



Dauphin

Everything you deserve

DETACHED GARAGES

(Wood Frame)

Construction and zoning requirements for detached garages and storage sheds for residential dwellings



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The City of Dauphin Building Bylaw is primarily an administrative document that adopts the Manitoba Building Code and related standards to provide construction requirements. Throughout this booklet the Manitoba Building Code will be referred to as the Building Code.

Detached garages and storage sheds vary in size and area, and 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 that will comply with the regulations. If the nature of your project is different than that contained in this booklet, and you are not familiar with the regulations that may be applicable, it is recommended that you contact someone who is knowledgeable in this area.

Every effort has been made to ensure the accuracy of information contained in this publication. However, in the event of a discrepancy between this booklet and the governing City of Dauphin Bylaw, the Bylaw will take precedence.

Do I require a building permit to build a detached garage or storage shed?

Yes! A building permit is required. This permit may be obtained by submitting the required information to the City of Dauphin Building Inspector.

Do I need a building permit for a foundation slab only?

No, but before pouring the concrete slab for your future garage or storage shed you should make sure that this slab will meet ALL applicable Building Code and Zoning Bylaw regulations with respect to:

- a) allowable size;
- b) appropriate thickness and reinforcing; and
- c) allowable distances from property lines and the dwelling;

For instance, as explained in other sections of this booklet, the Building Code has special requirements concerning the foundation slab thickness if the structure is 50 sq. m. (538 sq. ft.) or larger in area. As well, the Zoning Bylaw has minimum side yard regulations, which, together with the proposed width of the roof eaves, will affect the location of the garage or storage shed in relation to the property lines. Please refer to the section on Zoning requirements for further information regarding acceptable locations and allowable size for your detached garage or storage shed. When you decide to proceed with the construction of the garage or storage shed, a building permit will be required at that time.

Building Permit fee for a Detached Garage is \$275.00. A separate Development Permit fee of \$75.00 will apply to all detached garages & sheds over 11.5 sq. m. (120 sq. ft.).

Exception: Storage sheds that are 11.5 sq. m. (120 sq. ft.) or less in area do not require a building permit provided they are situated on the property in accordance with the Zoning Bylaw and provided they do not create a hazard. Sheds larger than 11.5 sq. m. require a building permit.

General Information

What information is required to make a building permit application?

You must present 1 copy of a Surveyor's Building Location Certificate. As an alternative, a well-drawn site plan showing all property dimensions, locations of all buildings, and the location and size of the proposed structure (including doors & windows) may be acceptable. Normally, no construction plans are required if you are building a one-storey conventional wood-framed detached garage (commonly referred to as a 'garage package') structure. However, in certain instances, additional information, including plans or design by a Professional Engineer, may be required.

What about a carport? Does it require a building permit?

Yes! A building permit is required to build a carport. If the carport stands alone or is attached to a detached garage, then the Zoning and Building Code regulations in this booklet apply. Construction plans will be required for all carports. Detailed information must be provided on the roof framing, the number of posts, the post Foundation, and the size of the beams over top of the posts. If the carport is attached to the house or to an attached garage, then a structural design prepared by a professional engineer may be required.

Can I assume that the City sidewalk, lane pavement, or neighbour's fence is the property line?

No! The only accurate way to determine your property line is with a Manitoba Land Surveyor's Staking Certificate.

How can I obtain a Staking Certificate?

Check your records. Some homeowners may have previously acquired this document in conjunction with receiving a Manitoba Land Surveyors Building Location Certificate. Otherwise, the services of a qualified Land Surveyor should be obtained. A number of firms are listed in the Yellow Pages. Using the services of a Land Surveyor is the best way to avoid property boundary disputes with neighbours.

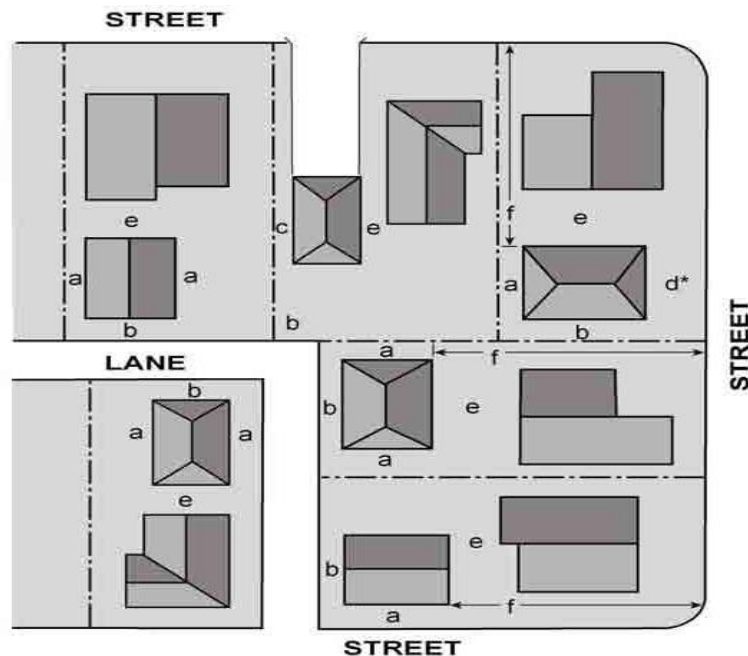
How close can I build to the property lines?

In most cases when a garage or storage shed is built to the rear of the dwelling, it can come as close as 600 mm (2 ft.) to the side and rear property lines.

A garage or storage shed located beside the dwelling or on a reverse corner lot* require different setbacks. See FIGURE 1.

FIGURE 1 - Property Line Setbacks

- a - interior side setback 600 mm (2 ft.)
- b - rear setback 1.5 m (5 ft.), no lane 600 mm (2 ft.)
- c - same as dwelling (usually 1.5 m (5 ft.))
- d - same as dwelling (usually 3.0 m (10 ft.))
- e - 1 m (3 ft.) measured eave to eave
- f - 18 m (60 ft.) from front property line and 1.5 m (5 ft.) behind the rear wall of dwelling (see 5.3.2.b) in Zoning Bylaw)



*** A reverse corner lot is a corner lot where its rear property line abuts the side lot line of an adjoining property.

Zoning

Do these setbacks include the overhang?

In the required setbacks from the property lines to the wall of the garage, shed, or carport posts, a 300 mm (1 ft.) overhang is permitted. (Eavestrough may be added to the 300 mm (1 ft.) overhang.)

NOTE: It should be recognized that if a larger overhang is desired then the garage or storage shed wall must be set back farther from the property line. A clear separation of 300 mm (1 ft.) from the property line to the eaves must always be maintained as shown in FIGURE 2. In this example the 300 mm (1 ft.) overhang requires that the garage wall be set back 600 mm (2 ft.) from the property line.

What is the maximum height allowable?

The maximum height allowable for a garage or storage shed is 4.5 m (14.8 ft.) determined according to roof style as shown in FIGURE 3.

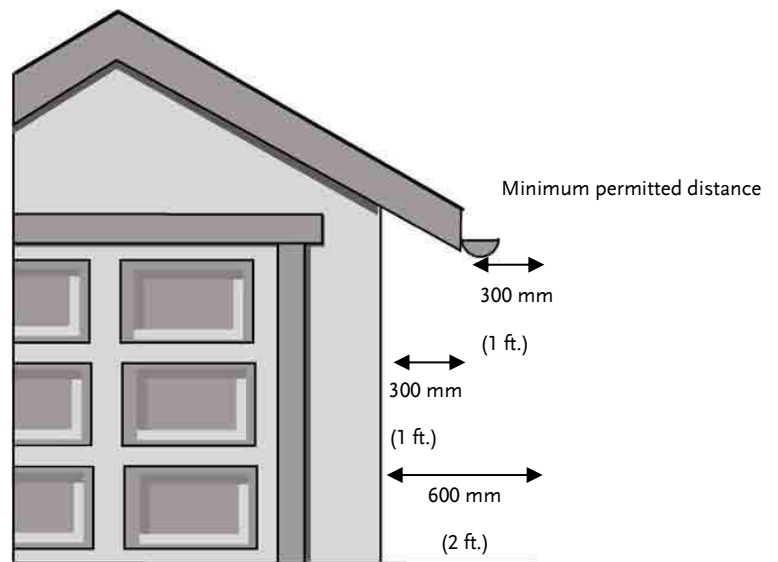
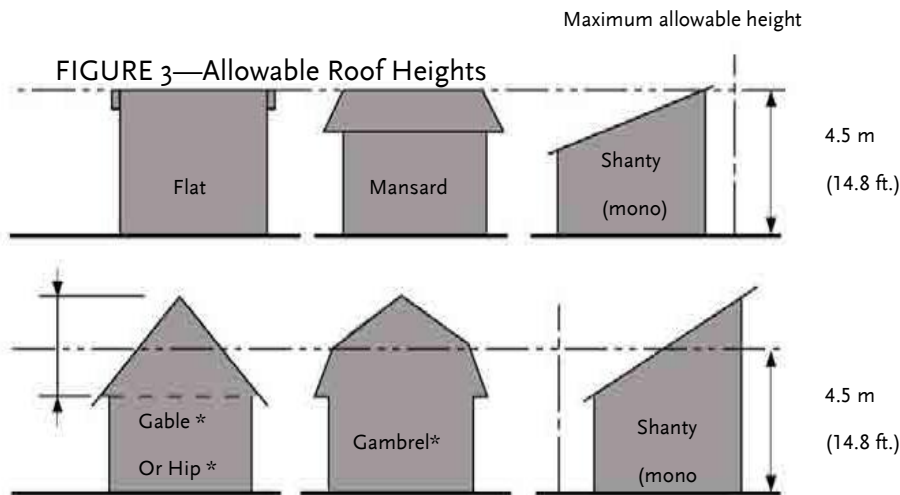


FIGURE 2—Setback from Overhang

Zoning



* Note: Where the slope of a gable, gambrel or hip roof, or any portion of such roof is less than 1:3 (rise:run), the building height shall be measured as through the roof were flat.

How large of a garage can I build?

The size of a garage, shed, or carport cannot exceed 20% of the total lot area. For example, if the lot is 40 x 100 ft. (4,000 sq. ft.) then up to 800 sq. ft. (20% of 4,000) of accessory building may be constructed.

If I cannot meet these requirements, what are my alternatives?

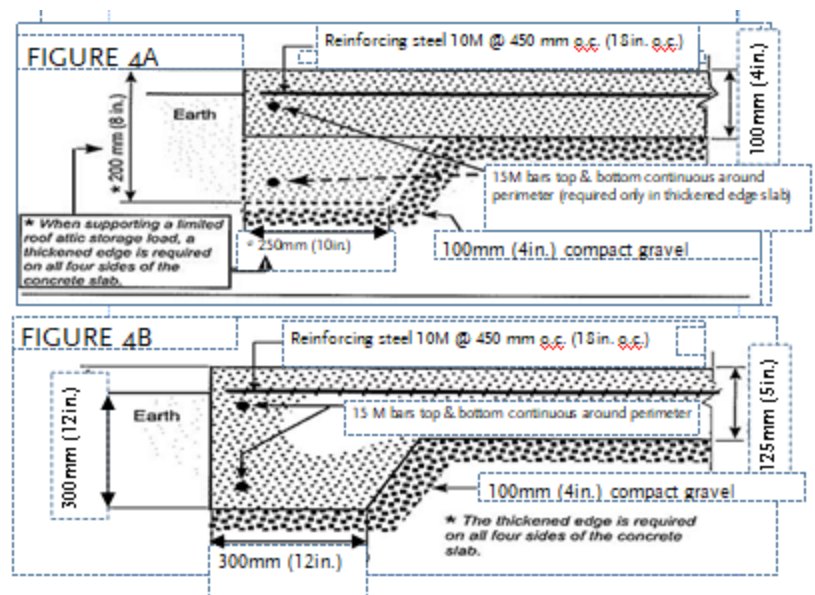
To vary these requirements you must apply for a zoning variance. This application can be made at City Hall, 100 Main Street South, Dauphin.

Foundations

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

1. For a detached garage having a building area of less than 50 sq. m. (538 sq. ft.) it is recommended that a concrete slab with a thickness of not less than 100 mm (4 in.) be used as shown in FIGURE 4a.
2. For a building area of 50 to 70 sq. m. (538 to 753 sq. ft.) inclusive, it is recommended that a thickened edge concrete slab be used as shown in FIGURE 4b.
3. For foundations other than those shown in Figures 4a and 4b, or if the building area is greater than 70 sq. m. (753 sq. ft.), or if the garage supports an upper floor or a roof with other than limited attic storage floor area, the foundation must be designed by a professional engineer registered in the Province of Manitoba.

NOTE: To be considered as one-storey, roof trusses that are designed for storage shall be limited to 1,066 mm (42 in.) height, 2,590 mm (8 ft. 6 in.) length and 1.0 kPa (20 psf) storage live load.



Foundations

What if I add on to my existing garage?

For a garage, shed, or carport addition to an existing structure, the entire foundation, both the existing and the addition, must be made to comply with the foundation requirements shown in FIGURES 4a and 4b, or alternatively the foundation must be designed by a professional engineer.

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

The details and standards in the 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 professional engineer. Some variations that will require an engineer are:

1. Wood mudsill foundation and anchorage details to prevent uplift due to wind.
2. Foundation slab that includes a curb of more than 150 mm (6 in.) or retaining wall to hold back the earth where the lot is not level.
3. Foundation slab that is greater than 70 sq. m. (753 sq. ft.)
4. Foundation slab that supports a second floor or roof attic storage with a height of more than 1,066 (42 in.) and/or supports a load more than 1.0 kPa (20 psf).

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 (4,600 psi) after 28 days and must have air entrainment of 5 to 8 per cent.

Fire Protection & Framing

Do I have to fire-rate the exterior walls?

You must fire-rate only those walls which are closer than 600 mm (24 in.) to any property line which faces an adjoining property. If the wall faces a street or a public lane this requirement does not apply.

Note: It is possible that in some instances the Zoning Bylaw may not permit a wall to come closer than 600 mm (24 in.) to a property line. Fire-rating of walls can be achieved by applying to the inside face of the wall a layer of 15.9 mm (5/8 in.) standard non-rated drywall or 12.7 mm (1/2 in.) fire-rated (Type X) drywall or equivalent.

Can I have windows in the walls?

Windows and other openings, including doors, are only permitted in a wall if the wall is 1.2 m (4 ft.) or more from the property line of an adjoining property. If the wall faces a street or a public lane, this requirement does not apply. There are no distance restrictions between a window in a detached garage and a single-family dwelling on the same lot. The above requirements for fire rating of walls and placement of windows or other openings in these walls are designed to limit fire spread between buildings on adjoining properties.

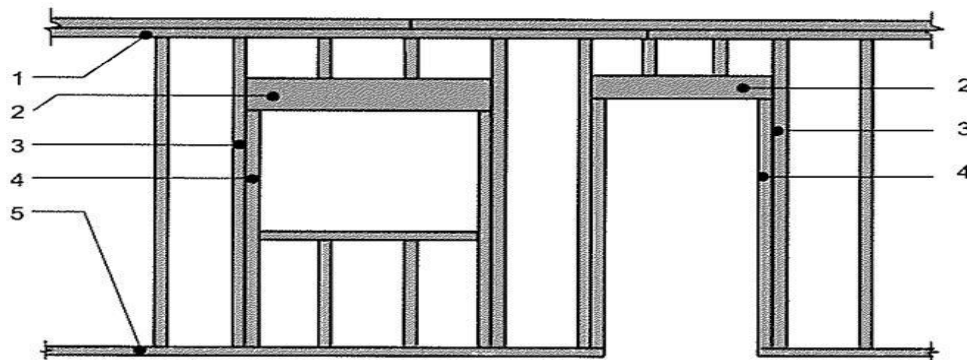
What type of framing methods are acceptable?

The framing details described in this pamphlet are based on a 1-storey wood-framed structure that does not include any additional superimposed loads, and further design consideration may be required to address these additional superimposed loads. Framing methods must be in accordance with good engineering practice. A detailed discussion of this aspect of construction is beyond the scope of this publication. However, some common framing details are indicated on the following pages. Refer to FIGURES 5,6 & 7, and TABLES 1 & 2.

For more detailed information refer to the book *Canadian Wood Frame House Construction* available to purchase from Canada Mortgage and Housing Corporation. This publication is an excellent guide to good framing methods and construction techniques. It also includes information for wall and roof sheathing requirements, exterior cladding application, roof coverings, etc.

Where the structure will not be a standard wood frame structure, such as post and beam, concrete block, brick (including brick veneer), or metal framing, or where the framing members exceeds that prescribed in this pamphlet, the design must be by a professional engineer and drawings must be submitted under the seal and signature of a professional.

FIGURE 5—Wall Framing and Lintel Detail



Notes to FIGURE 5:

- 1) **DOUBLE TOP PLATE:** Joints must be staggered at least one stud spacing. Joints are to be lapped or suitably tied at corners or intersecting walls.
- 2) **LINTEL:** Refer to TABLE 1 to determine the size of lintel required for the opening width you select.
- 3) **THROUGH STUD:** Refer to TABLE 2 to determine the maximum spacing and maximum unsupported height of studs.
- 4) **CRIPPLE STUD:** The 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 cripples are required on both sides of opening when 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 openings, at each end of each wall, and at intervals not exceeding 2.4 m (7 ft. 10 in.).

Fire Protection & Framing

FIGURE 6—Exterior Corner Detail

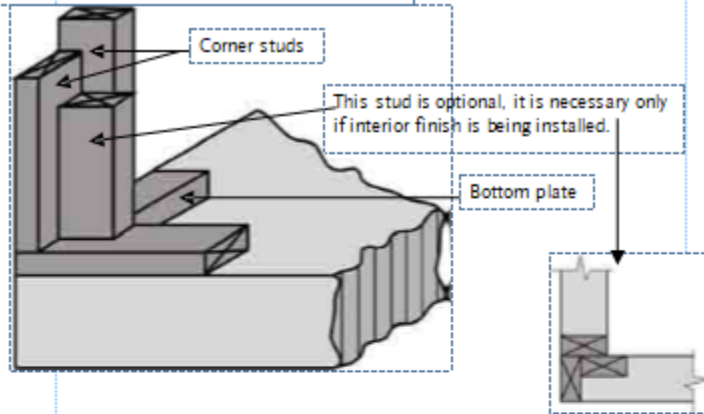


FIGURE 7—Exterior Wall Framing at Gable End Detail

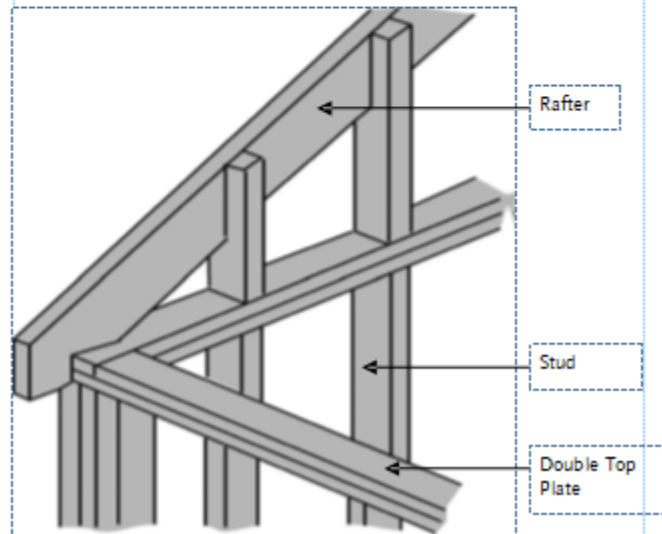


TABLE 1 - Wood Lintel Spans for Windows and Man Doors

Size of Lintels	Maximum Allowable Spans
2 - 38 x 89 mm (2 - 2 x 4)	1.19 m (3 ft. 11 in.)
2 - 38 x 140 mm (2 - 2 x 6)	1.79 m (5 ft. 10 in.)
2 - 38 x 184 mm (2 - 2 x 8)	2.18 m (7 ft. 2 in.)

Notes to TABLE 1:

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

TABLE 2 - Size and Spacing of Studs

Type Of Wall	Supported Loads (including dead loads)	Minimum Stud Size	Maximum Stud Spacing	Maximum Unsupported Height
Exterior	Roof with or without attic storage	38x64mm (2x3)	400mm (16")	2.4m (7'10")
		38x89mm (2x4)	600mm (24")	3.0m (9'10")

Note to TABLE 2:

This table is for use with all species of lumber and minimum grades of standard, stud, and No. 2.

Fire Protection & Framing

TABLE 3 - Wood Lintels - NOT SUPPORTING Roof Loads

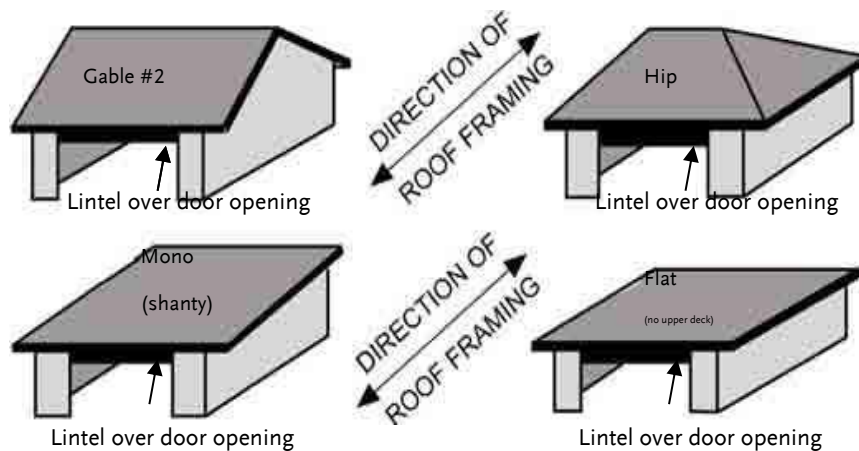
Maximum Door Opening Width	Lintel - Gable Roof Only (Door in Gable End)
2.44 m (8 ft.)	2 - 38 x 184 mm (2 - 2 x 8)
3.66 m (12 ft.)	2 - 38 x 235 mm (2 - 2 x 10)
4.27 m (14 ft.)	3 - 38 x 235 mm (3 - 2 x 10)
4.88 m (16 ft.)	3 - 38 x 235 mm (3 - 2 x 10)
5.49 m (18 ft.)	3 - 38 x 286 mm (3 - 2 x 12)

If the roof type selected is as shown in FIGURE 9, i.e. Gable #2, Hip, Mono, or Flat, then TABLE 4 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 4 to find the minimum lintel size.

Notes to TABLE 3:

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

FIGURE 9—Roof styles with lintel supporting roof framing



What size of lintel is required for the overhead door?

The size of lintel required depends entirely upon the load that it must support, which in this case is determined by the style of roof. See TABLES 3 & 4.

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 8, then TABLE 3 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.

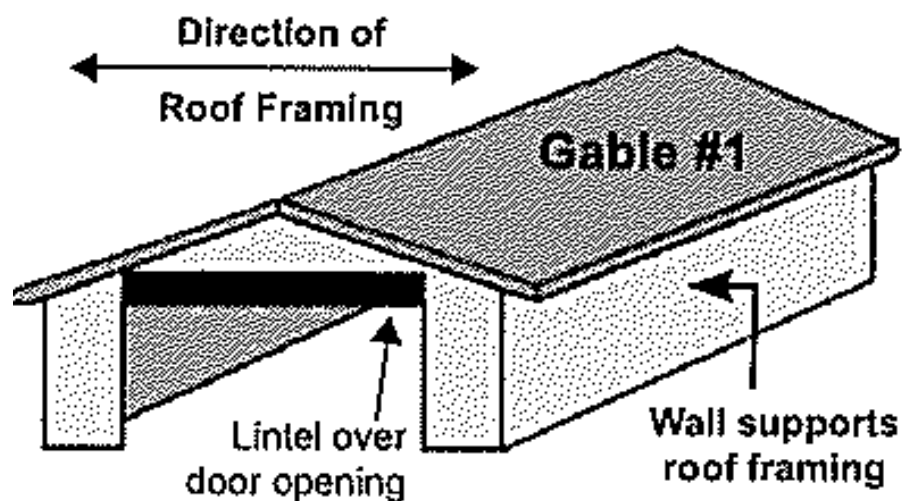


FIGURE 8—Roof Style with lintel NOT supporting roof framing

Overhead Door Lintels

TABLE 4—Wood Lintels—SUPPORTING ROOF LOADS
Supported length (see Note 3 below)

Width of opening (lintel span)	2.44 m (8 ft.)	3.05 m (10 ft.)	3.66 m (12 ft.)	4.27 m (14 ft.)	4.88 m (16 ft.)
2.44 m (8 ft.)	3-38 x 184mm (3 - 2 x 8)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 235 mm (3 - 2 x 10)
2.74 m (9 ft.)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 235 mm (3 - 2 x 10)	3-38 x 235 mm (3 - 2 x 10)
3.05 m (10 ft.)	3-38 x 184 mm (3 - 2 x 8)	3-38 x 235 mm (3 - 2 x 10)	3-38 x 235 mm (3 - 2 x 10)	3-38 x 235 mm (3 - 2 x 10)	3-38 x 286 mm (3 - 2 x 12)
3.66 m (12 ft.)	3-38 x 235 mm (3 - 2 x 10)	3-38 x 235 mm (3 - 2 x 10)	3-38 x 286 mm (3 - 2 x 12)	4-38 x 286 mm (4 - 2 x 12)	4-38 x 286 mm (4 - 2 x 12)
4.27 m (14 ft.)	3-38 x 286 mm (3 - 2 x 12)	3-38 x 286 mm (3 - 2 x 12)	4-38 x 286 mm (4 - 2 x 12)	Design Req'd by Engineer	Design Req'd by Engineer
4.88 m (16 ft.)	3-38 x 286 mm (3 - 2 x 12)	4-38 x 286 mm (4 - 2 x 12)	Design Req'd by Engineer	Design Req'd by Engineer	Design Req'd by Engineer
COLUMN 1	2	3	4	5	6

Notes to TABLE 4:

- 1) The lintels in this table are Spruce-Pine-Fir lumber grades 1 & 2, except those marked * which are Douglas Fir lumber grades 1 & 2.
- 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 (see FIGURE 10).
- 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 89 mm (3 1/2 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) The deflection limit for lintels was set at a maximum 15 mm (0.6 in.) to ensure proper closure of garage doors.

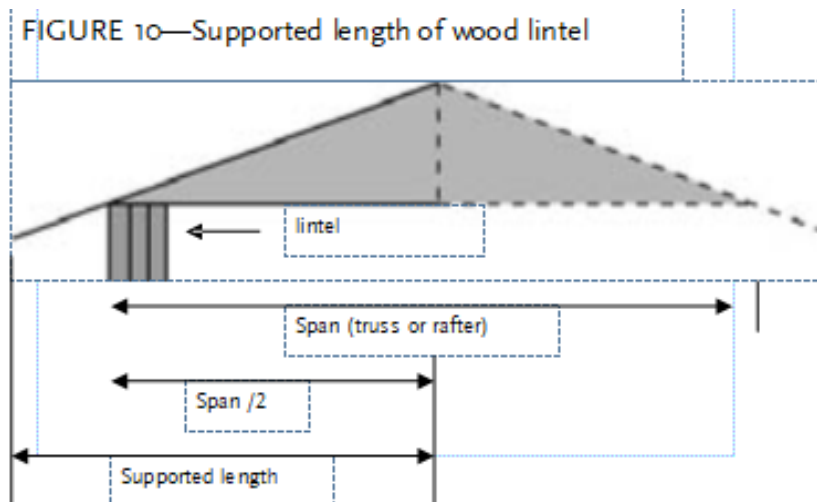
Overhead Door Lintels

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 7.32 m x 7.32 m (24 ft. x 24 ft.) garage with a 2.74 m (9 ft.) overhead door opening and a 600 mm (2 ft.) overhang. Refer to TABLE 4.

Begin by selecting the row for a 2.74 m (9 ft.) overhead door opening. Next, knowing that the supported length will be half the distance of the roof span plus the overhang (see FIGURE 10), we divide the 7.32 m (24 ft.) roof span distance by 2 and add the 600 mm (2 ft.) roof overhang to get the total supported length of 4.27 m (14 ft.).

Now looking along the table to column 5 where the supported length is 4.27 m (14 ft.), we see that the proper size of lintel would be 3 - 38 x 235 mm (3 - 2 x 10). If there was no roof overhang over the door opening we would look to column 4 where the supported length is 3.66 m (12 ft.). The correct lintel size, in this case, would be 3 - 38 x 184 mm (3 - 2 x 8).



Rafters & Trusses

What roof framing choices are there?

In wood framing, the most common method is to use premanufactured trusses.

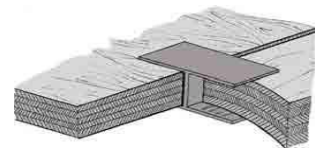
Framing the roof with pre-manufactured trusses.

There are several truss manufacturers and suppliers listed in the Yellow Pages under both LUMBER-RETAIL and TRUSSES.

These firms can provide detailed information regarding the proper installation of their products.

Note: When using trusses or rafters at 600 mm (24 in.) spacings with panel-type roof sheathing of less than 12.7 mm (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 11 and/or solid blocking.

FIGURE 11c—"H" Clip Detail



Framing with other methods

If you are framing using other than premanufactured roof trusses, the truss must be designed by a professional engineer registered in the Province of Manitoba.

Note: The use of gang nailers (metal plates) in manufacturing "home made" trusses is not permitted unless extensive engineering involvement and testing is carried out and the supporting documentation is submitted and found acceptable. These types of fasteners are only intended for use under the design and quality control of a truss manufacturer.

Truss designs vary depending upon spans, roof slope, etc. Before manufacturing your own trusses, obtain an accepted truss design drawing showing the span, the size of the members, the size and thickness of the plywood gussets, and the nailing patterns. Do not copy truss designs used on other buildings. These designs may be inadequate for your application.

Are there any other Building Code requirements?

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

Compliance

Who enforces all of these requirements?

The City of Dauphin Building Inspector is assigned the responsibility of monitoring construction for compliance with the various Building Codes and Bylaws. This monitoring is carried out by means of the permit approval process and periodic site inspections. The ultimate responsibility for compliance rests with the owner and/or contractor.

Is there any way that compliance with a certain aspect of the Building Code can be waived?

The City of Dauphin Building Inspector does not have the authority to waive the requirements but does have the authority to accept equivalencies that meet the intent of the Building Code. If you feel you can satisfy a Building Code requirement by using an equivalent material or construction method, contact your Building Inspector.

Notice:

Precautions should be taken to avoid gas service lines from being enclosed in or under building as per CSA Z184 Gas Pipelines Systems Standards. Additionally, care should be taken when excavating to avoid disturbing other underground service lines including telephone cables and electrical power cables.

Please ensure you contact the utility companies prior to proceeding with construction or any underground excavation.

Contact Information

Dave Derkach
Building Inspector
City of Dauphin

Ph: 204-622-3219

Fax: 204-622-3291

Email: daved@dauphin.ca

Remember to Click or Call Before You Dig

For BellMTS, Manitoba Hydro/Gas or Westman
Communications Group locates:

Click: <http://www.clickbeforeyoudigmb.com>

Call: 1-800-940-3447

