A GUIDE TO DETACHED RESIDENTIAL ACCESSORY BUILDINGS

SAULT STE. MARIE

The Building Division is responsible for administration and enforcement of the Ontario Building Code and the municipality's Building and Property Standards By-laws, along with various other statutes and regulations. The purpose of these regulations is to safeguard life, limb and health by establishing appropriate minimum standards. For more information please visit our web site at www.saultstemarie.ca

Building Division responsibilities include:

- Plans examination
- Permit issuance
- Inspections
- Administration and enforcement of:
  - By-Law 2005-150 – Comprehensive Zoning By-Law
  - By-Law 2005-151 – A by-law providing special exceptions from the provisions of By-Law 2005-150
  - Property Standards By-Law 2012-9 Yards By-Law 2012-10
  - –By-Law 2009-50 – Commonly cited as the "Sewer By-law”
  - Streets By-Law 2008-
  - Signs By-Law 2005-
  - Moving By-Law 84-170
  - Work Order Inquiries / Zoning Compliance Requests
  - Issuance of Moving, Occupancy and Demolition of Building Permits
  - Administration of the Property Standards Committee.
  - Pool Regulations
  - Ontario Building Code 'Interior Guards Details - SB-7' Booklet
  - Ontario Building Code 'Exterior Guards Details- SB-7' Booklet
  - TACBOC Standards (Toronto Area Chief Building Officials Committee) Reference Documents Covering Topics:, Application Guide, Basement Alterations, Carports, Decks, Garages, Barrier Free, Plumbing Systems, Wall Sections & Details

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Preface

Detached accessory buildings, such as garages and storage sheds, vary in size and area. It is beyond the scope of this booklet to deal with every possible situation. The requirements and construction guidelines that follow are provided to assist you in designing and constructing a detached garage or storage shed which will comply with the regulations. If the nature of your project is different than that contained in this booklet or you are not familiar with the regulations which may be applicable, it is recommended that you contact someone who is knowledgeable in this area such as a qualified designer.

Throughout this booklet the information provided is based on the minimum standards set out in the Ontario Building Code and City Zoning By-Law. Every effort has been made to ensure the accuracy of information contained in this booklet. However, in the event of a discrepancy between this booklet and the governing Act, Regulation, or By-Law, the Act, Regulation, or By-Law will take precedence.

We strongly encourage applicants to discuss their specific projects with staff in the Planning and Building Division of the City prior to commencement.

Frequently Asked Questions

Is a building permit required to build a detached garage, storage shed or carport?

Any accessory building over 10m^2 (108 ft^2) in size will require a building permit.

Buildings that are less than 10m2 (108 ft2) do not require a building permit but are still required to conform to the setback and height restrictions set out in the Zoning By-Law.

What information do I need to obtain a building permit?

1. Applications – you are required to complete a building permit application in full. Applications are available on the City's website at www.saultstemarie.ca

2. Site Plan. You will need to attach 2 site plans consisting of:
   - The property measurements
   - Dwelling units and any other building locations and measurements.
   - Location of overhead power lines
   - Any known easements including reserves
   - Drainage swales – accessory buildings must be placed on site so they do not interfere with any drainage swales.
   - Indicate front, side, and rear setbacks from the lot lines.
   - Location and size of the proposed garage or shed must also be included.

See Figure 1 & Figure 2.

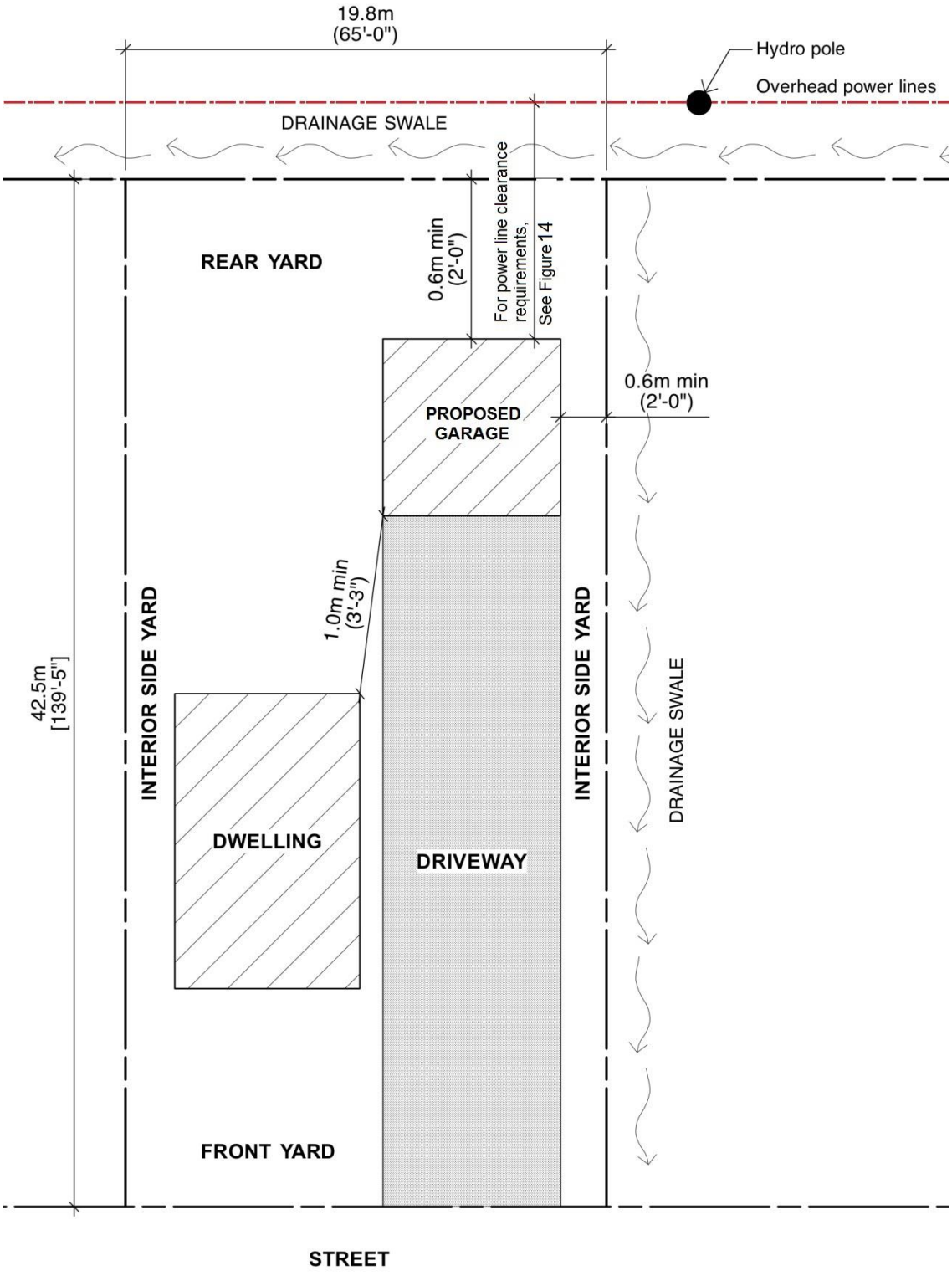

19.8m
(65'-0")
Hydro pole
Overhead power lines
DRAINAGE SWALE
REAR YARD
0.6m min
(2'-0")
For power line clearance
requirements,
See Figure 14
0.6m min
(2'-0")
PROPOSED
GARAGE
1.0m min
(3'-3")
42.5m
[139'-5"]
INTERIOR SIDE YARD
INTERIOR SIDE YARD
DRAINAGE SWALE
DWELLING
DRIVEWAY
FRONT YARD
STREET

Figure 1

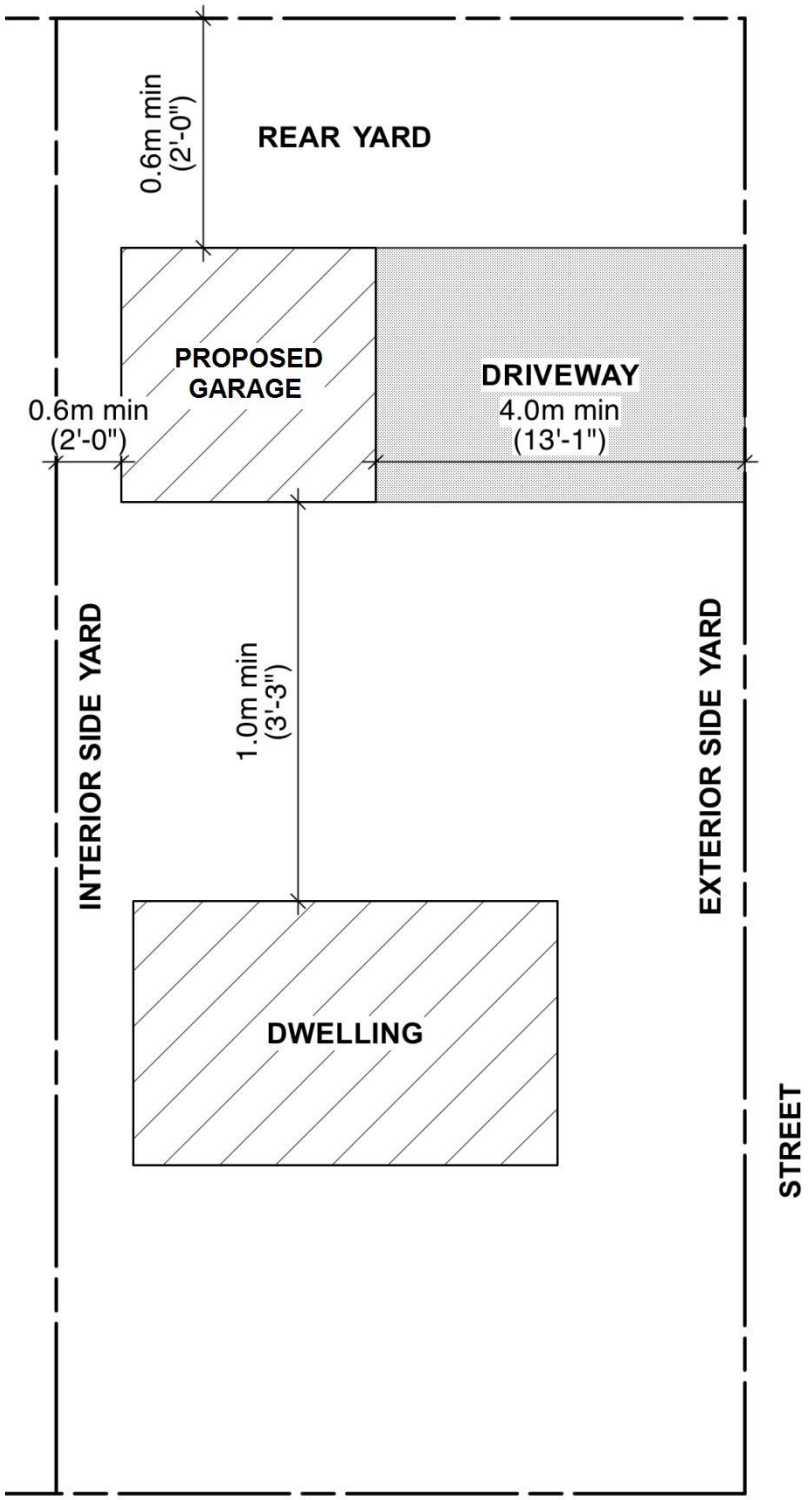

0.6m min
(2'-0")
REAR YARD
PROPOSED
GARAGE
DRIVEWAY
4.0m min
(13'-1")
0.6m min
(2'-0")
INTERIOR SIDE YARD
1.0m min
(3'-3")
EXTERIOR SIDE YARD
DWELLING
STREET
STREET

Figure 2

Construction Plans

3.1 Garage / shed less than 55m^2 (592 ft^2) - smaller buildings do not normally require submission of construction plans, designs may be required from a Professional Engineer. Review this document for such situations or call the Building Division directly at 705-759-5410.

3.2 Garage / Shed of 55m^2 (592 ft^2) or more - larger buildings require submission of 2 copies of a site plan, floor plan, section, and elevations. These plans must be clear and to scale. There must also be sufficient detail to allow building staff to determine compliance with the Ontario Building Code. If you are having someone else provide the plans they must be registered with the Ministry of Municipal Affairs and Housing (MMAH) as a registered designer and must provide a BCIN (Building Code Identification Number).

What is required to be shown on the floor plan?

- Size of garage / shed with dimensions
- Location and sizes of windows, doors, etc.
- Size of beams / lintels in wall openings, if required
- Direction of roof trusses

What details are required on the section drawing?

- Type and thickness of materials in the roof, walls, and floor assemblies
- Dimension of height of wall, pitch of roof, and size of overhang

What information should be indicated on the elevation drawings?

- Type of finish cladding material
- Window and door location
- Indicate roof slope and overhang
- Total building height
- Foundation line
- Grade line

Can I assume that the City sidewalk, edge of pavement, or neighbor's fence is the property line?

No. To accurately determine the location of your property line, please refer to your survey (usually provided with purchase of the property). If you do not have a copy of your survey, the Ontario Land Registry Office may have a survey of your property on file.

Zoning

How far away from the property line should my building be?

PLEASE NOTE: The following setbacks are only generalized guidelines. Please contact the Building Division to confirm the setback requirements for your specific property or you can view the required set back information on the City's web site at www.city.sault-ste-marie.on.ca - See Table 1 and Figure 1 & 2

Where an accessory building is located on a property that abuts Lake Superior or St. Mary's River, the accessory building shall conform to the same setbacks and height restrictions as set out for the main building. This regulation applies to all R1 zoned properties regardless of whether or not they abut Lake Superior or the St. Mary's River. Please contact the Building Division for more information.

With the exception of garages and carports, all accessory buildings shall be located in the rear yard. Accessory buildings are not permitted within a required exterior side yard, they must be located in the rear yard or an interior side yard.

The setbacks for detached accessory buildings on corner lots vary depending on the location of the corner lot where they are built, and the configuration of the abutting lots.

For corner lots it is recommended that you contact the Building Division to discuss your building proposal.

Table 1

Yard Regulations for Garages and Carports in Residential Zones					
Location	**Minimum Distance from Main Building**	**Minimum Distance from Interior Side Lot Line**	**Minimum Distance from Exterior Lot Line**	**Minimum Distance from Rear Lot Line**	**Maximum Building Height**
Joined to Main Building	not applicable	1.2m for 1 storey 1.8m for 2 storey	Same as for main building	Same as for main building	Same as for main building
In Side Yard	1m (3ft 3 3/8 in)	1.2m (3ft 11 1.4in)	Accessory structures shall not be located within a required exterior side yard	0.6m (1ft 11 5/8in)	6m (19ft 8 1/4in)
In Rear Yard	1m (3ft 3 3/8 in)	0.6m (1ft 11 5/8in)	Same as for main building	0.6m (1ft 11 5/8in)	6m (19ft 8 1/4in)

Notes to Table 1

1. This table does not apply to properties zoned as R1.
2. This table does not apply to properties zoned as R2 that abut Lake Superior or the St. Mary's River.

How large of a garage can I build?

The proposed accessory building cannot be larger than the main building on the property.

The maximum lot coverage for most residential zones is 40%

The maximum span of any structural member cannot exceed 12.2m (40ft) 9.23.1.1.(1)(e) of the Ontario Building Code.

When the span of the truss exceeds 9.8m (32 ft 2 in) the foundation and lintels must be designed by a qualified person using Part 4 of the Ontario Building Code. 9.23.12.3.(1)(d)

Do these setbacks include the overhang?

The setback does not include an eave projection which needs to have a minimum setback of 0.3m (1 ft) from the property line.

What is the maximum height allowable?

The maximum height for a detached garage is 6m (19 ft 8 in) above established grade. The maximum height for all other accessory buildings is 3.6m (11 ft 10 in) above established grade. See Figure 3. There are also restrictions on the unsupported height of wood studs – please refer to the framing section of this booklet.

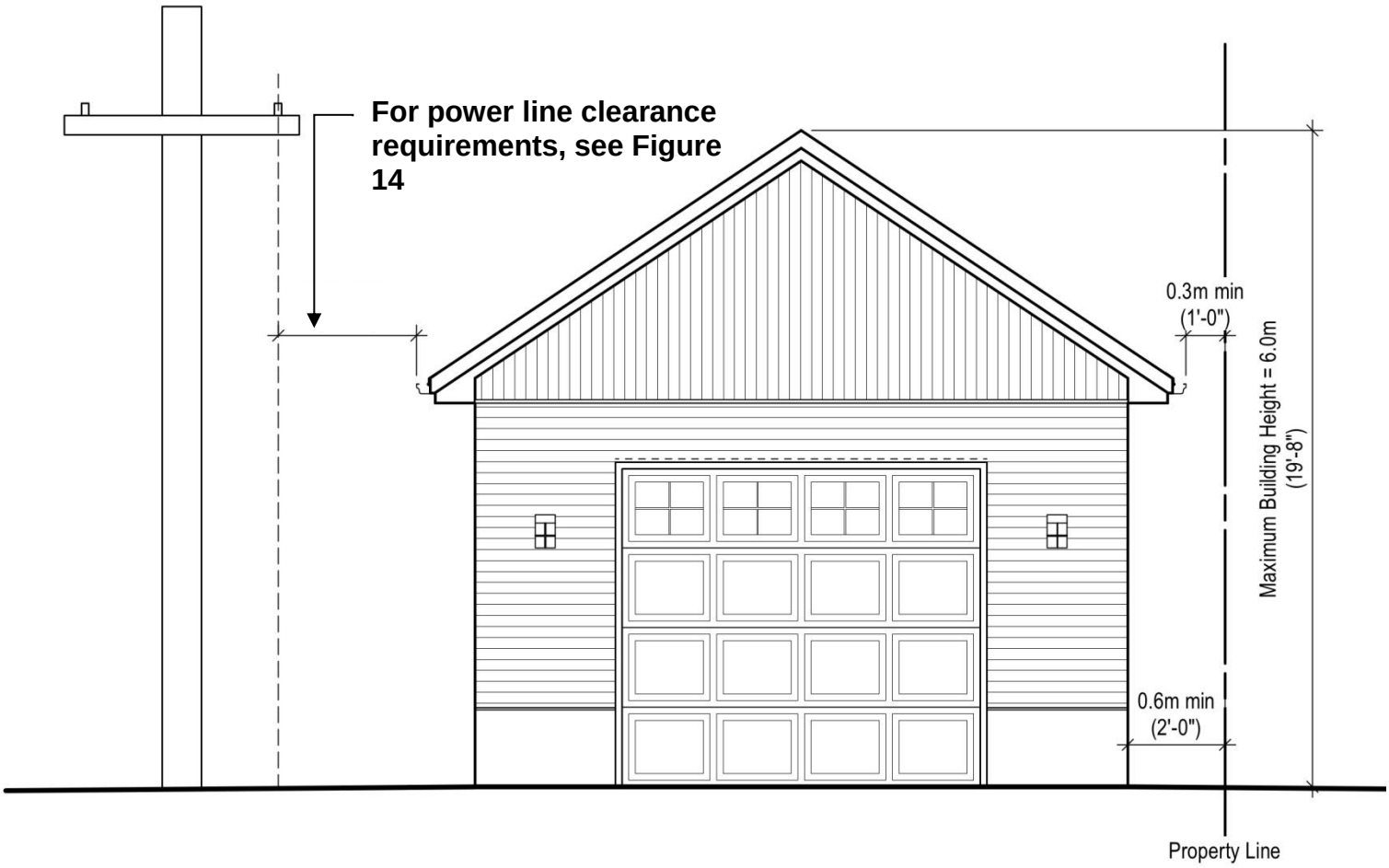

For power line clearance requirements, see Figure 14
0.3m min
(1'-0")
Maximum Building Height = 6.0m
(19'-8")
0.6m min
(2'-0")
Property Line

Figure 3

Foundations

What type of foundation is required for a one-storey wood frame detached garage?

For a detached garage having a building area of less than 55m2 (592 ft2) it is recommended that a concrete slab with a thickness of not less than 100mm (4 in) and a thickened perimeter be used similar to that shown in Figure 5.

For a building area larger than 55m2 (592 ft2), a frost wall may be used as shown in Figure 4, or the slab on grade must include a club footing that is appropriately sized for the soil conditions. Refer to Figure 5.

When any dimension of the garage exceeds 12m (40 ft) or the span of the trusses exceeds 9.8m (32 ft 2 in) the foundation must be designed by a qualified person using Part 4 of the Ontario Building Code.

If the foundation is to support masonry construction or brick veneer, a frost wall may be used or the slab on grade must be designed by a qualified person using Part 4 or Part 9 of the Ontario Building Code.

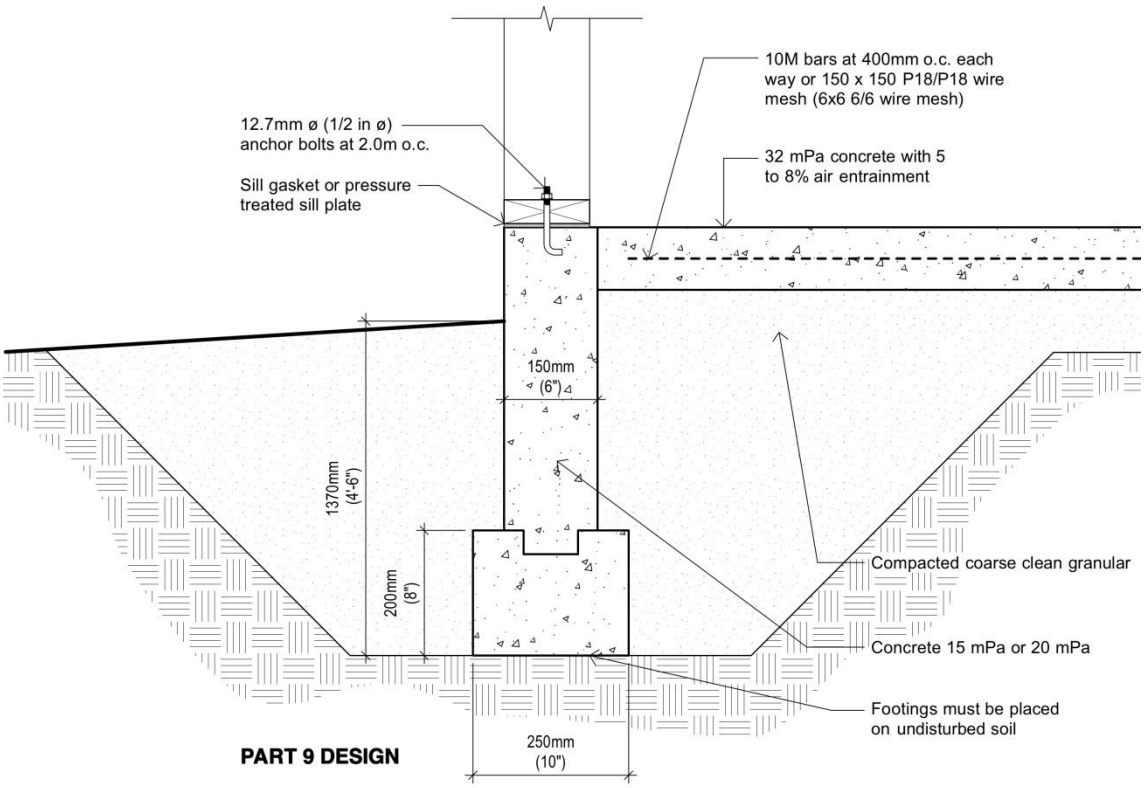


Figure 4

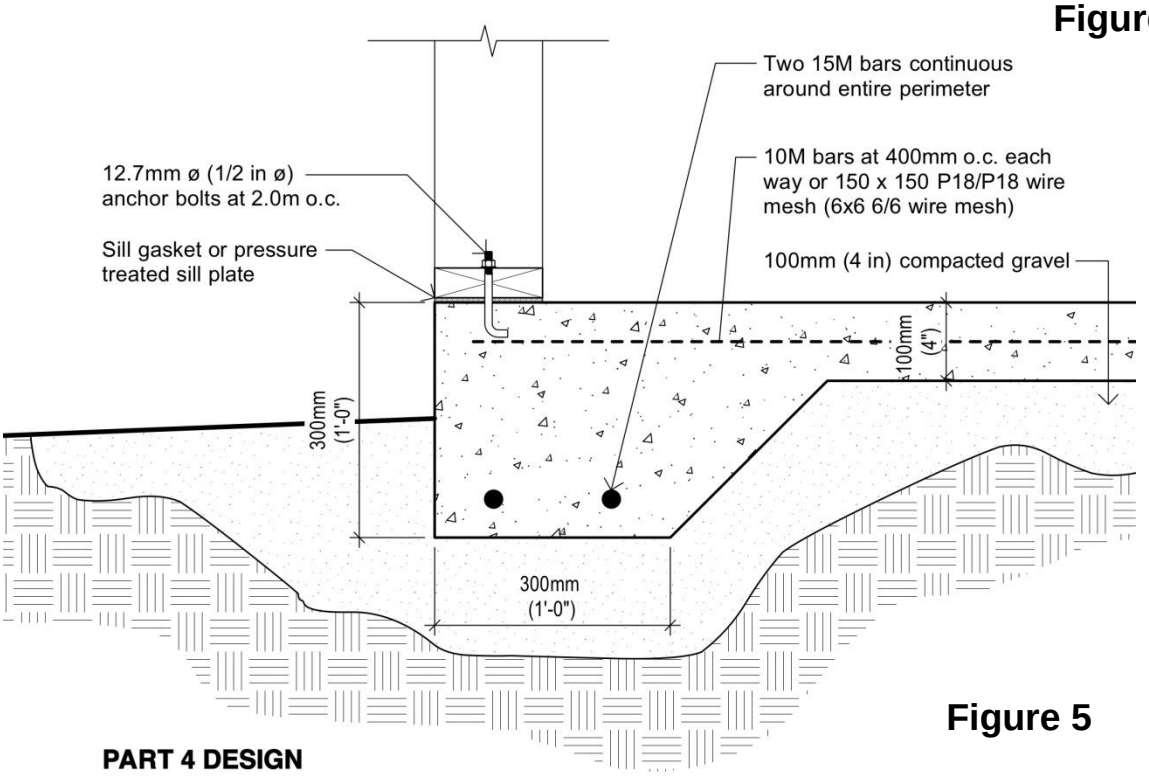


Figure 5

What if I add on to my existing garage?

For a garage, shed, or carport addition to an existing structure, the foundation must comply with the foundation requirements shown in Figure 4 and Figure 5, or alternatively the foundation must be designed by a Professional Engineer.

Can I vary the foundation slab details shown in this pamphlet?

The details and standards in this pamphlet are considered non-engineered details and are based on past “good construction practice”. Variations from these design standards are only permitted where the design is by a qualified person. Some variations that will require additional design are:
Wood mudsill foundation and anchorage details to prevent uplift due to wind.
Foundation slab that includes a curb of more than 150mm (6 in) or retaining wall to hold back the earth where the lot is not level.
Foundation slab that supports brick or masonry construction.

What type of concrete do I require for my foundation slab?

Concrete used for all detached garage or shed foundation slabs must have a minimum compressive strength of 32 MPa (4600 psi) after 28 days and must have air entrainment of 5% to 8%.

Framing

What types of framing methods are acceptable?

The framing details described in the pamphlet are based on a 1 storey wood framed structure that does not include any additional superimposed loads. Framing methods must be in accordance with Section 9.23. of the Ontario Building Code and good engineering practice. A detailed discussion of this aspect of construction is beyond the scope of this pamphlet. However, some common framing details are shown in Figure 6.

Wall Studs

Except for at openings, wall studs must be continuous between the bottom plate and the top plate(s), no splicing of studs is permitted. The studs must be oriented to be at right angles to the wall face except that wall studs may be placed on the flat in gable ends of roofs that do not contain finished space. Size and spacing of studs must conform to Table 2.

Table 2

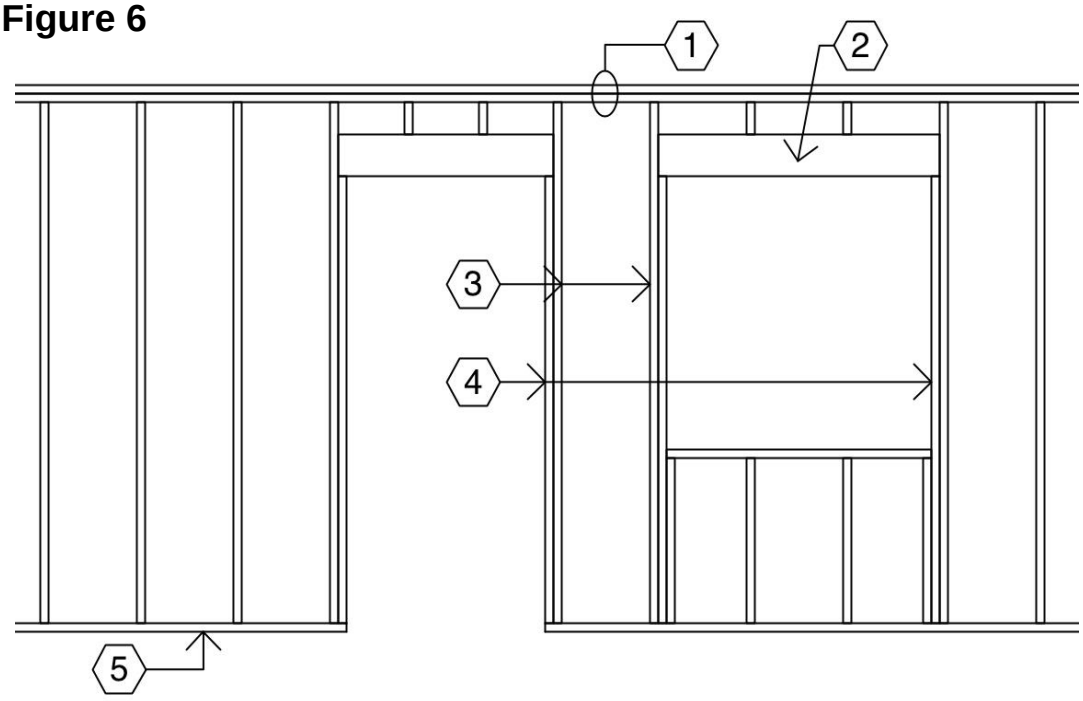
Can I use rough sawn lumber to build my garage or shed?

Supported Loads (including dead loads	Minimum Stud Size, mm (in)	Maximum Stud Spacing, mm (in)	Maximum Unsupported Height, m (ft in)
Roof with or without attic storage	38x64 (2x3)	400 (16)	2.4 (7 ft 10 in)
	38x89 (2x4)	600 (24)	3.0 (9 ft 10 in)
Roof with or without attic storage plus one floor	38x89 (2x4)	400 (16)	3.0 (9 ft 10 in)
	38x140 (2x6)	600 (24)	3.0 (9 ft 10 in)

No. All lumber used for structural framing and sheathing shall be identified by a grade stamp to indicate its grade as determined by the NLGA (National Lumber Grades Authority), “Standard Grading Rules for Canadian Lumber”.

For more detailed information refer to the book Canadian Wood Frame House Construction available to purchase from Canada Mortgage and Housing Corporation (CMHC) (www.cmhc.ca). This publication is an excellent guide to good framing methods and construction techniques. It also includes information for wall and roof coverings.

Figure 6



Notes to Figure 6:

1. **Double Top Plate:** Joints must be staggered at least one stud spacing. Joints are to be lapped or suitably tied at corners and intersecting walls.
2. **Lintel:** Refer to Table 3, Table 4, or Table 5 to determine the size of lintel required for the opening width you select.
3. **King Stud**
4. **Trimmer Studs:** The Ontario Building Code requires these studs to be a single full length piece of lumber extending from the underside of the lintel to the bottom plate. Two trimmers are required on both sides of the opening when the opening is greater than 3 m (9 ft 10 in).
5. **Single Bottom Plate:** To prevent uplift, this bottom plate should be firmly anchored down at each side of door opening, at each end of each wall, and at intervals not exceeding 2.4 m (7 ft 10 in). Bottom plate is to be pressure treated and or separated from concrete by a polyethylene membrane to resist decay.

Wood Lintel Spans for Windows and Man Doors	
Size of Lintels	**Maximum Allowable Spans**
2 – 38 x 89 mm (2 – 2x4)	**1.01 m (3 ft 3 ¾ in)**
2 – 38 x 140 mm (2 – 2x6)	**1.48 m (4 ft 10 ¼ in)**
2 – 38 x 184 mm (2 – 2x8)	**1.80 m (5 ft 10 7/8 in)**

Table 3

Notes to Table 3:

1. This table is for use with Spruce-Pine-Fir lumber No.1 or No.2 Grade.
2. Lintel spans are based on a maximum joist or rafter span of 4.9m (16 ft) and a maximum truss span of 9.8m (32 ft 2 in)
3. Minimum bearing length of 38 mm (1-1/2 in) each end of lintel.
4. A single piece of 89 mm (3-1/2 in) thick lumber may be used in lieu of 2 pieces of 38 mm (1-1/2 in) thick lumber on edge.

Overhead Door Lintels

What size of lintel is required for the overhead door?

The size of lintel required depends entirely upon the load it must support which, in this case, is determined by the style of roof.
See Table 4 and Table 5.

How are the tables used in determining the required overhead door lintel size?

If the roof style selected is Gable #1 as shown in Figure 7, then Table 4 is used to determine the lintel size. This table is used where the door opening DOES NOT SUPPORT THE ROOF, i.e. where the roof framing elements such as trusses or rafters run parallel to the door opening.

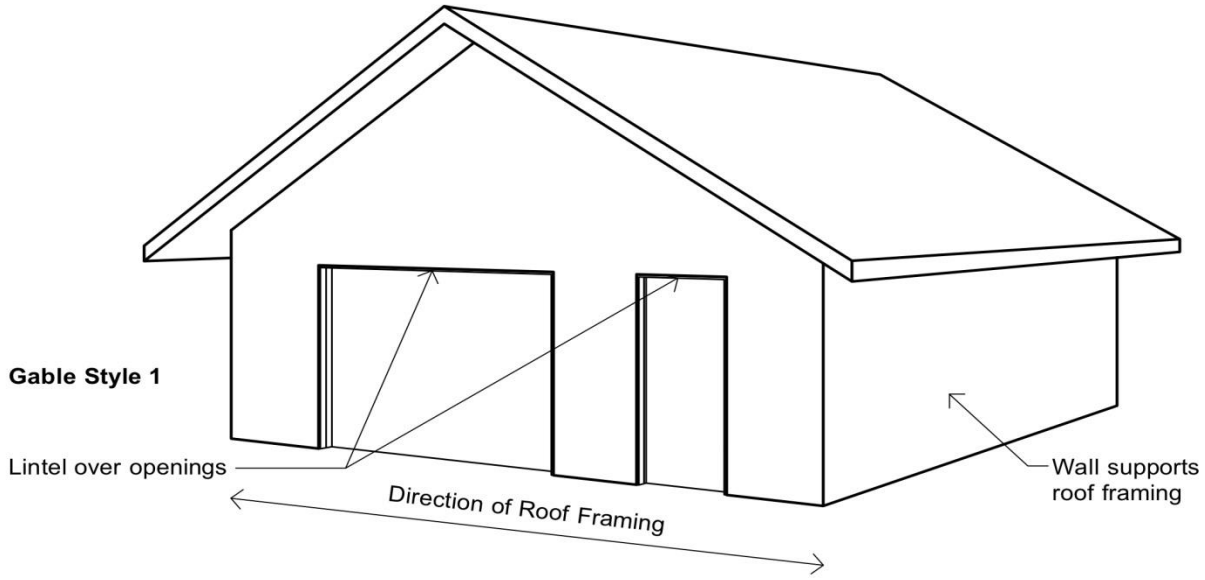


Figure 7

Wood Lintel Spans for Overhead Doors – NOT Supporting Roof Loads	
Maximum Door Opening Width	**Lintel Size – Gable Roof Only (Door in Gable End)**
4.18 m (13 ft 8 9/16 in)	**2 – 38x184mm (2 – 2x8)**
5.34 m (17 ft 6 ¼ in)	**2 – 38x235mm (2 – 2x10)**
6.21 m (20 ft 4 ½ in)	**2 – 38x286mm (2 – 2x12)**

Table 4

Notes to Table 4

1. This table is for use with Spruce-Pine-Fir lumber No.1 or No.2 Grade.
2. Built-up lintels must be constructed of full length members – no splicing of members is permitted between supports.

If the roof type selected is as shown in Figure 9, Figure 8, Figure 11, or Figure 10 , i.e. Gable #2, Hip, Mono, or Flat, then Table 5 is used to determine the lintel size. This table is used where the lintel over the door opening SUPPORTS THE ROOF, i.e. where the roof framing elements such as trusses or rafters run perpendicular to the door opening.

To select a size of wood lintel simply match the door opening size with the appropriate supported length in Table 5 to find the minimum lintel size.

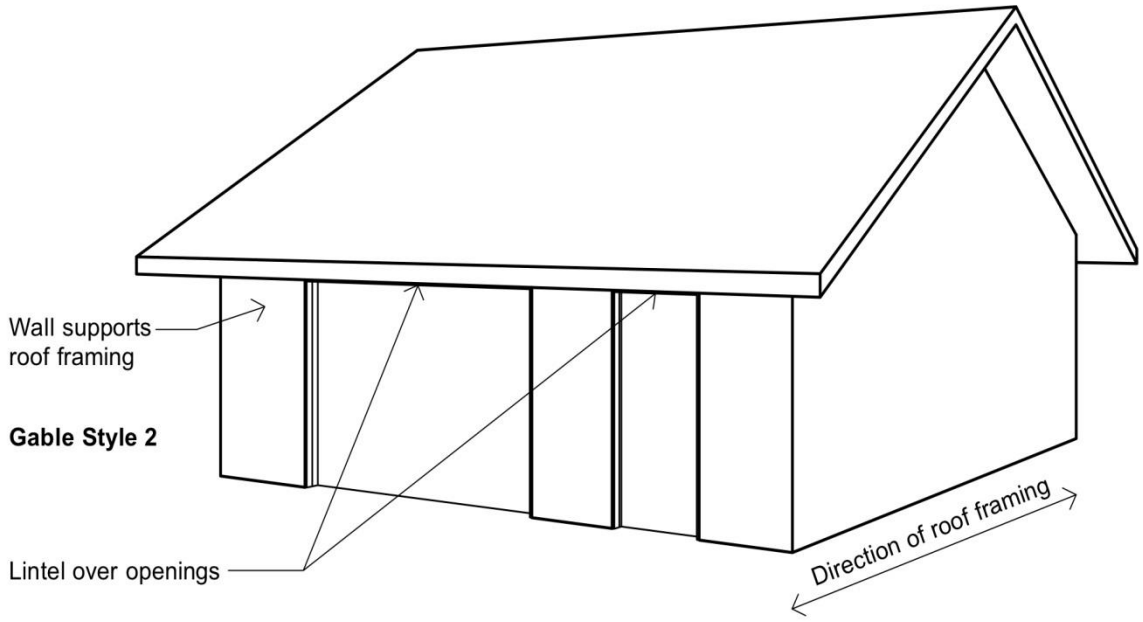


Figure 9

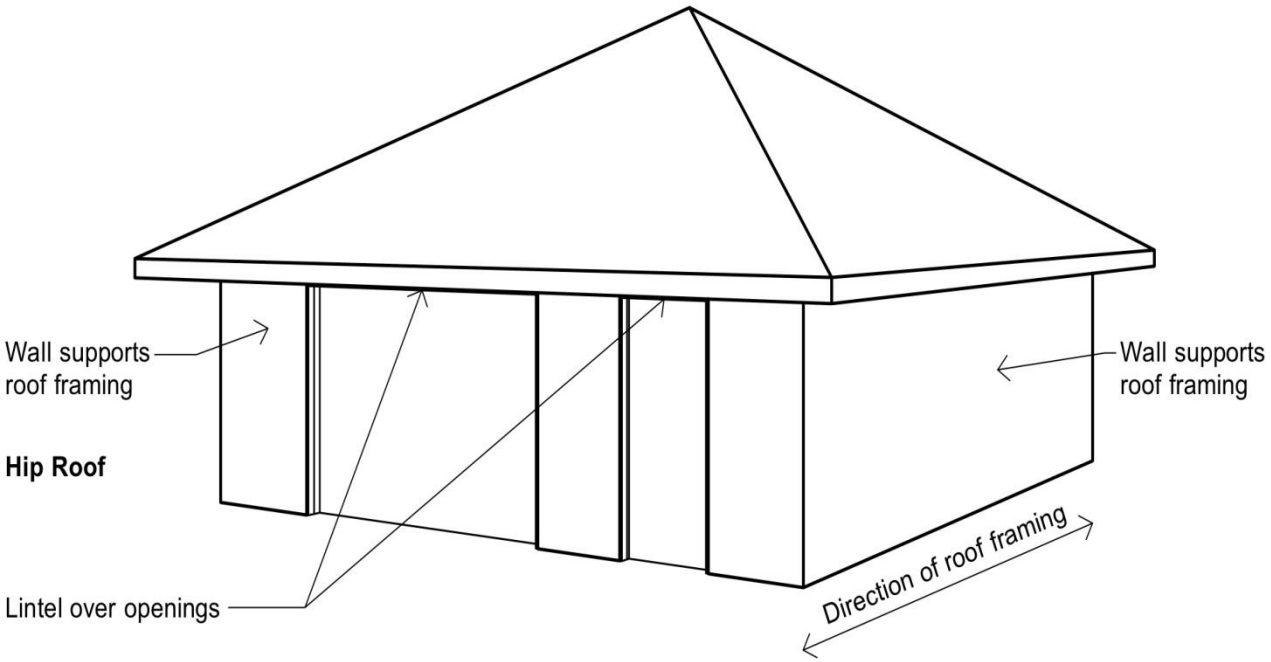


Figure 8

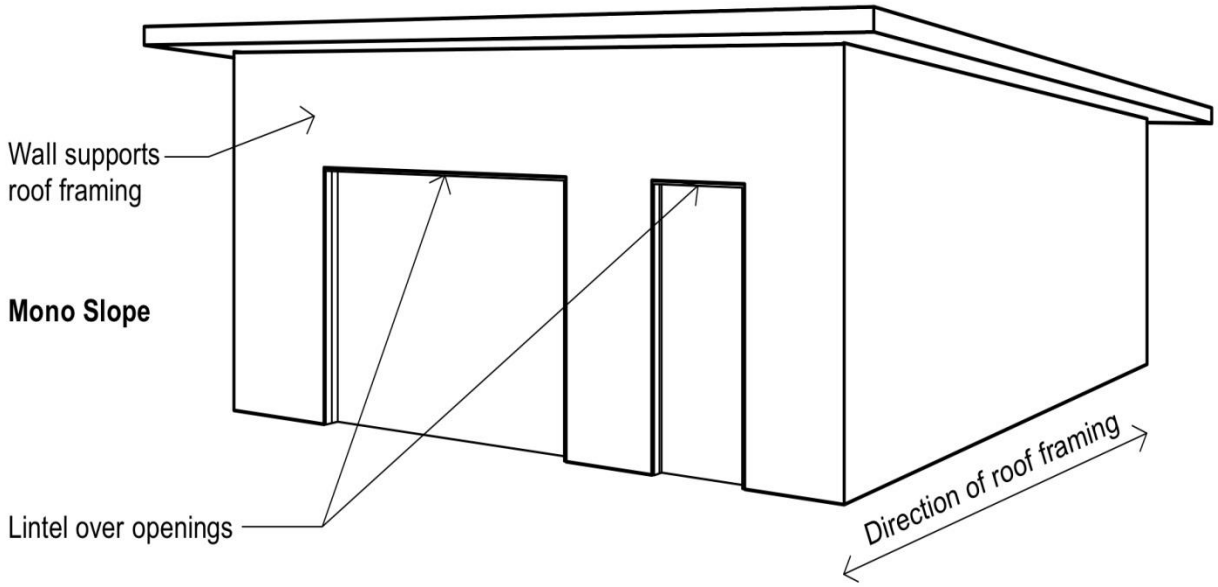


Figure 11

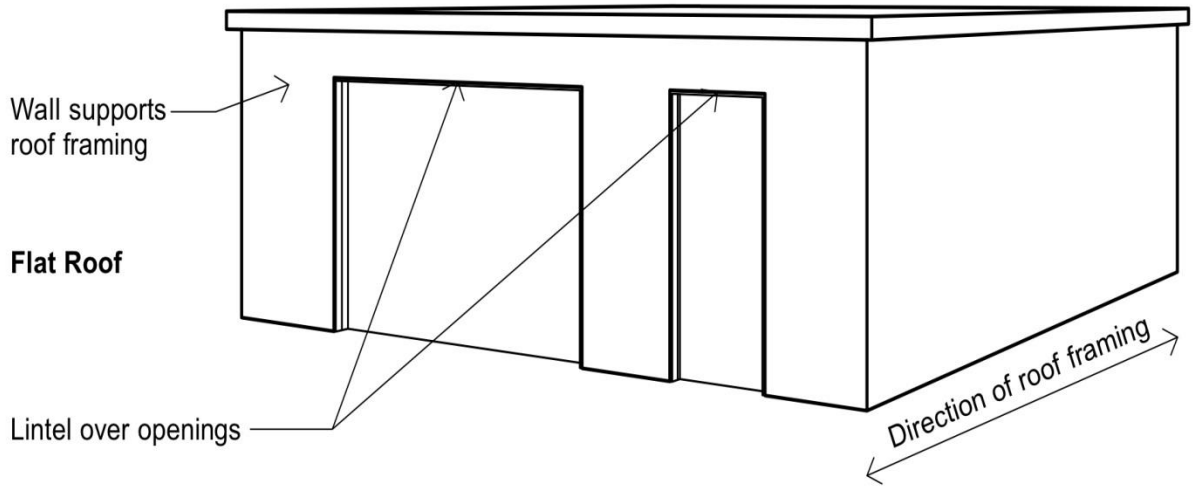


Figure 10

Lintel Size Selection for an Overhead Door

Example: in order to select the correct size of lintel in cases where it is supporting the roof, three pieces of information are needed: the size of the garage, the width of the overhead door opening, and the size of the roof overhang. As an example, assume a 8.53m x 8.53m (28ft x 28ft) garage with a 2.74m (9ft) overhead door opening and a 600mm (2ft) overhang.

Refer to Table 5

Begin by selecting the row for a 2.74m (9ft) overhead door opening. Next, knowing that the supported length will be half the distance for the roof span plus the overhang (see Figure 13), we divide the 8.53m (28ft) roof span by 2 and add the 600mm (2ft) roof overhang to get the total supported length of 4.8m (16ft).

Now looking along the table to column 4 where the supported length is 4.8m (16ft), we see that the proper size of lintel would be 3 – 38mm x 235mm (3 – 2x10).

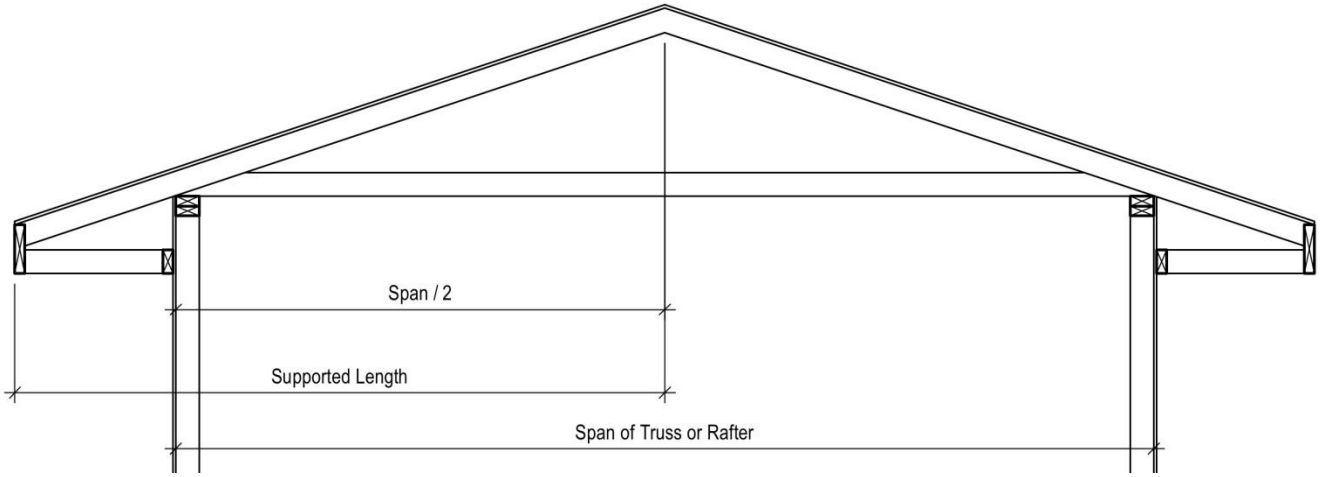


Figure 12

Wood Lintels – Supporting Roof Loads			
Supported Length			
Width of Opening (Lintel Span)	2.4 m (8 ft)	3.6 m (12 ft)	4.8 m (16 ft)
2.44 m (8 ft)	2 - 38x286mm (2 – 2x12)	2 - 38x286mm (2 – 2x12)	2 - 38x286mm (2 – 2x12)
2.74 m (9 ft)	3 - 38x235mm (3 – 2x10)	3 - 38x235mm (3 – 2x10)	3 - 38x235mm (3 – 2x10)
3.05 m (10 ft)	3 – 38x286mm (3 – 2x12)	3 – 38x286mm (3 – 2x12)	3 – 38x286mm (3 – 2x12)
3.66 m (12 ft)	130 x 304 Glue-Laminated Timber	130 x 304 Glue-Laminated Timber	130 x 304 Glue-Laminated Timber
4.27 m (14 ft)	130 x 304 Glue-Laminated Timber	130 x 304 Glue-Laminated Timber	130 x 304 Glue-Laminated Timber
4.88 m (16 ft)	130 x 304 Glue-Laminated Timber	80 x 380 Glue-Laminated Timber	80 x 418 Glue Laminated Timber
5.49 m (18 ft)	130 x 342 Glue-Laminated Timber	130 x 380 Glue-Laminated Timber	130 x 418 Glue-Laminated Timber
6.10 m (20 ft)	130 x 380 Glue-Laminated Timber	80 x 532 Glue-Laminated Timber	Intentionally Left Blank
Column 1	Column 2	Column 3	Column 4

Table 5

Notes toTable 5:

1. The lintels in this table are Spruce-Pine-Fir lumber No.1 or No.2 Grades
2. Built-up lintels must be constructed of full length members. No splicing of members is permitted between supports.
3. Supported length means half the span of trusses, roof joists, or rafters supported by the lintel plus the length of the overhang beyond the lintel. Figure 12
4. If the supported length is between the sizes shown, use the column with the greater depth. For garages or storage sheds with a door width or supported length greater than shown on the tables, consult a Professional Engineer.
5. The spans shown in the table are the clear spans between the load bearing supports at each end of the lintel. To find the total length of lintel needed, add the two bearing lengths of the support to the clear span.
6. The minimum bearing length of the support at each end of the lintel must be 89mm (3-1/2 in) where spans are greater than 3.66m (12 ft); where spans are less than 3.66m (12 ft) the minimum bearing length of the support at each end of the lintel must be 76mm (3 in).
7. Lintel sizes smaller than those shown on these tables may be used provided the lintel has been designed by a Professional Engineer and the lintel design and calculations are submitted and accepted.
8. The above noted lintels are not designed to carry masonry or floors above the overhead door. For these types of applications consult a Professional Engineer.
9. Glue Laminated Timber to conform to CAN/CSA-0122-M and CAN/CSA-0177-M and 20f-E Stress Grade.

Rafters and Trusses

What roof framing choices are there?

In wood framing there are basically two methods for framing roofs. They are:

1. Framing the roof with pre-engineered trusses. There are several truss manufactures and suppliers listed in the Yellow Pages under Trusses-Roof. These firms can provide detailed information regarding the proper installation of their products.

Note: when using trusses or rafters at 600mm (2ft) spacing with panel-type roof sheathing of less than 12.7mm (1/2 in) thickness, support must be provided to all edges of each roof sheathing panel including those that meet at the ridge. This can be accomplished with the use of 'H' clips as shown in Figure 13 and/or solid blocking.

2. Framing the roof with individual pieces of lumber (2x4, 2x6 etc.) This is commonly known as stick framing.

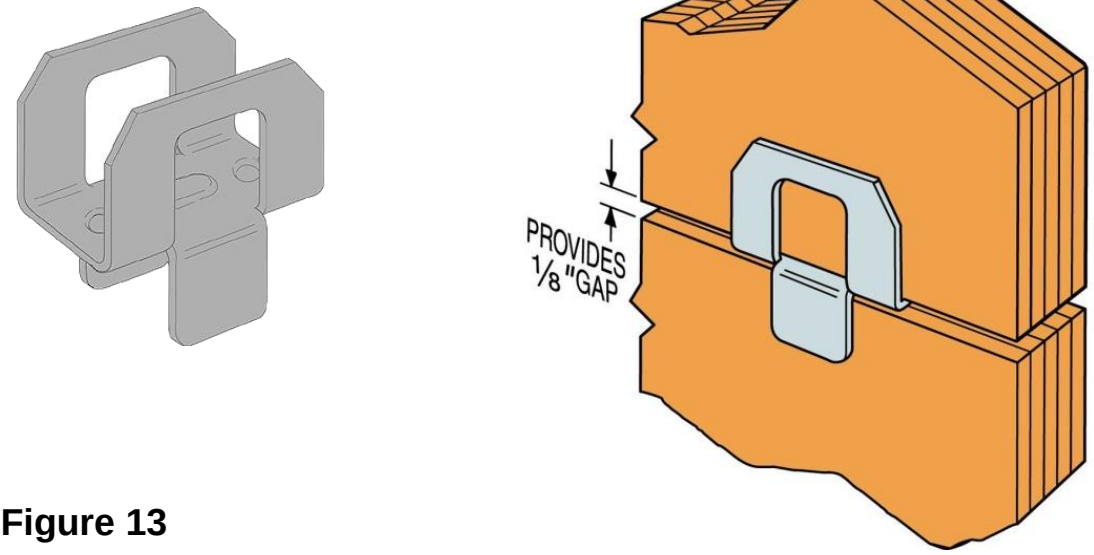


Figure 13

Table 6

Roof Rafter Spans – Rafter NOT Supporting Ceiling									
Commercial Designation	**Grade**	**Member Size (in)**	**Rafter Spacing**			**Member Size (mm)**	**Rafter Spacing**		
			12 in	16 in	24 in		300mm	400mm	600mm
			Ft-in	Ft-in	Ft-in		m	m	m
Spruce-Pine-Fir	No.1 and No.2	2x4	8-1	7-4	6-5	38 x 89	2.47	2.24	1.96
		2x6	12-9	11-7	10-1	38 x 140	3.89	3.53	3.08
		2x8	16-9	15-2	12-9	38 x 184	5.11	4.64	3.89
		2x10	21-4	19-1	15-7	38 x 235	6.52	5.82	4.75
		2x12	25-7	22-2	18-1	38 x 286	7.80	6.76	5.52

Table 6 indicates maximum rafter spans for various species and sizes of rafters. If you are framing a roof containing hip or valley rafters, the hip and/or valley rafters must be not less than 50mm (2 in) greater in depth than the common rafters and not less than 38mm (1-1/2 in) in thickness.

This table applies to roofs with a slope of 1 in 3 or greater. Roof slopes of less than 1 in 3 are subject to different loading conditions, e.g. adequate ridge support must be provided.

Are there any other Building Code requirements?

Yes, there are various other requirements concerning framing, sheathing materials, sheathing paper, flashing, siding, stucco, and shingles. Most of these aspects of construction are dealt with in the previously mentioned book available from Canada Mortgage and Housing Corporation.

The Ontario Building Code is available on the e-laws website.

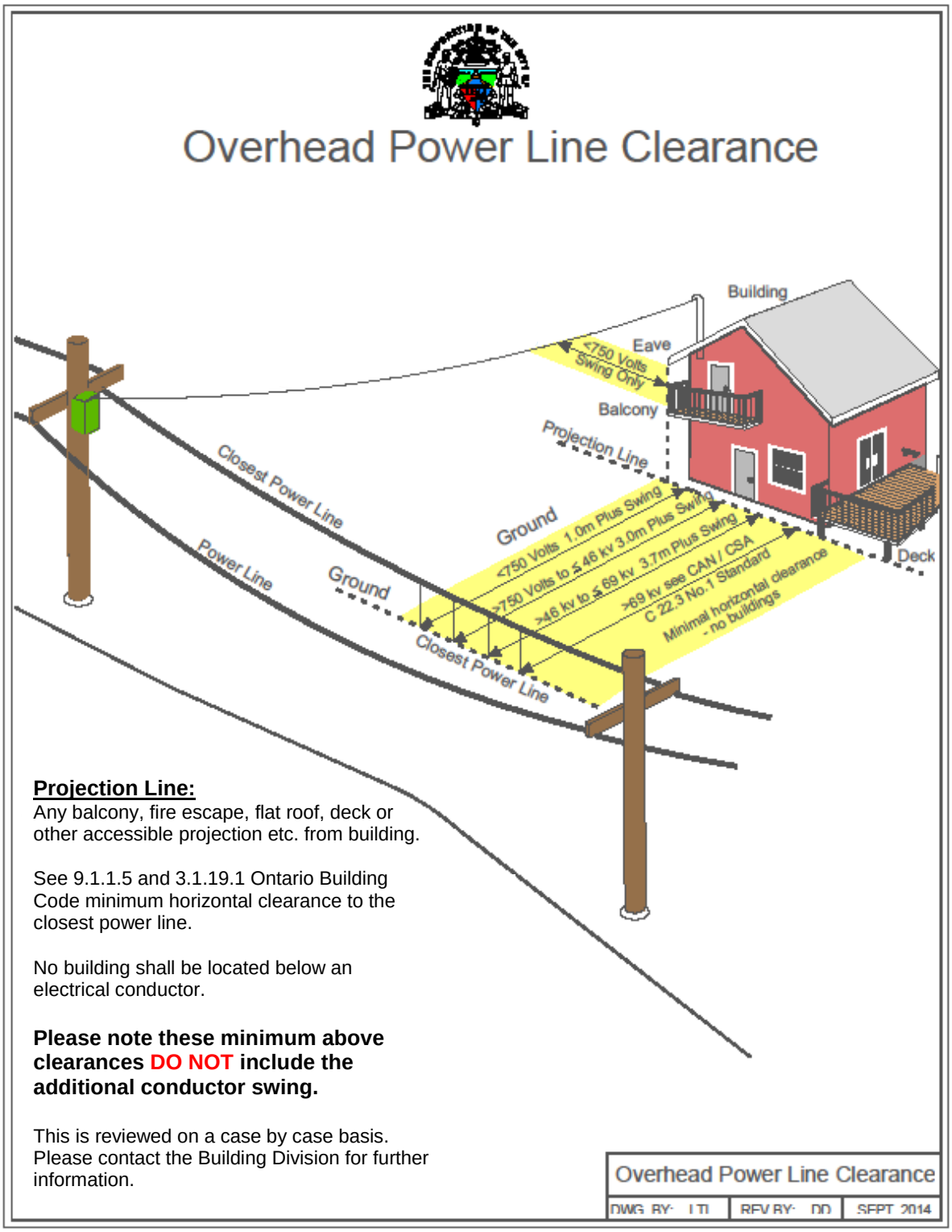

Overhead Power Line Clearance
Building
Eave
<750 Volts Swing Only
Balcony
Projection Line
Closest Power Line
Ground
<750 Volts 1.0m Plus Swing
>750 Volts to ≤ 46 kv 3.0m Plus Swing
>46 kv to ≤ 69 kv 3.7m Plus Swing
>69 kv see CAN / CSA C 22.3 No.1 Standard
Minimal horizontal clearance - no buildings
Deck
Power Line
Ground
Closest Power Line
Projection Line:
Any balcony, fire escape, flat roof, deck or other accessible projection etc. from building.
See 9.1.1.5 and 3.1.19.1 Ontario Building Code minimum horizontal clearance to the closest power line.
No building shall be located below an electrical conductor.
Please note these minimum above clearances DO NOT include the additional conductor swing.
This is reviewed on a case by case basis. Please contact the Building Division for further information.
Overhead Power Line Clearance
DWG BY: LTI
REV BY: DD
SEPT 2014

Figure 14

For Further Information

Planning and Building requirements vary; we strongly recommend that applicants contact the City of Sault Ste. Marie Building Division to discuss their specific project prior to commencement.

Referenced Documents

Ontario Building Code O. Reg 333/12
Zoning By-Law 2005-150
Building By-Law 2008-148
The Span Book published by the Canadian Wood Council

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