# Deck Design Guide

TOWNSHIP OF RAMARA

2297 Highway 12

PO Box 130

Brechin, Ontario

## Responsibility

The purpose of this guide is to provide information only. The Applicant or Designer is responsible for all information that is included in an application. All information provided must comply by the Ontario Building Code and must be concise, precise and current.

## Planning

Applicants must investigate and adhere to any regulations that may apply such as the properties zoning, municipal by-laws and if they are within the Lake Simcoe Region Conservation Authority Regulated area.

All decks, porches and any other structures must conform to all applicable laws.

Please contact the Planning department for further information.

## Requirements to Obtain a Building Permit

A site plan showing the location of your proposed deck and all setbacks to all property lines, your septic system and other structures shall be indicated on this plan.

Detailed construction drawings must be provided for the project. This package provides you with a sample cross section drawing of a deck that may be used, accompanied by a plan view with measurements, spacing of piers and columns, spans of beams and joists.

A schedule one form is required for any drawings designed by the property owner or BCIN designer. Note: Drawings designed by a professional engineer or architect are not required to submit this form.

An Owner/Designer Declaration must also be submitted if the project drawings were completed by the home owner.

An letter of authorization form is required if any individual other than the property owner is applying for the project's building permit.

All building permits are processed through the website www.cloudpermit.com

## Fees

Applicable fee's must be paid for the application to be deemed complete. Paper applications may be submitted at an additional cost.

**REMEMBER TO CALL FOR LOCATION OF UTILITIES BEFORE YOU DIG**

**Ontario One Call**

(Underground locates)

1-800-400-2255

## CONSTRUCTION INFORMATION

### PIERS

**Engineered helical piles can be used in lieu of requirements below.**

**Size:**

- Piers used shall be not less than 9" in diameter.

**- All piers require a footing in sandy or loose soils, this can be achieved by forming a footing or by using a "bigfoot type" at the base of the pier. If you have hard clay soil or bedrock a pier can be used solely and supported directly on the solid soil base or rock.**

- Minimum footing size: 0.40m2 (4.3ft2) where; the supported joist length is 4.9m (16'), the pier spacing is 3m (10'), and the soil bearing capacity is 75 kPa (10.9 psi).

- Minimum size specified may be adjusted based on the specific supported joist length, pier spacing, and soil bearing capacity.

*NOTE: The minimum required bearing area must be doubled where the soil bearing capacity is affected by a high water table.*

**Concrete:**

- Piers shall consist of poured concrete with a minimum compressive strength of 15 MPa (2200 psi after 28 days)

**Depth and Height:**

- Piers must extend a minimum of 1.2m (4') below grade.

- Piers shall not extend more than 3x their width/diameter above grade.

### COLUMNS

**Size:**

- Wood columns shall be not less than 184mm (7-1/4") for round columns and 140mm x 140mm (6"x6") for square or rectangular columns.

**Anchorage:**

- Columns shall be directly fastened to their supporting and supported members to resist uplift.

### WOOD FRAMED CONSTRUCTION

**Ledger Boards:**

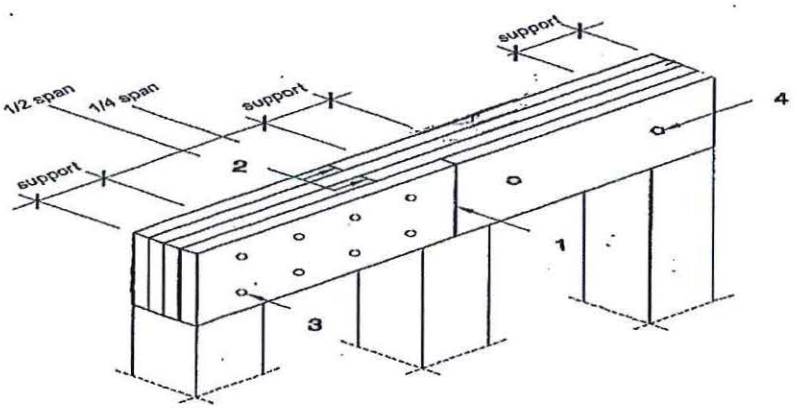
- A ledger board shall have the same dimensions as the floor joists it supports.

- Anchor bolts shall be embedded at least 100mm (4") into solid concrete, concrete filled masonry, or suitable structural lumber.

NOTE: The anchor bolts shall not be attached to hollow masonry or brick veneer.

| Supported Length, m (ft) | Maximum Anchor Bolt Spacing, mm (in) | |
|---|---|---|
| | Staggered 12.7mm (1/2") Ø Anchor Bolts | Staggered 16mm (5/8") Ø Anchor Bolts |
| 1.22 (4'-0") | 450 (17-3/4") | 500 (20") |
| 1.50 (4'-9") | 400 (16") | 450 (17-3/4") |
| 2.00 (6'-6") | 300 (12") | 400 (16") |
| 2.50 (8'-2") | 275 (11") | 325 (12-3/4") |

**Built-up wood beams:**




(1) Where individual members are butted together to form a joint, the joint shall occur over a support.

(2) Where a beam is continuous over more than one span, joists are permitted at or within 150mm (5-7/8") of the end quarter of the clear span, provided the joints are not those closest to the ends of the beam.

(3) Built up beams can be nailed together with a double row of nails not less than 89mm (3-1/2") in length, not more than 450mm (18") apart, and not more than 100mm (4") from the end.

(4) Built up beams can be bolted together with a bolt not less than 12.7mm (1/2") equipped with washers, spaced not more than 1.2m (3'-11") apart, and not more than 600mm (24") from the end.

**Beam Spans:**

| | Maximum Span (m) | | |
|---|---|---|---|
| Supported Length (m) ([1]) | 3-38x184 (3-2"x8") | 3-38x235 (3-2"x10") | 3-38x286 (3-2"x12") |
| 2.40 (7.87') | 3.07 (10'-0") | 3.92 (12'-10") | 4.57 (14'-11") |
| 3.00 (9.84') | 2.85 (9'-4") | 3.52 (11'-6") | 4.09 (13'-5") |
| 3.60 (11.8') | 2.63 (8'-7") | 3.22 (10'-6") | 3.73 (12'-2") |
| 4.20 (13.7') | 2.44 (8'-0") | 2.98 (9'-9") | 3.46 (11'-4") |
| 4.80 (15.7') | 2.28 (7'-5") | 2.79 (9'-1") | 3.23 (10'-7") |
| 5.40 (17.7') | 2.15 (7'-0") | 2.63 (8'-7") | 3.05 (10'-0") |
| 6.00 (19.6') | 2.04 (6'-8") | 2.49 (8'-2") | 2.89 (9'-5") |

**Cantilever of joists over beam:**

-38mm x 184mm (2"x8") may not be cantilevered more than 400mm (16")

-38mm x 235mm (2"x10") or larger may not be cantilevered more than 600mm (24")

**Fastening of joists:**

-Floor joists may be supported on the tops of beams or may be supported with proper metal joist hangers.

-The floor joists must be mechanically fastened to the supporting member with two 82mm (3-1/4") nails.

**Joist spans:**

| | Maximum Span (m) | | |
|---|---|---|---|
| **Joist Size** | **300 (12") o.c.** | **400 (16") o.c.** | **600 (24") o.c.** |
| **38x140 (2"x6")** | 3.14 (10'-3") | 2.85 (9'-4") | 2.49 (8'-2") |
| **38x184 (2"x8")** | 3.81 (12'-6") | 3.58 (11'-9") | 3.27 (10'-8") |
| **38x235 (2"x10")** | 4.44 (14'-6") | 4.17 (13'-8") | 3.92 (12'-10") |
| **38x286 (2"x12")** | 5.01 (16'-5") | 4.71 (15'-5") | 4.42 (14'-6") |

* The use of joists less than 38mm x 184mm (2"x8") is not recommended as it does not allow for the proper attachment of railings.

**Bridging of joists:**

-Bridging shall consist of 19mm x 64mm (1"x3") cross bridging, 38mm x 38mm (2"x2") cross bridging or solid blocking the same dimension as the joists.

-Bridging shall be located not more than 2.1m (6'-11") from each support or other rows of bridging.

-Cross-bridging shall be fastened with two 57mm (2-1/4") nails at each end.

## STAIRS

-Stairs shall conform to section 9.8 of the Ontario Building Code

## GUARDS AND RAILINGS

-Railings designs and supports shall conform to Supplementary Standard SB-7 of the Ontario Building Code.

**Height of Guards**

-Exterior guards serving not more than one dwelling unit shall be not less than 900mm (36") high where the walking surface served by the guard is not more than 1.8m (5'-11") above the finished ground level, otherwise the guards shall be not less than 1.7m (42") high.

## Openings in Guards

-Openings through a guard shall be of a size that will prevent the passage of a spherical object having a diameter of 100mm (4").

## Design to Prevent Climbing

-Guards shall be designed so that no member, attachment, or opening will facilitate climbing.

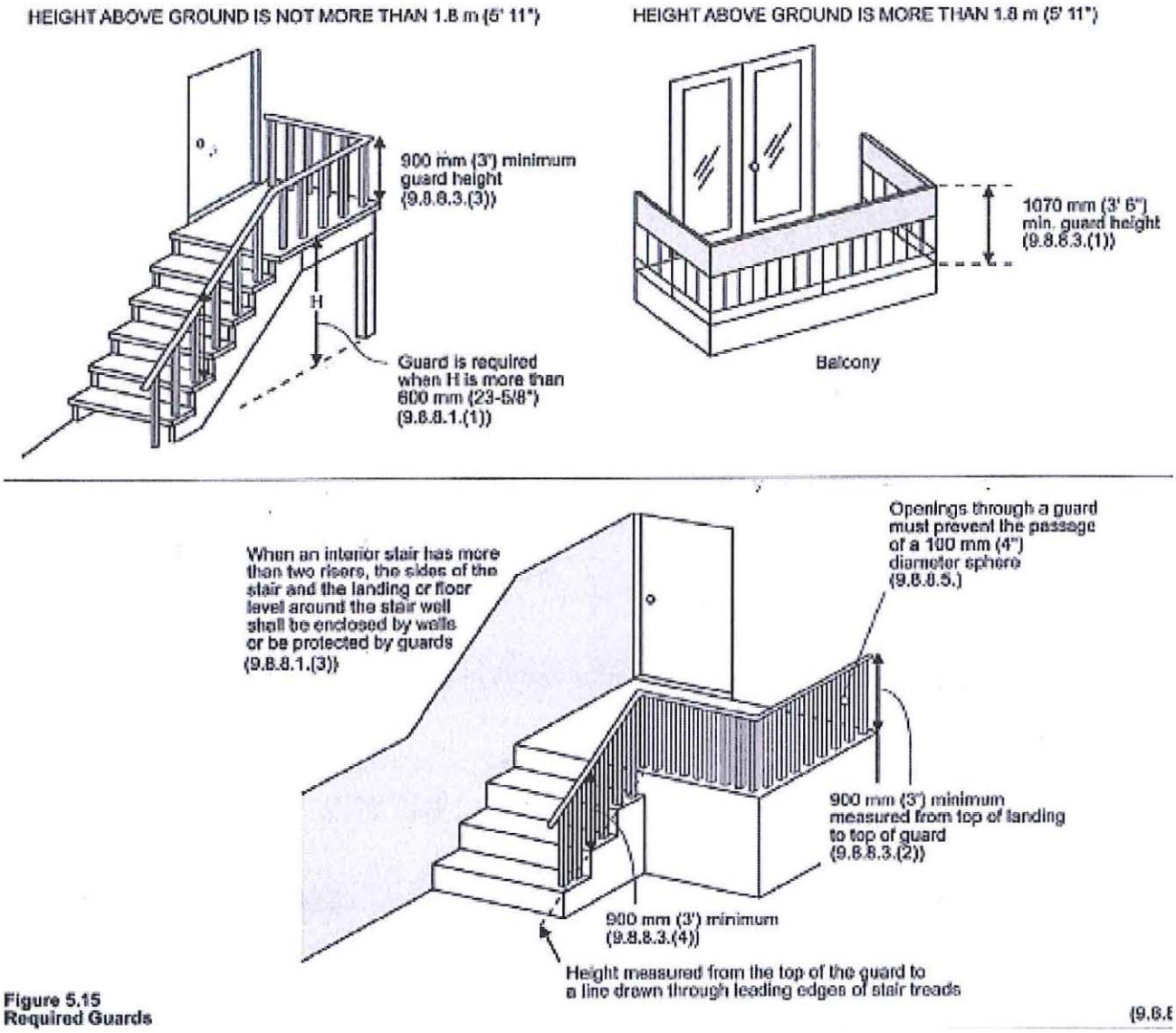



**Figure 5.15**
**Required Guards**

# Deck Sizing

(A) Footing Size: _____ By _____ Thickness _____

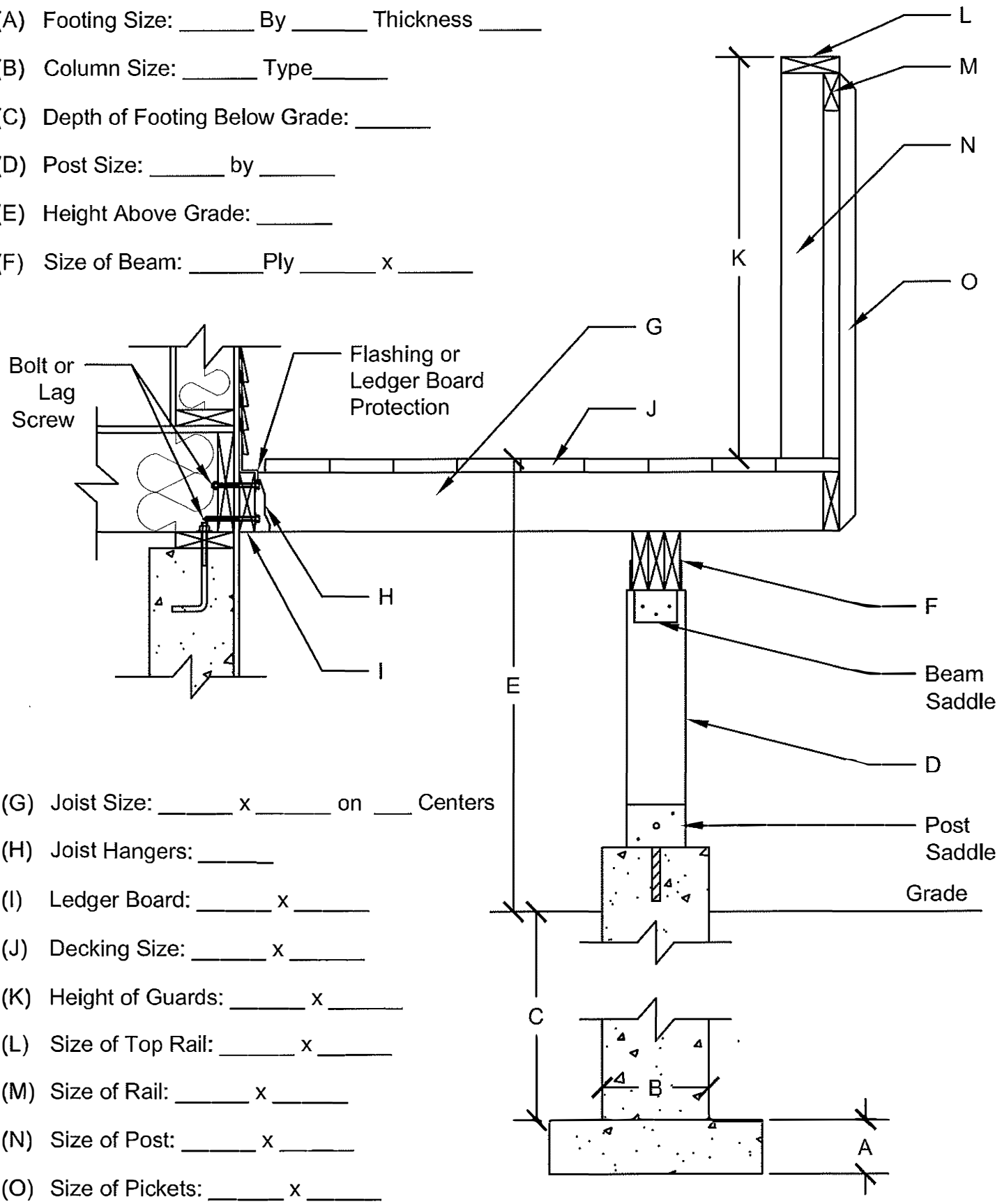
(B) Column Size: _____ Type_____

(C) Depth of Footing Below Grade: _____

(D) Post Size: _____ by _____

(E) Height Above Grade: _____

(F) Size of Beam: _____Ply _____ x _____




(G) Joist Size: _____ x _____ on ___ Centers

(H) Joist Hangers: _____

(I) Ledger Board: _____ x _____

(J) Decking Size: _____ x _____

(K) Height of Guards: _____ x _____

(L) Size of Top Rail: _____ x _____

(M) Size of Rail: _____ x _____

(N) Size of Post: _____ x _____

(O) Size of Pickets: _____ x _____
with _____ Spacing (Max $3\frac{7}{8}$")