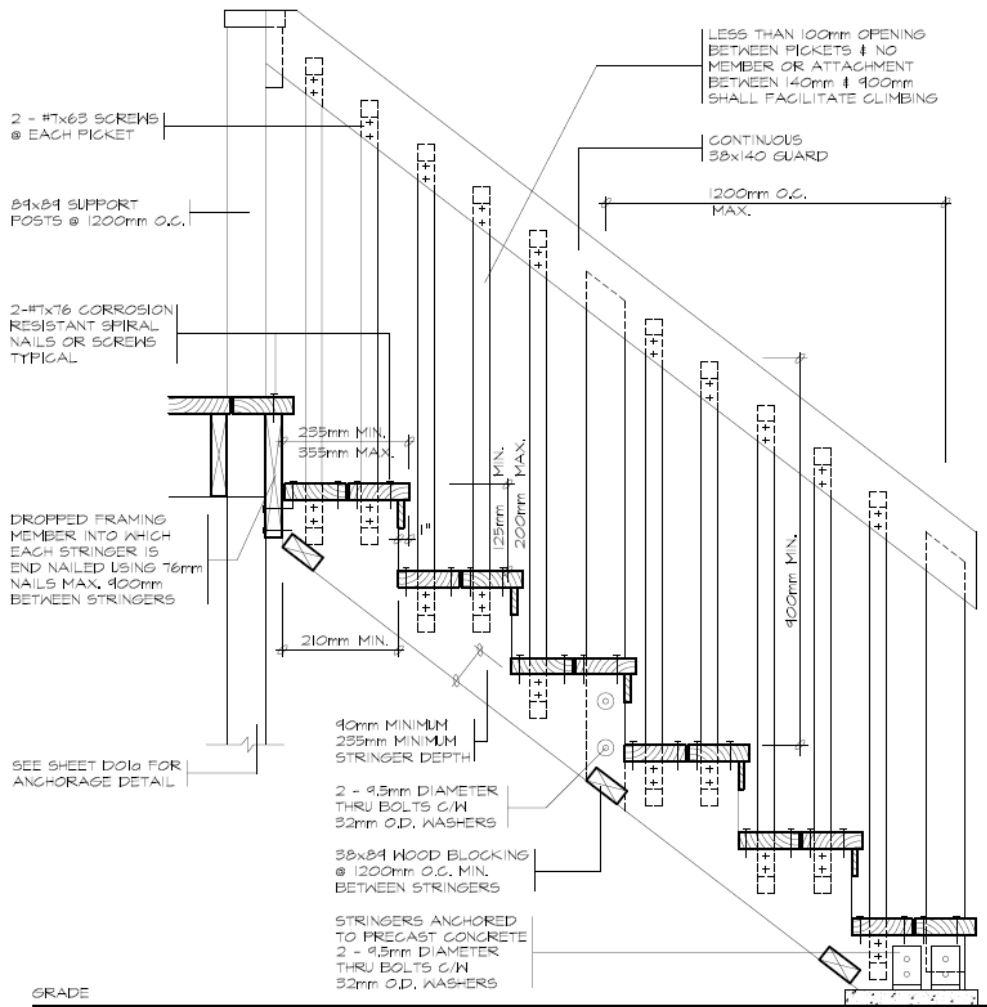
The following drawings illustrate some of the Building Code requirements that apply to typical deck construction. These drawings are provided for information purposes only and do not represent every detail of building construction or all standards that may apply to your project.



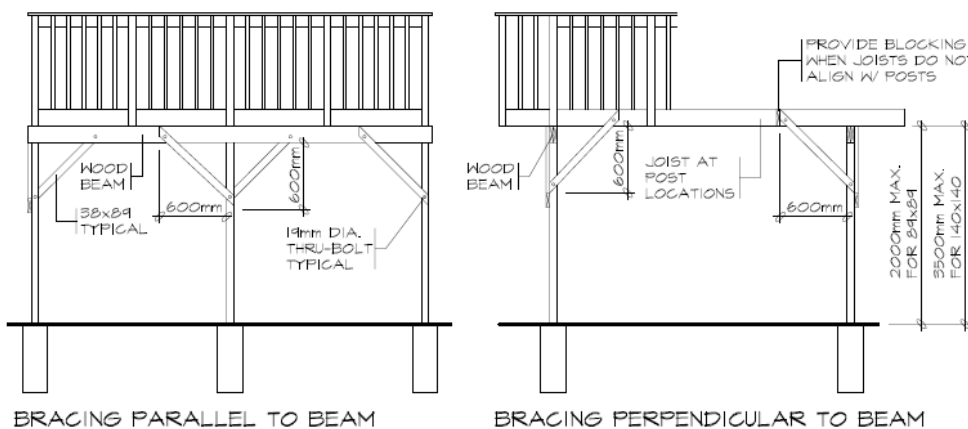
Sample Drawings Plan & Section– Fixed Through Brick Veneer to Wood Framing



Sample Drawings stair Section



SECTION 'B'



FREE STANDING DECKS GREATER THAN 600mm ABOVE GRADE SHALL RESIST LATERAL LOADING & MOVEMENT. ALL POSTS MUST BE BRACED WHERE THE SUPPORTED AREA EXCEEDS THOSE LISTED IN THE TABLE ON D01d

Sample Drawings Tables & Notes

POSTS SUPPORTING DECK & ROOF

POST SIZE (mm)	MAXIMUM HEIGHT (M) SEE NOTE 7	SUPPORTED ROOF AREA (M ²)				
		ROOF SNOW LOAD (kPa)				
		1.0	1.5	2.0	2.5	3.0
89x89	1.0	6.65	5.91	5.32	4.83	4.43
	1.5	3.63	3.23	2.90	2.64	2.42
	2.0	1.93	1.71	1.54	1.40	1.28
140x140	2.0	8.38	7.45	6.70	6.09	5.58
	2.5	5.72	5.08	4.57	4.15	3.80
	3.0	3.89	3.46	3.11	2.83	2.59
	3.5	2.70	2.40	2.16	1.96	1.80

POSTS SUPPORTING DECKS

POST SIZE (mm)	MAXIMUM HEIGHT (M) SEE NOTE 7	SUPPORTED DECK AREA (M ²)				
		ROOF SNOW LOAD (kPa)				
		1.0	1.5	2.0	2.5	3.0
89x89	1.0	10.86	10.86	10.43	8.71	7.48
	1.5	5.93	5.93	5.69	4.76	4.09
	2.0	3.15	3.15	3.02	2.53	2.17
140x140	2.0	13.67	13.67	13.13	10.98	9.43
	2.5	9.32	9.32	8.96	7.48	6.43
	3.0	6.35	6.35	6.10	5.10	4.38
	3.5	4.41	4.41	4.23	3.54	3.04

JOIST SPAN (mm)		PIER SIZE (mm)				BEAM SIZE				JOIST SIZE
		PIER SPACING (mm)				PIER SPACING (mm)				
		1200	1800	2400	3000	1200	1800	2400	3000	
75 kPa	1800	200#	250#	300#	350#	2/38x140	2/38x140	2/38x184	2/38x235	38x140
	2400	250#	300#	350#	400#	2/38x140	2/38x184	2/38x235	2/38x286	38x140
	3000	300#	350#	400#	450#	2/38x140	2/38x184	2/38x235	2/38x286	38x184
	3660	300#	350#	400#	450#	2/38x140	2/38x184	2/38x235	2/38x286	38x235
120 kPa	1800	200#	200#	250#	250#	2/38x140	2/38x140	2/38x184	2/38x235	38x140
	2400	200#	250#	250#	300#	2/38x140	2/38x184	2/38x235	2/38x286	38x140
	3000	200#	250#	300#	350#	2/38x140	2/38x184	2/38x235	2/38x286	38x184
	3660	250#	300#	350#	350#	2/38x140	2/38x184	2/38x235	2/38x286	38x235
190 kPa	1800	200#	200#	200#	200#	2/38x140	2/38x140	2/38x184	2/38x235	38x140
	2400	200#	200#	200#	250#	2/38x140	2/38x184	2/38x235	2/38x286	38x140
	3000	200#	200#	250#	300#	2/38x140	2/38x184	2/38x235	2/38x286	38x184
	3660	200#	250#	300#	300#	2/38x140	2/38x184	2/38x235	2/38x286	38x235

GENERAL NOTES

1. SITE PLAN OR SURVEY IS REQUIRED SHOWING ALL LOT LINES & DIMENSIONS SIZE & LOCATION OF ALL EXISTING BUILDINGS, LOCATION & SIZE OF DECK
2. LUMBER NO. 2 SPF OR BETTER. WOOD POSTS MIN. 84x89 (SOLID). USE CORROSION RESISTANT SPIRAL NAILS OR SCREWS.
3. DECK IS NOT PERMITTED TO BE SUPPORTED ON BRICK VENEER
4. CONCRETE PIERS SHALL BEAR ON UNDISTURBED SOIL. THE BEARING CAPACITY OF THE SOIL SHALL BE DETERMINED PRIOR TO CONSTRUCTION
5. PROVIDE A HANDRAIL 900mm HIGH ON STAIRS IF MORE THAN THREE RISERS.
6. FOR SUPPORTED AREAS WHICH EXCEED THOSE LISTED IN THESE TABLES THE POSTS SHALL BE BRACED AS SHOWN ON DOIC
7. MAXIMUM HEIGHT REFERS TO THE HEIGHT OF THE POST FROM THE TOP OF THE PIER TO THE DECK SURFACE

Deck By-Law

EXPLANATORY NOTE

BY-LAW NO. 142-95

DECK BY-LAW FOR THE TOWN OF MARKHAM

The purpose of this bylaw is to provide design flexibility while limiting the construction of decks that are likely to impose on the privacy of neighbors. The bylaw allows typical deck designs on large and small lots.

The current deck bylaw, 166-90 has proven overly restrictive. Many decks have been erected without permit after owners learn that a permit is not available for what they consider a reasonable home improvement.

The definition decks has been modified and the reference to materials deleted. The amended definition includes a deck when it is at or above 0.6m above grade. Anything below this height will be considered landscaping and not be subject to the bylaw.

Decks between 0.6m and 1.0m are permitted to extend to 0.6m from the side lot lines. The rear yard projection is restricted to 3.0m from the rear lot line.

Decks greater than 1.0m high are limited to 3.0m projection from the rear wall of the dwelling. The side yard setback must match that of the main dwelling in these cases.

Deck By-Law

142-95

A by-law to amend By-laws, 1229, 1442, 1507, 1767, 2150, 2237, 2489, 2551, 2571, 2612, 11-72, 122-72, 83-73, 151-75, 127-76, 250-77, 145-78, 162-78, 163-78, 184-78, 72-79, 91-79, 118-79, 134-79, 153-80, 72-81, 90-81, 193-81, 221-81, 194-82, 196-82 and 304-87, 19-94 as amended.

THE COUNCIL OF THE CORPORATION OF THE TOWN OF MARKHAM
HEREBY ENACTS AS FOLLOWS:

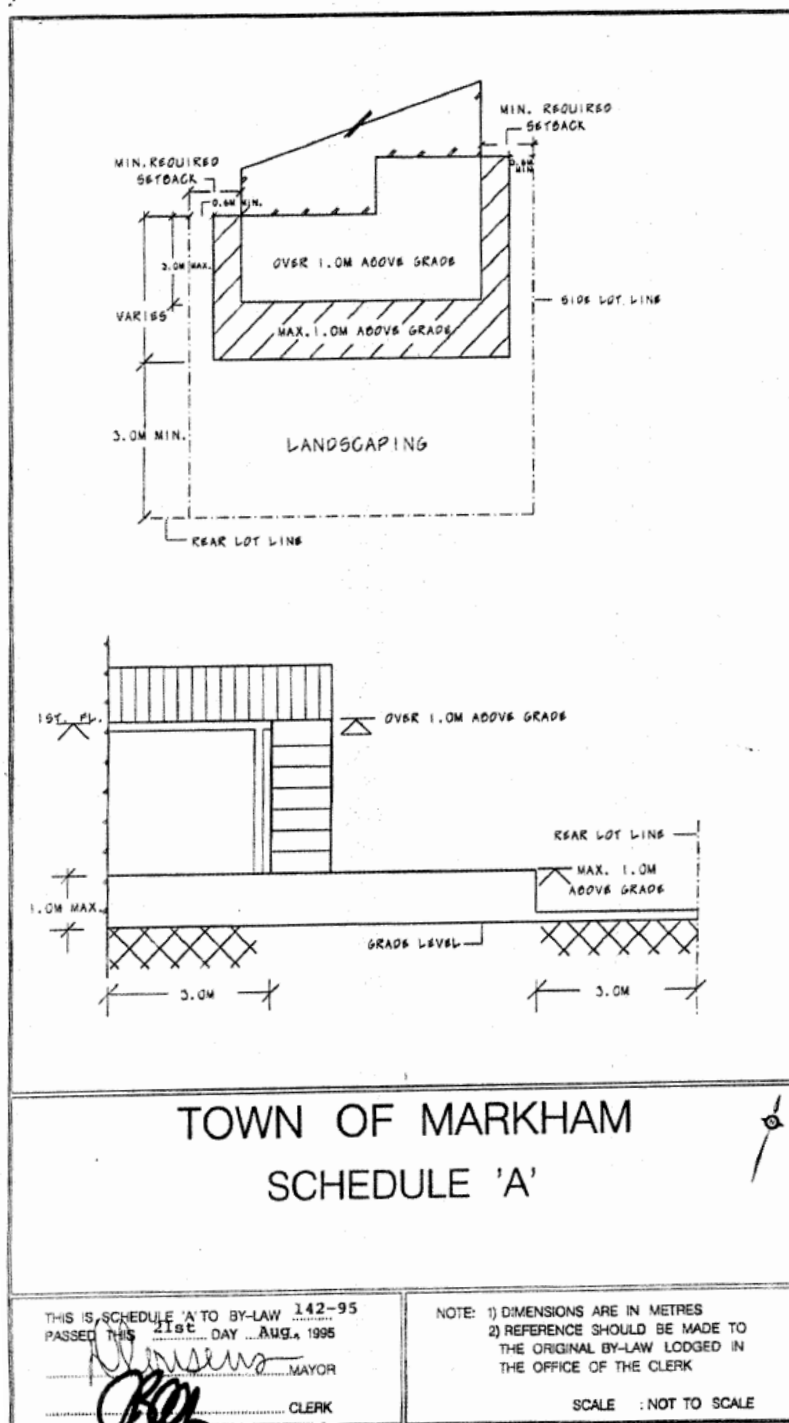
1. This by-law shall be known as the deck by-law.
 - 1.1 By-law 166-90, as amended, known as "the deck by-law" is hereby repealed.
 - 1.2 Schedule 'A' attached hereto shall form part of this by-law.
2. By-laws 1229, 1442, 1507, 1767, 2150, 2237, 2489, 2551, 2571, 2612, 11-72, 122-72, 83-73, 151-75, 127-76, 250-77, 145-78, 162-78, 163-78, 184-78, 72-79, 91-79, 118-79, 134-79, 153-80, 72-81, 90-81, 193-81, 221-81, 194-82, 196-82, 304-87 and 19-94, as amended, be and the same are hereby further amended as follows:
 - 2.1 For the purposes of this by-law the following definitions shall apply:
 - (a) DECK means a raised platform on a dwelling that:
 - (i) is located at the rear of the dwelling;
 - (ii) is more than 0.6 metre above the lowest ground surface along the perimeter of the platform;
 - (iii) is at or below the level of the GROUND FLOOR; and
 - (iv) is uncovered.
 - (b) GROUND FLOOR means the lowest floor of a building above the established grade, and shall not include a basement or cellar.
 - 2.2 Notwithstanding any other provisions contained in the by-laws noted herein, DECKS shall be permitted on a residential dwellings subject to compliance with the following provisions:
 - (a) A DECK one metre or less in height above the lowest ground surface at all points around the perimeter of the platform:
 - (i) Minimum rear yard setback of 3.0 metres
 - (ii) Minimum side yard setback of 0.6 metre
 - (b) A DECK in excess of one metre in height above the lowest ground surface at all points around the perimeter of the platform:

Deck By-Law

- 2 -

- (i) Maximum projection from the point on the dwelling closest to the rear lot line of 3.0 metres
 - (ii) Minimum rear yard setback of 3.0 metres
 - (iii) Minimum side yard setback to be same as required of the dwelling.
- 2.3
 - (a) Notwithstanding any other provision in this by-law, steps shall not be subject to the maximum height provisions, but in no instance shall steps be at an elevation higher than the GROUND FLOOR of the main dwelling.
 - (b) Steps leading down from a DECK to the ground shall not be included in calculating the maximum permitted projection.
 - (c) Steps shall not be subject to setback requirements.
- 2.4 That by-law 19-94 be amended, be and the same is hereby further amended as follows:
 - (a) By amending section 2 definition as follows:
 - (i) The definition of DECK is deleted and substituted with section 2.1(a) of this by-law.
 - (b) By amending section 6.2.2 (f) decks as follows:
 - (i) Delete section 6.2.2 (f) and substitute the sections 2.2 and 2.3 of this by-law.
- 3. All other provisions of those By-laws referred to in section 2 which are not inconsistent with the provisions of this by-law shall continue to apply.

Deck By-Law



Deck By-Law

Regulations for Decks

*Within the Defined Area of
By-law 177-96, as amended*

Section 5.3

Decks are permitted only in the *rear yard* of a lot used for residential purposes in accordance with the following regulations:

- A) Decks** that have a height of between 0.6 metres and 1.0 metre above the lowest ground surface at all points around the perimeter of the platform are permitted to encroach into the *required rear yard*, provided that:
- i) the *deck* is located no closer than 3.0 metres to the *rear lot line*;
 - ii) the *deck* is located no closer to the *interior side lot line* than the *interior side yard* requirement for the *main building*;
 - iii) the *deck* is located no closer to the *exterior side lot line* than the *main building*; and,
 - iv) the floor of the *deck* is not higher than the floor level of the ground floor of the *main building* on the *lot*.
- B) Decks** that have a height greater than 1.0 metre above the lowest ground surface at any point around the perimeter of the platform are permitted to extend from the wall closest to the *rear lot line* a maximum of 3.0 metres, provided:
- i) the *deck* is located no closer than 3.0 metres to the *rear lot line*.
 - ii) the *deck* is located no closer to the *exterior side* and *interior side lot line* than the *main building*; and,
 - iii) the floor of *deck* is not higher than the floor level of the ground floor of the *main building*.

Notwithstanding the above provisions, stairs used to access a *deck* shall not be subject to the setback requirements of this Section.

"Deck" is defined as "...an unenclosed *structure* that is accessory to a residential use and used as an outdoor living area, with a foundation holding it erect and a floor which is above finished *grade* and shall not include a landing or a stair."

"Rear Yard" is defined as "...a yard extending across the full width of the *lot* between the *rear lot line* and the nearest *main walls* of the *main building* or *structure* on the *lot*."

City of Markham

Alternate formats available upon request, please contact
The City of Markham Building Standards Department
(use the Milliken entrance)
101 Town Centre Blvd.
Markham, ON., L3R 9W3
P. 905-475-4870
F. 905-475-4706